School of Medicine

Academic Year 2010-2011
## Contents

<table>
<thead>
<tr>
<th>Foreword</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical Perspectives</td>
<td>7</td>
</tr>
<tr>
<td>Mission Statement and Education Program Objectives</td>
<td>9</td>
</tr>
<tr>
<td>The Johns Hopkins Medical Institutions</td>
<td>11</td>
</tr>
<tr>
<td>Instruction Leading to the M.D. Degree</td>
<td>19</td>
</tr>
<tr>
<td>Medical Student Employment Policy</td>
<td>31</td>
</tr>
<tr>
<td>Alcohol Policy for Medical Students</td>
<td>32</td>
</tr>
<tr>
<td>Financial Aid Satisfactory Academic Progress Review</td>
<td>32</td>
</tr>
<tr>
<td>Involuntary Leave of Absence</td>
<td>33</td>
</tr>
<tr>
<td>Academic Honesty</td>
<td>33</td>
</tr>
<tr>
<td>Honor Code</td>
<td>33</td>
</tr>
<tr>
<td>Special Students/Visiting Students</td>
<td>33</td>
</tr>
<tr>
<td>Enrollment</td>
<td>34</td>
</tr>
<tr>
<td>Interdivisional Studies</td>
<td>34</td>
</tr>
<tr>
<td>Graduate Programs</td>
<td>35</td>
</tr>
<tr>
<td>Office of Graduate Student Affairs</td>
<td>35</td>
</tr>
<tr>
<td>Degree Requirements</td>
<td>35</td>
</tr>
<tr>
<td>Departmental Requirements</td>
<td>35</td>
</tr>
<tr>
<td>Biochemistry, Cellular and Molecular Biology</td>
<td>35</td>
</tr>
<tr>
<td>Biological Chemistry</td>
<td>36</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>37</td>
</tr>
<tr>
<td>M.S.E. Program in Biomedical Engineering</td>
<td>40</td>
</tr>
<tr>
<td>Biophysics/Molecular Biophysics</td>
<td>41</td>
</tr>
<tr>
<td>Cell Biology</td>
<td>43</td>
</tr>
<tr>
<td>Cellular and Molecular Medicine</td>
<td>44</td>
</tr>
<tr>
<td>Functional Anatomy and Evolution</td>
<td>44</td>
</tr>
<tr>
<td>History of Science, Medicine, and Technology</td>
<td>45</td>
</tr>
<tr>
<td>Human Genetics and Molecular Biology</td>
<td>46</td>
</tr>
<tr>
<td>Immunology</td>
<td>49</td>
</tr>
<tr>
<td>Medical and Biological Illustration</td>
<td>52</td>
</tr>
<tr>
<td>Molecular Genetics</td>
<td>55</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>55</td>
</tr>
<tr>
<td>Pathobiology</td>
<td>57</td>
</tr>
<tr>
<td>Pharmacology and Molecular Sciences</td>
<td>60</td>
</tr>
<tr>
<td>Physiology</td>
<td>61</td>
</tr>
<tr>
<td>School of Public Health</td>
<td>62</td>
</tr>
<tr>
<td>Interdivisional Program: Ph.D./Sc.M./M.H.S. in Clinical Investigation</td>
<td>62</td>
</tr>
<tr>
<td>Interdepartmental Councils</td>
<td>64</td>
</tr>
</tbody>
</table>

The University, The School of Medicine

The Johns Hopkins Medical Institutions

The Kennedy Krieger Institute, Inc., The Good Samaritan Hospital of Maryland, Inc., Sinai Hospital of Baltimore, Other Hospitals

Curriculum, Electives, Required Work, Requirements for M.D. Degree, Preparation for Medical School, Requirements for Admission, Application for Admission, School of Medicine Technical Standards for Admission, Course Requirements for M.D., M.D.-Ph.D. Applicants, Early Decision, Deferred Admission, Combined Study-M.D.-Ph.D., Advanced Standing

Grading and Examinations | 24 |
| Promotions | 25 |
| Grade Appeals Policy | 25 |
| Policy on USMLE Requirement | 26 |
| Guidelines for Conduct on Teacher/Learner Relationships | 26 |
| Procedures Relating to Student Discipline | 28 |
| Attendance Policy in the Preclinical Curriculum | 29 |
| Core Clerkship Attendance Policy | 30 |

### Associated Institutions

The School of Medicine, The Bloomberg School of Public Health, The School of Nursing, The Welch Medical Library, The Johns Hopkins Health System, Johns Hopkins Medicine, The Johns Hopkins Hospital and East Baltimore Medical Campus Expansion, The Johns Hopkins Community Physicians, Johns Hopkins Bayview Medical Center

Office of Graduate Student Affairs

Graduate Programs

Degree Requirements

Biochemistry

Biomedical Engineering

Biophysics

Cell Biology

Cellular and Molecular Medicine

Functional Anatomy and Evolution

History of Science, Medicine, and Technology

Human Genetics

Immunology

Medical and Biological Illustration

Molecular Genetics

Neuroscience

Pathobiology

Pharmacology

Physiology

School of Public Health

Interdivisional Program: Ph.D./Sc.M./M.H.S. in Clinical Investigation

Interdepartmental Councils
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Student Honor Code</td>
<td>64</td>
</tr>
<tr>
<td>Graduate Student Policy Statements</td>
<td>64</td>
</tr>
<tr>
<td>The Training of Medical Scientists: M.D.-Ph.D. Programs</td>
<td>67</td>
</tr>
<tr>
<td>Postdoctoral Education</td>
<td>69</td>
</tr>
<tr>
<td>Postgraduate Study and Fellowships, Internships and Residencies, Postdoctoral Courses-Continuing Education</td>
<td>69</td>
</tr>
<tr>
<td>General Information</td>
<td>73</td>
</tr>
<tr>
<td>Tuition, Fees, Financial Aid, Scholarships and Awards</td>
<td>101</td>
</tr>
<tr>
<td>Departments, Divisions, Institutes, Centers, and Subjects of Instruction</td>
<td>121</td>
</tr>
<tr>
<td>Schedules</td>
<td>315</td>
</tr>
<tr>
<td>Administration, Faculty, Fellows, and Students</td>
<td>317</td>
</tr>
<tr>
<td>Appendix</td>
<td>513</td>
</tr>
<tr>
<td>Alphabetical List of Names</td>
<td>517</td>
</tr>
</tbody>
</table>

- **Tuition, Fees, Financial Aid, Scholarships and Awards**: 101
  - Tuition and Other Fees, Tuition Policies, Refund Policy, Health Fees and Insurances, Student Research Scholarships and Awards, Young Investigators’ Day, Student Financial Assistance, Scholarships, Loan Funds

- **Departments, Divisions, Institutes, Centers, and Subjects of Instruction**: 121
  - Anesthesiology and Critical Care Medicine
  - Biological Chemistry
  - Biomedical Engineering
  - Biophysics and Biophysical Chemistry
  - Cell Biology
  - Dermatology
  - Emergency Medicine
  - Epidemiology
  - Functional Anatomy and Evolution
  - Institute of Genetic Medicine
  - Gynecology and Obstetrics
  - Health Sciences Informatics
  - History of Medicine
  - Medicine
  - Molecular and Comparative Pathobiology
  - Molecular Biology and Genetics
  - Neurology
  - Neuroscience
  - Oncology Center
  - Ophthalmology
  - Pathology
  - Pediatrics
  - Pharmacology and Molecular Sciences
  - Physical Medicine and Rehabilitation
  - Physiology
  - Psychiatry and Behavioral Sciences
  - Public Health
  - Radiation Oncology and Molecular Radiation Sciences
  - Radiology and Radiological Science
  - Section of Surgical Sciences
  - Department of General Surgery
  - Department of Neurological Surgery
  - Department of Orthopedic Surgery
  - Department of Otolaryngology-Head and Neck Surgery
  - Department of Plastic Surgery
  - Department of Urology
  - Multi-Department Courses

- **Schedules**: 315

- **Administration, Faculty, Fellows, and Students**: 317
  - Administration
  - Faculty
  - Postdoctoral Fellows
  - Students
  - Postgraduate Appointments

- **Appendix**: 513

- **Alphabetical List of Names**: 517
Medical education is a complex mixture of graduate and professional education. Students are expected to master basic principles and theories as well as to obtain sufficient knowledge and experience to practice medicine. The education must convey the continually expanding body of medical science and prepare students for a lifetime of competent and thoughtful interactions with patients at a time of rapid change in technology and societal needs.

To meet these educational goals, schools of medicine must be at once conservative and creative. They may often seem overly conservative, but this can be attributed to the physician's painfully acquired distrust of panaceas. There is a generally accepted need to preserve certain fundamental principles—the axiom, for example, that the rational practice of medicine rests on a firm understanding of the basic medical sciences. Yet the great advances in medicine, the need to reasonably limit the number of years of formal education, the increasing number and complexity of special fields, and the diversity of interests and talents among students all demand continual examination of our educational aims and process.

Old traditions and new methods are characteristics of the Johns Hopkins University School of Medicine, which to a large degree was founded in response to the highly variable standards of medical education at the time. Hopkins was the first medical school in the United States to require a college degree for admission, quite a radical idea when the first class entered over one hundred years ago. A college degree is still required, and current admission policies encourage a broad undergraduate education and permit successful applicants to select from a number of options prior to matriculation. The relative flexibility of the original curriculum foreshadowed the even greater number of choices available today. The wide variety of elective courses in the current curriculum allows students to extend their knowledge in special fields of interest and to schedule elective and required clinical courses in a flexible manner.

In addition to the four-year M.D. program, the School of Medicine provides a number of graduate programs in biomedical sciences and related fields that will lead to a Ph.D. or Master’s degree. Also, selected students are given the opportunity to work simultaneously towards both the M.D. and the Ph.D. degrees.

The diversity of these educational options is detailed in this catalogue.
THE UNIVERSITY
Johns Hopkins was a Quaker merchant of Baltimore who bequeathed $7,000,000 for the establishment of a university and hospital. The University was incorporated in 1867 under the terms of his bequest, and instruction began in 1876, three years after his death.

Daniel Coit Gilman, a graduate of Yale in the class of 1852 and president of the University of California, was elected first president of the Johns Hopkins University. It was a most propitious choice. In his inaugural address in 1876, Gilman elaborated his philosophy of education, in terms both prophetic and practical, which was to become the guiding principle of the University. Students should be free to select under guidance their courses of study; professors should be free of routine; investigators should be "free, competent, and willing" research and teaching should supplement one another.

"The object of the University," said Gilman, "is to develop character—to make men. It misses its aim if it produces learned pedants, or simple artisans, or cunning sophists, or pretentious practitioners. Its purport is not so much to impart knowledge to the pupils, as to whet the appetite, exhibit methods, develop powers, strengthen judgment, and invigorate the intellectual and moral forces. It should prepare for the service of society a class of students who will be wise, thoughtful, progressive guides in whatever department of work or thought they may be engaged."

During President Gilman's twenty-five years of enlightened leadership, his high hopes came to full fruition. It was in this environment of the first true university in America that the School of Medicine was evolved.

THE SCHOOL OF MEDICINE
The School of Medicine was opened in 1893, seventeen years after the University's founding. Part of this delay was occasioned by the desire to have a fully equipped hospital before students were accepted. The Johns Hopkins Hospital was completed in 1889, and from the outset its destiny has been inextricably woven with that of the School of Medicine. This policy was established in a letter from Mr. Hopkins to the first trustees of the Hospital: "In all your arrangements in relation to this hospital," he wrote, "you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of that university for which I have made ample provision by my will". Unfortunately, what was ample in 1867 was no longer so twenty years later. The final establishment of the School was made possible by the generosity of a number of Baltimore women, of whom Miss Mary E. Garrett was the principal donor.

President Gilman took steps to lay the educational foundation of the School of Medicine soon after his investiture. He was duly concerned with the lack of fundamental knowledge of biology, chemistry, physics, and modern languages in students undertaking the study of medicine. He therefore organized a "preliminary medical course" in the Faculty of Philosophy, setting a standard which ultimately became a prerequisite for admission to many medical schools in the United States. His action influenced Miss Garrett to make her grant to the School contingent on its admitting only students whose preparation had been the equivalent of the Hopkins preliminary medical course. This was a great departure from the then accepted requirements for admission (see Appendix).

Although it occasioned disappointment at the time, the delay in opening the School of Medicine was a blessing in disguise, for it allowed time to assemble an excellent faculty. The first appointments, made in 1884, were those of Professors H. Newell Martin, Ira Remsen, John Shaw Billings, and William H. Welch. Assisted by William T. Councilman, Welch began to organize courses in pathology and bacteriology for practicing physicians. He also assembled a group of young men, among them Mall, Flexner, Nuttall, and Abbott, with whom he carried out fundamental research which reflected great credit on the Hospital and University. Thus, the principles of postgraduate medical education and research were established even before the School was officially in existence.

In 1888 William Osler was called from the University of Pennsylvania to be Physician-In-Chief to the Hospital and Professor of the Theory and Practice of Medicine in the University. The following year William S. Halsted and Howard A. Kelly were summoned to the chairs of Surgery and Gynecology and Obstetrics, respectively. Also called from many parts of...
the country to serve on the faculty when the school opened in 1893 were Henry M. Hurd, Superintendent of the Johns Hopkins Hospital and subsequently Professor of Psychiatry, Franklin P. Mall, Professor of Anatomy, John J. Abel, Professor of Pharmacology, and William H. Howell, Professor of Physiology. William H. Welch served as Professor of Pathology and Dean of the Medical Faculty.

The opening of the Johns Hopkins University School of Medicine marked a new departure in medical education in America because it was the first time that all professors in the preclinical branches served on a full-time or university basis. The chairs of Anatomy, Physiology, Pharmacology, and Pathology in the School were from the outset true university chairs, filled by men who gave their “entire time and strength” to the University, to use Gilman's words. Available to their respective departments were funds, all too meager, making it possible for the professors and their assistants to carry out research in fields of their own choice. Thereafter, medical schools all over the country would follow the lead, and medical education, instead of being largely a proprietary business conducted for profit, would become a major concern of university endeavor.

The clinical as well as the preclinical departments of the School continued to prosper in the succeeding years. Osler contributed to the development in America of exact diagnosis, with the assistance of the laboratory, and of detailed description of disease. He also laid the foundations for intern and residency training in American hospitals. Halsted and his colleagues developed in the laboratories and clinics a new approach to surgery based on meticulous operative technique. He also, with Welch, championed the system of full-time clinical departments. The General Education Board’s establishment, in 1913, of The William H. Welch Endowment for Clinical Education and Research made it possible for the responsible instructors in Medicine, Surgery, Pediatrics, and Obstetrics to devote their entire time to their university duties. The endowments of the Henry Phipps Psychiatric Clinic and the William Holland Wilmer Ophthalmological Institute accomplished the same ends for the Departments of Psychiatry and Ophthalmology. Each of the clinical departments of the School is now staffed by men and women who devote their entire time to teaching, hospital practice, and research, as well as by practicing physicians who perform these duties on a part-time basis.

The organization of the preclinical and clinical departments as full-time university faculties was an innovation that has been accepted by many American medical schools. Of comparable significance, perhaps, was the development of the graduate school concept in medical education. Students in their clinical years at the Johns Hopkins School of Medicine became an integral part of the staff of the Hospital, learning largely by actual participation in patient care rather than by attendance at lectures. They were also encouraged to participate in research activities in the laboratories and clinics under the supervision of members of the faculty. Graduates of the School introduced the Hopkins practices elsewhere when called to fill posts at other institutions.
Mission Statement and Education Program Objectives

The mission of the Johns Hopkins School of Medicine is to educate medical students, graduate students, and postdoctoral fellows in accordance with the highest professional standards; to prepare clinicians to practice patient-centered medicine of the highest standard; and to identify and answer fundamental questions in the mechanisms, prevention and treatment of disease, in health care delivery and in the basic sciences.

The aim of the pre-doctoral curriculum of the School of Medicine is to produce leaders in Medicine who will take the foundation of a broad education in Medicine to improve health through patient care, research, and education.

As a measure of their competence, every graduate of the Johns Hopkins University School of Medicine will:

The Science and Practice of Medicine

• Apply scientific principles and a multidisciplinary body of scientific knowledge to the diagnosis, management, and prevention of clinical problems.
• Understand the variation in the expression of health and disease through critical evaluation of biomedical research.

Clinical Competence

• Obtain a sufficient level of medical knowledge to understand the basic facts, concepts, and principles essential to competent medical practice.
• Exhibit the highest level of effective and efficient performance in data gathering, organization, interpretation and clinical decision making in the prevention, diagnosis, and management of disease.

The Social Context of Medicine

• Understand and respond to factors that influence the social, behavioral, and economical factors in health, disease and medical care.

Communication

• Demonstrate effective and compassionate interpersonal communication skill toward patients and families necessary to form and sustain effective medical care.
• Present information and ideas in an organized and clear manner to educate or inform patients, families, colleagues and community.

Professionalism

• Display the personal attributes of compassion, honesty and integrity in relationship with patients, families, and the medical community.
• Adhere to the highest ethical standards of judgment and conduct as it applies to the health care milieu.
• Demonstrate a critical self-appraisal in his/her knowledge and practice of medicine, as well as received and give constructive appraisal to/from patients, families, colleagues and other healthcare professionals.

Lifelong Learning

• Understand the limits of personal knowledge and experience and will demonstrate the intellectual curiosity to actively pursue the acquisition of new knowledge and skills necessary to refine and improve his/her medical practice or to contribute to the scientific body of medical knowledge.
The School of Medicine, the Bloomberg School of Public Health, the School of Nursing, the Welch Library of the University, and The Johns Hopkins Hospital are often referred to as the Johns Hopkins Medical Institutions.

THE SCHOOL OF MEDICINE
The school is located in the eastern part of Baltimore, about twenty minutes by car from the Homewood campus. The preclinical curriculum for medical students is taught in the new Anne and Michael Armstrong Building, a four story, 100,000 square foot structure which opened in the Fall of 2009. The Armstrong building was designed to accommodate, nurture, and encourage learning opportunities. The building’s advanced anatomy lab, digital classrooms, and laboratories, lecture halls and study areas are designed to better prepare physicians for fully understanding the relevance of science to patient care.

The preclinical departments of Biological Chemistry, Biophysics and Biophysical Chemistry, Cell Biology, Functional Anatomy and Evolution, Molecular Biology and Genetics, Neuroscience, Pharmacology and Molecular Sciences, and Physiology are primarily situated in the Hunterian III, Wood Basic Science, Preclinical Teaching Building, Biophysics, Physiology, and the Broadway Research buildings. The Wood Basic Science Building and the Preclinical Teaching Building contain teaching laboratories, conference rooms, and lecture halls for graduate student teaching, as well as research laboratories. The Department of Pathology occupies a building across Monument Street from the other preclinical departments and adjacent to buildings accommodating the clinical departments. The Richard Starr Ross Research Building houses the research laboratories of the clinical departments.

The Traylor Research Building augments the basic research facilities of the clinical departments and houses the Department of Biomedical Engineering. The Turner Auditorium Building contains a 750 seat auditorium, a 150 seat auditorium, and conference and seminar rooms. The Broadway Research Building is home to the Department of Molecular and Comparative Pathobiology, the McKusick-Nathans Institute of Genetic Medicine, the Institute for Basic Biomedical Sciences High Throughput Biology, and the Institute of Cell Engineering. Johns Hopkins Medicine and School of Medicine administrative offices are also located in the building.

The offices, research laboratories, and facilities for patient care of the clinical departments are located in buildings operated by the Johns Hopkins Hospital but owned jointly by the Hospital and University.

Instruction in the School of Medicine is under the supervision of the Advisory Board of the Medical Faculty, composed of the President of the University, the Dean and the departmental directors.

THE BLOOMBERG SCHOOL OF PUBLIC HEALTH
The Bloomberg School was founded in 1916 by William H. Welch and John D. Rockefeller and was the first institution of its kind worldwide. Today, it is the largest school of public health and provides opportunities for graduate education to individuals from a wide variety of backgrounds and experience.

Ten departments offer nine graduate degrees, including a school-wide Master of Public Health. Programs of study embrace research and service in diverse fields: professional practice, basic and applied research; social policy; planning, management and evaluation of the delivery of health services; and the biological and environmental health sciences. Graduate training programs in clinical investigation, pre- and postdoctoral training programs, certificate programs, and other continuing education opportunities are also offered.

The School is situated on Wolfe and Monument Streets, directly opposite the Welch Medical Library.

THE SCHOOL OF NURSING
The School of Nursing was established in 1983 as the eighth academic division of the University. Its mission is to provide leadership to improve health care and advance the profession through education, research, practice, and service.

The School of Nursing offers baccalaureate, master’s and doctoral degrees in nursing. The baccalaureate program is offered in two
forms: a traditional, two year upper division option, and a 13.5 month accelerated option for students with previous degrees in a field other than nursing. The School offers a Peace Corps Fellows option for individuals who have successfully completed Peace Corps Service and desire to participate in community nursing practice.

The Master’s program includes nurse practitioner, clinical specialist, nursing management and community health options. In addition, the School offers a combined MSN/ MBA in conjunction with the Carey School of Business, and a MSN/MPH with the Bloomberg School of Public Health. Certificate programs are available in the Business of Nursing and in post-master’s nurse practitioner and clinical specialist options.

The School of Nursing offers an individualized Ph.D. program in selected areas of research congruent with the student’s area of interest and the expertise of the research faculty. The School began offering a Doctor of Nursing Practice program in January 2008. This practice-focused doctoral program is designed to prepare expert nurse clinicians, administrators, and executive leaders to improve health and health care outcomes. Selected postdoctoral programs prepare nurse scientists with advanced skills and knowledge in a selected area of practice and with expertise in the design and conduct of related research.

The School of Nursing is located at 525 N. Wolfe Street, directly across the street from the Johns Hopkins Hospital. This ten year old structure, named in honor of Anne M. Pinkard, is the first building dedicated solely to nursing education at Johns Hopkins.

THE WELCH MEDICAL LIBRARY

The William H. Welch Medical Library provides the Johns Hopkins Medical Institutions (School of Medicine, the Johns Hopkins Bloomberg School of Public Health, Johns Hopkins School of Nursing, Johns Hopkins Hospital, Kennedy-Krieger Institute) and its affiliates with information services that advance research, teaching, and patient care. Since 2001, Welch has been organizing library services around the all-digital collection of the future, creating state-of-the-art interfaces to these collections and redefining the role of librarians supporting the digital collection. WelchWeb (http://www.welch.jhu.edu) guides users to a rich array of electronic information resources and library services. The Welch Library offers a wide range of services to the Medical Institutions including liaison consultation, classes and online tutorials, document delivery, and an editing referral service. All Welch services are available online.

Faculty, staff and students can search a range of databases and full-text electronic journals, as well as take advantage of the library’s information services and classes. The WelchWeb (http://www.welch.jhu.edu) provides users with Internet access to databases in many disciplines, a collection of online full-text journals, and online reference services called “Ask a Librarian”. Welch provides access to over 25,000 online journals and 7,500 medical e-books. Materials not in the Welch collection can be requested online through the WelDoc service (http://weldoc.welch.jhmi.edu/weldoc/). Print materials in the Welch collection also can be requested online. Email delivery is used whenever possible. If the request is too large for scanning then the physical item—the book—is delivered to the user’s office. With an emphasis on providing services at the point of use, a number of Welch spaces (http://www.welch.jhu.edu/about/hours.html) have been created for Hopkins communities in Hampton House, the School of Nursing and the Hopkins Population Center. Customized information portals continue to be created for departments and user groups some of which include the Basic Sciences (http://infosuite.welch.jhmi.edu/BS/), the Department of Physical Medicine and Rehabilitation (http://infosuite.welch.jhmi.edu/PMR/), the Welch Center for Prevention, Epidemiology, and Clinical Research (http://infosuite.welch.jhmi.edu/WelchCenter/), and the Hopkins Population Center (http://infosuite.welch.jhmi.edu/PopCenter/). Authors at the Medical Institutions can find open access publishing resources from WelchWeb or directly from a website sponsored by University’s Scholarly Communications Group as well as step-by-step instructions for complying with the NIH Public Access Policy (http://scg.library.jhu.edu/).

The library’s education program is designed around tools and technologies for biomedical communication. Online tutorials on information resources and tools are made available on Welch Web as they are developed. Classes are offered to advance skills in searching online databases, managing information, finding funding for research, and the use of various tools to promote scholarship. Details may be found at http://www.welch.jhu.edu/classes/index.cfm.

A special library of historical materials, administered by the Department of History of Medicine, Science, and Technology, is located on the third floor of the Welch Building.
**Johns Hopkins Medicine**

The Johns Hopkins University and the Johns Hopkins Health System Corporation (JHHSC) have entered into a collaboration called Johns Hopkins Medicine. Johns Hopkins Medicine provides a vehicle for internal operational coordination among JHHSC and its affiliates and the Johns Hopkins University School of Medicine (JHUSOM). Johns Hopkins Medicine also provides a united voice for external activities. JHU and JHHSC, as distinct yet independent corporations, are now able to respond in an integrated fashion to opportunities and pressures affecting the medical enterprise. The Dean of the JHUSOM serves as the Chief Executive Officer of Johns Hopkins Medicine.

**THE JOHNS HOPKINS HEALTH SYSTEM**

One of the first of its kind, the Johns Hopkins Health System is a nonprofit, academically based integrated healthcare system offering a comprehensive array of services, including outpatient care, ambulatory surgery, community hospital care, home health care, long-term care for the elderly and sophisticated treatment centers in virtually every area of medical specialization.

Formed in July 1986, the Johns Hopkins Health System includes the following chief components: The Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, Howard County General Hospital, Suburban Hospital, Sibley Memorial Hospital, All Children's Hospital in St. Petersburg, Florida, and Johns Hopkins Community Physicians which operates 29 primary care centers. Johns Hopkins Medicine specialty physicians practice at two major health and surgery centers in Baltimore County, one in Anne Arundel County, and one in Montgomery County. These facilities offer care in a variety of medical and surgical sub-specialties. Once within the Johns Hopkins Health System, patients have access to the resources, services, and facilities of The Johns Hopkins Hospital.

**The Johns Hopkins Hospital and East Baltimore Medical Campus Expansion**

Under the provisions of Johns Hopkins' bequest, The Johns Hopkins Hospital already was destined at its opening in 1889 to be affiliated with the still-to-be created School of Medicine of The Johns Hopkins University. At the school's founding in 1893, it became the first to be intimately allied with both a university and a hospital that was especially designed as an institutional partner. Today, The Hospital is a collection of more than a dozen “mini hospitals” and centers, 51 buildings, more than 200 separate clinical services and 1,053 licensed beds sprawling over half of the 80 acres housing the Johns Hopkins Medical Campus in East Baltimore. All of The Hospital's, and most of the medical institutions' buildings, including parking garages, are connected by covered corridors or tunnels.

In recent years, the East Baltimore Medical Campus has witnessed an unprecedented expansion in new building construction. More than $1.7 billion in redevelopment projects encompass the construction of a new, state-of-the-art, expanded hospital building that is nearing completion, while several other buildings have already been completed. These include the Robert H. and Clarice Smith Wilmer Eye Institute Outpatient Surgery and Laboratory Building, the Anne and Mike Armstrong Medical Education Building, two cancer research buildings, the Hackerman-Patz Patient and Family Pavilion, the David M. Rubenstein Child Health Building and a basic biomedical sciences laboratory and office building also known as the Broadway Research Building. With a total of 2.6 million square feet of new construction, numerous health, safety and space challenges resulting from outdated facilities are being addressed.

The expanded Johns Hopkins Hospital that is opening in April 2012 will consist of two connected 12-story towers—the Sheikh Zayed bin Sultan Al Nahyan Cardiovascular and Critical Care Tower and The Charlotte R. Bloomberg Children’s Center. Together, they will contain 560 private rooms—355 of those will be adult inpatient rooms and 205 will be pediatric rooms—encompassing 1.6 million square feet with a main entrance larger than a football field. Located on a 5-acre site, the new clinical buildings will house 33 state-of-the-art operating rooms. Ten of those operating rooms are designated for pediatrics. New radiology suites will also have the latest imaging equipment, such as an intraoperative MRI suspended on steel beams that allow it to move between two of the ORs. A new adult Emergency Department as well as a new Pediatric Emergency Service will share trauma capacity, because the Children's Center is the designated pediatric trauma center for the State of Maryland.

The adult tower is named to honor the father of His Highness Sheikh Khalifa bin Zayed Al Nahyan, the president of the United Arab Emirates (UAE). Among the 355 private rooms, it will contain 96 intensive care rooms and 35 obstetrics rooms.
The children’s hospital, named in honor of the mother of New York City Mayor Michael Bloomberg, will completely replace the current one and is designed to be “kid friendly.” Included in the bed numbers are a 45-bed neonatal intensive care unit and a 40-bed pediatric intensive care unit. The new Pediatric Emergency Department will nearly double the current capacity. Whimsical animal sculptures will be placed throughout the lobby area, which has a soaring, light-filled, 4-story atrium. The building will be surrounded by gardens. Patient rooms will all be private and parents can sleep by their child in each room on a comfortable sleep sofa. Rooms will have an interactive in-house television system to play games, access the internet or watch movies. Pediatric patients can also have meals on demand. The children’s hospital will have a new auditorium and special events area, and a two-story playroom on the 11th and 12th floors that has a basketball court and giant movie screen.

Immediately south of Orleans Street is the 90,000-square-foot David M. Rubenstein Child Health Building which provides primary health care to children living in the East Baltimore community as well as specialty services to a broader population. The Orleans Street Parking Garage provides 2,300 hundred parking spaces and mixed-use space that includes a new loading dock, kitchen space to serve the new clinical building and an adjacent 45,000-gross-square-foot energy plant.

The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins encompasses a wide spectrum of specialty programs for patients coping with cancer, including bone marrow transplantation and new drug development. The Harry and Jeanette Weinberg Building houses the Cancer Center’s patient care and clinical services, including surgical suites. The Bunting Blaustein Cancer Research Building and the David Koch Cancer Research Building are state-of-the-art cancer research and teaching buildings that mirror each other in design and are connected to each other to enhance interdisciplinary interaction, which is integral to understanding cancer.

The Kimmel Cancer Center also offers complete family and patient services that include a Cancer Counseling Center, survivor and palliative care programs, and the 39-suite Hackerman-Patz Patient and Family Pavilion for patients and their families who are traveling from out of town.

A century ago, Johns Hopkins became the first to fully integrate the missions of teaching, research and patient care, a synergistic triangle that became a “model of its kind” and has been adopted by virtually every American medical school. The model’s strength rests on the autonomy of each of its member institutions. Thus, The Johns Hopkins Hospital is a separate corporation governed by its own board of trustees and has an endowment that is independent of the university’s. But in keeping with the vision of founder Johns Hopkins, relations between the school of medicine and the hospital are close and formal and were further reinforced in 1997 with the creation of Johns Hopkins Medicine. Johns Hopkins Medicine provides a unified governing structure for both the hospital and the school of medicine, more firmly uniting the physicians and scientists of the Johns Hopkins University School of Medicine with the health professionals and facilities that make up the broad, integrated Johns Hopkins Health System.

The head of each clinical department of the hospital also is director of the corresponding academic department of the school of medicine. The president of the hospital, the department heads and medical staff representatives make up the medical board of the hospital, which advises the trustees in all matters related to patient care.

The Johns Hopkins Community Physicians

Johns Hopkins Community Physicians is a wholly-owned subsidiary of the Johns Hopkins Health System. It provides quality primary, secondary, and hospital-based care to families throughout Maryland. JHCP owns and operates numerous attractive, convenient medical centers in communities across the state including: Baltimore City, and Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, Prince George’s, Queen Anne and Washington counties. JHCP centers offer easy access to primary care physicians, specialty physicians, diagnostic and laboratory services, and, at Wyman Park Medical Center, White Marsh and Odenton, pharmacy and optical services. Through its physician group, more than 250 physicians, nurse practitioners, nurse midwives, and physician assistants provide care to over 200,000 patients. JHCP has implemented a fully electronic medical record so that patients’ records can be viewed from any of our locations. JHCP at Water’s Edge in Harford County, JHCP at Canton Crossing, and JHCP at Wyman Park are level 3 NCQA Certified Patient Centered Medical Homes, a designation bestowed on few practices in Maryland. JHCP accepts most insurance plans. In addition, as a Department of Defense designated uniformed services treatment facility, JHCP provides managed health care to

THE JOHNS HOPKINS MEDICAL INSTITUTIONS
active duty and retired military families and retired military members under the Uniformed Services Family Health Plan, a Tricare Prime designated provider.

Johns Hopkins Bayview Medical Center
Johns Hopkins Bayview Medical Center, located just three miles from The Johns Hopkins Hospital, is home to major centers for research, teaching, and clinical activities for the Johns Hopkins Health System, the Johns Hopkins University School of Medicine, the National Institute on Aging (NIA) and the National Institute on Drug Abuse (NIDA).

Johns Hopkins Bayview is a full-service, Joint Commission-accredited academic medical center. Among the wide range of services offered are an area-wide trauma center and the state’s only regional adult burn center. Founded in 1772, our 561-bed facility features several centers of excellence including stroke, geriatrics, joint replacement, wound care and bariatrics, to name a few.

The Bayview Medical Offices (BMO) provide clinic and ambulatory care. From July 2009 to June 2010, there were 212,800 emergency and ambulatory visits; 245,200 visits to programs in psychiatry, alcohol and drug abuse; 20,900 admissions to the acute care hospital; and 9,200 operations in the surgical suite.

As part of the Johns Hopkins Health System, Johns Hopkins Bayview physicians hold full-time faculty positions at The Johns Hopkins University School of Medicine. Residents and medical students participate in basic and advanced rotations, as well as fellowships and elective rotations at Johns Hopkins Bayview.

Extensive research programs on the campus reflect the commitment to expand and understand the pathophysiology of disease and develop innovative treatments for their cure. The 200,000 square-foot Asthma & Allergy Center, with state-of-the-art laboratories and other facilities, has served as the focus of this research for the School of Medicine. NIDA’s Addiction Research Center and NIA’s Gerontology Research Center are located in the National Institute of Health's Biomedical Research Center, a 550,000 square-foot facility on the Johns Hopkins Bayview campus.

ASSOCIATED INSTITUTIONS

Kennedy Krieger Institute, Inc. - located adjacent to the Children’s Medical and Surgical Center of the Johns Hopkins Medical Institutions, directs its efforts toward improv-
underway in such areas as autism, spinal cord injury, learning disabilities, Down syndrome, adrenoleukodystrophy (ALD), and cerebral palsy that will help identify treatments and improve outcomes.

Multidisciplinary programs related to autism spectrum disorders combine research, assessment, treatment, community outreach and training. IAN, the Interactive Autism Network, an online national database project, is designed to facilitate research that will lead to advancements in the treatment, care, and prevention of these disorders.

The F.M. Kirby Research Center for Functional Brain Imaging, a joint venture between the JHU Department of Radiology and the Institute promotes advanced neuroimaging that allows observation of the human brain as it works.

Professional training programs provide medical students, residents and postdoctoral fellows in pediatrics, neurology, physical and rehabilitation medicine, child psychiatry, and neurodevelopmental disabilities and professionals in the clinical disciplines with a comprehensive approach to the child and adolescent with a brain disorder, spinal cord injury, or musculoskeletal disorder and a knowledge of the methods in which diagnosis, management and therapy may best be accomplished.

The Good Samaritan Hospital of Maryland, Inc., situated on a 43-acre site in residential northeast Baltimore, is a 317-bed academic/community and specialty center particularly known for its orthopaedic, rheumatology and rehabilitation programs which are affiliated with the Johns Hopkins University School of Medicine.

The hospital recently completed a major renovation project with the expansion of its full service emergency department, backed up by fully equipped intensive care and critical care units, a cardiac catheterization laboratory, a state-of-the-art surgical complex, and two new inpatient units.

The hospital has 236 licensed acute-care beds, 51 rehabilitation beds and a 62-station renal dialysis unit and a 30 bed Transitional Care Unit. The outpatient departments have approximately 200,000 visits a year, over 55,000 of which are through the emergency department. In addition, the hospital’s ambulatory surgery center performs approximately 9,000 procedures annually.

Teaching programs are developed primarily for postgraduate education and research programs. There is an exchange of medical house officers and residents at various levels from Good Samaritan Hospital and the Johns Hopkins Hospital. Clinical clerkships and externships are available for predoctoral medical students during elective periods. In addition, Good Samaritan Hospital’s Department of Medicine offers an Internal Medicine Residency Program which provides a range of patient care and didactic experiences designed to prepare its trainees for entry into clinical practice or fellowship training.

The hospital is involved in research at both the basic and applied levels. The Thomas O’Neill Memorial Research Laboratories occupy the north wing, conveniently located adjacent to patient care areas.

Good Samaritan Hospital is part of MedStar Health which includes Union Memorial Hospital, Franklin Square Hospital Center, Harbor Hospital, Washington Hospital Center, National Rehabilitation Hospital, Georgetown University Hospital, Montgomery General Hospital, and St. Mary’s Hospital. To assure that the most appropriate level of health care is available to all members of the community, the Good Samaritan Hospital has constructed two professional office buildings, two housing complexes for the elderly and a 147 bed nursing home on its grounds.

Sinai Hospital of Baltimore has a long and proud tradition of leadership among community-based teaching hospitals. The hospital serves as a model for the delivery of quality health care to patients of diverse socio-economic backgrounds.

Sinai Hospital was founded in 1866, as a voluntary hospital and for many years was located on Monument Street opposite The Johns Hopkins Hospital and School of Medicine. During the 1950’s Sinai Hospital developed a full-time chief system in its clinical departments to complement its full-time chiefs of radiology and pathology, and a formal affiliation between the Johns Hopkins Medical School and the Sinai Hospital was developed. In 1959 Sinai Hospital moved into its entirely new physical plant about six miles from the former location, where it serves a large segment of the population of northwest Baltimore and the adjacent suburbs.

Sinai Hospital has become one of the most active medical centers in the state of Maryland and maintains its dedication to the highest standards of service and education. The acute general hospital has 481 acute care beds, 21 NICU beds and 35 bassinets. There are approximately 28,410 patients admitted to Sinai Hospital annually plus nearly 2,600 deliveries. The Outpatient Departments have more than 69,506 clinic visits a year and the active emergency service has more than 74,000 patient visits. ER-7, the 34,500 square foot Emergency Center, provides seven specialized care centers: Emergency, Trauma, Urgent, Fast Track, Pediatrics,
Chest Pain Evaluation and Observation. The hospital has a comprehensive Psychiatric Care Program including a 24 bed inpatient psychiatric unit and an open-heart surgery program. Sinai has a large Rehabilitation Center with a 57 bed rehabilitation hospital for inpatients, 10 of which are traumatic brain injury beds. Across the street is the 292 bed Levindale Hebrew Geriatric Center and Hospital, which provides subacute, chronic and long-term care. In 1998, Sinai Hospital and Levindale merged with Northwest Hospital Center to form LifeBridge Health, which now provides under one umbrella virtually all health services, ranging from prenatal care to hospice care. LifeBridge Health is one of the regions most innovative providers of high quality health care. In 2000, Levindale merged with Jewish Convalescent & Nursing Home. LifeBridge Health & Fitness is a national model for hospital-sponsored wellness centers.

The Medical Staff of Sinai Hospital numbers over 1,023 full-time and private practicing physicians. There are chiefs of Anesthesiology, Medicine, Obstetrics-Gynecology, Ophthalmology, Orthopedics, Otolaryngology, Pathology, Pediatrics, Psychiatry, Radiology, Radiation Oncology, Rehabilitation Medicine, Surgery, Urology, Emergency Medicine, Neurology, Neurosurgery and Dentistry, most of whom hold teaching appointments in the Johns Hopkins Medical School.

Sinai Hospital offers residency training programs in Obstetrics and Gynecology, Physical Medicine and Rehabilitation, Pediatrics, General Surgery, and Ophthalmology. Sinai also offers the Johns Hopkins/Sinai Hospital program in Internal Medicine. Residents from the Johns Hopkins University rotate to various Sinai Hospital services.

There is a long-standing commitment to both basic science and clinical research. The Research Building houses laboratories in biochemistry, obstetrics and gynecology, pathology, surgery, medicine, and animal facilities to accommodate the activities of a staff of physicians and scientists. Johns Hopkins medical students have the opportunity to receive instruction on the clinical services of the departments of Medicine, Obstetrics-Gynecology, Pediatrics, Rehabilitation Medicine, and Surgery. Students at any level of training are eligible to participate in the research activities of the departments listed. Other Hospitals participating in instruction offered by several clinical departments include Union Memorial Hospital, Franklin Square Hospital, Greater Baltimore Medical Center and St. Agnes Hospital.
CURRICULUM

The curriculum is organized to allow each of our graduates to achieve the eleven educational objectives noted in the Mission and Education Program Objectives for the Johns Hopkins University School of Medicine (page 9). The regular M.D. curriculum comprises four academic years designated First through Fourth Years. The academic requirements of this program can be combined with graduate study leading to a Masters or Ph.D. degree. These programs are described in later sections.

The Genes to Society curriculum is highly integrated both vertically and horizontally across the four years. Elective time is available beginning in Quarter 4 of the Second Year. Elective courses are described in the programs of the various departments in the section under Departments and Divisions, Centers, Institutes and Subjects of Instruction. This information is supplemented by an elective book which is updated annually. Selected students may interrupt the regular curriculum for one or more years in order to pursue special studies.

The study of science basic to the practice of medicine begins in the First Year with four months of Foundations courses, including Introduction to Human Anatomy, Scientific Foundations, Clinical Foundations and Foundations of Public Health and Ethics. These courses are intended to introduce students to the basic language and concepts of biomedical science, including molecular biology, cell biology, biochemistry, anatomy, and the social and behavioral sciences. During Clinical Foundations, students begin training in the physician-patient medical interview, physical diagnostics and clinical reasoning. Each student is assigned a college advisor (see Student Advising, page 73) upon entry to medical school, who serves as the instructor in Clinical Foundations, and academic and career advisor for the remainder of the four years.

Following winter break in First Year, students begin an 18-month organ systems-based course, Genes to Society, which presents genetics, molecular biology, advanced anatomy, physiology, pathology, pathophysiology and clinical presentations related to each organ system. Immunology, Infectious Disease, Hematology-Oncology, Psychiatry, and Nerve and Special Senses are covered in the First Year. One half-day per week is devoted to a precepted clinical experience, the Longitudinal Clerkship, which provides further training in patient-centered interviewing, physical diagnosis, and health care systems.

Beginning with the first week of medical school and periodically in between courses, 3-day intersessions will focus students on a multidisciplinary topic related to the social and behavioral sciences. The titles of these intersessions in the First Year are Health Care Disparities and Service Learning, Prevention and Health Promotion, Global Health Care, Pain Care and Disaster Medicine. Students will have a variety of lecture and small group discussions supplemented by experiential and skill learning in each intersession. In the afternoons of these intersessions students will be attending a Scholarly Concentration course in one of five concentrations: Basic Science Research, Clinical Research, Public and Community Health, History of Medicine, and Medicine and the Arts. Beginning as a seminar series, each student will eventually complete a mentored scholarly project by the end of the Second Year of study.

Second Year students return in late August to complete the Genes to Society course in the following organ systems: Respiratory, Renal, Cardiovascular, Gastroenterology, Reproductive Health and Endocrinology, and Rheumatology. The Longitudinal Clerkship continues one-half day per week until the winter break. The intersessions in the Second Year are Substance Abuse Care, Patient Safety and Quality, and End-of-Life and Palliative Care. The Genes to Society course ends in February of the Second Year, and is followed by a 4-week Transitions to the Wards course, which provides intensive training in procedural skills, team communication skills, and clinical reasoning in preparation for the hospital-based clerkships that follow.

In the final quarter of the Second year, students begin the core clinical clerkships. These are 8-week rotations in the clinical disciplines of Medicine, Surgery, Pediatrics, and Gynecology, Obstetrics and Women’s Health, 4-week rotations in Neurology and Psychiatry, and a 4.5-week rotation in Emergency Medicine. A week of Translational Medicine is required after each 8-week clerk-
ship; during these intersession weeks, students will return to a discussion of state of the art biomedical investigation. Students may elect to delay one 8 week rotation in the next 5 quarters, but must complete this required core of rotations by the end of the first quarter in Year 4. Three one-month advanced clinical rotations are required prior to graduation: Chronic Disease and Disability, Subinternship, and Critical Care Medicine.

The clinical clerkships are devoted to the study of health and disease in the various clinical departments of the School of Medicine, The Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, Sinai Hospital and other affiliated hospitals. Students are introduced to practical clinical problems through instruction and participation in a health care team. Elective courses available in every department range from direct participation in current biomedical research to advanced clinical work. Many clerkships and elective courses may be taken during the summer.

In addition to the advanced clinical clerkships noted above, students are required to complete a 2-week course in the Fourth Year designed to refresh clinical skills and prepare them for internship. This course, Transition to Internship and Residency and Preparation for Life (TRIPLE), is offered twice in the spring of the Fourth Year, and includes simulation-based training, advanced cardiac life support, and advanced communication skills.

The academic year for first year students begins in August and ends in mid-June. There is a winter break in December and a spring break in March.

Between the First and Second Years there is a summer vacation of eight to nine weeks when students may engage in research or other studies. Students must arrange their schedules to include, between the start of the fourth quarter of the Second Year and graduation in May of the Fourth Year, 7 quarters and 2 weeks of required clinical clerkships and 20 weeks of clinical elective work; two additional vacation periods may also be scheduled. At the student’s discretion, vacation quarters may be used for research, board preparation, or additional elective study. Graduating students cannot schedule required clerkships during the fourth quarter of the Fourth Year, unless approved by the Associate Dean for Student Affairs.

The total number of students in each class of the regular four year program is 120.

Electives
Programs in which elective study and research leading to graduate degrees are integrated with the medical program are described in a later section ("M.D.-Ph.D. Programs"). A limited number of stipends are available for students who wish to devote one full year to research.

Approval may be granted for elective study at institutions other than the Johns Hopkins University. In such instances, the student must present a description of the elective including goals and objectives to the Associate Dean for Student Affairs for approval. One of the required 2 1/4 elective quarters may be taken at another non-affiliated medical institution. Students desiring to study at other institutions must make final arrangements through the Office of the Registrar of the Johns Hopkins University School of Medicine.

Students visiting other institutions and those who devote their free time to elective courses in this institution will be held responsible for proficient work just as in the case of the required subjects of instruction. Formal registration for elective quarter programs is through the Office of the Registrar of the School of Medicine. The elective work for the Second through the Fourth Years is denoted by the symbol E (e.g., Neurology E). Such courses are listed numerically by department or sub-department. The catalog does not list all elective courses. The Elective Book, an up-to-date description of all elective opportunities, is maintained by the Registrar and is available from the Registrar’s Office or the following website: http://www.hopkinsmedicine.org/som/students/Academics/electives.html.

Required Work
The required departmental work for each course and basic clerkship is usually regarded as a unit. It may be offered and graded as a single course, although the catalogue may indicate various course elements that comprise the whole. Formal registration for all required courses must be made through the Registrar of the School of Medicine.

REQUIREMENTS FOR M.D. DEGREE
To be eligible for the M.D. degree, candidates must successfully complete the prescribed course of study of the First through the Fourth Years.

PREPARATION FOR MEDICAL SCHOOL
The courses taken and the grades earned are but a portion of an applicant’s credentials. Certain areas of study (i.e. introductory biol-
ogy, chemistry, physics and organic chemistry with associated laboratory exercises and calculus) have traditionally been of value to medical students. Beyond the successful fulfillment of these basic prerequisites the Committee on Admissions is concerned solely with the quality and scope of an applicant’s undergraduate educational experience. The field of concentration for undergraduate studies and the selection of additional courses in the sciences and mathematics should be the choice of the student and will not affect the admissions process.

REQUIREMENTS FOR ADMISSION

The following general requirements must be met by all applicants:

1. Accredited Institution. All applicants must be or have previously been in attendance at an institution on the list entitled “Accredited Institutions of Postsecondary Education,” authorized and published by the American Council on Education, One DuPont Circle, N.W., Washington, D.C. 20036. Extension or evening courses taken in fulfillment of premedical course requirements are not acceptable unless they are identical to courses offered in the college’s regular academic program. Preparation in foreign universities, in most cases, must be supplemented by a year or more of course work in an accredited United States university.

2. Required Academic Work. Each applicant must have received the B.A. degree or its equivalent prior to matriculation. A list of specific pre-medical course requirements may be found on page 22. In order to assess the classroom performance of an applicant, the Committee on Admission requires that all of the coursework submitted in fulfillment of admission requirements must be evaluated on the basis of a traditional grading system. Such a system must employ a range of numbers or letters to indicate the comparative level of performance. If the applicant has received a grade of Pass/Credit for any of the specified premedical course requirements, the instructor must supply, in writing, a statement evaluating the student’s performance in that course. CLEP credits may not be substituted for any course requirement.

3. Conditions of Admission. Students admitted to the School of Medicine on a conditional basis (i.e. requirement(s) yet to be completed) must fulfill those conditions prior to matriculation in the School of Medicine.

4. Standardized Testing. The Medical College Admissions Test (MCAT) is required for acceptance. The MCAT must be taken no later than September in the year the application is submitted. The oldest MCAT considered will be from four years prior to the year of matriculation.

5. Letters of Recommendation. A recommendation from the applicant’s college premedical committee or an officially designated premedical advisor is required. If the college does not have a premedical advisor or premedical committee, two letters of recommendation are required from science faculty members in science departments who have taught the applicant and one non-science faculty member who has also taught the applicant. In addition to the letters indicated above, applicants with advanced degrees and/or full time employment are required to submit recommendations from each component of their education and major work experiences.

6. Non-U.S. Citizen Applicants. Official transcripts are required from all colleges attended outside the United States and Canada. Applicants who do not hold a permanent resident visa or an immigrant visa are not eligible for the financial aid program from Johns Hopkins University School of Medicine due to federal restrictions on the use of a large percentage of the loan funds which support the aid program. Because of these limitations, qualified students will be issued conditional acceptances into the School of Medicine under the following terms: on or before July 1 of the year of matriculation the accepted student must provide an escrow account or a four year irrevocable letter of credit drawn on a major United States bank in the favor of Johns Hopkins University. These funds must be sufficient to meet all tuition, mandatory fees and living expenses for the anticipated period of enrollment. The current escrow requirement is $270,000. In the event of tuition increases for future years, accepted students will be billed for additional charges as they become due. Details of financial requirements will be included in letters of acceptance.

7. Application Review. Following receipt of all required credentials, the committee on admission will review applications and make interview decisions. Applicants selected for interview will be notified by the committee. It may be possible to arrange an interview with a regional representative of the committee when the applicant lives at some distance from Baltimore. Notification of acceptances are made between October 15 and April 15.

APPLICATION FOR ADMISSION

Applicants must first submit an on-line application with the Association of American Medical Colleges: www.aamc.org; 2501 M Street,
Course Requirements for Regular M.D. and M.D.-Ph.D. Applicants

Effective with the class entering in 2012.

1. BIOLOGY
College Biology with laboratory, one year (8 semester hours)
The student should have an appreciation for the diversity of life such as viruses, prokaryotes, plants and animals, and a familiarity with the life cycles and metabolic activities of these organisms. The student should attain a basic understanding of the structure and function of the mammalian cell. Included should be a basic understanding of mammalian genetics. Credit for advanced placement is not acceptable as a substitute. Individuals who have completed their studies in biology more than 4 years prior to their application are strongly advised to take a one semester advanced mammalian biology course.

2. CHEMISTRY
General college chemistry with laboratory, one year (8 semester hours)
Organic Chemistry with laboratory, one semester, and a second semester of either organic chemistry or biochemistry without a laboratory. The student should have knowledge of chemical equilibrium and thermodynamics, acid/base chemistry, the nature of ions in solution and redox reactions, the structure of molecules with special emphasis on bioorganic compounds, reaction rates, binding coefficients, and reaction mechanisms involved in enzyme kinetics. Also important is a basic understanding of the structure of nucleic acids including how they store and transfer information. Applicants with advanced placement in general chemistry must take one additional semester of advanced chemistry with lab.

3. COMPUTER LITERACY
It is highly recommended that the student have a working knowledge of computers including the use of computers to retrieve information and to communicate with others.

4. HUMANITIES, SOCIAL & BEHAVIORAL SCIENCES
The study of the humanities, social and behavioral sciences is an essential foundation for the study of medicine. (24 semester hours)
An applicant’s educational experience must include at least 24 semester hours in these disciplines. Effective communication skills are essential and candidates must be proficient in spoken and written English and be able to communicate well. The TOEFL exam is not needed for foreign students to apply to the School of Medicine, however, the applicant must be proficient in spoken and written English.

5. MATHEMATICS
Calculus or statistics, one year (6-8 semester hours)
Mathematics courses should enable the student to develop equations, to interpret graphical representations of function and to evaluate probability involved in testing hypotheses. Advanced Placement credit for calculus, acceptable to the student’s undergraduate college, may be used in fulfillment of the math requirement.

6. PHYSICS
General College Physics with laboratory, one year (8 semester hours)
The student should have an understanding of the constants and units of physical measurement, Newtonian mechanics, the physical properties of various states of matter such as liquids, solids and gases, and the basic aspects of electricity, magnetism and optics. Advanced Placement credit for physics, acceptable to the student’s undergraduate college, may be used in fulfillment of the physics requirement.
NW., Lobby-26, Washington, DC, 20037-1300; telephone: 202-828-0635. The deadline for submitting an application to AMCAS for Johns Hopkins is October 15.

Once you have completed your AMCAS application and received your AAMC ID number, you may then submit the Johns Hopkins secondary application via the internet at www.hopkinsmedicine.org/admissions. The deadline for submission of the secondary application to the MD-PhD Program is November 15. The deadline for submission of the secondary application for the regular MD Program is December 1.

Letters of recommendation to the MD-PhD Program must be received by November 15. Letters of recommendation to the regular MD Program must be received by December 1. All letters of recommendation should be sent to the AMCAS letter service: http://www.aamc.org/students/amcas/faq/amcasletters.htm.

Application Fee: The secondary application fee for Johns Hopkins University School of Medicine is $80. This fee is non-refundable and must be paid on-line when submitting the secondary application. The application fee will be waived for applicants who have received an AMCAS fee waiver. Specific details are available in the secondary application instructions.

For the latest information concerning admissions requirements and procedures, please visit our website at: www.hopkinsmedicine.org/admissions. Specific questions about applying to the School of Medicine may be answered by calling the Admissions Office at 410-955-3182. Information may also be requested by writing to: Committee on Admissions, Johns Hopkins University School of Medicine, 733 N. Broadway, Suite G-49, Baltimore, MD 21205 or via email at somadmiss@jhmi.edu.

Accepted Applicants: It is the policy of the Johns Hopkins University School of Medicine to require criminal background investigations on accepted students in any professional or graduate program at the School of Medicine, interns, residents, and clinical fellows in any Graduate Medical Education program sponsored by Johns Hopkins, and other clinical and research postdoctoral fellows at the School of Medicine.

SCHOOL OF MEDICINE
TECHNICAL STANDARDS FOR ADMISSION

Applicants to the Johns Hopkins University School of Medicine are considered without regard to disability, but with expectation that they can complete satisfactorily all parts of the curriculum within the prescribed four year period. The School does not offer a decelerated curriculum. In addition to certain academic standards, candidates for the M.D. degree must have abilities and skills in observation, communication, motor function, quantification, abstraction, integration, conceptualization and interpersonal relationships and behavior. Some disabilities in certain of these areas may be overcome technologically, but candidates for the medical degree must be able to perform in a reasonably independent manner without the use of trained assistants. The candidate must have sufficient motor function to elicit information from patients by palpation, auscultation, percussion, and other diagnostic maneuvers. The candidate must be able to execute motor movements reasonably required to provide general care in emergency treatments to patients. Such actions require coordination of both gross and fine motor muscular movement, equilibrium and functional use of the senses of touch and vision. Those desiring additional information should contact the Admission's Office.

EARLY DECISION

We do not accept applications for early decision.

DEFERRED ADMISSION

The Deferred Admission Plan enables students to diversify their educational and life experiences as they prepare for a career in medicine. Deferred admission may be approved for a period of one to three years to pursue international fellowships (Rhodes, Rotary, Marshall, Watson, Fulbright scholarships, etc.), join the Peace Corps, participate in service assignments in the United States or abroad, teach, or conduct research. Admitted applicants who are interested in deferring their matriculation into the first year class, must submit a written request by May 1 for review and approval by the Deferral Committee. If approved, applicants must complete an AMCAS application by the August 1 deadline of the year prior to matriculation. Please contact the Admissions Office for further information.

COMBINED STUDY-M.D.-Ph.D.

The Committee on Admission accepts applications not only from applicants for the M.D. program but from those who are interested in a combined M.D.-Ph.D. degree. Provided with the Johns Hopkins application for the M.D. program is a supplemental form which should be completed by those applicants...
for the combined degree. Under the section “Graduate Programs” in this catalogue, those departments which offer study leading to a Ph.D. degree are listed. When the application for the M.D. program as well as the “Application Supplement for Admission to Combined M.D.-Ph.D. Study” are received along with all necessary letters of recommendation, they will be reviewed by the Committee on Admission, the M.D.-Ph.D. Committee, and by the appropriate graduate department. If admitted to both degree programs, the student will ordinarily be expected to complete at least the first year of M.D. study before starting full-time Ph.D. work. Students initially accepted for only one of the two degrees are eligible to reapply for study towards the other at a later time. Students enrolled in the M.D. program can make application for a graduate program at any time during the course of their medical training. See section entitled “The Training of Medical Scientists: M.D.-Ph.D. Programs.”

Advanced Standing
Due to space limitations, the School of Medicine is unable to admit transfer students.

Doctors of Medicine
Persons who have already received the degree of Doctor of Medicine elsewhere will not be admitted as candidates for that degree from the Johns Hopkins University.

Grading and Examinations
Grading at the Johns Hopkins University School of Medicine is not viewed as an end in itself. Although grades are an appropriate means for monitoring and recording achievement and progress towards the M.D. degree, they represent but one indicator of a student’s performance and attributes. Descriptive evaluations are of equal importance.

Students at Johns Hopkins receive continual feedback on their progress toward achieving the educational objectives of the curriculum. For the knowledge-based courses in the first 20 months of the curriculum, written assessments occur approximately every 2-3 weeks; students also receive narrative feedback from course and small group leaders for each course block. In Clinical Foundations, detailed feedback is provided in face-to-face meetings with college advisors, as well as with online evaluations. With the Genes to Society curriculum, the student portfolio was introduced as another method of feedback and assessment. Periodically, students are asked to enter documentation into the portfolio, such as reflective writing, credentialing, and patient care documentation. This portfolio is reviewed twice a year with the College advisor and used as a framework for individualized learning plans.

At Johns Hopkins, the student has access to grades and written evaluations. Competition between students for grades per se is strongly discouraged, emphasis being placed instead on giving each student full opportunity to develop his or her particular abilities and interests.

Grades in the preclinical courses are designated as Pass or Fail. Beginning with the Longitudinal Clerkship and Transition to the Wards, and continuing with subsequent clinical clerkships and electives, grades are designated as Honors, High Pass, Pass or Fail. Pass is awarded to the student who fulfills all of the requirements of a course or clerkship in an entirely satisfactory manner. High Pass is awarded to students for excellent performance. Honors is awarded to a student who has been consistently outstanding in scholarship and professionalism.

The grade of Fail is used if a student does not meet the minimum performance requirements of a course or clerkship as defined by the course directors.

If a student exhibits a marginal performance in which the minimal performance expectations of a course or clerkship are met, but individual components of the course have not been satisfactorily mastered, a grade of Unsatisfactory may be given. Remedial work will be required before a grade of Pass is awarded. Remedial work will not allow an Unsatisfactory grade to be remediated higher than a Pass. If the remedial work for a failing grade requires repetition of the entire course or clerkship, the resulting grade will reflect the student’s performance on the retaken course/clerkship and will be recorded next to the failing grade already entered on the transcript.

Students who do not complete all required components of a course are given an Incomplete. When students are unable to complete requirements because of illness or other compelling personal circumstances, they should promptly contact the Associate Dean for Student Affairs in order to request permission for a temporary interruption of studies. The Associate Dean for Student Affairs will assist in making arrangements for completion of course requirements by an excused student. The Incomplete is a neutral statement and reflects nothing per se about the quality of a student’s performance. The Incomplete may be remediated to Pass, High Pass or Honors. The Incomplete must not be used in lieu of a failing or marginal grade.
Promotions

The record of each student will be reviewed by the appropriate Committee on Student Promotion at scheduled intervals and action will be taken on each student’s status. In addition to maintaining good academic standing, students are expected to adhere to the accepted standards of professional behavior in their contacts with fellow students, faculty, patients, staff, and others. A student must satisfactorily complete the work of an academic year in all regards and be in good standing before advancement to the next year.

During years one and two, students must pass every course in order to be promoted. In either the first or second year, dismissal is automatic if a student receives two failing grades, one failing and one unsatisfactory grade, or unexcused incompletes in two or more courses.

A student may repeat only one year of the first two years of the curriculum. During the repeat year dismissal is automatic if the student receives one failing grade or two unsatisfactory grades.

During the clinical years, a failure in a required course/clerkship will be referred immediately to the Promotions Committee for discussion and presentation of a remediation plan, unless the student’s overall performance requires consideration of dismissal. The student will be permitted to complete any subsequent required course/clerkship he/she has begun, but no additional required clerkships can be taken until the failure is remediated. Unsatisfactory performance in two courses/clerkships or failure in a subsequent course will result in dismissal from school at the discretion of the Promotions Committee.

The Committee on Student Promotion may make specific recommendations regarding remediation of grades in any year.

A student dismissed for academic reasons may submit a written petition for readmission to the appropriate Committee on Student Promotion setting forth an explanation for the student’s deficient performance, any extenuating circumstances, and any other information relevant to the student’s fitness to continue the academic program. The student additionally may request the opportunity to appear personally before the Committee on Student Promotion.

In accordance with the high standard of ethical conduct required of a physician, students are expected to refrain from acts of dishonesty which impair the academic integrity of the University. Students whose behavior appears to be unbefitting a physician will be reviewed by an ad hoc committee of the Advisory Board of the Medical Faculty, and such other persons as may be deemed appropriate. The ad hoc committee will be appointed by the Dean, or in the Dean’s absence, the Vice Dean for Education. This committee will decide on the student’s status within the school. Students reviewed under such circumstances will have the opportunity to meet with the ad hoc committee in person prior to a decision. A student whose status is affected by a decision of the ad hoc committee will be afforded an opportunity to appeal to the Dean and, thereafter, to the Provost of the University. A complete description of procedures to be followed in disciplinary matters is located in this catalog in the section titled “Instruction Leading to the M.D. Degree.” It is also available in the Student Affairs Office.

At the end of the Fourth Year the candidate’s entire record, including both required and elective work, will be reviewed by the Committee on Student Promotion. Those who have satisfactory records and who are judged by the Committee to have demonstrated evidence of personal fitness for a career in medicine will be recommended to the Advisory Board of the Medical Faculty for the degree of Doctor of Medicine. Students must have resolved all outstanding charges of misconduct and violations of academic ethics to be eligible for graduation.

Grade Appeals Policy

The components of evaluation in a course or clerkship should be transparent to the student and discussed at the start of the student’s experience. Grades are generated by the course/clerkship director. Should there be a disagreement about a grade in a course or clerkship, the student is to follow the guidelines below for grade appeals.

1. The first stage of a grade appeals process will be a meeting between the student and the course director. The course director may also request any faculty preceptors involved in evaluating the student be present for this meeting. At that time, the student will have an opportunity to voice his/her concern(s) about the grade which he/she received. The course director will have the chance to review the criteria by which the final grade is determined and will be expected to answer any questions the student has. The course director may elect to obtain additional information based upon what the student has said and would ultimately decide to maintain the original grade or submit an amended grade to the Registrar.

2. If dissatisfied with the results of the above, the student may appeal to the appropriate Promotions Committee (First and Second Year or...
Third and Fourth Year) by contacting the Office of the Vice Dean for Education. The Committee will be chaired by the Vice Dean who will vote only in the case of a tie. The Associate Dean/Registrar, the Associate Dean for Student Affairs, and the Assistant Dean for Minority Affairs will be non-voting ex-officio members. The student will be asked to provide information regarding the grounds for the grade appeal and will be given an opportunity to address the Committee if they so desire. The course director involved will not be allowed a vote in the matter and will be excused for the period of debate and voting after being given a chance to address the Committee. After consideration, the Committee will advise the Vice Dean for Education of any changes merited. Two standards will be employed by the Committee in evaluating the appeal which could lead to a recommended amendment:

a. if the grade is not found to reflect valid and consistent academic performance standards or criteria, or the considered academic judgment of the course director;

b. if the grade is found to be based upon impermissible criteria beyond performance, achievement, and effort such as gender, race, age, or other factors as delineated in the policy on Teacher Learner Relationships.

3. The student may appeal an adverse decision to the Dean of the Medical School by notifying him/her in writing within 7 days of the decision. The Dean’s review will be limited to review of procedural integrity and his/her decision will be final.

Policy on USMLE Requirement
Students must take Step 1 by September 15 of their third year and receive a passing score in order to proceed with core clerkships. Students must schedule both components of Step 2 by December of their senior year and sit for the examination prior to graduation.

Guidelines for Conduct in Teacher/Learner Relationships

Statement of Philosophy
The Johns Hopkins University School of Medicine is committed to fostering an environment that promotes academic and professional success in learners and teachers at all levels. The achievement of such success is dependent on an environment free of behaviors which can undermine the important missions of our institution. An atmosphere of mutual respect, collegiality, fairness, and trust is essential. Although both teachers and learners bear significant responsibility in creating and maintaining this atmosphere, teachers also bear particular responsibility with respect to their evaluative roles relative to student work and with respect to modeling appropriate professional behaviors. Teachers must be ever mindful of this responsibility in their interactions with their colleagues, their patients, and those whose education has been entrusted to them.

Responsibilities in the Teacher/Learner Relationship

Responsibilities of Teachers
• Treat all learners with respect and fairness.
• Treat all learners equally regardless of age, gender, race, ethnicity, national origin, religion, disability, or sexual orientation.
• Provide current materials in an effective format for learning.
• Be on time for didactic, investigational, and clinical encounters.
• Provide timely feedback with constructive suggestions and opportunities for improvement/remediation when needed.

Responsibilities of Learners
• Treat all fellow learners and teachers with respect and fairness.
• Treat all fellow learners and teachers equally regardless of age, gender, race, ethnicity, national origin, religion, disability, or sexual orientation.
• Commit the time and energy to your studies necessary to achieve the goals and objectives of each course.
• Be on time for didactic, investigational, and clinical encounters.
• Communicate concerns/suggestions about the curriculum, didactic methods, teachers, or the learning environment in a respectful, professional manner.

Behaviors Inappropriate to the Teacher-Learner Relationship
These behaviors are those which demonstrate disrespect for others or lack of professionalism in interpersonal conduct. Although there is inevitably a subjective element in the witnessing or experiencing of such behaviors, certain actions are clearly inappropriate and will not be tolerated by the institution. These include, but are not limited to, the following:
• unwanted physical contact (e.g. hitting, slapping, kicking, pushing) or the threat of
the same;
• sexual harassment or harassment based on age, gender, race, ethnicity, national origin, religion, disability or sexual orientation;
• loss of personal civility including shouting, public or private humiliation, displays of temper (such as throwing objects);
• discrimination of any form including in teaching and assessment based upon age, gender, race, ethnicity, national origin, religion, disability, or sexual orientation;
• requests for others to perform inappropriate personal errands unrelated to the didactic, investigational, or clinical situation at hand;
• grading/evaluation on factors unrelated to performance, effort, or level of achievement.

Avenues for Addressing Inappropriate Behavior in the Teacher/Learner Context

Learners’ Concerns
Learners may address situations in which they feel that they have been the object of inappropriate behavior at various levels. At the most basic level, the most effective way to handle a situation may be to address it immediately and non-confrontationally. Oftentimes, a person is simply unaware that his/her behavior has offended someone, or even if aware, will correct the behavior appropriately if given the opportunity to do so in a way that is not threatening. The way to raise such an issue is to describe the behavior factually (“When you said...”), describe how the behavior made you feel (“I felt...”), and state that the behavior needs to stop or not be repeated (“Please, don’t do that again.”)

Sometimes, such a request is not successful, or the person repeats the behavior, or the learner does not feel comfortable speaking directly to the teacher about his/her behavior. In those cases, it may be helpful to discuss the behavior with course directors, laboratory mentors, program directors, or department chairs. Students may also elect to speak to their respective Associate or Assistant Deans for informal advice and counsel about these issues. These individuals may offer additional suggestions for resolving the matter informally, such as, for example, speaking to the individual on the learner’s behalf or on behalf of an entire class, raising the general issue in a faculty meeting, assisting the learner with writing to the individual teacher or even direct intervention to get the behavior to stop.

If no satisfactory resolution is reached after these discussions or the learner does not feel comfortable speaking to these individuals, he/she may bring the matter formally to the attention of the School of Medicine administration. The avenues for this more formal reporting vary depending upon the status of the reporting individual.

• If the person reporting the behavior is a medical student: The student should speak with one of the Associate or Assistant Deans in the Office of Student Affairs.
• If the person reporting the behavior is a graduate student or M.D./Ph.D. student pursuing their graduate studies: The student should speak with the Associate Dean for Graduate Student Affairs and/or the Director of the M.D./Ph.D. program.
• If the person reporting the behavior is a post-graduate trainee (i.e. resident or clinical fellow): The trainee should speak with the Associate Dean for Graduate Medical Education.
• If the person reporting the behavior is a research fellow: The trainee should speak with the Associate Dean for Postdoctoral Affairs.

Teachers’ Concerns
If a teacher feels that a learner has engaged in inappropriate behavior, it is likewise most effective to address the situation immediately and non-confrontationally. If the matter is not resolved satisfactorily, the teacher should contact the course director, program director, or laboratory mentor to discuss the matter. If the teacher wishes to make a formal allegation of misconduct, they should contact the following members of the administration:

• If the matter involves a medical student, contact the Associate/Assistant Dean for Student Affairs;
• If the matter involves a graduate student, contact the Associate Dean for Graduate Student Affairs;
• If the matter involves a research fellow, contact the Associate Dean for Graduate Medical Education;
• If the matter involves a postgraduate trainee, contact the Associate Dean for Graduate Medical Education;
• If the matter involves a research fellow, contact the Associate Dean for Postdoctoral Affairs.

These allegations will be handled according to established School of Medicine policies published elsewhere.

Procedures for Handling Allegations of Inappropriate Behavior in the Teacher/Learner Context

• If the behavior involves unlawful discrimination or sexual or other forms of unlawful harassment, the matter will be referred to the Office of Institutional Equity and be handled through University policies established for that office. The student may also directly contact that office.
• If the behavior involves unwanted physical
contact or other forms of violent or threatening acts, the matter may be referred for evaluation under the University's Policy Addressing Campus Violence.

• Upon being notified of alleged inappropriate behavior, the Associate or Assistant Dean will notify senior administration officials in a written report within 5 business days of the allegation as follows:

  • If the complaint is lodged against a faculty member, the Vice Deans for Education and Faculty will be notified. Other than those matters referred to the Office of Institutional Equity, the matter will be handled in accordance with the School of Medicine's Procedures for Dealing with Issues of Professional Misconduct.

  • If the complaint is lodged against a post-graduate trainee, the Vice-Dean for Education and the Associate Dean for Graduate Medical Education will be notified. If the complaint is lodged against a research fellow, the Vice Dean for Education and the Associate Dean for Postdoctoral Affairs will be notified. Other than those matters referred to the Office of Institutional Equity, if based on the written report, those Deans decide that a formal investigation is warranted, they will convene an ad hoc committee to investigate the complaint and notify the complainant, the respondent and appropriate department chairs and program directors of such an action. The ad hoc committee will be composed of three faculty members from departments other than those of the complainant or respondent. The committee will be responsible for gathering information and interviewing the complainant, respondent, and other individuals as they deem appropriate. Based upon information gathered and their deliberations, the committee will submit a written report to the Deans involved within thirty days of the allegation as follows:

  • The School of Medicine is committed to the fair treatment of all individuals involved in this process. All efforts will be made to maintain the confidentiality of the resolution process to the extent possible and subject to the overriding concern of a prompt and fair investigation and/or resolution of the complaint.

  • The School of Medicine will not tolerate any form of retaliatory behavior toward learners who make allegations in good faith. Individuals who believe that action has been taken against them in retaliation for raising concerns under this policy, may address those concerns through the procedures described in this policy.

  • Records of all communications as well as the written reports of the Associate Deans and ad hoc committee will be kept in the Office of the Vice Dean for Education.

  • If it is determined that the allegations from the complainant were not made in good faith, the student or post-graduate trainee will be referred for disciplinary action under the appropriate University procedures which are described elsewhere.

### Procedures Relating to Student Discipline

The following procedures will govern complaints regarding the conduct of a student enrolled in the School of Medicine.

A student's record within the School of Medicine will contain documentation reflecting conduct during the period of enrollment. A student will have access to his School record, including those documents, if any, reflecting conduct, in accordance with the standards set forth in the Family Educational Rights to Privacy Act and applicable University policy. The University's policy on access to and release of student records is published annually and a copy may be obtained from the Office of the Registrar of the School of Medicine.

1. When information reaches the School indicating that a student has engaged in behavior unbefitting a physician and/or a medical scientist, the student will be requested to confer with the Associate Dean for Student Affairs.

2. Where a matter involving student conduct cannot be resolved to the satisfaction of the Associate Dean for Student Affairs, or where the gravity of the acts with which the student is charged appears to warrant further attention, the Dean of the Medical Faculty will appoint an ad hoc committee of the Advisory Board of the Medical Faculty to hear the charge of misconduct. The Committee may include such other persons, for example, student peers, as may be deemed appropriate. Each person appointed to the ad hoc committee shall be free of bias or personal interest...
in the matter. The Dean, Vice Dean, Associate Dean and Registrar shall be non-voting ex-officio members of the ad hoc committee. The Dean, Vice Dean, or an Associate Dean shall preside at meetings of the ad hoc committee and may vote when the ad hoc committee is equally divided on a question.

3. A student charged with misconduct will be given written notice of the charges and of the date and time of the Committee hearing. Prior to the hearing an accused student shall be given access to all documentary evidence to be presented against him. An accused student may request an opportunity to consult with the Dean, Vice Dean, or an Associate Dean prior to a hearing.

4. A student may be accompanied to the hearing by a faculty member or student advisor. Representation of the accused student or the accusing party at the hearing by attorneys will not be permitted.

5. In the course of the hearing, a student will be given the opportunity to present evidence and witnesses in his behalf, to question all witnesses, and to make statements to the Committee.

6. Members of the ad hoc committee may ask questions of the student charged and of witnesses appearing before the Committee.

7. A hearing before the ad hoc committee will be closed and persons other than Deans appearing as witnesses will be asked to absent themselves before and after their testimony. Parents of the accused student will be permitted to accompany a student throughout the hearing, and if they should wish to do so, to make a statement.

8. A hearing shall be recorded but the deliberations of the ad hoc committee shall not be recorded. Following the hearing, the accused student shall be permitted to listen to the recording upon request, but all copies of the recording shall remain in the School’s possession.

9. All parties, witnesses, and representatives shall be excused at the conclusion of the hearing and the ad hoc committee shall deliberate privately. The Committee shall make findings as to the truth or falsity of the charges against the student and, where necessary, shall submit to the Dean a recommendation of a penalty.

10. The options for disciplinary action, should the Committee decide that the student’s behavior warrants discipline, will include, but will not necessarily be limited to the following:
   a. Reprimand without probation or suspension.
   b. Probation for a specified time period or until explicit* conditions are met. Review of the proceedings before the ad hoc committee unless the student is judged by the Dean, Vice Dean, or Associate Dean to be a danger to himself or others. A student must seek the permission of the Dean, Vice Dean, or Associate Dean in order to continue the educational program pending appeal from the recommendations of the ad hoc committee.

   c. Suspension for a specified time period or until explicit* conditions are met. Review to be administrative.
   d. Suspension for a specified time or until explicit* conditions are met. Review by the ad hoc committee of the Advisory Board.
   e. Unconditional Expulsion

*Explicit conditions are to be unambiguous and as objective as the conditions allow.

11. A student may appeal an adverse decision to the Dean of the School of Medicine, or, in the absence of the Dean, appeal may be made to the Vice Dean or an Associate Dean. The appeal should be made within 30 calendar days of the date of the committee decision.

12. A student may attend classes pending the proceedings before the ad hoc committee unless the student is judged by the Dean, Vice Dean, or Associate Dean to be a danger to himself or others. A student must seek the permission of the Dean, Vice Dean, or Associate Dean in order to continue the educational program pending appeal from the recommendations of the ad hoc committee.

Attendance Policy in the Preclinical Curriculum

Among the goals of the Scientific Foundations of Medicine and the Genes to Society courses are to develop a sense of professionalism, to promote collegiality, to engage students in teaching one another, and to give students experience working in teams where different backgrounds and expertise are represented. Meeting these goals requires each student to be actively engaged, therefore attendance is mandatory at all group learning and teamwork activities including activities in the Simulation Center and workshops. Attendance is also mandatory at all activities that involve patients and/or guests, such as clinical correlations. Videofiles of large group lectures where attendance is not required are available online via course management software.

Failure to attend at least 80% of these events in a block will result in the student being reported to the course and block directors and the Associate Dean for Student Affairs. Unexcused attendance below 80% will affect the student’s performance in the course and will be considered a breach of the standards of professionalism expected by the School. In blocks where at least five sessions of one type of event occur (e.g., Small Group Discussions), attendance at 80% of these sessions is required in additional to
overall attendance at 80% of interactive and patient and guest events. Excused absences may be granted in cases of illness, religious observance, family emergency, presentations at scientific conferences, or required legal activity (e.g., jury duty) through discussion (in advance whenever feasible) with the section director, course director, and/or Associate Dean for Student Affairs.

Core Clerkship Attendance Policy

The School of Medicine recognizes the primacy of the Core Clerkships as critical components of medical students’ education. Core Clerkship attendance is required. Attendance rules are governed by the School of Medicine in the following ways:

School Holidays: The School of Medicine publishes an annual calendar that identifies official SOM holidays for students (http://www.hopkinsmedicine.org/som/students/academics/calendar.html). These holidays currently include the following:

- Labor Day (Quarter 1, 1 day)
- Thanksgiving (Quarter 2, 4 days [2 weekdays, 2 weekend days])
- Christmas and New Year (winter break)
- Martin Luther King Day (Quarter 3, 1 day)
- Spring vacation (spring break)
- Memorial Day (Quarter 4, 1 day)
- Independence Day (Summer Quarter, 1 day)

The holidays which occur during the Clerkship time generally fall on a Monday or Friday adjacent to a weekend. These weekend days adjacent to these weekday holidays are NOT considered official school holidays (with the exception of Thanksgiving) and required activities may be scheduled on those weekend days at the discretion of the Clerkship Director. University Commencement and Convocation are NOT considered holidays for Core Clerkship students. Similarly, election day, presidential inauguration, and other public or civic events are not considered holidays for Core Clerkship students.

Excused & Unexcused Absences

a. Residency Interviews The following policy is to address the amount of time that fourth year students can miss from their Core Clerkships for residency interviews. The goal is to ensure that students obtain sufficient experience in each of the basic disciplines to meet the objectives of the Hopkins curriculum.

Interview days should not be considered the equivalent of PERSONAL days. Students should make every effort to leave as late as possible and return as early as possible when interviewing to minimize time lost from a core clerkship.

1. On 6-9 week clerkships, students will be allowed to miss 3 full days of responsibilities as excused absences for interviews.
2. On 4-4.5 week clerkships, students will be allowed to miss 2 full days of responsibilities as excused absences for interviews.
3. Students must inform course directors of any such absences in advance of the beginning of the clerkship when possible. If students do not contact the course director in advance of any absences, they will be considered unexcused and will impact on the student’s final grade.
4. All students who miss more than the allowed days above will be required to develop a plan for remediation of missed days with the clerkship director. Such remediation is a necessary requirement for successful graduation from the M.D. curriculum.

b. Comprehensive Clinical Skills Exam (CCSE)

The CCSE is a required educational activity for all graduating medical students. Students are encouraged not to schedule their CCSE during a Core Clerkship, but this is not always possible. The student is to be excused from Clerkship duties for the duration of the exam (approximately 7-9 hours, since the current 12-case version of the exam runs from about 8AM to 4:30PM). Students should expect to attend required basic clerkship educational activities after they have completed the exam.

c. Other Required Coursework

Certain required courses may occasionally be scheduled concurrently with a Core Clerkship. If this occurs, scheduled activities for these other courses take priority over all scheduled Clerkship activities. Nevertheless, if such a conflict arises for a particular student, remediation may be required (see below).

d. Elective Coursework

Under no circumstances will elective coursework supersede required Core Clerkship activities. Students will not be excused from required Core Clerkship duties to attend clinical elective courses (or similar activities, such as research electives or ACLS training), whether such electives are internal or external to Johns Hopkins. This includes elective experiences requiring complex or expensive travel arrangements, such as those conducted overseas. It is the responsibility of the
student to ensure that no such conflicts arise. Students should consult the SOM calendar and the Registrar’s office for official start and end dates for each required Core Clerkship.

e. Personal Reasons (including Religious Holidays)
Students must notify the Clerkship Director as early as possible before the start of the clerkship regarding any scheduled absence other than those described above, and should expect that they will need to make up missed time. This includes (but is not limited to) any absence for religious holidays, academic events (e.g., national meetings and other presentations, including within Johns Hopkins), and civic responsibilities (e.g., election day, jury duty). Although each Clerkship Director has discretion to allow or disallow such absences (except for jury duty and religious holidays, see below*) based on their potential impact on the educational experience, the general rule is “a day for a day” (i.e., each missed day will generally result in one additional day made up at a later time).

*University policy regarding religious holidays states, “Religious holidays are valid reasons to be excused from class. Students who must miss a class or an examination because of a religious holiday must inform the instructor as early as possible in order to be excused from class or to make up any work that is missed.”

f. Weather and Other Related Emergencies Within the Baltimore Area
Weather-related policies are stipulated by the Johns Hopkins University. Core Clerkship students are not considered “Required Attendance Employees” and are excused from attendance at normally-required Clerkship activities if affected by circumstances (e.g., weather) related to University delays or closings. As necessary, remediation plans will be made on a case-by-case basis by the Clerkship Director.

Weather and Other Related Emergencies Outside the Baltimore Area
Students who travel during (e.g., on weekends) or in close temporal proximity to (e.g., just before) a Core Clerkship may be delayed in their return travel plans by inclement weather, flight cancellations, or other similar events outside their control. In such circumstances, safety is the first priority. Once the student’s safety is assured, they should immediately notify people related to the Clerkship, as appropriate (e.g., Clerkship Director or Coordinator, clinical team or preceptor with whom they are rotating, etc.). Students will generally be required to remediate any time or activities upon safe return or at a later date. Students should be advised, however, that extended or repeated travel-related absences will be considered unprofessional behavior and will likely result in grade reductions, failure, or disciplinary action.

g. Illness or Injury (Personal or Family)
Illnesses or injuries are handled on a case by case basis by Clerkship Directors. In almost all cases, such events cannot be predicted in advance. When either occurs, the student’s first responsibility is to their own personal safety and the safety and well-being of those around them. Once the situation has stabilized sufficiently and it is safe to do so, a student should immediately notify people related to the Clerkship, as appropriate (e.g., Clerkship Director or Coordinator, clinical team or preceptor with whom they are rotating, etc.). Family emergencies (including illness or death of a loved one) should be handled similarly. As necessary, remediation plans will be made on a case-by-case basis by the Clerkship Director.

It is at the discretion of the Clerkship Director to establish a required remediation plan for the student, regardless of the reason for absence. Note that if a significant component of the educational experience is missed for any reason, it is at the Clerkship Director’s discretion to require remediation, reduce the student’s grade, or remove the student from the Clerkship that cycle. In such cases, students may need to wait for the next available Clerkship slot, potentially delaying promotion or graduation in some circumstances.

Students who fail to attend required activities (e.g., Clerkship Orientation) without advance notice and are unable to offer a reasonable or appropriate justification (as judged by the Clerkship Director) may be subject to grade reductions, failure, or disciplinary action on grounds of lack of professionalism.

Any student who feels unfairly treated with regard to attendance or duty hours policy should discuss these issues with the Clerkship Director. If a mutually agreeable decision is not reached, the student should contact the Office of Student Affairs if they wish to pursue the matter further.

Medical Student Employment Policy
In recognition of the primacy of the educational goals for students enrolled the full-time M.D. curriculum in the School of Medicine, the following policy was established to provide guidance to students, faculty, and administrators:

1. Students enrolled in the full-time M.D. curriculum may be employed by individuals, divi-
sions, departments, or other entities within the University with limitations described below.

2. Students must be in good academic standing in order to be eligible for employment by the University. Documentation of this standing will be coordinated by the Office of Student Affairs. If there is evidence that the student’s academic performance is placing the student at-risk for failing, in addition to the usual supports offered in these situations, the student’s employment status will be reviewed by the Office of Student Affairs in collaboration with the student. This could result in termination of University employment.

3. Students must submit a Request for Authorization of Student Employment form to the Office of Student Affairs describing the proposed employment. This form also requires information from the proposed supervisor of the employment and an acknowledgement on their part of awareness of this policy.

4. Students enrolled in a full-time research elective are exempt from this rule as they have no other curricular responsibilities at that time. However, only six weeks of paid elective credit can count toward the cumulative elective credit required for graduation.

5. Violations of this policy will be reported to the Office of Student Affairs and could result in disciplinary action or referral to the appropriate Promotions Committee for review.

Alcohol Policy for Medical Students

Intoxication in the workplace is considered unprofessional behavior. Therefore, this policy shall regulate the use of alcohol at school sponsored/sanctioned medical student events on the premises of the Johns Hopkins University School of Medicine and Health System.

1. No funds provided directly by the SOM Administration will be used to purchase alcoholic beverages.

2. Appropriate measures must be taken to ensure that guests/participants under the age of 21 do not have access to alcoholic beverages.

3. At events where alcohol is served, the organizers must provide ample non-alcoholic beverage choices.

4. All events serving alcohol are required to contract bartenders to oversee the distribution of alcoholic beverages. Bartenders are expected to deny alcohol to anyone who appears to be impaired from alcohol.

5. The organizers of such events must complete a Event Alcohol Approval Request Form and meet with one of the Associate or Assistant Deans of Student Affairs to obtain approval for the event.

Financial Aid Satisfactory Academic Progress Review

Federal law and regulations require that all students receiving federal financial assistance must maintain satisfactory academic progress. The following policy represents the standards adopted by JHU School of Medicine. The policy applies to all students who receive federal financial aid assistance.

In determining student’s academic progress, the Financial Aid Office will follow the School of Medicine’s Student Promotion Committee academic review policy which is established for all students and meets the minimum Title IV academic policy requirements. (See Promotions Committee Process)

Student academic standing and satisfactory academic progress will be reviewed annually by the Financial Aid Office to determine students continued eligibility for Title IV financial aid funding. Evaluations will be made on both a qualitative and quantitative basis. Determination of a student’s academic status will be in collaboration with the Associate Dean of Student Affairs or designee.

Qualitative Review

The Financial Aid Office will follow the recommendations of the Committee on Student Promotions for the qualitative review of academic progress status of the student.

The School of Medicine’s Committee on Student Promotions reviews and assesses the satisfactory academic progress of all medical students at scheduled intervals.

For continued financial aid eligibility, the student must have a passing grade of at least a “P” or its equivalent in all required coursework or have academic standing consistent with graduation requirements at the end of the second year.

Upon the recommendation of the Student Promotion Committee, any student who is not progressing academically, and who has been determined to have received federal financial aid funding, will have their financial aid status reviewed by the Financial Aid Office and the Associate Dean of Student Affairs or designee to determine continued aid eligibility.

Quantitative Review

The Financial Aid Office will monitor the quantitative time frame for completion of the program which equals one and one-half time the program normal length.
Review will be completed on an annual basis.

<table>
<thead>
<tr>
<th>Program</th>
<th>Minimum Years</th>
<th>Maximum Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine/MD</td>
<td>4 years</td>
<td>6 years</td>
</tr>
<tr>
<td>MD/PHD</td>
<td>6 years</td>
<td>9 years</td>
</tr>
</tbody>
</table>

Because students are allowed to switch between programs, monitoring will be based on last date of matriculation in the specific program.

In the review of quantitative measurement of program completion, the Financial Aid Office will count all terms and academic years even if the student did not receive federal financial aid funding in one or more of the academic periods.

Approved leave of absences (LOA) for other than academic purposes will be excluded from the quantitative maximum time frame calculation for which the student is expected to complete their program.

Approved full-time non-credit research fellowships (SIR) for other than academic purposes shall be excluded from the quantitative maximum time frame calculation for which the student is expected to complete their program.

Students, who exceed the maximum time frame for completion of their program, will be denied any additional financial aid funding.

**Evaluation Periods**

The Financial Aid Office will complete review of a student’s academic record at the end of each academic year.

The Registrar’s Office will provide a report which will identify those students who may be in academic difficulty.

The Financial Aid Office and the Associate Dean of Student Affairs or designee, will determine student’s continued eligibility for financial aid funding based on the Student Promotion Committee recommendations.

**Involuntary Leave of Absence**

Students may be asked to withdraw or be placed on an involuntary medical leave of absence when their health, or the behavioral manifestations of their health, render them unfit to continue the course of study. Prior notice and the opportunity to be heard will, under ordinary circumstances, be given before the imposition of an involuntary leave of absence. However, the School of Medicine reserves the right to conclude that, on certain occasions, conditions exist which warrant an immediate leave of absence in order to avert imminent harm to the student, or to other persons or property. In such an event, a student on an involuntary leave of absence will be apprised immediately of procedures for appeal and reinstatement by the Associate Dean for Student Affairs.

**Academic Honesty**

Students must show integrity and honesty at all times in carrying out classroom assignments, in taking course examinations, in discharging their patient obligations, and in their dealings with others. It is also the duty of students as well as faculty to report dishonest acts to the course director or other faculty member, the Dean, or an Associate Dean.

Since nothing less than complete trustworthiness is acceptable in a physician, any act of dishonesty casts doubt upon a student’s suitability to be a physician and is viewed as unprofessional behavior. Such acts are dealt with in the manner prescribed under “Promotions”, and the possible penalties include expulsion.

**Honor Code**

The honor code, developed by the medical student body, introduced in September 1991, is as follows:

As a student at The Johns Hopkins School of Medicine, I pledge:

To do my own work and be honest in my interactions with peers, faculty, and staff. This applies to my work on examinations, assignments, and papers as well as work in the laboratory.

To uphold the high standard of conduct in patient care which has always been maintained by the Johns Hopkins medical community.

To base my interactions with other students on mutual respect and cooperation.

To act on infractions of the honor code, and to maintain the confidentiality of all parties involved.

To encourage my peers to uphold this honor code.

Upon matriculation every student is required to sign that they have read the Honor Code. It is the expectation that every student live by this Honor Code.

**Special Students/Visiting Students**

Under special circumstances a limited number of properly qualified persons may be admitted as special students to courses offered by the School of Medicine. Special students will not ordinarily be accepted for
enrollment in the required courses leading to the M.D. degree. Exceptions to this policy require the approval of the Vice Dean for Education. Credit will not be given for such work toward the M.D. degree in this school.

Students enrolled in other medical schools who desire clinical clerkships in the School of Medicine are advised that the School reserves the right to strictly evaluate the pre-clinical and clinical education provided by the applicant's own school. Moreover, since clerkship opportunities are necessarily limited, the School must give first consideration to placement of its own students. As a general rule, clerkships are limited to students in LCME approved schools. Visiting students are also accepted for research opportunities. Enrollment of visiting students is usually limited to one nine week period per academic year.

Information on application, fees and health insurance requirements may be obtained from the Office of the Registrar on the following website: http://www.hopkinsmedicine.org/som/students/policies/visitors.html

**Enrollment**

The School of Medicine enrolls full time students for the M.D., Ph.D., and Masters' degrees. Part time students are not accepted for the M.D. degree. Under special circumstances part time students may be accepted for graduate study. Tuition is assessed in relation to period of enrollment as specified in the Tuition and Fees section of this circular.

Students may interrupt their course of study to enroll in a combined degree program. Leave of absence status may be requested if a student wishes to temporarily withdraw from the course of study.

Student in-residence is a category of full time enrollment that recognizes the student who interrupts the usual sequence of study to do an additional year (or years) of research or clinical work at Johns Hopkins or another approved site. Students in-residence are assessed a minimal registration fee. The Associate Dean for Student Affairs must approve all requests for leave of absence and student in-residence status.

**Interdivisional Studies**

Regularly matriculated students throughout the University are eligible to register for credit courses offered by the basic science departments and selected courses in clinical departments providing prerequisites are met and space is available. Admission to the required courses of the medical curriculum require approval of the course director and the Associate Dean/Registrar.

A tutorial program designed for junior and senior undergraduates offers over 100 tutorials in clinical and basic science departments. Divisional registrars can provide additional information.
The School of Medicine supports a number of programs of graduate study in the biomedical sciences and related fields. These programs provide opportunities for advanced course work and research training leading to advanced degrees.

Under the direction of the university-wide Doctor of Philosophy Board, opportunities for study for the degree of Doctor of Philosophy are available in the School of Medicine in biological chemistry, biomedical engineering, molecular biophysics, cell biology, cellular and molecular medicine, functional anatomy and human evolutionary studies, history of science, medicine and technology, human genetics, immunology, molecular biology and genetics, neuroscience, pharmacology and molecular sciences, physiology and pathobiology. A Master of Arts degree is offered in medical and biological illustration, history of science, medicine and technology, and health sciences informatics. The requirements for the various degrees are established by the Doctor of Philosophy Board of the University and by particular departments, committees, and schools.

A limited number of scholarships and grants are available for support of students in many of these programs.

**OFFICE OF GRADUATE STUDENT AFFAIRS**

The primary goal of the Office of Graduate Student Affairs (OGSA) is to address the concerns and needs of students enrolled in Doctor of Philosophy and Master of Arts programs in the School of Medicine. The Associate Dean for Graduate Student Affairs provides advice or counseling to students having personal or professional difficulties. The OGSA works with students to find whatever resources may be needed to deal with a broad range of problems that may arise during graduate training. The OGSA coordinates: disability services for Ph.D. students in the School of Medicine; recruitment efforts and summer programs aimed at recruiting underrepresented minority students, students from disadvantaged backgrounds, and students with disabilities into a basic research environment; the "Introduction to Research Ethics I and II" course designed specifically for research issues specific to PhD students.

**DEGREE REQUIREMENTS**

Requirements which must be met by all candidates:

For the Doctor of Philosophy degree:

1. A minimum of two consecutive semesters of registration as a full-time, resident graduate student.
2. A certification by a department or program committee that all departmental or committee requirements have been fulfilled.
3. A dissertation approved by at least two referees and certified by them to be a significant contribution to knowledge.
4. A Doctor of Philosophy Board Oral Examination.

Requirements for the various Master’s degrees are listed with the individual programs.

Application for Admission: Requests for information and application materials should be directed to the Office of Graduate Student Affairs. Completed applications must be accompanied by a non-refundable fee of $100 for on-line applications to one graduate program, $110 for applications to two-three programs, and $150 to apply to four or more programs. Paper applications are no longer accepted.

**Dissertation Publication:** An abstract is required for publication in Dissertation Abstracts.

**DEPARTMENTAL REQUIREMENTS**

Requirements of the individual graduate departments or programs are set forth in the following sections. Further information may be obtained by writing to the director of the department, The Johns Hopkins University School of Medicine, Baltimore, Maryland 21205.

**BIOCHEMISTRY, CELLULAR AND MOLECULAR BIOLOGY**

Fields of Study and Research

The Departments of Biological Chemistry, Biophysics and Biophysical Chemistry, Cell Biology, Molecular Biology and Genetics, Neuroscience, Pharmacology and Molecular Sciences, and Physiology jointly provide a program of study leading to the Ph.D. degree. No candidates are accepted for the M.A. degree.
The purpose of the program is to train highly qualified persons for careers in basic biomedical research. Strong emphasis is placed on molecular and cellular approaches to fundamental problems in research areas covered by the participating departments. Following completion of basic formal course work, original research leading to a dissertation is the major feature of the training program. Students may elect dissertation problems from a broad spectrum of options offered by the faculty of the seven departments.

The joint training program involves approximately 100 faculty members and 150 graduate students. The director of the training program in Biochemistry, Cellular and Molecular Biology is Professor Carolyn Machamer.

The Faculty
A list of the faculty members participating in this program and their fields of specialization may be found on the BCMB website, http://biolchem.bs.jhmi.edu/bcmb.

Facilities
The lecture halls and the research laboratories are located in the Wood Basic Science Building and the adjoining Physiology, Biophysics, Hunterian, Preclinical Teaching, Ross Building, Broadway Research, and Rangos Buildings. Modern equipment for research is available to students. This includes electron microscopes, confocal microscopes, nuclear magnetic resonance spectrometers, mass spectrometers, HPLC and gas-liquid chromatographs, protein sequencers, peptide synthesizers, oligonucleotide synthesizers, X-ray diffraction equipment, and a molecular graphics display. Each department has a small library and all are located close to the Welch Medical Library.

Collaborative Facilities
All seven departments enjoy excellent working relationships with other departments in the medical school and with departments at the Homewood campus and the Bloomberg School of Public Health.

Requirements for Admission
Candidates for admission to graduate standing should present a bachelor's degree with undergraduate training in organic, analytical, inorganic, and physical chemistry, general biology, physics and calculus. Inquiries for admission should be directed to: Chairperson of Admissions, Graduate Program in Biochemistry, Cellular and Molecular Biology, The Johns Hopkins University School of Medicine, 1830 E. Monument Street, Room 2-102, Baltimore, MD 21205, or email to sroot@jhmi.edu.

Requirements for the Ph.D. Degree
During the course of graduate study the student must successfully complete the “Foundations of Modern Biology” course comprised of eight modules: Macromolecular Structure and Analysis, Biochemical and Biophysical Principles, Molecular Biology and Genomics, Genetics, Cell Structure and Dynamics, Organic Mechanisms in Biology, Pathways and Regulation, and Bioinformatics. These are completed in the first three quarters of year one. Three electives and BCMB Ethics and Career Issues in Science are completed in the fourth quarter of the first year and Method and Logic in Biology is a required second year course. Qualified students can test out of required courses. In addition, four elective courses are required in the advanced years of study.

An oral examination, conducted as prescribed by the Doctor of Philosophy Board of the University, must be completed before the end of the second year. Subsequently, the student is required to present an acceptable doctoral dissertation based on research undertaken during residency as a graduate student and must present a public seminar on his/her dissertation work. Postdoctoral research training is encouraged.

Courses
The first year required core course modules are as follows: Macromolecular Structure and Analysis (100.709), Biochemical and Biophysical Principles (100.710), Cell Structure and Dynamics (110.728), Molecular Biology and Genomics (260.709), Genetics (260.708), Organic Mechanisms in Biology (330.709), Pathways and Regulation (360.728), BCMB Ethics and Career Issues in Science (800.713), Bioinformatics (800.707), along with Core Discussion (800.708). The required second year course is Method and Logic in Biology (800.705). Courses are detailed under the course descriptions listed in the entries of the Departments of Biological Chemistry, Biophysics and Biophysical Chemistry, Cell Biology, Molecular Biology and Genetics, Neuroscience, Pharmacology and Molecular Sciences, and Physiology.

Financial Support
Financial Support covering normal living costs, medical insurance, and tuition is available for accepted candidates.

BIOLOGICAL CHEMISTRY
Program Overview
The graduate program in Biological Chemis-
try focuses on teaching a rigorous scientific approach to biomedical research. Research projects in the program investigate the biomedical, genetic, and molecular basis of a variety of disorders and diseases while probing the fundamental properties of molecules and cells. The Biological Chemistry faculty members investigate the biochemical mechanisms underlying a great variety of normal biological processes. Our interests span neurobiology, immunology, cellular and developmental biology, glycobiology, protein structure and folding, signal transduction, proteomics, and metabolism. We also study pathologies arising from abnormalities in these processes, such as cancer, neurodegeneration, infectious disease, diabetes, and obesity. The Biological Chemistry (BC) program offers a highly flexible and personalized training environment in which there is significant personal interaction with the faculty. The program is currently home to 28 outstanding students.

Plan of Study
A curriculum of formal courses and informal tutorials characterizes the first year.

**Current Topics in Biological Chemistry:** First- and second-year students will participate in a literature-based discussion course involving the entire BC faculty and covering important concepts and recent developments in biological research. Due to the small size of the course, it is similar to a tutorial and provides the students with a great deal of personal exposure to our faculty. BC students participate in the weekly departmental journal club and seminar series. The first year BC course requirements are listed below:

**Foundations of Modern Biology Core Course:** Students take all of the eight following modules: Macromolecular Structure and Analysis; Biochemical and Biophysical Principals; Molecular Biology and Genomics; Genetics; Cell Structure and Dynamics; Organic Mechanisms in Biology; Computational Biology and Bioinformatics.

**First year elective courses:** Students choose four of the following courses: Developmental Biology; Mechanisms in Bioorganic Chemistry; Neurobiology; Epigenetics; Transcription Mechanisms; Virology; Post Transcriptional Events in Gene Regulation; Structure and Chemistry of Lipid Bilayers; The Nucleus; Fundamentals of Membrane Physiology; Introductory Molecular Immunology; HIV Biology; Single Molecule Biophysics; Cytoskeleton.

**Biomedical Ethics and Professional Development:** This course consists of three sessions: Introduction to Ethics of Biomedical Education and Research, The Art and Science of a Research Proposal, and Scientific Writing and Reviewing.

**Research in Biological Chemistry:** A major part of the first year program will be 2-3 research-oriented rotations performed in BC laboratories of the student’s choice. At the conclusion of these rotations the student will commit to a particular laboratory for pursuing a research project leading to a Ph.D. thesis. An oral qualifying examination will be administered after completion of the first year course curriculum. Two elective courses should be taken subsequent to the first year. Certain courses that are particularly demanding could be substituted for two courses. The objective of the Ph.D. program is to prepare young scientists for independent careers in biomedical research.

**Admissions Information**
Students are usually admitted for the fall semester. Applicants should have an undergraduate degree in any area of biology, chemistry, or biochemistry. Scores on the Graduate Record Examinations are required (GRE 5316). The application deadline is January 10.

**To Request an Application**
Contact the Office of Graduate Student Affairs, 1830 E. Monument Street, Room 2-107, Baltimore, MD 21205-2186; Email: grad_study@jhmi.edu. The program contacts are: Denise J. Montell (dmontell@jhmi.edu) & Michael J. Caterina (caterina@jhmi.edu), Co-Directors; and Wendy Novak (wsenorio1@jhmi.edu), Program Coordinator.

**BIOMEDICAL ENGINEERING**
Biomedical Engineering (BME) has emerged as one of the most exciting interdisciplinary research fields in modern science. Biomedical engineers apply modern approaches from the experimental life sciences in conjunction with theoretical and computational methods from the disciplines of engineering, mathematics and computer science to the solution of biomedical problems of fundamental importance. The Biomedical Engineering Graduate Program of the Johns Hopkins University is designed to train engineers to work at the cutting edge of this exciting discipline. There are two graduate programs in biomedical engineering. The masters program is supported by the Whiting School of Engineering and leads to a Masters of Science degree. The Ph.D. program is supported by the School of Medicine and leads to a Ph.D. in Biomedical Engineering.
The Faculty
A partial list of the members of the faculty and their fields of specialization is found on page 130.

Ph.D. in Biomedical Engineering
The cornerstone of the Program is our belief in the importance of in-depth training of students in both life sciences and modern engineering. In-depth training in life sciences is achieved in one of two ways. Typically, incoming PhD students enroll in the first year basic sciences curriculum of the Johns Hopkins University School of Medicine. That is, they learn human biology with the medical students. This is a unique and intensive curriculum covering a broad range of topics including molecules and cells, human anatomy, immunology, physiology and neuroscience. Students choosing this option typically devote their entire first academic year to these courses. This curriculum is an excellent way to build a broad and solid foundation in the life sciences. Alternatively, students may elect alternative life sciences curricula. These curricula have been carefully designed to provide training in areas of the life sciences that are appropriate to each of the program's research areas. This option is of particular value to students who enter the program having a strong background in the life sciences. In-depth training in engineering, mathematics and computer science is achieved through elective courses that are taken in the second year.

All students are admitted with full fellowship. This covers tuition and provides a modest stipend for the duration of their PhD. Because the students are fully funded, they can choose to perform their dissertation in essentially any laboratory in the University (subject to the approval of the program directors). A special program with the NHLBI of the NIH allows students to also choose from research laboratories at the NIH.

Students typically do research rotations during the summer before start of the first academic semester, during the first year (typically as they are taking medical school courses), and during the following summer year. They are expected to choose a research laboratory before the start of the second academic year.

Emphasis is placed on original research leading to the doctoral dissertation. The research is usually experimental in nature, and students are expected to learn biological experimental techniques; nevertheless, experiment or theory can be emphasized in the research as desired by the student.

Program Directors
Professor Reza Shadmehr and Professor David Yue are the co-directors of the BME Ph.D. Program.

Requirements for Admission
The Program accepts applications for the PhD program until December 15 of each year. We typically recruit students in five areas: Computational Biology, Imaging, Tissue Engineering, Neural Engineering, and MNCP (molecular, neural, and cardiac physiology). The program is unique in that it offers the BME student the strengths of one of the best medical schools in the world. If you wish to combine engineering with cutting edge research in medicine, this may be the program for you.

In their first year, our students have the option of taking many of the same courses as the medical students, including human anatomy, molecules and cells, and genes to society. In their second year, our students take advanced engineering courses. Therefore, students that apply to our program need to not only have a strong background in engineering and mathematics, but also sufficient background in chemistry (including organic chemistry) and biology (at least two introductory courses).

The admission process is by committee. The applicant should specify which area they are interested in, and write about the kind of research they are considering. The faculty in each area vote and rank the applicants. The final pool of applicants is ranked and voted on by the entire faculty.

All accepted students receive a full fellowship. The fellowship covers tuition and provides for a monthly stipend. In this way, the students are free to choose from almost any research lab in the university. To facilitate this process, students do two or more rotations during their first year and typically choose a lab by the end of the summer of their first year.

About one third of our incoming students are international students. A short list of these students is formed by committee and the top candidates are interviewed by phone. Like all admitted students, international students receive full financial aid as well as a monthly stipend. They too have the freedom to choose from any lab.

Applications should be complete when submitted. In order to be considered a complete application we must have:
• A completed on line application form.
• Official transcripts from every college or university attended. Sealed, official transcripts or certified records of all university (undergraduate and graduate) study must be submitted. If you have attended more than one institution, transcripts from each must be
included with your application.

• Official Graduate Record Examination scores (GRE) – MCAT scores will be acceptable. The GRE code for applying to graduate programs at the Johns Hopkins University School of Medicine is 5316.

The BME Ph.D. program does not rely heavily on the GRE exam in making admissions or financial aid decisions. Research experience, course grades, and recommendations carry more weight. However, because the GRE score is part of the application and does affect admissions decisions in some cases, foreign applicants who took the GRE in its electronic form in a country where the electronic test is no longer offered are advised to retake the exam in its paper form. Applications will be considered regardless of which form of the exam was taken.

• Three letters of recommendation – these letters should come directly from faculty members who are acquainted with you and your academic work. These letters should be sealed and comment on your aptitude and promise for independent research.

• Personal statement – a typewritten statement (one page maximum) indicating the basis of your interest in graduate study and your career objectives. Included should be a discussion of any research experience you have had.

Applicants for admission must fulfill the following course prerequisites:

• one year of college level biology (may include quantitative biology or physiology)
• one semester of organic chemistry
• differential equations

If you are interested in applying and do not have the prerequisite courses, you may want to submit your application with an explanatory note indicating you have made/will make arrangements to take the prerequisites before you would matriculate (if your application is accepted). In the past, applicants have taken the prerequisites at their present schools, local community colleges, etc. Courses taken at any accredited college or university are acceptable.

Each applicant must have received a BA or BS degree or its equivalent prior to matriculation. A Masters degree is not required for admission to our program. All written correspondence and supporting documents should be sent directly to The Johns Hopkins School of Medicine, 1830 E. Monument Street, Suite 2-107, Baltimore, MD 21205-2196. Phone: 410-614-3385; Fax: 410-614-3386; grad_study@jhu.edu.

Processing: The Ph.D. Program admissions committee will not consider any application until it is complete. Once an application has been received the applicant will be notified if supporting materials are missing.

Interview: The admissions committee will review completed applications and invite applicants to come to Johns Hopkins for a personal interview with faculty. Applicants from North America must come for an interview to be considered for admission. In the case of overseas applicants, for whom such a trip is not possible, a small number of telephone interviews will be conducted. The final admissions decisions will be made from the pool of interviewed applicants. Interviews are generally conducted in March.

Acceptance: Applicants will be notified by end of March of the outcome of their application. An offer of admission from the program will include a yearly stipend, full tuition and paid medical and dental insurance. This applies to every accepted applicant, regardless of citizenship or national origin. Those offered admission will be asked to let us know their decision as soon as possible. In any case, we must have the applicant’s decision by April 15. Applications can be found at .

Financial Aid
Fellowships for tuition and support stipends (regardless of citizenship or national origin) are available from the general funds of the university. U.S. citizens and Permanent Residents are eligible for support from training grants from the National Institutes of Health (NIH). Students are encouraged to apply for individual fellowships from the National Science Foundation and for NRSA awards from the NIH. Only online applications for admission are accepted and must be received by December 15.

Requirements for the Degree of Doctor of Philosophy
The first two years are ordinarily devoted to advanced courses in engineering science and in biomedical science. Engineering, mathematics, and other physical science courses to be taken are arranged between students and their advisers. Each student is assigned a panel of three advisers during the first two years. Eighteen credit hours of course work in engineering, mathematics or physical sciences are required. In addition, students must complete eighteen credit hours of course work in the life sciences. Of these 36 credit hours, at least six must be at the graduate level. At least three credit hours in a course with strong engineering or mathematical theory content at the 600-level must be taken. For a list of course offerings by the
Department of Biomedical Engineering, see the departmental statement on page 126. For additional courses available to students, see the catalogue of the Schools of Arts and Sciences and Engineering.

Summers are spent working in a biomedical laboratory to gain experience and to seek out a suitable thesis research area. By the beginning of the third year, students should start original research leading to the dissertation. Students must fulfill a modest teaching requirement during one year of their program. The remaining time is spent in thesis research. The program typically takes five to six years to complete.

The student must pass a preliminary oral examination which will be a Doctor of Philosophy Board examination. This is taken in the first half of the third year. The student must then conduct original research, describe it in a dissertation, and pass a final oral examination that is a defense of the dissertation. There is a minimum residency requirement of two consecutive academic years.

Integrated M.D.-Ph.D. Program
Candidates for the Ph.D. in biomedical engineering who wish to apply jointly for the M.D. degree must apply directly through the School of Medicine. Although the combined programs would normally require at least seven years to execute sequentially, the combined program can ordinarily be completed in six years, with appropriate planning. Good preparation in biology and chemistry as well as mathematics, engineering, and the physical sciences is essential. Life science graduate requirements are met by the first-year program of the School of Medicine. This program is more arduous than the Ph.D. program alone, but it may have marked advantage for students interested in clinical research and applications in hospital systems and in the delivery of health care. The catalog for the School of Medicine should be consulted for admittance requirements and procedures.

Information about applying to the combined M.D.-Ph.D. program can be found at www.hopkinsmedicine.org/mpth/phd/admissions/Howtoapply.html. Applications submitted for consideration of the combined degree will be reviewed by the Medical School admissions committee. If the Medical School admissions committee accepts the application, it is then passed along to the Biomedical Engineering Ph.D. Program admissions committee for review. A student applying to the combined program who wishes to be considered for the straight Ph.D. program must submit a written request to have his/her application forwarded to the Biomedical Engineering Ph.D. Program office for admission consideration if his/her application is not accepted by the Medical School admissions committee.

M.S.E. PROGRAM IN BIOMEDICAL ENGINEERING

Master’s of Science in Engineering
The master’s degree program is designed for students who wish to pursue careers in research and development, or as a step toward Ph.D. or M.D./Ph.D. education. The program, which is designed to be completed in two years, consists of core courses, elective courses, and a thesis project. The project may be basic research in a laboratory or practical engineering, related to patient monitoring or other clinical problems.

Admission and Financial Aid
Students with undergraduate degrees in engineering are eligible to apply. Exceptional students with degrees in basic sciences may also apply, but would normally have to take a number of courses to overcome deficiencies in their curriculum. All students have the potential to receive full tuition support by obtaining a position in a research laboratory. Research assistantships are usually advertised by various laboratories in the institution to carry out specific research and development projects. Students without a research assistantship are expected to pay full tuition independently. Fellowships are also awarded to the top students in the program. Applications for admission are due by the appointed deadline (usually in mid-January). For more information and to apply online, go to www.bme.jhu.edu/academics/masters.

Requirements for the M.S.E. Degree
Each student will take a minimum of 24 credits of courses at the 400-level or higher and complete a thesis. Students fulfill the course requirement by taking two courses in the Systems Bioengineering sequence (580.421, 580.422 or 580.429) and other advanced engineering, math and science courses. (JHU undergraduates waive the SBE sequence and take 8 credits from advanced engineering, math or science.) Students will also fulfill a minor teaching requirement by providing support to one of three lab-based undergraduate courses and six core lecture courses each semester. Additionally, all students must complete a thesis based on a research problem requiring application of quantitative or applied engineering principles to biomedical engineering.
BIOPHYSICS AND BIOPHYSICAL CHEMISTRY

In addition to its participation in the Program in Biochemistry, Cellular and Molecular Biology (BCMB) described earlier, the Department of Biophysics and Biophysical Chemistry provides training for outstanding students with interests in such quantitative areas as crystallography, enzymology, kinetics, protein design, and mathematical computer modeling, which fall outside the scope of the BCMB Program. Two separate training programs are available. The Program in Molecular Biophysics (PMB) is a large training program involving about 45 faculty members from both campuses of the University. The Biophysics and Biophysical Chemistry Program is a small program tightly centered around the Department of Biophysics and Biophysical Chemistry, and is appropriate to applicants with varied interests and diverse training backgrounds. Requirements for these two programs are given below. Applicants should feel free to discuss with the department which program is most appropriate for them.

Biophysics and Biophysical Chemistry Program

Requirements for Admission
Candidates for admission to graduate standing should present a Bachelor’s degree or equivalent with some undergraduate training beyond the elementary level in at least two of the following areas: chemistry, biology, mathematics, physics and computer science. Undergraduate courses in physical chemistry, general college physics, differential and integral calculus and computer science are particularly important. However, deficiencies in some of these subjects can be made up during graduate residency.

Requirements for the Ph.D. Degree
During the course of graduate study the student must satisfactorily complete the following program of courses in the University or their equivalent at the intermediate or advanced level.

This list does not constitute an inflexible program; exceptions and modifications may be made at the discretion of the department to fit individual backgrounds, needs and interests.

Required Courses
The following seven, short courses are required:

- 100.709 Macromolecular Structure and Analysis (offered by the Department of Biophysics and Biophysical Chemistry)
- 100.710 Biochemical and Biophysical Principles (offered by the Department of Biophysics and Biophysical Chemistry)
- 260.708 Genetics (offered by the Department of Molecular Biology and Genetics)
- 260.709 Molecular Biology and Genomics (offered by the Department of Molecular Biology and Genetics)
- 340.703 Cell Structure and Dynamics (offered by the Department of Cell Biology)
- 330.709 Organic Mechanisms In Biology (offered by the Department of Pharmacology and Molecular Sciences)
- 360.728 Pathways and Regulation (offered by the Department of Physiology)

Examinations: Applicants must pass a qualifying oral examination as prescribed by the Doctor of Philosophy Board of the University. This examination will normally take place during the second year of residency. After the completion of the thesis, the student must satisfactorily complete a comprehensive oral examination administered by the Department of Biophysics and Biophysical Chemistry.

Dissertation: Completion of an original investigation and presentation of a dissertation is required. The dissertation must be accepted by the department and must be considered worthy of publication by referees nominated by the department.

Program in Molecular Biophysics

Overview
The Program in Molecular Biophysics (PMB) was established in 1990 and has evolved continuously over the years to provide its student participants with training in both the fundamental principles of biophysics and contemporary advances in the field. Over 45 faculty, members of 14 departments throughout the University, offer opportunities for learning in diverse and changing areas of research. The carefully designed set of courses and intensive laboratory work integrate various aspects of molecular biophysics into a dynamic curriculum.

Johns Hopkins has long been a leading research institution of world renown. The Hopkins biophysics community is known for its collaborative and congenial atmosphere. Students are encouraged to forge innovative paths by seeking the advice of other biophysicists and forming collaborations that enhance their research. PMB is committed to
making the resources of experiment, theory, and computation available to its scientists.

In keeping with an institution of its caliber, a large number of technology hubs and instrumentation facilities are available to Hopkins researchers.

The program offers training for outstanding students in such areas as X-ray crystallography, NMR and optical spectroscopies, statistical mechanics, thermodynamics, biophysical chemistry, molecular biology, and biochemistry. It emphasizes studies of macromolecules and their assemblies, for which combined approaches - molecular genetics and structural studies for example - may be necessary.

**Major Research Areas**

Protein Folding & Dynamics, Membranes & Membrane Proteins, DNA-Protein Interactions, Structural Biology & Prediction, RNA Biophysics, Enzymes & Metabolic Pathways, Computation & Theory, Protein Design & Evolution, Single Molecule Studies

**Requirements for Admission**

We encourage applications from students who have majored in biological sciences, biochemistry, chemistry, engineering, and physics; although more diverse backgrounds in related disciplines are welcomed as well.

The program derives its strength from participants with various interests and backgrounds. PMB students come from a range of undergraduate disciplines and, therefore, some may require additional courses or tutorials to round of their basic training. Individual needs can be interwoven into the required curriculum. Optimal background includes general chemistry, organic chemistry, physical chemistry, two semesters of college-level physics, biochemistry or molecular biology, and calculus or a high-level math course.

**Financial Support**

All PMB students who are U.S. citizens or permanent residents receive full financial support including tuition, health insurance, fees, and a 12-month stipend. Assuming satisfactory progress toward the Ph.D., students may expect continued support of tuition, health insurance, and stipend through the course of their graduate study.

Program in Molecular Biophysics graduate students are supported for the first two years by a training grant from the National Institutes of Health. However, this support is limited to U.S. citizens and U.S. permanent residents. International applicants will be required to demonstrate financial support for their studies and will be required to deposit funds covering the first two years of tuition and living expenses with the University prior to April 15. If the funds are not deposited in a timely manner, any offer of admission to the Program in Molecular Biophysics will be null and void.

Students are encouraged to apply for external sources of funding such as National Science Foundation Predoctoral Fellowships, NIH Predoctoral Fellowships to Promote Diversity in Health-Related Research, and the Association for Women in Science Predoctoral Awards. Students accepted in the PMB have an excellent record of success in pursuing these opportunities.

**Requirements for the Ph.D.**

Degree Students must satisfactorily complete required and elective coursework. In addition, students must pass a Doctor of Philosophy Board Oral, a qualifying exam required university-wide, administered at the end of the second year. Students must continue to make satisfactory progress toward completion of their thesis research and meet annually with a thesis review committee starting in their fifth semester. Once thesis research is complete, students must defend their thesis before a final exam committee and present a final thesis seminar.

**Required Courses**

The methods and tools of biophysics are drawn from physics, chemistry, biology, mathematics and computer science. Consequently, our curriculum is correspondingly broad and rigorous. Five required one-semester courses form the core of the PMB curriculum: Physical Chemistry of Biological Macromolecules, Proteins & Nucleic Acids, Methods in Molecular Biophysics, Computer Modeling of Biological Macromolecules, and Organic Mechanisms in Biology. These courses provide a conceptual framework for understanding energetics, dynamics, structure and interactions at the molecular level, practical experience in computational analysis, and exposure to the current frontiers of biophysical research.

**Additional Academic Requirements:**

In addition to coursework, students attend weekly seminars and present one of their own in the second year. Proficiency in biochemistry, cell biology, and molecular biology is tested formally with an oral evaluation at the end of the first year. Students who have never taken courses in these areas are welcome, but not required, to take such courses during their first year. Tutorials and self-directed study provide alternative avenues for preparing for this evaluation.

The program aims to involve students in research projects from the start. First-year
students complete three 10-week rotations in laboratories of their choosing. At the end of each rotation period, students present 10-minute talks with their rotation advisors, other faculty and students present. By summer of the first year, a student will have joined a research group and embarked on thesis research. Students are accepted to Ph.D. candidacy after successful completion of a qualifying oral exam at the end of the second year. Beginning in the fifth semester, students meet annually with a faculty thesis review committee.

Dissertation
Completion of an original Investigation and presentation of a dissertation are required. The dissertation must be accepted by the program and considered worthy of publication by the referees.

How to Apply
Students must complete applications online (www.hopkinsmedicine.org/graduateprograms). The GRE general test is required; a subject test is not required. All supplementary application materials including GRE scores, at least two letters of recommendation, undergraduate transcripts, and a statement of purpose should be sent to: Office of Graduate Student Affairs, 1830 E. Monument Street, Suite 2-107, Baltimore, MD 21287. Telephone: 410-516-5197, pmb@jhu.edu. The deadline for receipt of complete applications is January 3, 2011. Promising applicants will be invited to a Visiting Weekend to meet with faculty on both campuses, talk with students, and have a look around Baltimore.

Program in Molecular Biophysics graduate students are supported for the first two years by a training grant from the National Institutes of Health. However, this support is limited to U.S. citizens and U.S. permanent residents. International applicants will be required to demonstrate financial support for their studies and will be required to deposit funds covering the first two years of tuition and living expenses with the University prior to April 15. If the funds are not deposited in a timely manner, any offer of admission to the Program in Molecular Biophysics will be null and void.

Visit our website at pmb.jhu.edu.

CELL BIOLOGY
The Department of Cell Biology offers two programs of study leading to the Ph.D. degree. Members of the department who work in the area of cell biology participate in the joint program in Biochemistry, Cellular and Molecular Biology described in detail on page 35; in addition to its participation in this program, the department also provides training in a separate Cell Biology Program within the department itself.

The Faculty
A list of the members of the staff and their research interests may be found in the departmental statement on page 141.

Cell Biology Program
Prerequisites
The department will admit well-qualified students to the program for work leading to the degree of Doctor of Philosophy. Applicants should have thorough training in general biology, chemistry and physics, or to remove deficiencies in these areas by means of appropriate undergraduate courses during the first year in residence.

Requirements for the Ph.D. Degree
Requirements established by the Department of Cell Biology and the Doctor of Philosophy Board of the University which must be met by all candidates are as follows:
1. Complete a minimum of two consecutive semesters of registration as a full time, resident graduate student. Most candidates require five years.
2. Demonstrate evidence of achievement and promise in a comprehensive oral examination administered by the Doctor of Philosophy Board, usually at the end of the second year of residence.
3. Write a dissertation, embodying findings worthy of publication, and certified to be a significant contribution to knowledge by at least two referees.
4. Present a final departmental oral examination/seminar in the field of the dissertation research certified by from three to five examiners.
5. The department or program committee must certify in writing that all departmental or committee requirements have been fulfilled.

Core Courses
Students will generally fulfill the course requirements of the interdepartmental program in Biochemistry, Cellular and Molecular Biology, but alternative courses can be arranged to meet individual needs. Advanced courses are required according to the needs of individual students.

Elective Courses
At their discretion, faculty members reserve the right to require students to take elective courses.

Teaching
Training in teaching (Molecules and Cells and/
or Organ Histology) is required for all graduate students.

CELLULAR AND MOLECULAR MEDICINE (CMM)
The Graduate Training Program in Cellular and Molecular Medicine prepares scientists for laboratory research at the cellular and molecular level with a direct impact on the understanding, diagnosis, treatment and prevention of human diseases. The Ph.D. graduates of the program obtain rigorous training in scientific research and develop a thorough knowledge of human biology and human diseases.

This program grew out of a need for graduate training at the interface between medicine and the traditional basic science disciplines. Rapid progress in cellular and molecular biology has strongly impacted clinical medicine, offering insights about the fundamental causes of many diseases. Thus, the goal of this program is to train scientists who will make discoveries in the laboratory that can be applied expeditiously to the diagnosis, treatment, and prevention of disease. New technology allows scientists to identify genetic and molecular defects causing or predisposing to disease. The trainees in this program are working precisely at this interface between science and medicine to contribute to the long term well being of society.

Facilities
Students will work in well equipped laboratories of approximately 125 program faculty located throughout the medical school campus. These researchers are supported by many shared facilities including microscopy, molecular biology and protein chemistry.

Requirements for Admission
Applicants should have a bachelor degree with undergraduate training in biology, inorganic chemistry, organic chemistry, physics and calculus. Cell biology and/or biochemistry are recommended. The Graduate Record Examination (GRE) is required. Inquiries regarding admissions should be referred to the Office of the Graduate Program in Cellular and Molecular Medicine, 1830 E. Monument Street, Room 2-103. Telephone: (410) 614-0391; Fax: (410) 614-7294; E-mail:cmm@jhmi.edu.

Requirements for the Ph.D. Degree
Students must complete successfully the following courses: Introduction to the Human Body: Anatomy, Histology & Physiology (800.702), Molecular Biology and Genomics (260.709), Genetics (260.708), Cell Structure and Dynamics (340.703), Pathways and Regulation (360.728), Topics in Cellular and Molecular Medicine (250.706), Cellular and Molecular Core Discussion (800.703), Cellular and Molecular Basis of Disease (800.709), Principles of Immunology I (260.611.01), Graduate Pharmacology (330.707), Fundamental Virology (260.804) or Biochemical/Biophysical Principles (100.710), and Research in Cellular and Molecular Medicine (800.801). Students are required to take four elective courses to further broaden their experience in cellular and molecular medicine, as well as an ethics course. Elective courses may include courses at the School of Public Health and Homewood Campus. Elective course topics include bioorganic chemistry, biophysical chemistry, human anatomy, immunology, pathobiology, pharmacology and neuroscience.

Each student will conduct research in at least three different laboratories of CMM faculty during the first year. All rotations must be performed in the laboratories of CMM faculty members. These laboratory rotations will be approximately ten weeks long. At the end of the first year, students will select a research advisor from one of three rotation laboratories and begin original research leading to their doctoral dissertation.

A University mandated Doctor of Philosophy Board Oral examination must be completed by the end of the second year of study. Between the end of year two and the beginning of year three, a thesis committee must be selected and a meeting must be convened. Annual meetings are held until such time as the thesis committee believes the student is ready to write their doctoral dissertation. The dissertation is based on the student’s novel research; a public seminar of thesis work is a graduation requirement.

Financial Aid
The program is supported by a combination of monies from the Lucille P. Markey Charitable Trust and an NIH training grant. Each student is provided a stipend, health and dental insurance and tuition throughout their years in the program. The program covers these benefits during the students’ first year; in subsequent years the research advisor is responsible.

FUNCTIONAL ANATOMY AND EVOLUTION PROGRAM
Prerequisites
The Functional Anatomy and Evolution (FAE) Program will admit well-qualified students to the program for work leading to the degree of Doctor of Philosophy. Applicants should have
thorough training in organismic biology, chemistry, physics, and mathematics.

Requirements for the Ph.D. Degree
Requirements established by the FAE Program which must be met by all candidates are as follows:

1. Complete a minimum of four years of registration as a full time, resident graduate student. Most candidates require five years.
2. Demonstrate evidence of achievement and promise in a comprehensive oral examination administered by the Doctoral Board, usually at the end of the second year of residence.
3. Write a dissertation, embodying findings worthy of publication, and certified to be a significant contribution to knowledge by at least two referees from within the department and two referees from outside.
4. Present a final departmental seminar in the field of the dissertation research.
5. The department or program committee must certify in writing that all departmental or committee requirements have been fulfilled.

Core Courses
Students must achieve a B- or better in Human Anatomy, Organ Histology, Evolutionary Biology, Biomechanics of the Skeleton, Mammals: Diversity, Structure and Evolution, Primate Evolution, and Biostatistics.

Elective Courses
Students must also take at least four elective courses, to be determined through consultation with FAE faculty, chosen from among those offered by the FAE faculty (including Dinosaurs, Cladistics, Morphometrics, and Allometry), as well as elsewhere in the university (e.g., Sedimentary Environments, Climates of the Past, Paleoecology, Behavioral Ecology, Animal Behavior, Geobiology, Isotope Geochemistry).

Rotations
Students must complete a formal research rotation with the faculty during their first year. The rotation consists of a written formal prospectus/proposal of the research work, a write-up of the research by the student, and an oral presentation to the FAE group. Students are required to undertake pre-dissertation research in the second year.

Teaching
Training in teaching medical school Human Anatomy and undergraduate anatomy is provided for all graduate students.

Fellowships
Predoctoral fellowships covering normal living costs and tuition are available.

HISTORY OF SCIENCE, MEDICINE, AND TECHNOLOGY
This program is jointly run by the Department of the History of Medicine (SOM) and the Department of the History of Science and Technology (A&S).

The work of this program extends over all phases and dimensions of the development of medicine and related sciences, the history of disease, and the historical analysis of related conceptual, cultural, and social problems. Students acquire facility in the methods of historical research and gain a wide acquaintance with the available literature in the history of medicine, science, and related fields of history. Departmental offerings are particularly strong in the history of medicine and science for early modern Europe; medicine, science and technology in the United States; 19th and 20th centuries; history of disease and public health; health and society in China and Africa; and Russian and Soviet science.

Students come to The Johns Hopkins University with diverse backgrounds including medicine, science, and history. The Ph.D. program prepares students for scholarly careers in teaching and research. For further information, see our website at: http://www.hopkinsmedicine.org/graduateprograms/history_of_science/. Students who wish to combine medical training with academic training in the history of medicine may inquire about the M.D.-Ph.D. program by writing The Director, M.D.-Ph.D. Program, School of Medicine, The Johns Hopkins University, 1830 E. Monument Street, Suite 2-300, Baltimore, MD 21205.

Requirements for Admission
Candidates must be at the post-baccalaureate level. Preference will be given to applicants with training in some aspect of the health field, sciences, or history. For further information applicants should write to Director of Graduate Studies, Program in the History of Science, Medicine, and Technology, 1900 East Monument Street, Baltimore, Maryland 21205.

Requirements for Degrees
The student must satisfy the requirements of the University, the School of Medicine, and the Program.

Doctor of Philosophy Degree: The principal requirement for the Ph.D. degree in the history of medicine or science is the writing of a dissertation based upon original research and of publishable quality. Prior to embarking on full-time dissertation research, candidates will prepare themselves by a variety of courses, seminars, and guided reading. During the first year of study, students receive a general
introduction to historical research and complete a year-long survey in either the history of science or the history of medicine. In their second and third years, candidates prepare three fields of study: one in the Program of History of Science, Medicine, and Technology; one in the History Department; and a third field to be determined by the student and the advisor. The specific requirements for such fields are set by the faculty member directing the field, in consultation with the student. These fields entail both broad and intensive reading, and the passing of a comprehensive examination and/or preparation of several historiographic essays. Candidates must also demonstrate a reading knowledge of two foreign languages before being admitted to formal candidacy for the degree. The final requirement for the Ph.D. degree is completion of a dissertation that is an original contribution to historical knowledge, and of a standard suitable for publication.

**Master of Arts Degree:** The department also admits students who wish to complete the requirements for this degree. These include the demonstration of competence in the general history of medicine by passing an examination at the end of the first year of study, completion of a satisfactory research essay, and demonstrated reading ability of one foreign language.

**Financial Aid**
The Owsei Temkin Fellowship, The Jerome J. Bylebyl Fellowship, The William Coleman Fellowship, The Harry Woolf Fellowship, and regular department fellowships are among those available. These awards include tuition, stipend, research allowance, and medical insurance.

**HUMAN GENETICS AND MOLECULAR BIOLOGY**

**Ph.D. Program**
The Institute of Genetic Medicine offers an interdivisional program based in the School of Medicine to train Ph.D. candidates for research careers in human genetics and molecular biology.

The Predoctoral Training Program in Human Genetics and Molecular Biology has been designed as an alternative to the combined M.D./Ph.D. program for those, primarily interested in research, who want knowledge of study of human biology along with in-depth research training within a period of five to six years. This program is predicated on the belief that research progress is enhanced by detailed knowledge of the experimental organism. Therefore, the program offers a solid background in human biology as well as rigorous training in research strategies and techniques of molecular biology and genetics. Required courses include cell biology, biochemistry, immunology, human pathology and pathophysiology, which provide insight into the human phenotype, as well as comprehensive courses in human genetics and molecular biology.

The cornerstone of the program is the thesis project. Research training is initiated as the student enters the program by a series of laboratory rotations. The faculty (listed below) come from clinical as well as basic science departments, have a wide range of research interests pertinent to human genetics, and carry out well-supported research programs. Students choose among a variety of projects, ranging from studies of molecular mechanisms of disease, genetic control of cell differentiation and molecular cytogenetics to investigations into the pathogenesis of inborn errors of metabolism and genetic factors that predispose to disease. A wide choice of elective courses in diverse areas of genetics and molecular biology provides the means to achieve individual career goals. Students gain valuable experience as teaching assistants in such undergraduate courses as genetics and molecular biology. Supporting activities include journal clubs, the short summer course in mammalian genetics at the Jackson Laboratory in Bar Harbor, Maine, faculty and student research conferences, and seminars by visiting scientists.

The combination of research training in molecular biology and genetics with knowledge of human biology uniquely qualifies graduates to carry out sophisticated genetic studies of important biological problems relevant to genetic disease and to teach human biology as well as human genetics and human genetic disease.

**Combined M.D./Ph.D. Program**
The faculty of the Human Genetics Program offers research training for medical students in the combined M.D./Ph.D. program. Students apply to the combined program at the time of application to the M.D. program. (See section entitled Medical Scientist Training Program).

**The Faculty and Research Interests**

**DAN ARKING**
Assistant Professor of Medicine
Cardiovascular genomics and aging.

**MARY ARMANIOS**
Assistant Professor of Oncology
Syndromes of telomere shortening which capture both the degenerative and cancer-prone phenotypes of aging.

**DIMITRIOS AVRAMOPOULOS**
Associate Professor of Psychiatry
Genetic basis of complex disorders, particularly psychiatric disorders.

**JOEL BADER**
Associate Professor of Biomedical Engineering, School of Engineering
Computational biology and bioinformatics; statistical genetics.

**STEPHEN B. BAYLIN**
Professor of Oncology
Molecular determinants of endocrine differentiation in human cancer; DNA methylation changes in cancer; regulation of polyamine biosynthesis in human cells.

**MICHAEL BEER**
Assistant Professor of Biomedical Engineering
Computational molecular biology and genomics.

**SETH BLACKshaw**
Assistant Professor of Neuroscience
Developmental neurobiology.

**JEF D. BOEKE**
Professor of Molecular Biology and Genetics
Transposition mechanism; reverse transcription in genome evolution; yeast molecular genetics.

**KATHLEEN BURNS**
Assistant Professor of Pathology
Roles of transposable elements and other mobile DNAs in human disease.

**ARAVINDA CHAKRAVARTI**
Professor of Medicine
Genetics of common, multifactorial disease.

**LINZHAO CHENG**
Associate Professor of Medicine
Molecular genetics of human stem cells; stem cell-based genetic models for human diseases.

**JANICE E. CLEMENTS**
Professor of Molecular and Comparative Pathobiology
Molecular biology of the lentiviruses, visna virus and simian immunodeficiency virus.

**RONALD COHN**
Assistant Professor of Pediatrics
Molecular mechanisms of muscle regeneration; inherited myopathies.

**GARRY R. CUTTING**
Professor of Pediatrics
Molecular genetics of cystic fibrosis and ion channels; gene mapping by pulse field gel electrophoresis.

**CHI V. DANG**
Professor of Medicine
Role of C-Myc oncoproteins in cell growth differentiation and neoplasia.

**HARRY C. DIETZ**
Professor of Pediatrics
Molecular biology of heart development and of heritable disorders affecting the heart; influence of premature termination codons on RNA splicing and processing.

**ANDREW P. FEINBERG**
Professor of Medicine
Genomic imprinting in normal development and diseases; genetics of childhood cancer; novel genomic technology.

**STEPHEN J. GOULD**
Professor of Biological Chemistry
Identification of genetic basis of peroxisome assembly disorders.

**CAROL GREIDER**
Professor of Molecular Biology and Genetics
Mechanisms and regulation of telomere length and telomerase normal and cancer cells.

**WILLIAM B. GUGGINO**
Professor of Physiology
Molecular biology of transport proteins; cystic fibrosis; gene therapy.

**RAFAEL IRIZARRY**
Professor of Biostatistics, School of Public Health
Development of quantitative methods and software for genomics and epigenomics.

**HAIQ KAZAZIAN**
Professor of Pediatrics
Study of LINE-1 retrotransposons in humans and mice.

**SCOTT KERN**
Professor of Oncology
Genetic alterations in pancreatic carcinoma and colorectal dysplasia.

**GARY KETNER**
Professor of Molecular Microbiology and Immunology, School of Public Health
Adenovirus biology and use of adenovirus as vaccines.

**KENNETH KINZLER**
Professor of Oncology
Genetic analysis of human cancers.

**JOSH LAURING**
Assistant Professor of Oncology
Breast cancer biology.

**STEVEN LEACH**
Professor of Surgery
Genetic regulation of pancreatic cancer.

**SE-JIN LEE**
Professor of Molecular Biology and Genetics
Growth and differentiation factors in mammalian development.

**GUSTAVO MAEGAWA**
Assistant Professor of Pediatrics
Lysosomal storage diseases.

**NICHOLAS MARSH-ARMSTRONG**
Assistant Professor of Neuroscience
Transgenic studies of CNS developmental gene regulation.

**DEBRA MATHEWS**
Assistant Professor of Pediatrics
Intersection of bench science, public policy, and society.

**ANDREW MCCALLION**
Associate Professor of Molecular and Comparative Pathobiology
Functional genomics; complex disease; gene regulation; non-coding variation in disease.

**SUSAN MICHAELIS**
Professor of Cell Biology
Molecular mechanisms of signal transduction; protein targeting and secretion; yeast molecular genetics.

**BARBARA R. MIGEON**
Professor of Pediatrics
Molecular basis of the X-chromosome inactivation and developmental regulation of X-linked genes; molecular cytogenetics; sex differentiation.

**DUOJIA PAN**
Professor of Molecular Biology and Genetics
Growth control in normal development and cancer.

**AKHILESH PANDEY**
Professor of Biological Chemistry
Identification of novel proteins involved in signal transduction; proteomics.

**BEN HO PARK**
Associate Professor of Oncology
Breast Cancer.

**MICHAEL PARSONS**
Assistant Professor of Surgery
Zebrafish as model system for endocrine pancreas development.

**JONATHAN PEVSNER**
Associate Professor of Neuroscience
Molecular neurobiology specializing in the area of synaptic vesicle function.

**RANDALL REED**
Professor of Molecular Biology and Genetics
Molecular genetics of olfaction.

**ROGER H. REEVES**
Professor of Physiology
Recombination, physical and somatic cell genetic mapping; developmental consequences of aneuploidy; manipulation and modification of yeast artificial chromosomes.

**ALAN F. SCOTT**
Associate Professor of Medicine
Molecular genetics of cellular transformation and metastasis; studies of a human transposon-like sequences; genome organization and evolution.

**GREGG L. SEMENZA**
Professor of Pediatrics
Identification of cis-acting DNA sequence elements and trans-acting proteins that regulate hypoxia-inducible expression of the human erythropoietic gene through analysis of transgenic mice, transfected tissue culture cells, and in vitro DNA-protein interactions.

**GERALDINE SEYDOUX**
Professor of Molecular Biology and Genetics
Molecular genetics of germ cell development.

**KIRBY D. SMITH**
Professor of Pediatrics
Chromosome DNA organization; genomic evolution; regulation of gene function during development.

**HONGJUN SONG**
Professor of Neurology
Biology of neural stem cells and neurogenesis in the adult CNS.

**FORREST SPENCER**
Associate Professor of Medicine
Centromere function and cell cycle control in yeast; molecular genetics of chromosome segregation; yeast artificial chromosomes.

**SARA SUKUMAR**
Professor of Oncology
Breast cancer.

**SEAN TAVERNA**
Assistant Professor of Pharmacology
Histone modifications and epigenetics.

**DAVID L. VALLE**
Professor of Pediatrics
Clinical, biochemical and molecular studies of human inborn errors.

**VICTOR VELCULESCU**
Associate Professor of Oncology
Molecular genetics of human cancer.

**BERT VOGELSTEIN**
Professor of Oncology
Molecular genetics of human cancer.

**TAO WANG**
Assistant Professor of Pediatrics
X-linked mental retardation.

**DON ZACK**
Professor of Ophthalmology
Molecular approaches to the study of retinal development and function.

**Research Facilities**
Research laboratories are well equipped to carry out sophisticated research in all areas of genetics. The proximity to renowned clinical facilities of the Johns Hopkins Hospital, including the Institute of Genetic Medicine, and Oncology Center provides faculty and students with access to a wealth of material for study. Computer and library facilities are excellent. Because the program in human genetics is a university-wide activity, supporting facilities are extensive.

**Financial Aid**
The program is supported by a limited number of teaching assistantships and predoctoral training funds from the National Institutes of Health. These fellowships, which are restricted to United States citizens and permanent United States residents, cover tuition and provide monthly stipends and are awarded to essentially all students in the program. Students are encouraged, however, to apply for fellowships from outside sources (e.g., the National Science Foundation, Howard Hughes Medical Institute) before entering the program.

**Courses**
The courses include the required core cours-
es: Macromolecular Structure, Molecular Biology and Genomics, Fundamentals of Genetics, Cell Structure Pathways and Regulation, Human Genetics, Bioinformatics, Histology, Molecules and Cells, Pathophysiology (lecture portion), and Pathology (lecture portion) listed in the entries of the departments of Cell Biology, Anatomy, Molecular Biology and Genetics, Biological Chemistry, Pathology, Medicine and Biology. Numerous elective courses are available and are listed under sponsoring departments.

The courses offered by the faculty of the program are listed below. All courses are open to graduate students from any university program as well as selected undergraduates. Prerequisite: Introductory course in genetics.

710.700 Human Genetics. R. Reeves, A. Feinberg and staff. Third quarter.
The course is a research oriented introduction to principles of human genetics with emphasis on research papers, techniques and strategies. Topics for discussion will include chromosome structure and function, gene mapping, mutation and karyotypic aberrations, sex determination, inborn errors of metabolism, genetic heterogeneity, genotype-environment interaction in health and disease, including cancer.

Ten weekly meetings will be held to explore in depth the current biochemical knowledge of diseases such as diabetes, gout, megaloblastic anemias, inherited enzymopathies and disorders of blood clotting, lysosomal function and connective tissue.


Readings on the seminal papers and major contributions in the history of genetics.

710.723 Molecular Genetic Dissection of Complex Diseases. A. Chakravarti
Discuss molecular and computational technologies that allow the large scale studies of genome variation in patients and their families.

710.724 Developmental Genetics. Drs. Semenza and Jabs
Roles of specific growth factors, transcription factors and intermediary signal transduction pathways in mammalian development.

710.730 High Performance Computing for the Biological Sciences.
This course covers the theory and usage of the three major methods of conducting high performance computing: queue based systems, message passing interfaces, and parallel virtual machines. Current programs and algorithms for all systems types will be given including examples of how to restructure problems in order to utilize grid computing methods. All examples are geared towards the biological sciences. Unix knowledge and some programming experience (perl, python, shell) recommended.

710.731 Advanced Perl for the Biological Sciences.
This course covers advanced topics in Perl such as complex regular expressions and parsing methods, intermediate data structures and algorithms, modules and packages including their creation. All examples are geared towards the biological sciences. Basic perl programming experience required.

710.733 Epigenetics Seminar for Graduate Students. Drs. Migeon, Feinberg, Mendell, Baylin, and Taverna.
Nine weekly discussions of papers about the nature of epigenetic factors in mammalian cells and their roles in conferring cell memory, imprinting in embryonic development, and regulating gene function. Also discussed are the chromatic diseases (somatic and germine.)

IMMUNOLOGY
The Graduate Program in Immunology under the aegis of the Department of Molecular Biology and Genetics offers a program of study leading to the Ph.D. degree. Within this program, the faculty offer didactic training and research experiences with a strong emphasis on fundamental problems in immune responses and immunological reactions.

The Faculty and Research Interests
MARIO AMZEL
Professor of Biophysics and Biophysical Chemistry
Recognition of flexible peptide; mimicry of antigen by antidiotypic antibodies; affinity maturation.

LINZHAO CHENG
Associate Professor of Oncology
Stem cell models for human blood/immune development and disease.

ANDREA COX
Associate Professor of Medicine
Virus; protective immunity; hepatitis C virus; T cell; vaccine; immunotherapy

STEPHEN V. DESIDERIO
Professor of Molecular Biology and Genetics
Molecular mechanisms of lymphocyte differentiation and activation; immunoglobulin and T cell receptor gene assembly.

CHARLES DRAKE
Associate Professor of Oncology
Using a unique murine model to investigate the basic mechanisms involved in immune tolerance to prostate cancer and using these data to design innovative immunotherapy approaches

MICHAEL A. EDIDIN
Professor of Biology, School of Arts and Sciences
Cell-surface organization and function of H-2 and HLA gene products.

EPHARAIM FUCHS
Associate Professor of Oncology
Cancer immunotherapy; bone marrow transplantation; T lymphocyte danger model; cryoablation; adoptive immunotherapy.

PATRICIA J. GEARHART
Adjunct Professor of Medicine
Molecular mechanism of somatic mutation in antibody variable genes.

DIANE GRIFFIN
Professor of Molecular Microbiology and Immunology, School of Public Health
The role of the immune response in the pathogenesis of viral diseases.

ABDEL HAMAD
Assistant Professor of Pathology
T cell development; tolerance; Fas pathway; immunoregulation; type 1 diabetes; lymphoproliferation

ALLAN D. HESS
Professor of Oncology
Immunology of bone marrow transplantation and graft vs. host disease.

ELIZABETH M. JAFFEE
Professor of Oncology
Analysis of antitumor immune responses against human tumors; identification of the targets of tumor-specific cytotoxic T cells.

ABRAHAM KUPHER
Professor of Cell Biology
Lymphocyte activation; signaling; cell-cell interaction; intercellular communication; multidimensional live cell imaging; recombinant biosensors.

HYAM I. LEVITSKY
Professor of Oncology
Vaccine development; mechanisms of antigen-specific tolerance; identification of tumor antigens.

DREW M. PARDOLL
Professor of Oncology
Function of alpha-beta and gamma-delta T-cells in the immune response; T cell development; mechanisms of antitumor immunity.

JOEL POMERantz
Assistant Professor of Biological Chemistry
Functional specificity and design of signal transduction pathways in the immune response.

STUART RAY
Associate Professor of Medicine
Immune response to hepatitis C virus (HCV); HCV sequence variation; mechanisms of HCV persistence; rational vaccine design; biomarkers.

NOEL ROSE
Professor of Pathology
Self/non-self discrimination; autoimmunity; autoimmune disease.

ANTONY ROSEN
Professor of Medicine,
Cellular and molecular mechanisms of apoptosis; relevance to autoimmunity.

SCHEHERAZADE SADEGH-NASSErI
Associate Professor of Pathology
Molecular mechanisms of antigen presentation; structure and function of MHC proteins; regulation of T-cell function.

JONATHAN SCHNECK
Professor of Pathology
Design of novel compounds that regulate T-cell responses and structural analysis of proteins central in the generation of immune response.

JYOTI SEN
Adjunct Assistant Professor of Medicine
T cell development; T cell function; T cell aging; signal transduction; gene expression.

RANJAN SEN
Adjunct Professor of Medicine
Transcription; recombination; chromatin structure; NFkB; T and B cells.

ROBERT F. SILICIANO
Professor of Medicine
Mechanisms of antigen recognition by human T lymphocytes; pathogenic mechanisms in HIV infection and AIDS vaccine development.

MARK J. SOLOSKI
Professor of Medicine
Structure and function of lymphocyte membrane proteins; growth and development of T lymphocytes; molecular biology of MHC genes.

TZYY-CHOOU WU
Professor of Pathology

ZHOU ZHU
Associate Professor of Medicine
Stem cell models for human blood/immune development and disease.

Requirements for Admission
Candidates for admission should hold a Bachelor's degree with undergraduate training in organic and inorganic chemistry, general biology, physics and calculus. Courses in immunology, biochemistry and molecular biology are recommended but not required. Candidates should take the GRE (including subjects in biology, chemistry, or biochemistry and molecular biology).

Requirements for the Ph.D.
Students in the Immunology program are asked to successfully complete the following courses: 1) Biochemical and Biophysical Principles; 2) Macromolecular Structure and Analysis; 3) Immunology Core Course; 4) Molecular Biology and Genomics; 5) Genetics; 6) Computational Biology and Bioinformatics; 7) Pathways and Regulation; 8) Cell Structure and Dynamics; 9) Graduate Immunology; and 10) Special Studies and Research. Students also take advanced elective courses selected from those offered by this program. Students are normally con-
concerned with course work during their first year and will initiate dissertation research during the second year, while completing more specialized courses relevant to their developing interests.

During the second year of study, subsequent to the satisfactory completion of a substantial amount of required courses, candidates will be required to take the Doctor of Philosophy Oral Examination.

The candidate is also required to present a written dissertation based on original research undertaken during residency as a graduate student. Upon completion of the dissertation work, he/she is required to present a thesis seminar.

Courses
The programs of instruction and training in the Graduate Program in Immunology are designed to meet the needs of: a) students of medicine, b) candidates for doctoral degrees, and c) post-doctoral students wishing to prepare for careers in teaching and research.

250.603 Principles of Immunology. Dr. Schneck. October - November.

Offered for first year medical students. The general content is similar to Graduate Immunology, but is oriented more toward human diseases involving the immune system. Lectures, small discussion groups, clinical correlation, and laboratory exercises involving PCR and flow cytometry are included. Some graduate students with special permission are allowed to take this course.


This course is offered as an advanced course dealing with a selected topic in molecular immunology immunity and will combine student run presentations and guest lectures. The course will focus on a specific topic related to immune recognition, development, activation, and effector function. The topic will change annually.

250.703 Graduate Immunology. Dr. Sadegh-Nasseri. Jan-May.

This course is offered as the major course for graduate students in the third and fourth quarter to provide a comprehensive survey of modern cellular and molecular immunology. It consists predominately of lectures given by faculty from the Hopkins community, but also includes some guest lecturers from outside Hopkins. This course is open to all graduate students and postdoctoral fellows.


A graduate seminar that will examine three unsolved problems in immunology: Discussion of each topic, to be led by individual students, will center on two to three critical papers suggested by the instructors and read in advance by the group. Performance will be evaluated on the basis of individual presentations, participation in class discussion, and a four to five page paper in the form of a research proposal addressing an unresolved issue in the field.

260.712 Introductory Molecular Immunology. Dr. Soloski. April-May.

A brief overview of the molecular and biochemical principles of immune recognition. This course does not replace the more in depth Graduate Immunology (ME250.703) which will be given concurrently.

250.709 Immunology Core Course. Dr. Ray.

This is a year long course that meets on a weekly basis. It is intended to provide a small group setting that will allow first year students a deeper understanding of their didactic lectures. The course largely uses student lead discussions of relevant journal articles but problem sets and demonstrations are also incorporated. Each session is moderated by an Immunology faculty member. Enrollment is open only to students enrolled in the Immunology Graduate Program.

250.713 Tumor Tolerance and Transplantation. Dr. Pardoll. Mar-Apr.

Immune tolerance is central to the pathobiology of cancer and is a critical element in transplantation medicine. As basic mechanisms of immune tolerance become elucidated, it is now possible to determine which of these are operative for specific cancer types and for transplantation of specific organs. In addition, bone marrow transplantation, a critical approach in the therapy of cancer immune deficiency diseases and potentially autoimmune diseases, has its own set of associated tolerance mechanisms. Novel therapeutic approaches designed to manipulate immune tolerance are being developed and clinically tested. This course will review both classic and recent cutting edge papers relevant to these subjects. The goal will be to integrate basic mechanistic discoveries with disease pathobiology in a fashion that elucidates translational pathways to the therapy of immune mediated diseases.

250.719 Tumor Immunology. Dr. Levitsky.

This graduate level seminar focuses on the dynamic relationship between neoplastic transformation, cancer progression, and the host immune response. Course combine faculty lectures with a student led journal club covering one or more landmark papers relevant to that week's topic.

250.717 Control of Lymphocyte Apoptosis. Dr. Sen.

Through a combination of lectures, discussions of published papers and student presentations we shall explore the current understanding of the mechanisms that regulate the choice between cell life and cell death. We will use examples from B and T lymphocytes, and attempt to discern common principles as well as cell-specific effects. Most of the course will focus on peripheral differentiation and immune responses.

250.804 Innate Immunity. Dr. Soloski.

A graduate level advanced course which covers in-depth the genes, proteins and cells that play role in the innate immune response. Topics include innate immunity, pathogen recognition receptors, the microbiome and the role innate immunity plays in shaping the adaptive immune response.

250.718 7 Pillars of Immunology. Dr. Drake.

An advanced graduate course covering seminal papers that helped shape current concepts of
immune function. Course involves student presentation and small group discussion.

**Fellowships**
Everyone admitted to the program is offered full tuition, stipend, and health insurance. A modest travel award is also given to attend one scientific meeting per year.

**MEDICAL AND BIOLOGICAL ILLUSTRATION**
A graduate program leading to the degree of Master of Arts in Medical and Biological Illustration is offered to students preparing for a career in medical communications. The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Accreditation Review Committee for the Medical Illustrator (ARC-MI) which is sponsored by the Association of Medical Illustrators.

**Current Accreditation: 2011-2018**
Applicants must hold a bachelor degree with courses in premedical sciences and be able to demonstrate art skills and experience which they obtained through instruction in the fine and applied arts. Basic medical science courses will be offered by the School of Medicine. Illustration and communications curriculum will be provided by the Department of Art as Applied to Medicine. Students may individualize their study depending on previous training, professional interests, and career objectives. All degree candidates must satisfy the requirements of the University, the School of Medicine, and the Department of Art as Applied to Medicine.

**Art as Applied to Medicine**
- GARY P. LEES, Associate Professor of Art as Applied to Medicine, Director of the Department of Art as Applied to Medicine
- NORMAN J. BARKER, Associate Professor of Pathology, Associate Professor of Art as Applied to Medicine
- HOWARD C. BARTNER, Associate Professor
- TIMOTHY H. PHELPS, Associate Professor
- SARAH LOUISE POYNTON, Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Art as Applied to Medicine
- DAVID A. RINI, Associate Professor
- CORINNE SANDONE, Associate Professor
- IAN SUK, Associate Professor of Neurological Surgery, Associate Professor of Art as Applied to Medicine
- ANNE REED ALTEMUS, Assistant Professor
- OSCAR RENATO BAEZA, Assistant Professor
- DONALD FRANK BLISS, II, Assistant Professor

**Requirements for Admission**
The applicant must have a bachelor degree demonstrating a high level of scholarship. Courses in chemistry, anatomy and physiology; molecular biology, cell biology, embryology, or histology; and one course in writing at the college level are required. A portfolio of non-scientific art, including still life drawing and painting (watercolor preferred), figure studies, graphic design, and digital media is submitted for review.

**Equipment and Fees**
Each student is required to own a digital camera, a USB flash memory stick and an external portable hard drive.

A separate deposit fee of $50.00 is required for first year students.

**Requirements for Master of Arts Degree**
1. Each candidate must successfully complete all courses offered, and must submit a thesis on a subject approved by the department director. The completed thesis must be approved by a university qualified preceptor as worthy of acceptance in partial fulfillment of requirements for the M.A. degree. The candidate's standing will be reviewed by the Committee on M.A. and Ph.D. Programs before he or she is recommended for degree. Students who receive three unsatisfactory grades may be dropped from the program. Students who receive more than six credits with grades of C or lower are placed on academic probation.

2. The student must satisfactorily complete courses in Human Anatomy offered by Functional Anatomy and Evolution; Introduction to the Human Body offered in the Cellular and Molecular Medicine graduate program; and

**JENNIFER ELIZABETH FAIRMAN, Assistant Professor**
**JUAN RAMON GARCIA, Assistant Professor**
**KENNETH M. HEYMAN, Adjunct Assistant Professor**
**DALE R. LEVITZ, Adjunct Assistant Professor**
**MICHAEL SCOTT LINKINHOKER, Adjunct Assistant Professor**
**MIGUEL ANTONIO SCHOEN, Assistant Professor**
**BRENT R. WHITAKER, Assistant Professor**
**BANG THOAI WONG, Adjunct Assistant Professor**
**VIRGINIA MACVEAGH FERRANTE, Instructor**
**JOAN AUDREY FREEDMAN, Instructor**
**SANDRA BEATRIZ GABELLI, Instructor in Biophysics and Biophysical Chemistry, Instructor in Art as Applied to Medicine, Instructor in Oncology**
**CAROLYN V. JONES, Instructor**
**JOSEPH M. DIETER, JR., Lecturer**
**CATHERINE E. KIEFE, Lecturer**

**Oscar Renato Baexa, Assistant Professor**
**David A. Rini, Associate Professor**
**Corinne Sandone, Associate Professor**
**Ian Suk, Assistant Professor**

**Instructor**
**Jennifer Elizabeth Fairman, Assistant Professor**
**Juan Ramon Garcia, Assistant Professor**
**Kenneth M. Heyman, Adjunct Assistant Professor**
**Dale R. Levitz, Adjunct Assistant Professor**
**Michael Scott Linkinhoker, Adjunct Assistant Professor**
**Miguel Antonio Schoen, Assistant Professor**
**Brent R. Whitaker, Assistant Professor**
**Bang Thoai Wong, Adjunct Assistant Professor**
**Virginia Macveagh Ferrante, Instructor**
**Joan Audrey Freedman, Instructor**
**Sandra Beatriz Gabelli, Instructor in Biophysics and Biophysical Chemistry, Instructor in Art as Applied to Medicine, Instructor in Oncology**
**Carolyn V. Jones, Instructor**
**Joseph M. Dieter, Jr., Lecturer**
**Catherine E. Kiefe, Lecturer**
Principles of Animal Pathology offered in the Department of Molecular and Comparative Pathobiology. Students may elect additional science courses with approval of the director.

3. Students must outline their thesis research and consult with their preceptor by the first quarter of the second year. The thesis will include original investigation with expository illustrations or sculpture (3D modeling, animation, web interface or equivalents).

4. A candidate’s period of attendance in the program will be no less than 18 months. Transfer graduate students must register a minimum of two consecutive semesters as full time residents.

Departmental Courses

Courses are directly related to technical, biological, or medical subject matter. Student assignments require problem solving and individual research topics. Complete understanding of the topic is required. Expertise in all media communication utilized by clinicians, research scientists, health science personnel, students, patients, and the public is stressed.

Students may be assigned in-house illustrating for experience, when appropriate. The director must be notified of and approve all such assignments.

First Year

The academic calendar for first year students begins the first weekday in August.

120.703 Color Illustration. Rendering of scientific subject matter with emphasis on form, texture, and tissue color matching methods. Rini and Sandone. One quarter.

120.708 Media Reproduction. Introduction to reproduction methodology, specifications for copy, and art preparation for print and non-print media. Lees and Dieter.

120.709 Continuous Tone Illustration. Continuous tone rendering of medical and biological subjects. Assignments in a variety of media with individually researched topics. Rini and faculty. One quarter.

120.710 Pen and Ink Illustration. Pen and ink rendering developed by sequential exercises and projects. Phelps and Suk. One quarter.

120.711 Illustration for Visual Presentations. Standards, techniques, and color media used for preparing effective digital presentation visuals. Lees and Weaver. One quarter.

120.714 Editorial and Conceptual Illustration. Conceptual approach to illustration utilizing brainstorming and problem solving skills to effectively interpret and illustrate manuscripts and clinical or anatomical concepts. Phelps. One quarter.

120.715 Biological Illustration. Application of illustration techniques to biological, botanical, and natural science topics. Phelps and Whitaker. One quarter.

120.716 Medical Sculpture. Materials and techniques used in producing instructive three-dimensional medical sculpture and rehabilitative facial prostheses. Garcia. One quarter.


120.719 Illustrating Anatomy. Sketching from the cadaver and application of illustration techniques, coordinated with gross anatomy dissection schedule. Emphasis on relationships and accuracy in surgical and radiological approaches. Augmented by autopsy, specimens, and text references. Lees. One quarter.

120.720 Digital Imaging I. Technical aspects of digital art production using both vector and raster-based digital imaging applications. Fairman. Two quarters.

120.721 Digital Imaging II. Creating digital artwork for print and projection media: two-dimensional color still images. Fairman and Suk. One quarter.

120.722 Digital Imaging III. Theory and techniques for creating 3D models and animations for distribution as electronic files and videos. Bliss and Blum. One quarter.

120.723 Digital Imaging IV. Theory and techniques for creation of dynamic animation optimized for electronic presentation media. Fairman. One quarter.

120.807 Design of Instructional Programs. Instructional design process, project planning and development. Hands-on experience as instructional designer, project manager, programmer, illustrator, animator, user-interface designer and end user. Altemus, Freedman. One quarter.

Second Year


120.750 Surgical Illustration. Illustration of surgical procedures from operating room sketches for medical education. Lees, Phelps, Rini, Sandone. One semester.

120.754 Research and Thesis. Original investigation under preceptor and department advisor. Lees, Phelps, Rini, Sandone. One semester.


120.756 Operating Room Sketching. Introduction to operating room protocol, observation and recording of surgical procedures. Lees, Phelps, Rini, and Sandone. One quarter.

120.757 Scientific Communication. Principles of effective oral and written presentation. Exercises include a grant proposal, oral presentations and review of publications. Poynton and Kane. Six sessions.

120.758 Portfolio. Professional portfolio and exhibition preparation and presentation, includes effective negotiation in a professional environment. Sandone, Fairman and guest faculty. One quarter.

Elective Studies

Students may select from the following courses with the approval of the director. Hours and course content to be arranged with the instructor.


120.707 Medical Video. Production methods for a medical video. Levitz. One quarter.

120.712 Visual Concepts. Conceptualization of scientific information and application to problem solving assignments. Lees. One quarter.

120.752 Illustrating with Digital Images. Team-based approach to producing teaching visuals using medical imaging science and visualization techniques. Department faculty and staff. One quarter.

120.801 Advanced Projects in Illustration. Special projects in editorial and conceptual illustration. Department faculty.

120.813 Independent Studies. Students may arrange independent study with a faculty member with the approval of the Director. Scheduled during any quarter of the second year as an overload.

Seminars are offered throughout the year introducing topics pertinent to the profession. Sample topics: illustration ethics, electronic publishing, web-based learning, e-commerce, intellectual property, artist rights, art pricing, and virtual reality. Department faculty and guest lecturers. Rini coordinator.

Scholarships

The W. B. Saunders Company Fellowship in Art as Applied to Medicine This fellowship was established in 1964 in honor of Lawrence Saunders upon his retirement after 50 years of distinguished leadership in medical publishing.

The William P. Didusch Scholarship and Loan Fund An endowment for student tuition support in the Department of Art as Applied to Medicine was established in 1973 with a generous gift from Mr. Didusch. A significant contribution was added to this Fund from the estate of Bertha M. Trott whose death in 1973 ended a life filled with dedication and service to urologists at Johns Hopkins and elsewhere. Memorial contributions from friends and colleagues have been added to this Fund since the death of William P. Didusch in 1981.

The Kathleen Mackay Powell Memorial Fund An endowment to assist and benefit students in the field of medical illustration given in memory of Kathleen Mackay Powell who studied in the department (1930-31) under Max Brödel.

The Elinor Widmont Bodian Scholarship in Medical Art This scholarship fund was established in 2000 by Mrs. Bodian and her family to provide financial assistance to students in Medical Illustration.

The Leon Schlossberg Scholarship Fund This scholarship was established in 1999 in memory of Leon Schlossberg’s lifetime association as a medical illustrator for the Department of Surgery and faculty member in Art as Applied to Medicine.

The Chester Reather Scholarship in Art as Applied to Medicine An endowment established in Art as Applied to Medicine in honor of Chester Reather’s distinguished career as a medical photographer and research associate at The Johns Hopkins University School of Medicine. This fund is used to reward a graduate student with a scholarship for innovative research and creative use of new imaging technology. 2010 recipient: Bona Kim.

The Frank H. Netter, M.D. Memorial Scholarship in Medical Art Frank. H. Netter, M.D. is known world-wide as a medical illustrator who could distill complex medical subject matter into clear, effective teaching images. Dr. Netter was not only a skilled draftsman, but knowledgeable in anatomy, physiology, and pathology through his medical training. Family and friends established this scholarship to recognize a student in Art as Applied to Medicine who displays a similar balance of medical and scientific knowledge with the artistic skills that he exhibited throughout his career. Winners of this award have excelled in their academic courses; displayed exceptional art expression; and most importantly utilized both resources to create well designed and effective didactic illustrations. 2010 co-recipients: Jodi Chapman and Brice-
The Gwynne M. Gloege Scholarship Fund in Medical Art

This scholarship fund was established in 2004 by Gwynne Gloege (JHU '56) to provide financial assistance to medical art students.

Financial aid and scholarships are awarded to students within the program based on financial need and academic performance.

Awards, Lectureship, and Support

The Annette S. Burgess Award

The alumni of the Department of Art as Applied to Medicine contribute funds each year which provide for an annual award given to the student whose ophthalmological illustration is outstanding.

The Ranice W. Crosby Distinguished Achievement Award

Through the generosity of alumni, colleagues, and friends, a medalion honoring Ranice W. Crosby, Director of Art as Applied to Medicine from 1943 to 1983, is awarded for scholarly contributions to the advancement of art as applied to the medical sciences. The recipient is selected by a committee at intervals of from one to three years.

The Samson Feldman Visiting Scholar in Art as Applied to Medicine

Rosetta A. and Sadie B. Feldman, sisters of Samson Feldman, established a visiting lectureship to honor his life as an artist and lifelong patron of the arts. Lecturers are selected from distinguished scholars in visual communications with the purpose of presenting contemporary views pertaining to medical art. The selection of lecturers are made by a committee representing the Department of Art as Applied to Medicine.

The James M. and Carolyn H. Phelps Fund

Support for the preservation and care of the Max Brödel Archives. This fund was established in memory of their parents by the Phelps family.

MOLECULAR GENETICS

The Department of Molecular Biology and Genetics offers programs of study in molecular genetics of bacteria and eukaryotic cells, leading to the Ph.D. degree, as part of the School of Medicine's interdepartmental program in Biochemistry, Cellular and Molecular Biology.

The Faculty

A list of the members of the Molecular Biology and Genetics staff and their research interests may be found in the departmental statement on page 201.

Postdoctoral Training

Students who have already been awarded the Ph.D. or M.D. degree may be accepted for postdoctoral research work with members of the faculty.

NEUROSCIENCE

The Department of Neuroscience offers an interdisciplinary program designed to train doctoral students for independent research and teaching in neuroscience. It is the goal of the program to ensure that candidates for the Ph.D. and M.D./Ph.D. degrees obtain a background covering molecular, cellular, systems and cognitive approaches to neuroscience, as well as receive training that brings them to the forefront of research in their particular area of interest. A series of core courses in neuroscience, along with advanced electives, seminar series, laboratory rotations and original independent dissertation research, form the Neuroscience Graduate Training Program.

Students enter the program from different backgrounds and the laboratories in which they elect to work cover different disciplines; therefore the program is tailored to fit the needs of individual students. The academic year at the Johns Hopkins University School of Medicine is divided into four quarters plus a summer semester. Courses are designed so that students have ample time to become involved in laboratory rotations. These laboratory rotations expose the student to a variety of current research techniques in neuroscience and provide an opportunity for the student to select a laboratory in which to conduct dissertation research. Scheduling of the three rotations is adjusted to make the most convenient schedule for each student. The rotations are usually completed by the end of the first full year in the program. Most students begin their thesis research at the beginning of their second year.

Courses

A year long core course provides an integrated overview of molecular and cellular neuroscience, neuroanatomy and systems and cognitive neuroscience. This course is aimed at providing Neuroscience graduate students with a foundation for posing meaningful questions in their area of interest. In addition to the core course, each student selects advanced
electives offered by members of the Neuroscience Training Program or other departments at the Medical School. A list of Neuroscience courses can be found in the department statement on page 211.

Seminar Program
The Neuroscience Training Program conducts several seminar series to ensure that students are exposed to recent work by researchers from across the country and the world as well as by Hopkins faculty and fellows. Graduate trainees participate actively in these series throughout their training, including inviting and hosting three speakers each year. A weekly lecture is given by an outstanding researcher in some field of neuroscience. Seminars are selected so that an overall balance of subject matter is covered yearly. Students are given an opportunity to meet with each speaker for questions and discussion. Weekly lunchtime talks are presented on current literature by graduate students, and postdoctoral fellows. Since an ability to communicate scientific work clearly is essential, graduate students receive close guidance in preparing and evaluating their journal club presentations. Once a month the faculty, postdoctoral fellows and students from one laboratory present and discuss the ongoing research in that laboratory. This provides an informal setting to discuss research being conducted in the laboratories of the Neuroscience Training Program and gives advanced graduate students and postdoctoral fellows a forum for presenting their work.

The Faculty
The Neuroscience Training Program at the Johns Hopkins University School of Medicine includes over ninety faculty members in the Departments of Neuroscience, Molecular Biology and Genetics, Biology, Behavioral Biology, Biological Chemistry, Physiology, Biomedical Engineering, Pharmacology and Molecular Sciences, Ophthalmology, Neurology, Neurosurgery, Orthopaedic Surgery, Psychiatry and Behavioral Sciences, Medicine, Otolaryngology, Pathology, Psychology and Cognitive Science. The faculty of the Neuroscience Training Program has trained about 300 Ph.D. and M.D./Ph.D. students and 550 postdoctoral fellows over the past ten years. A list of members of the staff and their fields of specialization may be found in the department statement on page 211.

Requirements for the PhD Degree
A minimum residency of two academic years is required. During the course of graduate study, the student must successfully complete the required course requirements. An oral examination, conducted as prescribed by the Doctor of Philosophy Board, must be completed by the end of the second year. The student must then conduct original research and describe this research in a written thesis dissertation, which must be approved by the students Thesis Committee and the Doctor of Philosophy Board.

Training Facilities
The Training Program is centered in the Department of Neuroscience. The Training Program utilizes laboratory facilities located in the Department of Neuroscience plus several other basic and clinical departments closely associated with the Neuroscience Department. All of these laboratories are within a short distance of each other. Modern state of the art facilities for research in molecular biology, neurophysiology, pharmacology, biochemistry, cell biology, and morphology are available. The Mind/Brain Institute, located on the Homewood Campus of the University, is a group of laboratories devoted to the investigation of the neural mechanisms of higher mental function and particularly to the mechanisms of perception. All of the disciplines required to address these questions are represented in the institute. These include neurophysiology, psychology, theoretical neurobiology, neuroanatomy, and cognitive science. All of the faculty in the Mind/Brain Institute are members of the Neuroscience Graduate Program.

Application and Admissions
Applicants should have a B.S. or B.A. with a major in any of the biological or physical sciences. Recommended course requirements for entry into the program are mathematics through calculus, general physics, general biology, general chemistry, and organic chemistry; laboratory research experience is desirable but not required. Students with deficiencies in one or more of these areas may be admitted provided they remedy the deficiency within their first year of graduate training.

Applications for admission are available online at http://www.neuroscience.jhu.edu. Applicants are required to take the Graduate Record Examination or Medical College Admission Test, and are encouraged to take the examinations in November or earlier. Two letters of recommendation, transcripts of undergraduate grades, and a statement on interest are required. December 8 is the deadline for receipt of the application form and all application materials.

Combined M.D./Ph.D. Program
About one quarter of the current predoctoral trainees in the Neuroscience Program are
candidates for both Ph.D. and M.D. degrees. Applications for admission to the combined program are considered by the M.D./Ph.D. Committee of the School of Medicine. Application forms for the School of Medicine contain a section requesting information relevant to graduate study. Applicants interested in the combined M.D./Ph.D. program should complete this section also and indicate specifically their interest in the “Neuroscience Training Program”. If application to the combined M.D./Ph.D. program proves unsuccessful and the applicant wishes to be considered for graduate studies, they must notify the Admissions Office of the Neuroscience Training Program by separate letter.

Financial Aid
The program provides tuition remission plus a stipend at or above the National Institutes of Health Predoctoral level for all students. All entering and first-year students are encouraged to apply for individual fellowships such as those sponsored by the National Science Foundation and the Howard Hughes Medical Institute.

PATHOBIOLOGY

Fields of Study and Research
The Graduate Program in Pathobiology provides students with opportunities to probe the mechanisms and origins of human disease through an integrative approach emphasizing systemic processes and their molecular and cellular pathologic underpinnings. Students are prepared for academic research, teaching, and biotechnology careers in one of seven programmatic areas: Cellular & Molecular Pathology; Immunopathology; Microbiology & Infectious Disease; Neoplasia; Neuropathology; and Cardiovascular Disease.

The Faculty
Faculty of the program have diverse interests united by a focus upon human disease.

RICHARD AMBinder
Professor of Oncology
Lymphoma; viral carcinogenesis.

ROBERT ANDERS
Associate Professor of Pathology
Liver Biology; growth control and immunology.

DAVID BERNER
Associate Professor of Pathology
Stem cells, cancer, and developmental biology.

WILLIAM BISHAI
Professor of Medicine
Microbiology; mycobacteria.

SHYAM BISWAL
Professor of Environmental Health Sciences, School of Public Health
Nr12-Keap1 stress response pathway in lung cancer and COPD; host immune response

KATHLEEN BURNS
Assistant Professor of Pathology
Human genetic variation; mobile DNA; cancer predispositions and progression.

CAROL L. BUREK
Associate Professor Emerita of Pathology
Clinical immunology and autoimmunity.

PATRIZIO CATUREGLI
Associate Professor of Pathology
Immunopathology; autoimmunity; thyroiditis.

DOUGLAS CLARK
Professor of Pathology
Biotechnology; Cancer.

JANICE CLEMENTS
Professor of Molecular and Comparative Pathobiology
Virology; SIV/HIV.

ISABELLE COPPENS
Associate Professor of Molecular Microbiology and Immunology, School of Public Health
Intracellular parasitism; apicomplexa-mammalian cell interactions.

CHI V. DANG
Professor of Medicine
Cancer biology; MYC and signaling pathways.

ANGELO DE MARZO
Professor of Pathology
Cancer biology; prostate cancer.

STEPHEN DESIDERIO
Professor of Molecular Biology and Genetics
Immune development; DNA recombination and repair; lymphoid malignancies

STEPHEN DUMLER
Professor of Pathology
Microbiology; rickettsial diseases

CHARLES EBERHART
Associate Professor of Pathology
Neuropathology; ophthalmic pathology cancer

LEISHA EMENS
Associate Professor of Oncology
Breast cancer/immunology and cancer vaccines; clinical trials

JAMES ESHELMAN
Professor of Pathology
Pancreatic cancer; early detection; familial predisposition; novel molecular tools.

SUSAN ESHELMAN
Professor of Pathology
Virology; HIV

ALAN FRIEDMAN
Professor of Oncology
Transcriptional control of hematopoiesis; stem cells; leukemic transformation.

EDWARD GABRIELSON
Professor of Pathology
Cancer biology; genomics.

KATHLEEN GABRIELSON
Associate Professor of Molecular and Comparative Pathobiology
Cancer therapy; signal transduction.
ROBERT GETZENBERG
Professor of Urology
Cancer biomarkers; cancer microenvironment; nanotechnology

MICHAEL GOGGINS
Professor of Pathology
Biology and genetics of pancreatic cancer.

MARC HALUSHKA
Assistant Professor of Pathology
Diabetic vascular disease.

ABDEL RAHIM HAMAD
Assistant Professor of Pathology
Immunology; T cell activation.

GARY HAYWARD
Professor of Oncology
Virology; CMV; herpes viruses.

JAMES HERMAN
Professor of Oncology
Cancer epigenetics.

CHRISTINE IACOBUZIO-DONAHUE
Associate Professor of Pathology
Cancer metastasis

J. BROOKS JACKSON
Professor of Pathology
Virology; HIV.

SANJAY JAIN
Professor of Pediatrics
TB pathogenesis; molecular imaging for infectious diseases; childhood TB

RICHARD JONES
Professor of Oncology
Cancer lymphoma; bone marrow transplantation.

PETROS KARAKOUSIS
Assistant Professor of Medicine
Mycobacterium tuberculosis latency and reactivation; TB diagnostics; TB chemotherapy.

DAVID KASS
Professor of Medicine
Molecular pathophysiology of heart failure; new treatment modalities; cardiac muscle mechanics.

SCOTT KERN
Professor of Oncology
Cancer; pancreatic cancer genetics.

KWANG SIK KIM
Professor of Pediatrics
Microbiology; genetics of bacterial pathogenesis blood-brain barrier.

ABRAM KOLIBROS
Professor of Pathology
Neuroradiology, neurodegenerative disease; stroke.

ABRAHAM KUPFER
Professor of Cell Biology
Immunology; CD4 T Cell activation and tolerance; imaging cellular immune interactions.

MARIKII LAIHO
Professor of Radiation Oncology
DNA damage response; cancer biology

JOHN LATTURA
Professor of Neurology
Brain malignancy; cancer stem cells; oncogenic signaling.

HYAM LEVITSKY
Professor of Oncology
Immunology; cancer vaccines; tolerance.

VICTOR LEVITSKY
Associate Professor of Oncology
Immunology to Epstein-Barr virus; biology of cytotoxic T-lymphocytes.

ANIRBAN MAITRA
Professor of Pathology
Pancreatic cancer.

JOSEPH MANKOWSKI
Associate Professor of Molecular and Comparative Pathobiology
Virology; HIV; pathogenesis of CNS lesions.

LEE MARTIN
Professor of Pathology
Cell death; motor neuron diseases; Parkinson's disease.

WILLIAM MATSUI
Associate Professor of Oncology
Stem cells; leukemia; lymphoma.

JOHN WOOD MCDONALD III
Associate Professor of Neurology
Spinal cord injury (SCI) research; clinical trials and rehabilitation-stem cell; neural regeneration; activity-based restorative therapies (ABRT); functional recovery.

ALAN MEEKER
Assistant Professor of Pathology
Cancer biology; telomeres.

JOSHDIAH MENDELL
Associate Professor of Pediatrics
MicroRNAs in normal biology and disease. Thrombosis and vascular inflammation.

AVINDA NATH
Professor of Neurology
Neuroscience; multiple sclerosis.

BEN HO PARK
Associate Professor of Oncology
Breast cancer genetics.

JONATHAN PEVSNER
Associate Professor of Neuroscience
Bioinformatics; neuropathology.

DONALD PRICE
Professor Emeritus of Pathology
Neuropathology; neurodegenerative disease.

JEFFREY RADE
Associate Professor of Medicine
Cardiology; vascular biology; thrombosis; neointimal hyperplasia.

LINDA RESAR
Associate Professor of Medicine
Cancer biology; leukemia, and lymphoid malignancy.

GREGORY RIGGINS
Professor of Neurological Surgery
Neuro-oncology; molecular targets; genomics.
RICHARD RODEN  
Professor of Pathology  
Cancer/virology; HPV in cervical cancer.

NOEL ROSE  
Professor of Pathology  
Immunology; autoimmune disease; immunotoxicology.

SCHEHEREZADE SADEGH-NASSERI  
Associate Professor of Pathology  
Immunology.

JONATHAN SCHNECK  
Professor of Pathology  
Immunology; T cell activation.

CYNTHIA SEARS  
Professor of Medicine  
Enteric pathogens; colon cancer; bacteroides fragilis.

IE MING SHIH  
Professor of Pathology  
Ovarian cancer.

CHARLES STEENBERGEN  
Professor of Pathology  
Cardiac pathology; ischemia reperfusion injury; cardioprotective signaling mechanisms.

SARASWATI SUKUMAR  
Professor of Oncology  
Breast cancer; Hox genes; methylated genes as biomarkers and targets of therapy; genome-wide analyses; intraductal therapy of early lesions.

CHARLOTTE SUMNER  
Assistant Professor of Neurology  
Inherited motor neuron and peripheral nerve diseases; genetic characterization, cellular mechanisms and novel therapies.

JUAN TRONCOSO  
Professor of Pathology  
Neuropathology; stroke.

CHRISTOPHER UMBRICH  
Assistant Professor of Surgery  
Breast cancer; thyroid cancer; early cancer progression; genome-wide analyses; bioinformatics.

RAPHAEL VISCIDI  
Professor of Pediatrics  
Virology.

TIAN-LI WANG  
Associate Professor of Gynecology and Obstetrics  
Cancer genetics; female reproductive cancer notch signaling; early detection of cancer.

BARBARA WASOWSKA  
Assistant Professor of Pathology  
Immunopathology; transplantation pathobiology.

PHILIP WONG  
Professor of Pathology  
Neuropathology; neurodegenerative disease.

TZYY-CHOU WU  
Professor of Pathology  
Immunology of cancer; cervical cancer vaccines; HPV.

SRINVASAN YEGNASUBRAMANIAN  
Assistant Professor of Oncology  
Cancer genetics/epigenetics; AR signaling; genomic instability.

M. CHRISTINE ZINK  
Professor of Molecular and Comparative Pathobiology  
Virology; SIV/HIV.

**Facilities**

Classroom instruction is conducted in the lecture, seminar, and conference rooms of the School of Medicine. Student research is conducted in the state-of-the-art research facilities of program faculty. These fully equipped laboratories support studies ranging from molecular, cellular and physicochemical analyses through whole animal and informatic-based techniques. The program takes special advantage of its clinical service laboratories and clinical activities to familiarize students with and provide resources for translational research.

**Requirements for Admission**

Students normally matriculate in June or August. The program requires: [1] a bachelor’s degree from a qualified college or university; [2] coursework with laboratory in inorganic & organic chemistry, general biology, and calculus; [3] scores from the Graduate Record Examination; [4] official transcripts of undergraduate grades; [5] a minimum of two letters of recommendation; and [6] a one-to-two page description of any prior research experience (not required if no prior research experience); and [7] a one-to-two page description of personal career goals. Underrepresented minority students are strongly encouraged to apply and to contact the program directors for guidance. Personal interviews at Johns Hopkins are normally required. Inquiries should be directed to: Ms. Wilhelmena Braswell, Program Coordinator, Graduate Program in Pathobiology, 720 Rutland Avenue, Ross 660, Baltimore, MD 21205. Tel: (443) 287-3163, Fax: (410) 614-3548, E-mail: pathobio@jhu.edu, http://pathology.jhu.edu/pathobio

**Coursework and Requirements for the Ph.D. Degree**

Students must successfully complete formal coursework in the first year of the program including courses in cell structure and dynamics, molecular biology, genetics, informatics, immunology, macromolecular structures and analysis, molecular biology and genomics, genetics, pathways and regulation, and pathology for graduate students. Starting at the beginning of the first year, students undertake a minimum of three three-month research rotations with program faculty before selecting a thesis mentor. At the end of the first year, students must pass a comprehensive oral examination given by
the Doctoral Board of the Johns Hopkins University School of Medicine. Under supervision of their thesis mentor and committee, students then select dissertation topics in the broad range of areas that relate to the pathobiology of disease. Beginning in the first year and continuing throughout the program, students attend journal clubs and seminars by distinguished speakers from Johns Hopkins and from other institutions. All students must complete a course in the responsible conduct of research, and two translation research rotations.

Student research is supervised by the mentor with oversight by a thesis committee comprised of University faculty with relevant expertise. The thesis committee evaluates and guides student progress; it also decides when writing of the dissertation may commence. Upon completion of research, students must write a dissertation acceptable to two faculty readers and give a public seminar. Students are expected to complete their studies in five years. Before graduation it is expected that students will publish at least one article where the student is first author.

Financial Aid
Candidates accepted into the program are normally offered support that provides payment of tuition, medical insurance, and a stipend.

PHARMACOLOGY AND MOLECULAR SCIENCES
The Department of Pharmacology and Molecular Sciences hosts the Pharmacology Graduate Program, which offers a program of study and research leading to the Ph.D. degree. Research training opportunities within the program cover a broad spectrum of biomedical sciences including chemical biology, immunology, virology, cancer, and neuroscience. The mission of departmental research is to understand the molecular processes underlying physiology and pathology, and to apply this knowledge to discovering new drug targets and developing novel therapeutics. Within the program, students may choose to focus their efforts in any of a large number of specific research areas including signal transduction, structural biology and drug design, NMR spectroscopy, molecular genetics, cancer chemoprevention, viral immunosuppression, cancer immunology, cell-mediated immunity, mechanisms of HIV infection, vaccine development, glycobiology, biomedical mass spectrometry, clinical pharmacology, drug delivery, anti-parasite drug development, histone acetylation and gene regulation, melatonin and circadian rhythm, drug metabolism, Vitamin D pharmacology, natural product biosynthesis, telomerase and chromosome stability, T cell activation and tolerance, DNA repair, DNA topoisomerases, molecular imaging, and the clinical pharmacology of cardiovascular agents. The department is also pleased to host students and award doctoral degrees to M.D./Ph.D. degree candidates and students in other Ph.D. graduate programs in which Pharmacology faculty participate (Biochemistry, Cellular and Molecular Biology, Cellular and Molecular Medicine, Immunology, Neuroscience, and Pathobiology)

The Faculty
A list of the members of the staff and their fields of specialization may be found in the departmental statement on page 262.

Requirements for Admission
Applicants should have a B.A. or B.S. degree with a major in any of the biological or physical sciences. Entering students are expected to have completed college-level courses in chemistry (inorganic, organic, and physical), calculus, and physics; a strong background in biochemistry is particularly desirable. A completed application form, scores on the Graduate Record Examination (although the GRE subject test is not required, applicants are encouraged to submit scores), at least three letters of recommendation, undergraduate transcripts and a statement of interest must be received by January 10.

Requirements for the Ph.D.
Students in the Pharmacology program are able to select a course of studies uniquely suited to their own career goals. It is usually required that students successfully complete the following courses: Foundations of Modern Biology (including modules on Macromolecular Structure and Analysis, Biochemical and Biophysical Principles, Molecular Biology and Genomics, Cell Structure and Dynamics, Organic Mechanisms in Biology, Pathways and Regulation, and Bioinformatics), Mechanisms in Bioorganic Chemistry, and Graduate Pharmacology. Students must also take three advanced elective courses selected from those offered by this or other departments. During their first year of study, students will complete 2-3 three-month research rotations in addition to their coursework. They will initiate dissertation research by the end of their first year and complete elective courses relevant to their developing interests in subsequent years of training.

During the second year of study, candidates will be required to pass a qualifying examination conducted as prescribed by the Doctor of Philosophy Board of the University. This examination will probe the depth and
breadth of the student’s knowledge of the biomedical subjects taught in the core courses.

The candidate is required to present a written dissertation based on original research undertaken while in residence as a graduate student and to present a departmental seminar describing the thesis research.

**Combined M.D.-Ph.D. Degrees**

Students seeking admission to or who are already participating in the M.D. program in the School of Medicine may participate in a program leading to both the M.D. and the Ph.D. degrees.

**Financial Support**

Financial support covering normal living costs, individual medical insurance, and tuition is usually provided.

**PHYSIOLOGY**

Physiology is an integrative science, bringing together diverse disciplines in an effort to understand the functioning of living organisms. It seeks to identify the mechanisms by which an organism maintains the processes we regard as characteristic of life. Physiological investigations of these mechanisms range from the molecular level to studies of intact animals and human subjects. More and more, departments of physiology are using the latest tools of cellular and molecular biology to study these problems. Our own department is particularly interested in seeking answers to questions in certain broad categories:

- What are the functions of cell membranes, and how are these functions controlled?
- How are messages sent from the outside to the interior of a cell, from one cell to another?
- How do groups of different cells coordinate their separate activities to develop and function as an integrated tissue organ?
- How is a process as complicated as the development of the mammalian embryo regulated and integrated?

The Department of Physiology accepts students for graduate study leading to the degree of Doctor of Philosophy. Applicants must satisfy the requirements of the department before admission. Candidates for the degree of Master of Arts in Physiology are not accepted.

**Requirements for Admission**

At the time of entry into the program, you must have completed a bachelor’s or higher degree. Ordinarily this degree will be in biology, physics, chemistry, mathematics, or engineering, or some combination of these, but exceptions will be made. Scientific research experience is not required but is now common among applicants to our program. Such experience is to your advantage and is widely available to undergraduates willing to take the initiative. If you are planning ahead, consider searching out an experience of this kind.

Regardless of the degree major, the following are entrance requirements: Physics: one year college level course is required; two years of study are recommended. Chemistry: two years are required, and three recommended, of college level courses with laboratory, including inorganic, organic, and physical chemistry. Biology: two years of college level courses, with laboratory. Mathematics: through differential and integral calculus.

Examinations: Students are required to take the Aptitude (general) section of the Graduate Record Exam. The Advanced (subject) test is not required, but is encouraged and viewed favorably by the Admissions Committee. Foreign applicants must take the Test of English as a Foreign Language Exam (TOEFL).

In addition to the above, official transcripts or certified records from all university (undergraduate and graduate) study and three letters of recommendation from at least two faculty members who are acquainted with the applicants academic work are required to complete the application for admission. While these requirements will apply for the large majority of applicants, exceptions will be made for unusually well-qualified candidates.

Applications are due by January 10 for September admission. This is the main application deadline and we encourage all applicants to meet his date. Most or all students will be selected from those meeting this deadline. A full application should be completed online. ETS Institutional code: 5316 for GRE/TOEFL scores.

**Course Requirements for the Ph.D. Degree in Physiology**

In general, students must complete successfully the following basic science courses, given by the School of Medicine:

- **First Year:** Courses: Biochemical and Biophysical Principles, Macromolecular Structure and Analysis, Current Physiology, Molecular Biology and Genomics, Genetics, Bioinformatics, Pathways and Regulation, Cell Structure and Dynamics, Physiology, Research, Primary Source Readings and Analysis.

  Rotations: Three laboratory rotations of ten weeks each (on average)

- **Second Year:** In the second academic year, the only required course is Research. In addition, students have the opportunity to begin taking elective courses. Students must complete four credits of elective courses.
other than “Research”. These additional courses are selected in accordance with the student’s particular needs. However, we strongly encourage one or more of the following electives: Bio-organic Mechanisms (Second Quarter), Immunology and Microbiology (Second Quarter), Neuroscience (Third Quarter), and Organ Histology (Fourth Quarter).

Examinations
Aside from regular course examinations, candidates are required to take and pass the following:

Doctor of Philosophy Board Oral Examination: Given by a committee appointed by the University, this examination will aim at testing the candidate’s knowledge of physiology and related sciences, critical sense, and ability to formulate an original, interesting, and appropriate research problem.

Final Examination and Defense of Thesis: This examination will be given by faculty inside and outside the department, appointed by the director of the graduate program of the department. Following this exam, students will be invited to present their thesis work at an open seminar.

The Faculty
A list of the members of the staff and their fields of specialization may be found in the departmental statement on page 269.

Postdoctoral Training
Students who have already been awarded the Ph.D. or M.D. degree may be accepted for postdoctoral research work with members of the faculty.

THE JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH
Courses in the Johns Hopkins Bloomberg School of Public Health are open to students of the School of Medicine without payment of additional fees if consent is obtained from the course instructor and the administrative officers of the School of Medicine. Interdivisional registration forms must be used to enroll in Bloomberg School courses.

Medical students may elect to pursue the Master of Public Health (MPH) program in the Bloomberg School in conjunction with the medical curriculum. The program will consist of eleven months of required and elective courses in the Bloomberg School. This is exactly the same program followed by other individuals pursuing the MPH degree, as described in the catalog of that School. The specific elective course program will vary according to the special interests of the individual student.

Medical students integrate this special program into their medical curriculum by taking a year’s leave of absence on completion of the second or third year. During that year the student is enrolled full time in the MPH program in the Bloomberg School. Upon completion of the MPH degree program, the student will return to the School of Medicine. The MPH degree is awarded independently upon completion of all MPH degree requirements.

Tuition support for this program may be applied for through the Bloomberg School.

All applications are subject to the approval of the Admissions Committee of the MPH program in the Bloomberg School. School of Medicine approval for all programs must be obtained from the Associate Dean for Student Affairs. Comparable study arrangements are possible also for medical students in other U.S. medical schools.

Opportunities are available for further training within the departments of the School and in numerous graduate degree programs. For those interested, information concerning these programs may be obtained from Admissions Services in the Bloomberg School.

INTERDIVISIONAL PROGRAM: Ph.D./Sc.M./M.H.S. IN CLINICAL INVESTIGATION
An interdivisional program leading to a Doctor of Philosophy, Master of Health Science, or Master of Science in Clinical Investigation has been developed jointly by the Schools of Public Health and Medicine. A special Clinical Investigator track is an option within existing clinical post-doctoral fellowship programs in the School of Medicine. Other potential students may also be considered for this program. Following one year of clinical fellowship, an instructional year composed of courses from the Schools of Medicine and Public Health are undertaken. Subsequently, the final two or three years of fellowship are undertaken in conjunction with a faculty mentor from the home clinical department or division. Upon successful completion of didactic instruction and demonstration of substantial achievement in clinical investigation in the form of an acceptable thesis, the degree of Doctor of Philosophy, Master of Health Science, or Master of Science from the Bloomberg School of Public Health is awarded, depending on the course of study undertaken by the student. The program is jointly administered by the Schools of Public Health and Medicine.
Courses

PH 390.631 Principles of Drug Development. (3 units) First term. Dr. Flexner. Jointly offered with the School of Public Health.  
Prerequisite: Consent of instructor.  
Prepares students to organize and deliver an effective scientific presentation. Focuses on designing a scientific talk, including preparing effective visual aids. Complements 390.701-702, at the end of which students are required to present their work. Student evaluation based on presentation.
PH 390.710-711 Biomedical Writing I and II. (2 units each for first and second term) First and second terms. Dr. Poynton. Enrollment maximum of 12. Students must register for both courses.  
Prerequisite: Restricted to students in the Graduate Training Program in Clinical Investigation.
Concentrates on writing the research paper and on the effective presentation of scientific information in text, tables, and figures. It emphasizes a reader-oriented approach to writing tables, abstracts, introductions, methods, results, and discussions. Students learn about the writing process by drafting and revising a manuscript based on their own research. Each section of the manuscript-in-progress is also read and discussed by the instructor and the other members of the class. Student evaluations based on written material.

PH 390.675 Outcomes and Effectiveness Research.  
Dr. John Robinson. Fourth term evening course.  
Prerequisite: Epidemiology and statistics from a science of clinical investigation.

Students will explore the applications of methods for assessing patient outcomes of care in inpatient and managed care settings, and the methods used to assess the contributions of treatment, patient characteristics, access arrangements, and other factors on disease outcomes. The range of outcomes to be examined includes clinical/disease outcomes, functional status, quality of life, satisfaction, and cost outcomes. The course will explore conceptual modeling of treatment/outcomes relationships including decision analysis, the range of data sources, data collection strategies, statistical modeling, and application of the information including the use of systematic reviews. The course will be graded based on class participation in discussions, a discussion on an article, and a final project where students will develop an outcomes or effectiveness proposal.

PH 390.701-702 Research Planning and Grant Preparation I and II. (2 units third term/4 units fourth term) Third and fourth terms. Drs. Adkinson and Levine. These courses must be taken in sequence.  
Prerequisite: Restricted to thesis students in Graduate Training Program in Clinical Investigation.
Students consider the principles of research strategy, the requirements of funding agencies, and choosing a research area of interest together with a suitable mentor. With mutual review and criticism, each student develops a research plan in the format of an NIH RO1 application, which forms the basis for clinical research activity in the subsequent two years. Student evaluation is based on written assignments and the final research plan.

PH 390.703 Presentation Skills. (1 unit) Fourth term. Dr. Adkinson  
Prerequisite: Restricted to students in Graduate Training Program in Clinical Investigation enrolled in 390.701-702.
Prepares students to organize and deliver an effective scientific presentation. Focuses on designing a scientific talk, including preparing effective visual aids. Complements 390.701-702, at the end of which students are required to present their work. Student evaluation based on presentation.

Prerequisite: Consent of instructor.
Explores ethical issues central to clinical research, reviews clinical investigation regulations and their application to common clinical research scenarios, examines the role of IRBs and the impact of good clinical practices for clinical trials. Student evaluation based on homework assignments.

Prerequisite: Restricted to students in the Graduate Training Program in Clinical Investigation.
Prepares students to organize and deliver an effective scientific presentation. Focuses on designing a scientific talk, including preparing effective visual aids. Complements 390.701-702, at the end of which students are required to present their work. Student evaluation based on presentation.

PH 390.711-712 Planning and Funding Clinical Research I and II. Dr. Punjabi. Third and fourth terms.
Considers the principles of successful clinical research strategies and the requirements of funding agencies. Students identify a defined research project together with a suitable team of mentors and collaborators. With mutual review and criticism, each student develops a written research proposal in the format of a grant application which integrates the scientific principles of the GTPCI curriculum. Designed as a capstone project for GTPCI MHS candidates. Student evaluation is based on the final written grant application and associated materials.

PH 390.751 Seminars in Clinical Investigation I and II. (2 units per term) Second term. Drs. Flexner and Adkinson.  
Prerequisite: Restricted to students in the Graduate Training Program in Clinical Investigation.
Prepares students to organize and deliver an effective scientific presentation. Focuses on designing a scientific talk, including preparing effective visual aids. Complements 390.701-702, at the end of which students are required to present their work. Student evaluation based on presentation.

PH 390.801 Professional Goals and Objectives. (1 unit) Second term. Drs. Flexner and Adkinson. Pass/fail only.  
Prerequisite: Restricted to students in the Graduate Training Program in Clinical Investigation.
Consists of didactic sessions focused on career development and mentoring, meetings between students and their academic advisors and/or potential research mentors to identify a single area or research focus, and discussing short- and long-term career goals. Student evaluation based on a precis of proposed research plans.


GRADUATE PROGRAMS 63
A monthly research forum, lasting 90 minutes, in which advanced fellows will present interim research findings and plans for discussion with colleagues and faculty. Pass/fail based on attendance and presentation participation.


Presents fundamental concepts and methods used specifically in clinical research. The two-course sequence covers three overarching topics: measurement, design, and diagnosis/prediction. This first course covers measurement and design. The measurement module covers basic concepts of measurement, with specific application to measurement technologies used in clinical research, from the lab to surveys. The design component covers commonly used designs in clinical research, such as early phase, crossover, and factorial designs, as well as the issues of surrogate endpoints and problems of multiplicity. Student evaluation based on in class mid-term and take-home final.

INTER-DEPARTMENTAL COUNCILS

Immunology Council
A University-wide Immunology Council has been established as a cooperative enterprise among the School of Arts and Sciences, the School of Public Health and the School of Medicine. Its purpose is to sponsor a collegial environment for research, training, and teaching in immunology within the University. An annual seminar series and honorary lecture are among the activities.

Research interests of the members of the Council: the mechanisms of antigen recognition by T-cells; the pathogenesis of AIDS and AIDS vaccine development; the structure and fuction of major histocompatibility complex encoded proteins; the biochemistry of lymphocyte signaling; T-cell development and T-cell activation; anti tumor immunity; immunoglobulin gene rearrangement and mutation; B-lymphocyte development; immunologic approaches to the treatment of cancer; dendritic cell function; mechanisms of transplant rejection; autoimmune disease mechanisms; antigen processing; innate immunity; the adaptive response to infectious agents; viral immunology; and mechanisms of immunologic tolerance.

A series of courses in basic and advanced immunology are given by members of the council in various departments of the University and degree programs are available in some of these departments. The principal degree programs are in the Graduate Program in Immunology at the School of Medicine and in the Department of Molecular Microbiology and Immunology at the School of Public Health.

Please consult Dr. Mark Soloski, Johns Hopkins University School of Medicine for program details.

GRADUATE STUDENT HONOR CODE

The graduate students have written an honor code to reinforce the existing honor system among students and to underscore the importance of ethics in their development as scientists. The honor code outlines the School of Medicine’s expectations regarding the manner in which students should conduct themselves and requires that each student acknowledge these expectations in a formal declaration of personal honor. The code is as follows:

As a student at the Johns Hopkins University School of Medicine, I pledge to be honest in:
• course work including examinations and all assignments;
• the reporting and presentation of research data with proper attribution and citation;
• professional interactions with all members of the scientific community.

Upon matriculation every student is required to sign that they have read the honor code. It is the expectation that every student live by this honor code.

GRADUATE STUDENT POLICY STATEMENTS

Student Outside Employment
Although the institution does not encourage it, students may work for compensation outside of the laboratory on a limited, part-time basis. Permission must be obtained from the program director and faculty mentor. This work must be apart from or beyond the normal research training activities. Under no circumstances may the conditions of stipend supplementation or the services provided for compensation interfere with, detract from, or prolong the trainee’s approved training program.

Vacation Policy
Beyond the official University holidays and breaks, students may take two weeks of vacation during the first year and three weeks vacation during years two through seven. Additional time off may be granted by mentor.

Leave of Absence
Students may take 15 calendar days of sick leave per year which can be applied to
pregnancy/childbirth. Under special circumstances, this period may be extended by the training program director or the sponsor. Sick leave is not accrued. For medical leave of absence, health insurance will be paid for by the program or sponsor for up to one year, if requested by the student.

Parental leave of 30 calendar days per year can be used for the adoption or birth of a child. Parental leave is not accrued.

A period of terminal leave is not permitted and payment may not be made from grant funds for leave not taken.

School of Medicine Criteria for Awarding a Terminal Master’s Degree

1. Student must successfully complete the required courses of the program.
2. Pass a preliminary Doctoral Board Examination (formerly the Graduate Board Oral Examination) or present an essay that satisfies a faculty member in the program.
3. Meet a two consecutive semester resident requirement as a full time student.

These school-wide requirements may be supplemented by additional department/program requirements.
The Johns Hopkins School of Medicine offers a variety of opportunities for the training of medical scientists. A combined curriculum leading to both MD and PhD degrees enables students who aspire to careers in academic medicine to obtain intensive training in specialized areas of the medical sciences while completing their medical studies. The traditional diversity and flexibility of the educational opportunities at Johns Hopkins permit the design of individualized programs to meet the needs of students with a variety of interests, educational backgrounds and career goals.

The curricula for students in the combined MD-PhD Program vary widely depending on the individual's previous education, on the area of scientific study, and personal interests. Course work leading to one degree is usually acceptable as partial credit toward the formal requirements of the other degree. A properly coordinated joint program may afford a significant economy of time in completing studies toward both MD and PhD degrees.

The MD-PhD Program sponsors special seminars and lectures and maintains the Paul Talalay MD-PhD Library to enrich the educational opportunities of all MD-PhD students. Efforts are made to acquaint MD-PhD candidates with the major advances and problems in contemporary medicine, to expose them to specialized techniques and aspects of medical science, and to promote a more intimate personal contact with successful medical scientists in this institution.

Students admitted to the combined degree program after four years of college take, on average, seven-to-eight years to satisfy the requirements of both degrees. Students complete two years of the basic science aspect of the medical curriculum before becoming fully involved with the research component of their studies, which may then be coordinated with clinical work in a number of ways.

Formal graduate programs in the School of Medicine encompass the following areas: Biochemistry; Cellular and Molecular Biology; Biological Chemistry; Biomedical Engineering; Molecular Biophysics; Functional Anatomy and Human Evolutionary Studies; Cell Biology; Cellular and Molecular Medicine; History of Medicine; Human Genetics; Immunology; Neuroscience; Pathobiology; Pharmacology, and Physiology. A combined MD-PhD Program is also available in the 11 graduate programs at the Bloomberg School of Public Health as well as the graduate programs supervised by the School of Arts and Sciences.

Admission Procedures. All individuals requesting applications for admission to the medical program of the School of Medicine through AMCAS will automatically receive an additional form on which they may indicate their desire to pursue joint studies leading to the MD and PhD degrees. A separate application to the graduate programs is not required. These applications will be reviewed by the directors of individual graduate programs and by the MD-PhD Committee. In general, an applicant invited to interview for the combined MD-PhD Program is not considered for the traditional MD Program. Under certain circumstances, MD-PhD applicants will be advised to interview for the traditional MD Program only.

A number of our medical students do not develop a clearly defined interest in the MD-PhD Program until some time after they have begun their medical school studies. A candidate for the MD degree may apply at any time for admission to a PhD program. A candidate for the PhD degree is also eligible to apply to the MD-PhD Committee for admission to the program during the first or second year of medical school. It should be noted that all applicants are evaluated in competition with the total pool of those seeking entry into each program.

Financial Support. The Johns Hopkins School of Medicine Medical Scientist Training Program (MSTP) is supported by a training grant from the National Institutes of Health. A number of exceptional students with unusual accomplishments and commitment to a career in the medical sciences will be selected for traineeships under this program. Such fellowships provide stipend and tuition support for combined medical and graduate study. All students who are admitted to the MD-PhD Program will be considered for these awards. Properly qualified students who do not receive such awards are eligible
for fellowship support from the graduate programs during the PhD phase of the joint MD-PhD Program, and for financial support for their medical studies on the basis of financial need. Minority students accepted into the MD-PhD Program, who do not receive MSTP funding, are eligible to apply for an Individual National Research Service Award (NRSA).

The MSTP is supervised by the MD-PhD Committee which is made up of faculty from the School of Medicine.

Graduates of The Johns Hopkins University School of Medicine MD-PhD Program have gone on to become leaders in many areas of academic medicine.

Advice on the scope and opportunities offered by these programs may be obtained from the Director of the MD-PhD Program.
Most doctoral recipients spend three to six years following receipt of degree in postdoctoral training. The Johns Hopkins University School of Medicine has an active program of postdoctoral study. Currently there are 2373 postdoctoral students enrolled, of whom 239 are in the basic medical science departments, 1283 in clinical science departments, 736 are house officers of the Johns Hopkins Hospital and 115 are house officers of hospitals whose programs are affiliated. By actions of the Advisory Board of the Medical Faculty and of the Medical Board of the Hospital, primary responsibility for postdoctoral medical education is placed upon the Medical Faculty. Postdoctoral students, including house officers of the Johns Hopkins Hospital and affiliated hospitals, must register in the School of Medicine and are designated by the title of Fellow of the School of Medicine.

The following sections outline briefly some of the opportunities for postdoctoral education in the Johns Hopkins University School of Medicine.

For specific information, applicants should communicate with the director of the department in which they desire to study, the Associate Dean for Postdoctoral Programs, or the Associate Dean for Graduate Medical Education, The Johns Hopkins University School of Medicine, 733 N. Broadway, BRB 147, Baltimore, MD 21205.

**POSTGRADUATE STUDY AND FELLOWSHIPS**

The School of Medicine offers opportunities for study to a limited number of individuals holding the M.D., Ph.D., or other equivalent doctoral degrees from accredited institutions. All departments and divisions have facilities for postdoctoral students. Candidates desiring to avail themselves of these opportunities for instruction and study must be acceptable to the head of the department in which they wish to work.

It is the policy of the Johns Hopkins University School of Medicine to require criminal background investigations on accepted students in any professional or graduate program at the School of Medicine, interns, residents, and clinical fellows in any Graduate Medical Education program sponsored by Johns Hopkins, and other clinical and research postdoctoral fellows at the School of Medicine.

Residency and fellowship programs are approved by the Maryland Higher Education Commission for veterans' educational benefits.

**Postdoctoral/GME Offices**

The Offices of Graduate Medical Education and Postdoctoral Programs, within the Dean's Office of the School of Medicine, are directed by Associate Deans. The offices deal with all house staff of the Johns Hopkins Hospital and all postdoctoral fellows in the School of Medicine. The offices recommend and implement institutional policies covering house staff, in conjunction with the Office of the Vice President for Medical Affairs of the Johns Hopkins Hospital, and for non-house staff postdoctoral fellows. In addition, the Associate Deans and staff are available to all house officers and postdoctoral fellows for personal and career counseling. Additional information regarding the Postdoctoral/GME offices can be found at www.hopkinsmedicine.org/som/gme.

**Health and Dental Insurance**

All postdoctoral students, their spouses, and dependent children must be covered by health insurance. It is required that postdoctoral students subscribe to the School of Medicine Student Health Program (SHP). Spouses and dependent children may be covered under an alternative insurance plan, subject to review and approval by the School of Medicine Registrar’s Office. Foreign or travelers insurance is not accepted.

The dental plan for postdoctoral students covers only the student. The dental plan for the house officer also covers dependents. The house staff health insurance plans are fully subsidized by the Hospital and School of Medicine. The cost of individual health and dental insurance is provided for all non-house staff postdoctoral fellows.

For a complete description of benefit plans, house staff should go to http://www.hopkinsmedicine.org/som/gme/residents/index.html. Fellows should go to http://www.hopkinsmedicine.org/som/gme/fellows/index.html.

**Other Benefits**

All house staff and fellows with full time, primary appointments in the School of Medicine are covered under a long-term disability

69
insurance program and a $100,000 term life insurance policy. These benefits are provided without cost to the trainees. A 403(b) retirement plan allows house staff and fellows to voluntarily tax-shelter a portion of their taxable income received as compensation for services. Income received in the form of fellowships (stipends) is excluded from 403(b) eligibility.

The University Health Service (UHS) provides adult ambulatory care to housestaff and postdoctoral students and spouses (if enrolled in the SHP). The fee for this service is provided by the preceptor.

Fellowships and Fees
Postdoctoral students are usually supported by stipends which accompany the awarding of fellowships. Some sources of the stipend offered to holders of these fellowships lie in the School of Medicine, others in agencies outside the school. Fellowship awards are usually made for one academic year and can be extended for those who wish additional training. Preceptors are expected to abide by the NIH minimum stipend guidelines for years of relevant experience for non-housestaff fellows paid through the Johns Hopkins University payroll system. Postdoctoral students who are not members of the house staff will be assessed tuition at the rate established by the University Board of Trustees for non-M.D. candidates, pro-rated in relation to period of enrollment (see Tuition Policies, page 101).

INTERNSHIPS AND RESIDENCIES
Graduate physicians who are applicants for internship and residency positions at the Johns Hopkins Hospital may direct their inquiries to the director of the department in which they desire to serve, care of the Johns Hopkins Hospital, 600 N. Wolfe St., Baltimore, MD 21287.

POSTDOCTORAL COURSES—CONTINUING MEDICAL EDUCATION
Intensive brief courses are offered annually by various clinical departments. During the 2010-2011 academic year, the following courses will be offered:

ANESTHESIOLOGY AND CRITICAL CARE MEDICINE
Perioperative Management- in its 27th Year. (Marco Island Marriott Hotel, Marco Island, FL) March 13-16, 2011.

Third Annual Neurocritical Care for the Medical and Surgical Intensivist: The Comprehensive Cerebrovascular Center. (Ritz-Carlton, Tysons Corner, VA) March 17-19, 2011.

MEDICINE
First International Workshop on HIV and Aging. (InterContinental Harbor Court Hotel, Baltimore, MD) October 4-5, 2010.

Fifth Infectious Diseases Update for the Primary Care Practitioner. October 7-8, 2010.

The Evaluation and Management of Pleural Disease: The 100th Anniversary of Thoracoscopy. October 7-8, 2010.


GI Evening with the Experts Educational Series. January 2, 2011; May 24, 2011.


38th Annual Current Topics in Geriatrics. (Sheraton Inner Harbor Hotel, Baltimore, MD) February 10-12, 2011.

13th Annual Nicholas Fortuin Cardiovascular Topics at Johns Hopkins. February 17-19, 2011.


21st Annual Clinical Care of the Patient with HIV Infection. (Renaissance Harborplace Hotel, Baltimore, MD) March 24-25, 2011.


Seventh Annual Advances in the Diagnosis and Treatment of Rheumatic Diseases. (Hyatt Regency Hotel, Baltimore, MD) May 20-21, 2011.


NEUROLOGY/NEUROSURGERY
21st Annual Practical Update in Outpatient Neurology. (Asthma & Allergy Center, Bayview Medical Center, Baltimore, MD) October 22, 2010.

Second Annual Spinal Disorders: Updates in Diagnosis and Management. May 21, 2011.

ONCOLOGY

OPHTHALMOLOGY


The 70th Wilmer Residents Association Clinical Meeting. June 3, 2011.


OTOLARYNGOLOGY


PATHOLOGY


PEDIATRICS

Updates and Advances in Neonatal Neurological Care for the Practitioner. (Bethesda North Marriott Hotel and Conference Center, Bethesda, MD) September 22, 2010.


PSYCHIATRY


17th Annual Update on the Treatment of Alzheimer’s Disease and other Related Disorders. April 2, 2011.


RADIOLOGY


27th Annual Computed Body Tomography: The Cutting Edge. (Disney Yacht and Beach Club Hotel, Orlando, FL) February 17-20, 2011.

Quantitative Nuclear Medicine to Improve Patient Outcomes. March 11-12, 2011.

GENERAL


REWards-Research Ethics Workshop about Responsibilities and Duties of Scientists. January 5, 2011; March 31, 2011; May 18, 2011.


Third Annual Hospital Punta Pacifica Symposium: Update in Gastroenterology and Urology. (Hotel Riu Plaza, Panama City, Panama) June 24-25, 2011.

The Business of Medicine Executive Graduate Certificate Program. Sessions begin in Fall and Spring.

Cardiac CT Practicum. Various dates from July 1, 2010-June 30, 2011.

Johns Hopkins Faculty Development Program: Longitudinal Program in Curriculum Development. September 1, 2010-June 30, 2011.

Johns Hopkins Faculty Development Program: Longitudinal Program in Teaching Skills Parts 1 and 2. September 9, 2010-April 14, 2011.

Johns Hopkins Faculty Development Program: Limited Longitudinal Program in Curriculum Development Parts 1 and 2. October 1, 2010-June 30, 2011.


Regularly Scheduled Conferences. (Johns Hopkins, Johns Hopkins Bayview Medical Center, and Good Samaritan Hospital).

For additional information on Continuing Medical Education activities for 2010-2011 write to: Office of Continuing Medical Education, Johns Hopkins Medicine, Turner 20, 720 Rutland Avenue, Baltimore, Maryland 21205-2195. Telephone: 410-502-9634; Fax: 866-510-7088; cmenet@jhmi.edu; www.hopkinscme.edu.
STUDENT ADVISING

The College Advisory/Clinical Skills Program provides medical students with a dedicated and longitudinal advisor/mentor. The program offers students a unique opportunity to learn the fundamental skills of medicine and lessons in professionalism and humanism from a trusted advisor, as well as build valued student-faculty connections.

The program goals are as follows:

• To foster a welcoming learning community for students honoring diversity and unique interests
• To promote faculty advising and mentoring relationships with all students throughout medical school
• To foster social and supportive connections between students, particularly across levels of training
• To foster scientific inquiry, innovation, and leadership among students
• To assist students in building networks of connections within the Hopkins medical community to meet their emerging goals
• To provide clinician role models to foster excellence in humanism, professionalism, and the clinical skills of medicine

Students and faculty are organized into four colleges. Each college is currently populated by 120 students (30 from each class) and 6 core faculty. Incoming students meet their core faculty advisors at Orientation. Advisors help students become familiar with the Baltimore community and many will invite students to their homes. Academic counseling will be offered to assist students in learning “the roadmap” of medical education.

When students are in their second year, the core advisors become the students’ Clinical Skills instructors and see them on a weekly basis. In the third and fourth years, faculty may assist in career counseling, finding additional mentors to satisfy emerging interests, and writing recommendation letters for students.

Students within each college organize social activities and participate in a student mentorship program, where Year 3 and Year 4 students form connections with the students in Years 1 and 2. Social events are held for each college several times per year so students get to know fellow students, including those more senior.

OFFICE OF STUDENT AFFAIRS

The principal objective of the Office of Student Affairs is to serve the needs of the students in the many aspects of life in the School of Medicine. A student who has a question about the experience here and who is uncertain as to an appropriate resource for an answer should check at the office. Anyone needing assistance in adapting to this environment, or advice about personal or professional matters, should visit the Associate or Assistant Deans for Student Affairs. The range of issues that may be addressed is broad, and additional resources will be found when needed.

The Office plays a major role in the application process for research experiences, extramural rotations, additional courses of study and residency positions. It also assists in arrangements for special funding of student projects and works in liaison with the Johns Hopkins Medical Student Society and other student groups and services. Notices containing new or more current information on a variety of topics are sent to each student at frequent intervals.

POLICY STATEMENTS

For a more comprehensive list of Johns Hopkins University policies see http://webapps.jhu.edu/jhuniverse/administration/minutes_policies_reports/policies/.

The University does not guarantee the award of a degree or a certificate of satisfactory completion of any course of study or training program to students enrolled in any instructional or training program. The award of degrees and certificates of satisfactory completion is conditioned upon satisfaction of all current degree and instructional requirements at the time of such award, compliance with the University and divisional regulations, as well as performance and conduct meeting bona fide expectations of faculty. No member of the faculty is obliged to provide students or graduates with an evaluation or letter of recommendation which does not accurately reflect that faculty member’s true opinion and evaluation of academic performance and conduct.

Equal Opportunity Policy

The Johns Hopkins University admits students of any race, color, gender, religion, age,
national or ethnic origin, disability, marital status or veteran status to all of the rights, privileges, programs, benefits and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, gender, marital status, pregnancy, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status, or other legally protected characteristic in any student program or activity administered by the University, including the administration of its educational policies, admission policies, scholarship and loan programs, and athletic or other University-administered programs or in employment.

Questions regarding Title VI, Title IX, and Section 504 should be referred to the Office of Institutional Equity 130 Garland hall, Homewood Campus, 410-516-8075, TTY 410-516-6225.

Policy on the Reserve Officer Training Corps

Present Department of Defense policy governing participation in University-based ROTC programs discriminates on the basis of sexual orientation. Such discrimination is inconsistent with the Johns Hopkins University non-discrimination policy. Because the ROTC is a valuable component of the University that provides an opportunity for many students to afford a Hopkins education, to train for a career, and to become positive forces in the military, the University, after careful study, has decided to continue the ROTC program and to encourage a change in federal policy that brings it into conformity with the University’s policy.

Statement Regarding the Privacy Rights of Students

Notice is hereby given that the School of Medicine of the Johns Hopkins University complies with the provisions of the Family Educational Rights and Privacy Act of 1974 (P.L. 93-380), as amended, and regulations promulgated thereunder. Eligible students, as defined in the regulations, have the right 1) to inspect and review their education records, as defined in the regulations; 2) to request the amendment of their education records if they are inaccurate, misleading or otherwise in violation of the student’s rights; 3) to consent to the disclosures of personally identifiable information in their education records except to the extent permitted by law, regulation or University policy; 4) to file a complaint with the United States Department of Education if the University allegedly fails to comply with the requirements of law or regulation. The University’s policy on Family Educational Rights and Privacy can be found on the internet at www.jhu.edu/news_info/policy/ferpa.html and copies of the policy are available from the School of Medicine Registrar’s Office.

Students with Disabilities

The School is prepared to furnish reasonable accommodations to students with disabilities. Students in need of reasonable accommodations should bring their circumstances to the attention of the Associate Dean for Student Affairs with responsibilities for the program in which the student is enrolled. The University’s Disability Services Coordinator also is available for consultation and assistance and may be reached at 410-516-8075. The School retains the right to refer a student for an independent evaluation of disability.

Annual Security Report

In accordance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics (20 USC 1092) as amended, and the regulations promulgated thereunder, the University issues its Annual Security Report which describes the security services at each of the University’s divisions and reports crime statistics for each of the campuses. The report is published in the University Gazette, and copies of the report are available from the University’s Security Department, 14 Shriver Hall, 3400 North Charles Street, Baltimore, Maryland 21218-2689 Tel. (410) 516-4600.

University Alcohol and Drug Policy for Students

The University, in keeping with its basic mission, recognizes that its primary response to issues of alcohol and drug abuse must be through educational programs, as well as through intervention and treatment efforts.

In addition to providing appropriate educational programs throughout the year, each division of the University will include such programs as part of its orientation for new students.

The University further recognizes that alcoholism and drug addiction are illnesses that are not easily resolvable by personal effort and may require professional assistance and/or treatment.

Participation in such programs may be required of a student as a “condition of continued enrollment.”

The University will adhere to strict policies of confidentiality for all participants in drug/alcohol abuse rehabilitation programs as described in University and Federal Regu-
lations covering confidentiality of student health records.

Maryland and the District of Columbia laws prohibit the possession or consumption of alcoholic beverages by persons under the age of 21. The possession, use, or distribution of illegal drugs and controlled substances, as defined by federal, state, and local statutes, is prohibited.

Students are expected to obey the law. Individuals who violate the law, in addition to being subject to criminal penalties, may be subject to University disciplinary measures. The distribution, possession, and unprescribed use of narcotics and other controlled dangerous substances by students is unlawful and strictly forbidden on University premises. When information reaches the University indicating that a student has been engaged in the distribution of controlled dangerous substances, whether on or off University premises, disciplinary proceedings which may lead to expulsion will be commenced immediately. Students are also advised that the University may decline to furnish and may withdraw letters of recommendation for those who have engaged in the illegal distribution, possession and use of controlled dangerous substances.

The University will not excuse acts of misconduct committed by students whose judgment is impaired due to alcohol or drug abuse.

**Anti-Harassment Policy**

**Preamble**

The Johns Hopkins University is committed to providing its staff, faculty and students the opportunity to pursue excellence in their academic and professional endeavors. This opportunity can exist only when each member of our community is assured an atmosphere of mutual respect. The free and open exchange of ideas is fundamental to the University’s purpose. It is not the University’s intent in promulgating this policy to inhibit free speech or the free communication of ideas by members of the academic community.

**Policy Against Discriminatory Harassment**

1) The University is committed to maintaining learning and working environments that are free from all forms of harassment and discrimination. Accordingly, harassment based on an individual’s gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status, or other legally protected characteristic is prohibited. The University will not tolerate harassment, sexual harassment or retaliation in the workplace or educational environment whether committed by faculty, staff, or students, or by visitors to Hopkins while they are on campus. Each member of the community is responsible for fostering civility, for being familiar with this policy, and for refraining from conduct that violates this policy.

2) For purposes of this policy, harassment is defined as:

a) any type of behavior which is based on gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status, that b) is so severe or pervasive that it interferes with an individual’s work or academic performance or creates an intimidating, hostile or offensive working or academic environment.

3) Harassment when directed at an individual because of his/her gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, personal appearance, veteran status, or any other legally protected characteristic may include, but is not limited to: unwanted physical contact; use of epithets, inappropriate jokes, comments or innuendos; obscene or harassing telephone calls, e-mails, letters, notes or other forms of communication; and, any conduct that may create a hostile working or academic environment.

4) Sexual harassment, whether between people of different sexes or the same sex, is defined to include, but is not limited to, unwelcome sexual advances, requests for sexual favors, and other behavior of a sexual nature when:

a) submission to such conduct is made implicitly or explicitly a term or condition of an individual’s employment or participation in an education program;  
b) submission to or rejection of such conduct by an individual is used as the basis for personnel decisions or for academic evaluation or advancement; or  
c) such conduct has the purpose or effect of unreasonably interfering with an individual’s work or academic performance or creates an intimidating, hostile or offensive working or educational environment.

Sexual harassment may include, but is not limited to: unwelcome sexual advances; demands/threats for sexual favors or actions; posting, distributing, or displaying sexual pictures or objects; suggestive gestures, sounds
or stares; unwelcome physical contact; sending/forwarding inappropriate e-mails of a sexual or offensive nature; inappropriate jokes, comments or innuendos of a sexual nature; obscene or harassing telephone calls, e-mails, letters, notes or other forms of communication; and any conduct of a sexual nature that may create a hostile working or educational environment.

5) Retaliation against an individual who complains of discriminatory harassment under this policy, is strictly prohibited. Intentionally making a false accusation of harassment is also prohibited.

Responsibilities Under this Policy

The University is committed to enforcement of this policy. Individuals who are found to have violated this policy will be subject to the full range of sanctions, up to and including termination of his/her University affiliation.

1) All individuals are expected to conduct themselves in a manner consistent with this Policy.

2) Staff, faculty and/or students who believe that they have been subject to discriminatory harassment are encouraged to report, as soon as possible, their concerns to the Office of Institutional Equity, their supervisors, divisional human resources or the Office of the Dean of their School.

3) Individuals who witness what they believe may be discriminatory harassment of another are encouraged to report their concerns as soon as possible to the Office of Institutional Equity, their supervisors, divisional human resources or the Office of the Dean of their School.

4) Complainants are assured that reports of harassment will be treated in a confidential manner, within the bounds of the University’s legal obligation to respond appropriately to any and all allegations of harassment.

5) Managers, including faculty managers, who receive reports of harassment should contact human resources or the Office of Institutional Equity for assistance in investigating and resolving the issue.

6) Managers, including faculty managers, are required to implement corrective action where, after completing the investigation, it is determined corrective action is indicated.

7) The University administration is responsible for ensuring the consistent application of this policy. Procedures for Discrimination Complaints Brought Within Hopkins

Inquiries regarding procedures on discrimination complaints may be directed to the Vice Provost for Institutional Equity, or the Director for Equity Compliance & Education, Garland Hall, 130, Homewood Campus, 410-516-8075, 410-516-6225 (TTY).

University Policy on Sexual Assault

The Johns Hopkins University is committed to providing a safe educational and working environment for its faculty, staff and students. The University is particularly concerned about the increase in reports of sexual offenses occurring on the nation’s campuses. The University has adopted a policy addressing sexual assaults and offenses involving sexual violence in order to inform faculty, staff and students of their rights in the event they are involved in an assault, and of the services available to victims of such offenses.

Members of the University community who are victims of, or who have knowledge of, a sexual assault occurring on University property, or occurring in the course of a University sponsored activity, or perpetrated by a member of the University community, are urged to report the incident to campus authorities promptly.

Persons who are victims of sexual assault will be advised by campus security of their option to file criminal charges with local police of the jurisdiction where the sexual assault occurred. Campus security and the Office of General Counsel will provide assistance to a complainant to reach law enforcement authorities.

A victim of an assault on University property should immediately notify campus security who will arrange for transportation to the nearest hospital. Persons who have been sexually assaulted will be taken to one of the three hospitals in Baltimore City designated as rape treatment centers. They are Mercy Hospital, 301 St. Paul Place (410-332-9000); University of Maryland Hospital, 22 South Greene Street (410-328-8667); Johns Hopkins Bayview Medical Center, 4940 Eastern Avenue (410-550-0100). These hospitals are equipped with the State Police Sexual Assault Evidence Collection Kit.

The University will provide counseling to any member of the Hopkins community who is a victim of a sexual assault, and also will provide information about other victim services. Students can seek the assistance of counseling through their divisional counseling offices, and members of the faculty and staff can seek assistance through the Faculty and Staff Assistance Program (FASAP).

A student who is a victim of sexual assault may request a transfer to alternative classes or housing if necessary to allay concerns.
about security. The University will try to accommodate the request if such classes and housing are reasonably available.

Persons who are the victims of sexual assault also may pursue internal University disciplinary action against a perpetrator with a University affiliation. The University’s disciplinary process may be initiated by bringing a complaint of sexual assault to the attention of a Dean, department chairman or director, supervisor, divisional personnel office, security office. The University’s Vice Provost for Institutional Equity is also available to render assistance to any complainant. Allegations of sexual assault will be investigated by the appropriate security offices and any other offices whose assistance may be valuable for gathering evidence.

The University reserves the right to independently discipline any member of the student body, staff or faculty who has committed a sexual or other assault whether or not the victim is a member of the University community and whether or not criminal charges are pending. Disciplinary actions against students accused of sexual assaults will be processed by the appropriate student affairs office of the School or campus attended by the accused student in accordance with established disciplinary procedures pertaining to the School in which the student is enrolled. Disciplinary actions against staff members will be governed by the procedures set out in the University’s personnel policies. Disciplinary actions against members of the faculty will be processed by the offices of the Dean of the appropriate academic division according to the procedures established by that division.

Both a complainant and the person accused of a sexual assault will be afforded the same opportunity to have others present during a University disciplinary proceeding. Attorneys, however, will not be permitted to personally participate in University disciplinary proceedings. Both the complainant and the accused will be informed of the resolution of any University disciplinary proceeding arising from a charge that a sexual assault has been committed.

The disciplinary measures which may be imposed for sexual assault will vary according to the severity of the conduct, and may include expulsion of a student from the University and termination of the employment of a member of the staff or faculty.

Policy Addressing Campus Violence
The Johns Hopkins University is committed to providing a learning and working environment that is safe to all members of the University community. The University will not tolerate violent acts on its campuses, at off-campus locations administered by the University, or in its programs. This policy of “zero tolerance” extends not only to actual violent conduct but also to verbal threats and intimidation, whether by students, faculty, staff, or visitors to the University.

The University urges individuals who have experienced or witnessed incidents of violence to report them to Campus Security. Alternatively, students are urged to report concerns about violence to the divisional office responsible for student matters, faculty to the divisional office responsible for faculty matters, and staff to the applicable human resources offices. The University will not permit retaliation against anyone who, in good faith, brings a complaint of campus violence or serves as a witness in the investigation of a complaint of campus violence.

Enforcement
Information regarding incidents of violent conduct and threats of violence will be investigated, and, if warranted, disciplinary action will be taken in accordance with applicable procedures. The University will notify law enforcement authorities of criminal conduct. In addition, the University may refer individuals accused of violations of this policy for an assessment of the likelihood that they will carry out violent acts. If the continued presence of an individual on campus threatens or disrupts the conduct of University business, the individual may be suspended from participation in University programs or activities pending the outcome of the assessment.

When advised of circumstances warranting intervention, the University will render assistance by contacting local or federal law enforcement agencies as appropriate. Individual members of the University community who receive threats of bodily harm or who are the targets of harassing or stalking behaviors are urged to contact Campus Security and to avail themselves of the services offered by student counseling offices and the Faculty and Staff Assistance Program.

Every effort will be made to respect the privacy of all individuals involved in the matter. However, the necessity to investigate the matter and to cooperate with law enforcement authorities may require the disclosure of otherwise confidential information.

Individuals accused of engaging in incidents of campus violence may seek legal counsel at their own expense. Individuals and their attorneys are reminded that attorneys do not participate in any internal University hearing.

Campus vendors are reminded that their
employees who conduct business on University premises must conform their conduct to the requirements of this policy. The University reserves the right to remove from campus vendor employees who engage in acts prohibited by this policy.

**Photography and Film Rights Policy**

The Johns Hopkins University reserves the right from time to time to film or take photographs of faculty, staff, and students engaged in teaching, research, clinical practices, and other activities, as well as casual and portrait photography or film. These photographs and films will be used in such publications as catalogs, posters, advertisements, recruitment and development materials, as well as on the university’s Web site, for various videos, or for distribution to local, state, or national media for promotional purposes. Classes will be photographed only with the permission of the faculty member.

Such photographs and film – including digital media-which will be kept in the files and archive of the Johns Hopkins University, will remain available for use by the university without time limitations or restrictions. Faculty, students, and staff are made aware by virtue of this policy that the university reserves the right to alter photography and film for creative purposes. Faculty, students, and staff who do not want their photographs used in the manner(s) described in this policy statement should contact the Office of Communications and Public Affairs.

Faculty and students are advised that persons in public places are deemed by law to have no expectation of privacy and are subject to being photographed by third parties. The University campus and those areas of University buildings generally accessible to faculty, students, and staff are considered public places for the purpose of this policy. The Johns Hopkins University has no control over the use of photographs or film taken by third parties, including without limitation the news media covering university activities.

**Use of Animals in Required Medical Student Teaching**

The rules established by the Animal Care and Use Committee will be observed in all courses using animals for teaching. The use of animals in teaching is appropriate, however, students will not be required to participate in the use of animals in teaching exercises against their will. When possible, alternatives to the use of live animals will be explored.

**Statement on HIV Infection**

The views of the School of Medicine of the Johns Hopkins University regarding HIV infection are consistent with the statements prepared by the Association of American Medical Colleges, “Policy Guidelines for Addressing Infection in the Academic Community: A Report of the AAMC Committee on AIDS and the Academic Medical Center” (October, 1988), and “The HIV Epidemic and Medical Education: A Report of the AAMC Committee on AIDS and the Academic Medical Center” (February, 1989).

**Policy on Firearms**

The possession, wearing, carrying, transporting, or use of a firearm or pellet weapon is strictly forbidden on University premises. This prohibition also extends to any person who may have acquired a government issued permit or license. Violation of this regulation will result in a disciplinary action and sanctions up to and including expulsion, in the case of students, or termination of employment, in the case of faculty and staff. Disciplinary action for violations of this regulation will be the responsibility of the divisional student affairs officer, Dean or Director, or the Vice President of Human Resources, as may be appropriate, in accordance with applicable procedures. Any questions regarding this policy, including the granting of exceptions for law enforcement officers and for persons acting under the supervision of authorized University personnel, should be addressed to the appropriate chief campus security office.

**WOMEN’S ADVISORY COMMITTEE**

The Women’s Advisory Committee is available for consultation by women medical students. The purpose and composition of this Committee are presented in the appendix to this catalogue in connection with information on the important gift to the University by Miss Mary Elizabeth Garrett.

**MEDICAL CARE FOR STUDENTS**

Comprehensive medical care is available to students and dependents through the University Health Center. Adult primary care services are provided by internists and nurse practitioners for students and dependents enrolled in the Student Health Program. The Center also provides specialty care including gynecological services and referrals to other specialties. Mental health services are provided by faculty and staff of the Department of Psychiatry. Pediatric care is provided by a pediatrician of your choice. The Univer-
The University Health Service Center is located at 401 N. Caroline Street, adjacent to the Cancer Research Building II. Information concerning clinic hours, referrals to specialty clinics and other arrangements is contained in a brochure distributed at the time of registration. Additional information is available at www.hopkinsmedicine.org/uhs.

STUDENT SERVICES
The Department of Student and Housestaff Services is designed to serve all students, housestaff, and post-doctoral fellows in the areas of housing (on and off campus), orientation to the institution and to the Baltimore area, student activities, recreational programs, and international student services.

The Housing Office coordinates all housing applications for on-campus housing and maintains an off-campus-housing database/website to advise students of other available housing options in the Baltimore area.

The Office of Cultural Affairs
The JHMI Office of Cultural Affairs (OCA) exists to cultivate and raise awareness of the rich humanistic tradition of the Johns Hopkins Medical Institutions. Programs and events sponsored by the OCA provide a basis for student/faculty interaction in non-academic areas and serve as a reminder of our humanistic roots.

The OCA is part of the Institute of the History of Medicine and is co-chaired by Randall Packard, Ph.D. and Richard Macksey, Ph.D.

Seminars, lectures, panel discussions, and films are offered throughout the academic year. Local artists, students, faculty and staff offer professional-quality presentations to inform, encourage and inspire members of the JHMI community. In addition to performance presentations, OCA sponsors several groups, including the Choral Society, Chamber Music Society, and the student literary magazine, meme.

All of these events are free and open to the student body, faculty, and employees. Student representation on the governing committee is welcome.

The Office of Cultural Affairs is located at 2024 E. Monument Street, Ste. 1-100, Baltimore, MD 21205. Call 410-955-3363 or visit www.JHOCA.org for information and current schedules of events.

International Services
International students may receive assistance with visas and other documents in the Office of International Student and Faculty Services located in the Lowell J. Reed Medical Residence Hall. The International Society, open to all members of the medical community plans trips and social events during the year of particular interest to international students.

STUDENT ORGANIZATIONS
The Johns Hopkins Medical Student Society. Membership is composed of all students actively seeking the M.D. degree. Each medical school class annually elects at least three representatives to the Society’s Executive Council. The 2010-2011 Council is composed of: Nancy Cheng, Yuval Patel, Nathan Skelly (President), Laura Kovell, and Ross McMillan representing the Class of 2011; Marisa Mathys, Craig Monsen, John Nichols, and John Zampella representing the Class of 2012; Hale McMichael, Jake Ruzevich, Richa Gupta, and Ian Hsu representing the Class of 2013; and Thomas Johnson, Atul Nakhisi, Vanessa Pascoe, and Janaki Paskaradevan representing the Class of 2014.

The Society strives through its numerous committees and activities to further the common interests of medical students, to contribute the students’ perspective toward the improvement of medical education, and to promote communication between students and administration. There is student representation on several working committees of the School, including the Admissions Committee and the Medical School Council. All students are urged to participate actively in the work of the Society.

Student National Medical Association - Johns Hopkins Chapter. Jesse Yang (President). As the oldest organization of minority students in the United States, the Student National Medical Association (SNMA) serves the needs of African-American, Latino, and Native American students through monthly meetings, faculty forums, community activities, and recruitment of prospective students.

The Johns Hopkins Graduate Student Association. Membership is composed of all students enrolled in graduate programs. A seminar and lecture program is sponsored by the Association. Prominent scientists who have shown an interdisciplinary approach to research in the biomedical sciences are invited to the Hopkins community for lectures and informal seminars. The Association has student representation on several committees of the School.

American Medical Student Association, Johns Hopkins Chapter. Ani Ramesh and Heather Chalfin (Co-Pres). The American Medical Student Association, known as AMSA, is a nationwide organization, run
autonomously by and for medical students. AMSA offers a wide variety of services: it publishes The New Physician, a monthly magazine with articles relevant to the medical student; it sponsors several externship programs for students interested in community medicine and family practice; and it plays an active political role in recommending changes in the course of medical education and the delivery of health care before the AMA and Congressional subcommittees.

At Johns Hopkins, membership is available to medical students from all four classes. Two students are elected from the second year class to serve as representatives at the AMSA national convention and to coordinate activities at Johns Hopkins. Such activities include the publicizing of AMSA’s summer programs and the organization of seminars focusing on national issues in medical education and health care.

**Alpha Omega Alpha** (honor medical society). Peter Dans, M.D., Faculty Councillor. The Alpha Chapter of Maryland was established at the Johns Hopkins University School of Medicine in 1906. Medical students with exceptional records of clinical and preclinical academic performance as well as outstanding humanistic qualities are elected to membership in their senior year. The chapter can also elect three housestaff members, two faculty members, and two alumni annually. Activities include seminars, lectureships, and Visiting Professorships.

**RECREATIONAL AND CULTURAL OPPORTUNITIES**

Baltimore, nationally commended as an All-American City, is a city you can live in and play in year round. Baltimore consists of neighborhoods representing all ethnic and racial backgrounds, a patch-work quilt of row houses with white marble stairs and inner city mansions reminiscent of Baltimore’s wealthy history. From the paved streets of the downtown area to the rolling estates on the edges of the City, Baltimore is truly a city for all people, all backgrounds, all interests.

The Johns Hopkins Medical Institutions are located one mile from the Inner Harbor at the head of the Chesapeake Bay, the nation’s largest tidewater bay. Baltimore is one of the busiest shipping ports in the nation. The Baltimore-Washington area is the fourth largest metropolitan region in the country.

Baltimore has emerged as the most exciting of the revitalized older cities in the United States. Everywhere you look, you will see new buildings and renovated row houses — progress in motion. The most spectacular contribution to the old city’s new magic was the opening of Harborplace, situated at the crux of the Inner Harbor. This year-round attraction is composed of two glasslike pavilions with some 135 shops and restaurants. Retail shops carry clothing, sporting goods, housewares, kites, books, perfumes, and a wide selection of other items. You can choose from French cuisine to a bowl of freshly made soup, from Maryland crabs to the good ole American hamburger. Also at the Harbor: The Maryland Science Center, Pier 6 Concert Pavilion and the National Aquarium where you can spend an entire day enjoying exhibits of exotic fish, as well as a tropical rain forest.

Directly outside Harborplace are paddle and sail boats which can be rented. Across the harbor some 150 slips accommodate motor and sailing vessels, in case you own your own. A few hundred feet beyond the docking area is Federal Hill, from which one can experience much of the city with one view. From this vantage point, you will see why the Inner Harbor is the heartbeat of Baltimore.

Throughout the summer and early fall, ethnic fairs are held downtown and in various ethnic neighborhoods. Week-ends can be spent savoring the food and drink of other countries while listening to folk music and watching the people.

If you are an indoor person, theater, music and art are in abundance. The Hippodrome Theatre is a major attraction for the city, and it is a stopping-off point for shows going to and coming from Broadway. Center Stage and Everyman Theatre present the traditional and the avant-garde, or you may just choose to have dinner and watch a play in one of many dinner theaters.

The Baltimore Symphony Orchestra plays in the Meyerhoff Symphony Hall designed by Pietro Belluschi, while the Baltimore Opera Company lilt the evening away in the Lyric Theatre. The Peabody Conservatory of Music, now affiliated with the Johns Hopkins University, has concerts throughout the year.

The city’s Baltimore Arena provides the latest in “pop” performances ranging from the big band sound to hard rock.

Besides many private galleries, Baltimore boasts the Baltimore Museum of Art and the Walters Art Museum, which have notable collections of oriental art, ancient and modern statuary, American masters, and European Renaissance and impressionist oils. A fine addition to the art scene is the American Visionary Arts Museum.

Baltimore is close to sandy beaches and year-round sports activities. If you like to participate, there is horseback riding, skiing, tennis, swimming, and sailing. If you are more of a spectator, try the traditional hunt racing
in the spring, lacrosse, Baltimore baseball at Oriole Park at Camden Yards, or football with the NFL's Baltimore Ravens. Or, place your bet at Pimlico Racetrack, which traditionally hosts the Preakness, the second race in the Triple Crown series.

If you want to get away from the City, historic Annapolis, the home of the United States Naval Academy, is 45 minutes away and annually presents the largest sailing and motorboat show on the East coast. Walking along the historic streets of renovated homes provides a restful afternoon.

Sunshine and fun are an easy three hour ride away at Maryland’s Ocean City, which offers luxurious high-rise apartment buildings on the one hand, small summer cottages on the other. Beautiful beaches are everywhere.

A good home base for travelers, Baltimore provides easy access to Washington, D.C., to the south, historic Philadelphia and bustling New York to the north. To the west, the hills and mountains of Maryland, Virginia and West Virginia welcome hikers and campers.

If you enjoy eating out, Baltimore has it all: from the many ethnic restaurants in the old neighborhoods, to new French restaurants. Because of its location on the Chesapeake Bay, Baltimore is a fish city, and Maryland crab is a treat not to be described, but to be eaten. Fells Point, the area where Baltimore City was started, can provide an entire evening’s entertainment for plain fare and some liquid refreshment in one of its one hundred plus pubs. This is the area of the city where mariners from around the world like to spend their hard-earned money, and it’s only a short drive from Hopkins.

For your living accommodations, the choice is varied. Many first-year students prefer to live in Reed Hall, across from the Johns Hopkins Hospital, where they can get to know their classmates. A favorite location in subsequent years is Charles Village, the area adjacent to the Johns Hopkins University’s Homewood Campus. Smart apartments are located in the suburbs, but can also be found downtown and within walking distance of the Hospital. If you want a home, you can look at properties with pleasant lawns and trees, or you may choose to be in a city row house. You can choose to be close to the water or nearer the countryside. Wherever you select to live, you will have chosen one of America’s most exciting cities.

**THE DENTON A. COOLEY CENTER**

A recreational center is adjacent to Reed Medical Residence Hall. Membership to the Denton A. Cooley Center is free to all full-time medical students and medical graduate students. Registration is required.

A satellite center is also located on the ninth floor of the School of Public Health. The use of the secondary facility is included with registration.

Faculty, staff, housestaff, fellows, and part-time students of the medical institutions may join for an annual membership fee.

The recreation complex includes a full size gymnasium, indoor track, racquetball courts, weight room, exercise areas and locker rooms. An outdoor swimming pool is also available during the summer months, with a paid pool membership.

Programs and activities offered through the Cooley Center include intramurals, tournaments, and fitness challenges. Group exercise classes and personal training are offered at an additional cost.

**LIVING ACCOMMODATIONS**

The Johns Hopkins Medical Institutions provide residence hall living accommodations in the Lowell J. Reed Medical Residence Hall for single students or married students not accompanied by their spouses. This facility is located within easy walking distance of the School of Medicine.

Reed Hall consists of two air-conditioned wings with a connecting lobby. The West Wing offers single rooms with large community bath and shower on each floor. Building codes prohibit cooking in the West Wing rooms. However, there is a small kitchenette with a microwave and table for students to use. A wash sink is adjacent to this room so students can wash their dishes. The East Wing consists of 4-person and 8-person suites of rooms arranged with common living/dining room, kitchenette and bathroom areas with adjacent private bedrooms.

In both wings room furnishings include bed, chest of drawers, desk and desk lamp, chair, bookshelves, and closet. The residents of both wings must provide their own bed linen and towels. In addition, residents of the East Wing must provide dishes, silverware, and utensils.

Other facilities in Reed Hall include a T.V. lounge, game room, library/conference room, study lounge, room with vending concession, self-service laundry, music room, and on-site computer room. The Housing Office also provides DVDs and games for students to borrow during their stay in Reed Hall.

Students may rent a single room for the entire academic year on a contract basis. Rentals are $525, $565, and $600 per month for single rooms in the West. Rentals for suites in the East Wing range from $610 to
$675 per month per person.

Applications for housing and a descriptive brochure may be obtained from the Housing Office, Reed Medical Residence Hall, 1620 McElderry Street, Room 1132, Baltimore, Maryland 21205. For information regarding both on and off campus housing see www.hopkinsmedicine.org/som/students/life/housing/index.html. You may also contact the Housing Director, Robin Lenzo, at 410-955-3905 or rlenzo1@jhmi.edu.

LIBRARIES

Reference has already been made to the William H. Welch Library of the School of Medicine. The University collections of over 2 million volumes are housed in the Milton S. Eisenhower Library on the Homewood campus. This library acquires in excess of 9,000 current journals and is a depository for United States Government documents as well as for United Nations, Atomic Energy Commission and other official publications. Students have direct access to all library reading rooms and stack areas.

The library of the Medical and Chirurgical Faculty of Maryland, 1211 Cathedral Street, contains 94,500 volumes and is operated in affiliation with the University facilities. Other libraries of Baltimore are the Peabody and the Enoch Pratt, with 250,000 and 1,700,000 volumes, respectively. These libraries are open to students of the School of Medicine without charge.

Washington, D.C. is so near that its libraries and museums may be easily utilized. Among the chief institutions of interest to students are the Smithsonian Institution and National Museum, the Library of Congress, the National Library of Medicine, and the libraries of the various departments and bureaus.

MEDICAL SOCIETIES

Journal Clubs: Regular meetings of journal clubs are held by members of each department to survey current medical and scientific literature.

The Johns Hopkins Medical and Surgical Association: Eileen P.G. Vining, President; Ralph H. Hruban, First Vice-President; Clair A. Francomano, Second Vice-President, David R. Shortle, Secretary-Treasurer; Diane J. Orlinksy, Associate Secretary-Treasurer. The association is composed of graduates of the School of Medicine, past and present members of the School faculty, and past and present members of the housestaff of the Johns Hopkins Hospital. Scientific papers by staff members and alumni are presented at the biennial meetings.

The Johns Hopkins Women’s Medical Alumnae Association. Carol M. Ziminski, President. A women’s organization in various forms has existed at the Medical School since 1904. The present association was incorporated in 1957 to provide professional support for women students and physicians. It maintains the Mary Elizabeth Garrett Room on the first floor of the hospital near the Doctor’s Lounge.

The activities of the association include seminars with guest speakers, informal lunches in the Garrett Room, potluck dinners at faculty homes, and a fall reception to introduce students to house staff, postdoctoral fellows and faculty.

A calendar of events is mailed to women students and physicians in the early fall.

The Medical and Chirurgical Faculty: The Medical and Chirurgical Faculty of the State of Maryland is located at 1211 Cathedral Street, Baltimore. This organization constitutes the state medical society. It conducts a scientific session each year in April and maintains a library.

The Baltimore City Medical Society: The Baltimore City Medical Society is an independent society of Baltimore physicians. Located at 1211 Cathedral Street, Baltimore. Their meetings are open to medical students.

PUBLICATIONS OF THE MEDICAL INSTITUTIONS


The Johns Hopkins Magazine: Catherine Pierre, Editor. The Magazine serves the Medical Institutions, as it does other divisions of the University, by informing friends of the University concerning current developments within its branches.

The Dome: Patrick Gilbert, Editor. The Dome is the monthly house organ for all students, faculty members and other employees of the Johns Hopkins Hospital, the School of Medicine and the School of Public Health. It contains feature stories on people and activities in the Medical Institutions. News about significant research, promotions, honors and award presentations also is included.

Hopkins Medicine: Sue DePasquale, Editor. This publication is sent to graduates of the medical school, former faculty and staff, and current medical school students and their families. Hopkins Medicine serves to inform
TEACHING AWARDS

The W. Barry Wood Award for Excellence in Teaching is awarded annually to the teachers voted by the students in the preclinical years to have been most inspirational and/or effective. The recipients of the 2010 award were Dr. Richard Lange of the Department of Medicine and Dr. David Weishampel of the Center for Functional Anatomy and Evolution.

The Housestaff Teaching Award, established by the Johns Hopkins Medical Student Society, is awarded annually for excellence in clinical teaching by a member of the housestaff. Its purpose is to recognize an individual’s contributions, but also to emphasize the importance which the students attach to the concept of house officers as teachers, and to reinforce this concept in the public mind. The recipient of the 2010 award was Dr. Anthony Derek Sung of the Department of Medicine.

The Stuart Award was established in 1969 following the bequest of a grateful patient, George J. Stuart of Washington, D.C. Dr. Stuart stipulated that the income from his bequest be presented to an outstanding clinical teacher in the School of Medicine. The selection is made by the senior students. The 2010 recipient was Dr. Mitchell Goldstein of the Department of Pediatrics.

The Professors’ Award for Excellence in Teaching was established in 1981 by the Advisory Board of the Medical Faculty and is intended to honor each year members of the faculty whose teaching is judged to have had a profound effect on students in the School of Medicine. All full time and part time members of the faculty are eligible for the award. Selection of the awardees is made by the Professors’ Award Committee. The recipients of the 2010 awards were: Dr. Nisha Chandra-Strobos of the Department of Medicine for teaching in the clinical sciences, Dr. Geraldine Seydoux of the Department of Molecular Biology and Genetics for teaching in the basic sciences, and Dr. Nancy Ann Hueppchen of the Department of Gynecology and Obstetrics for teaching in the basic and clinical sciences.

The Johns Hopkins University Alumni Association Excellence in Teaching Award was established in 1992 by the Johns Hopkins University Alumni Association to recognize the critical importance of teaching at Johns Hopkins. The 2010 recipient was Dr. Robert Francis Siliciano of the Departments of Medicine and Molecular Biology and Genetics.

The Graduate Student Association Award for Excellence in Teaching was established in 1986 by the Graduate Student Association to recognize faculty members demonstrating excellence in teaching at the graduate level. The 2010 recipient was Dr. Jeremy Nathans of the Departments of Molecular Biology and Genetics, Neuroscience, and Ophthalmology.

OTHER AWARDS

The Dean’s Special Recognition Award was established in 1983 to recognize exceptional service to the institution by members of the Johns Hopkins family.

FACULTY TRAVELING FELLOWSHIP AND VISITING SCHOLAR FELLOWSHIP

The Tilghman Traveling Fellowship: In 1976 Dr. and Mrs. R. Carmichael Tilghman established the Tilghman Traveling Fellowship in the Johns Hopkins University School of Medicine. The Tilghman Traveling Fellowship will be awarded periodically to young members of the medical faculty, who are native-born citizens of the United States, to assist them during a sabbatical leave of up to one year to travel outside the Baltimore area to pursue new theories, methods and techniques in their chosen discipline.

The recipients are to be selected by a committee composed of the Dean of the Medical Faculty, the Vice Dean for Faculty, the Vice Dean for Research, the Vice Dean for Clinical Investigation, the Associate Dean for Research Administration, and the Directors of the Departments of Medicine and Pediatrics. Both full and part-time members of all departments in the School of Medicine shall be eligible for consideration. Those whose proposed work during the sabbatical year looks toward clinical application will be given the strongest consideration.

Guidelines are available at http://www.hopkinsmedicine.org/research/funding/tilghman.html. Applications may be submitted at any time, but should be submitted at least 60 days prior to the proposed travel.

The Shing Yuk Yau Memorial Fund: The fund was established in 1984 in memory of Shing Yuk Yau by his family and friends. Its purpose is to help defray traveling expenses for visiting Chinese scholars studying medi-
cine at Hopkins. Preference is given to students and faculty studying subjects relating to the brain. The Fund fosters continuing exchanges between the School of Medicine and the Chinese Academy of Sciences.

NAMED PROFESSORSHIPS

The creation of a Professorship in the School of Medicine indicates that a sum of money has been added to the University endowment to generate income which supports a professor in a particular department.

John Jacob Abel Distinguished Service Professor of Pharmacology and Experimental Therapeutics [1962]: Paul Talalay, M.D.

Funded by a bequest in the will of Mrs. Ann Hamilton of Columbus, OH. Dr. Abel was the first Professor of Pharmacology (1893-1937) and a member of the original faculty of the School of Medicine.

Martin D. Abeloff Professorship [2007]: Drew M. Pardoll, M.D., Ph.D.

Funding provided by the Seraph Foundation (Henry and Linda Spires, Trustees) for a professorship in the Department of Oncology for the purpose of advancing outstanding cancer research and treatment. The Director of the Department of Oncology, Dean of the School of Medicine, and Seraph Trustees have the discretion of appointment over current and future faculty to this professorship.

Leonard & Madlyn Abramson Professorship in Neurodegenerative Diseases [2004]: Ted M. Dawson, M.D., Ph.D.

Funding provided by Abramson Family Foundation.

Aegon Professorship in Prostate Cancer Research [2009]: Michael Carducci, M.D.

The income from the principal will be used for prostate cancer research and held in the Sidney Kimmel Comprehensive Cancer Center, Department of Oncology.

Aetna U.S. Health Care Professorship in Medicine Genetics [1996]: Garry Cutting, M.D.

Funding provided by Aetna Healthcare Corporation.

Elizabeth Plank Althouse Professor for Alzheimer’s Research in Psychiatry and Behavioral Sciences [2006]: Constantine Lyketsos, M.D., M.H.S.

Funding provided for researching the cause, prevention, treatment, and cure of Alzheimer’s Disease.

Andelot Professor of Laryngology and Otology [1962]: Unoccupied.

This Professorship was funded by a grant from Mr. Lamont Dupont Copeland of Wilmington, DE, a grateful patient of Dr. John Bordley. The Andelot name was selected by Mr. Copeland. Previous occupants: Drs. John E. Bordley, George Nager, Michael M. E. Johns, and Charles W. Cummings.

E. Cowles Andrus Distinguished Professorship in Cardiology [2001]: Edward K. Kasper, M.D.

Funding provided by Miriam Andrus, in memory of her husband, E. Cowles Andrus, M.D.

C. Michael Armstrong Professorship [2000]: Gregg L. Semenza, M.D., Ph.D.

Funding provided by Trustee, C. Michael Armstrong, to support medical research, with initial focus on stem cell research.

Dr. Frances Watt Baker and Dr. Lenox D. Baker, Jr. Deanship of the School of Medicine [1997]: Edward D. Miller, M.D.

Dr. Frances Watt Baker and Dr. Lenox D. Baker, Jr. are 1966 graduates of the Johns Hopkins School of Medicine. Dr. Frances Baker is a pediatrician and Dr. Lenox Baker is a cardiothoracic surgeon and a member of the Johns Hopkins University Board of Trustees and the Board of Johns Hopkins Medicine.

Edmund F. and Virginia Ball Professorship in Ophthalmology [2005]: Unoccupied.

Funding provided by Mr. Edmund F. Ball. This gift will be used to support research in macular degeneration and other disorders.

Freida Derdeyn Bambus Professorship in Ophthalmology [2005]: Unoccupied.

Funding provided by Dr. Freida Derdeyn, a retired teacher who became acquainted with the work of the Wilmer Institute through a local group focusing on macular degeneration.

Theodore and Ingrid Baramki Professorship in Reproductive Endocrinology [1994]: Howard A. Zacur, M.D., Ph.D.

Funding provided by Dr. Theodore Baramki, a member of the faculty of the Department of Gynecology and Obstetrics and the estate of Clarice Reiss. This gift will be used to fund a professorship in reproductive endocrinology.

Philip Bard Directorship in the Department of Physiology [1999]: Unoccupied.

Established through commitments made in 1999 by Roger Greif, Philip Davies, Elizabeth B. O’Connor, Vernon Mountcastle, Timothy Harrison, and various donors in honor of Philip Bard, Professor of Physiology, 1933 to 1964.

Baxley Professor of Pathology [1901]: J. Brooks Jackson, M.D.

A bequest in the will of Dr. Henry Willis Baxley (1824-1876) provided funding for the first endowed chair in the School of Medicine. Dr. Baxley was a graduate of the University of Maryland in 1859, was a southern sympathizer during the Civil War, and following the war practiced his profession in Baltimore and later in Virginia. Previous occupants: Drs.

**Stanhope Bayne-Jones Professorship in Medicine [1974]: David L. Thomas, M.D.**

Mrs. Stanhope Bayne-Jones provided the funding for this Professorship. Stanhope Bayne-Jones received his M.D. degree from Johns Hopkins in 1914. As an expert in infectious diseases, he served on the faculty of the University of Rochester and Yale Medical Schools, and he also served as Dean at Yale. In 1942 he was made a brigadier general in the Army Medical Corps and served in many government posts during and following World War II.

**Bendann-Ilf Professorship in Ophthalmology [1995]: Nicholas T. Iliff, M.D.**

Funding provided by Constance, Maurice, and Violet Bendann.

**Dr. Bertram M. Bernheim Research Professorship in Surgery [1968]: James Black, M.D.**

Funding for this Professorship was provided by members of the Bernheim family to honor Bertram M. Bernheim, a 1905 graduate of the Johns Hopkins Medical School. As a member of the faculty of the Department of Surgery, he was responsible for pioneering research which resulted in significant advancements in vascular surgery and blood transfusion.

**Alfred Blalock Chair in Surgery [1992]: John L. Cameron, M.D.**

Funding for this Chair was by contributions from Dr. Blalock's residents. Dr. Alfred Blalock was Director of the Department of Surgery (1941-1964) and is credited with establishing the field of cardiac surgery. He is best known for the creation of the Blalock-Taussig operation for the treatment of cyanotic congenital heart disease.

**John E. Bordley Chair in Otolaryngology/Head and Neck Surgery [1990]: Paul Fuchs, M.D.**

Funding for this Chair was provided by the McCarthy-Cooper Estate, patients, and residents of Dr. John E. Bordley, who was Director of the Department of Otolaryngology for 17 years (1952-1969). Previous occupant: Dr. William J. Richtsmeier.

**Boury Professorship in Molecular Biology and Genetics [1962]: Unoccupied.**

This Professorship was funded by a bequest in the will of Mr. Louis J. Boury. Mr. Boury was a native of Baltimore who moved to New York where he became a successful grain merchant. Previous occupants: Drs. W. Barry Wood and Daniel Nathans.

**Breast Cancer Research Professorship in Oncology [1992]: Occupied by Vered Stearns, M.D..**

Funds were provided by Mr. and Mrs. Jeffrey Legum, Mrs. Naomi Legum, grateful patients and friends.

**Dana and Albert “Cubby” Broccoli Professorship in Oncology [2001]: Elizabeth M. Jaffee, M.D.**

Funded by a gift from the Dana and Albert “Cubby” Broccoli Charitable Foundation to be used to endow a Professorship in Oncology, having an initial focus on research and treatment of breast cancer.

**William R. Brody Professorship in Radiology [1992]: Martin G. Pomper, M.D..**

Funding for this Professorship was provided by Dr. William R. Brody who was the Director of the Department of Radiology from 1987-1994. In 1996 Dr. Brody was appointed President of the Johns Hopkins University.

**Thomas M. Brushart, M.D. Professorship in the Division of Hand Surgery [2000]: Thomas M. Brushart, M.D.**

Funding provided by Arthur H. and Dorothy M. Thornhill to provide faculty support in the Division of Hand Surgery, Department of Orthopaedic Surgery.

**John L. Cameron, M.D. Professorship for Alimentary Tract Diseases in the Department of Surgery [2002] Richard D. Schulick, M.D.**

Benjamin S. Carson, Sr., M.D. and Dr. Evelyn Spiro, R.N. Professorship in Pediatric Neurosurgery [2007]: Benjamin Carson, M.D.

Funding for this professorship was provided by Mr. and Mrs. Donald Spiro.

**David J. Carver Professorship in Medicine [1974]: Henry R. Halperin, M.D.**

Created by Dr. and Mrs. Samuel P. Asper in honor of Mrs. Asper’s father, Dr. Asper was a 1940 graduate of the School of Medicine and a member of the faculty. Previous occupants: Drs. Philip A. Tumulty and William Hazzard.

**Tom Clancy Professorship in Ophthalmology [2005]: Unoccupied.**

Funding for this professorship was provided by Tom Clancy, a friend of Johns Hopkins Medicine and Johns Hopkins Board of Visitors member.

**Clayton Professorship in Oncology [1984]: Bert Vogelstein, M.D.**

In 1947 Dr. and Mrs. William L. Clayton of Houston, Texas created the Clayton Fund which was used to support projects in cardiovascular disease under the direction of Dr. Benjamin M. Baker, class of 1927. In 1984 the direction was shifted to studies of colon cancer in the Oncology Center.

**Professorship in the Clinical Care and Research of Pediatric Endocrinology [2001]: Leslie Plotnick, M.D.**

Funds provided to fund a professorship in the
clinical care and research of Pediatric Endocrinology in the Department of Pediatrics. At the time of Dr. Plotnick’s retirement, the name of the endowed professorship will become the Leslie Plotnick, M.D. Professorship in the Clinical Care and Research of Pediatric Endocrinology.

Donald S. Coffey Professorship of Urology [2004]: Robert H. Getzenberg, Ph.D.
Funding provided from the bequest of Mrs. Catherine Iola Michael and of the Mr. J. Smith Michael Unitrust.

V. Robert Colton Chair in Gastroenterology [1999]: Unoccupied.
Established by a commitment made in 1999 by V. Robert Colton, a dentist from Michigan.

Rear Admiral Ray R. Conner and Laura H. Conner Professorship in Pediatrics in the School of Medicine [1997]: Janet R. Serwint, M.D.
Funding provided by the estate of Admiral Conner. The estate stipulates the holder of the chair shall be the Director of the Harriet Lane Clinic.

Sara Miller Coulson and Frank L. Coulson Professorship in Medicine [2011]: Roy C. Ziegelstein, M.D.
Funding provided from income from the principal which will be used “in honor of Dr. David Hellmann and that the holder of the chair be a physician who exemplifies Dr. Hellmann’s passion for clinical excellence and knowing their patient as a person.”

Michael J. Cudahy Professorship in Cardiology [1994]: James L. Weiss, M.D.
Funding provided by Michael J. Cudahy, the founder of Marquette Electonics, which produces medical, diagnostic, monitoring and clinical information systems.

Charles Cummings, M.D. Professorship in Otolaryngology - Head and Neck Surgery [2005]: Unoccupied.
Funding provided by various donors.

Harvey Cushing Professorship in Neurosurgery [1981]: Henry Brem, M.D.
Funding provided by Mr. and Mrs. John H. Whitney of New York in honor of Mrs. Whitney's father. Dr. Harvey Cushing, founder of the specialty of neurosurgery, was a member of the Johns Hopkins Department of Surgery from 1897-1912.

Dario Family Professorship in Mood Disorders [2010]: Kay Redfield Jamison, M.D.
Funding provided by the Dario Family to support the understanding, treatment, and dissemination of knowledge of mood disorders and support the position of the department director/s of the Johns Hopkins Mood Disorders Center.

Walter E. Dandy Professorship in Neurosurgery [2004]: Rafael J. Tamargo, M.D.
Funding provided by Walter E. Dandy, Jr.

Richard Bennett Darnall Chair in Surgery [1964]: Unoccupied.
Funding provided by a bequest in the will of Mrs. Eugenia B. Darnall whose husband, Richard Bennett Darnall, was an attorney in Annapolis, Maryland.

Richard Bennett Darnall Professor Emeritus of Cardiology [1964]: Vincent L. Gott, M.D.
See above.

Eugene DeJuan Sr. Professorship in Ophthalmic Education [2006]: James P. Dunn, M.D.
Funds provided by Eugene DeJuan, Sr. to help support the residency program at the Wilmer Institute.

DeLamar Professorship in Biological Chemistry [1919]: Gerald W. Hart, Ph.D.
Funding provided by a bequest in the will of Capt. Joseph R. DeLamar, who was born in Holland in 1843 and came to America after the Civil War and engaged in the marine salvage business. In 1878 he moved west, entered the mining business and became the owner of the Utah Mine and Smelting Co. On the advice of his attorney, he divided his $30 million estate between the “three best medical schools of the day -Johns Hopkins, Harvard and Columbia”. Previous occupants: Drs. Walter J. Jones, W. Mansfield Clark, Albert L. Lehninger, and M. Daniel Lane.

Martin W. Donner Professorship in Radiology [1988]: Jonathan S. Lewin, M.D.
Funding provided by contributions of current and former faculty, fellows, and house staff of the Department of Radiology. Dr. Martin W. Donner was Director of the Department of Radiology from 1972-1987.

Clarence Doodeman Professorship in Cardiology [2005]: Robert G. Weiss, M.D.
Funding provided by Edward and Loretta Downey to honor Mrs. Downey’s father, Mr. Clarence Doodeman.

James T. Dresher, Sr., Professorship in Cardiac Surgery [2001]: Duke E. Cameron, M.D.
Funding provided by The Dresher Foundation, Inc., to establish an endowed professorship to honor James Dresher, Sr.

Funding provided by the Altsheler-Durell Foundation, Inc. to establish a full professorship at the School of Medicine which will support a leading specialist in retinal diseases, and in particular, age related macular degeneration and/or low vision.
George S. and Delores D. Eccles Professorship in Ophthalmology [1998]: Peter A. Campochiaro, M.D.
Funding provided by the Eccles Foundation and by Mrs. Eccles for a professorship in Ophthalmology.

Milton T. Edgerton, M.D. Professorship in Plastic Surgery [2011]: W.P. Andrew Lee, M.D.
Funding provided by Dr. Milton T. Edgerton for an endowed professorship for the Director of the Department of Plastic and Reconstructive Surgery.

Doctor Dorothy Edwards Professorship in Gynecology and Obstetrics [1986]: Harold E. Fox, M.D.
Funding provided by a bequest of Dr. Dorothy Edwards, who attended the Johns Hopkins School of Medicine from 1917-1921. She was a successful gynecologist in Chicago. She specified that the Professorship be known by her title, first name, and last name.

Akef El Maghraby Professorship in Preventive Ophthalmology [1991]: Sheila K. West, Ph.D.
Funding provided by Dr. Akef El Maghraby.

Eudowood Professorship in Pediatric Immunology [1986]: Jerry A. Winkelstein, M.D.
Funding provided by the Eudowood endowment. Eudowood was the name of a tuberculosis hospital officially known as The Hospital for Consumptives of Maryland, which joined with other institutions to form the Children’s Medical and Surgical Center. The Eudowood endowment is managed by a Board of Directors which provides funding for this and other professorships.

Established by commitment made by Edith M. Ewald in memory of her daughter.

King Fahd Chair in Molecular Medicine [1993]: Andrew P. Feinberg, M.D., M.P.H.
Funding provided by the Kingdom of Saudi Arabia. The King Fahd Professorships in the School of Medicine represent “an indication of the mutual human interest and mutual support and friendship between the Kingdom of Saudi Arabia and the United States of America.”

King Fahd Chair in Pediatric Oncology [1993]: Robert J. Arceci M.D., Ph.D.
See above.

Robert and Maureen Feduniak Professorship in Ophthalmology [2009]: Michael Repka, M.D.
Established by Robert and Maureen Feduniak to support patient care and research related to amblyopia, strabismus, and eye diseases of children.

Funding provided by a bequest of Alice Larsen Fink reflecting her “deep regard for Dr. Firor as a fine surgeon, teacher, and humanitarian.”

Robert Garrett Professorship in Pediatric Surgery [1964]: Paul M. Colombani, M.D.
Funding provided by the Garrett Fund for the surgical treatment of children founded by Mary F. Jacobs. Previous occupant: Dr. J. Alex Haller.

Vincent L. Gott, M.D. Professorship in Ophthalmology [2002]: Sharon Solomon, M.D.
Funded by a major bequest from the Katherine Graham estate.
Alex Grass Professorship in Oncology [2003]: David S. Ettinger, M.D.
Funding provided by Mr. Alex Grass of Wormsleyburg, PA.

Joseph E. Green Professorship in Macular Degeneration and Other Retinal Diseases [1998]: Morton F. Goldberg, M.D.
Funding provided by a bequest from Joseph E. Green to the Department of Ophthalmology which will support research activities by a faculty member in macular degeneration.

Funding provided by various donors to support a faculty member in Ophthalmology.

John W. Griffin, M.D., Directorship for the Brain Science Institute [2011]: Jeffrey Rothstein, M.D.
Income from the principal will be used to provide faculty support and “advance the work of the Brain Science Institute. Through the support provided...the director will be better able to communicate with and serve a large and diverse neurosciences community, while making decisions efficiently and moving targeted programs along rapidly.”

Burton E. Grossman Professorship in Ophthalmology [1998]: Oliver Schein, M.D.
Funding for this professorship was provided by Dr. and Mrs. Burton Grossman to ensure the integration of the progression of specific ophthalmologic diseases and to develop techniques for preventing these diseases.

Guerrieri Family Professorship in Ophthalmology [1998]: Donald Zack, M.D.
Funded by the Guerrieri Family Foundation for the Center for Genetic Engineering and Molecular Ophthalmology at the Wilmer Institute.

Willard and Lillian Hackerman Professorship in Oncology [1981]: Moody D. Wharam, Jr., M.D.
Funding provided by Mr. and Mrs. Willard Hackerman. Mr. Hackerman is a graduate of the Johns Hopkins University School of Engineering and was a long time trustee of the University. He is the CEO of Whiting-Turner Construction Co. and founded the Whiting School of Engineering. Previous occupant: Dr. Stanley E. Order.

Funding provided by Mr. Karl H. Hagen to provide faculty support in the Department of Ophthalmology.

Haller Professorship in Pediatric Neurologic Diseases [1996]: Harvey S. Singer, M.D.
Funding provided by a bequest from Miss Virginia Doriot Haller of Salem, VA, whose purpose is to support research with a primary focus on genetic, developmental and environmental factors in the neurologic diseases of children.

Bayard Halsted Professorship in Cell Biology and Anatomy [1943]: Unoccupied.
Funding provided by a bequest in the will of Mr. Edward Bayard Halsted, a retired stock broker in New York City. “The income thereof shall be forever devoted to research work for the advancement of knowledge as to the nature, causes, means of prevention, and cure of such maladies...in need of further study and investigation.” Previous occupants: Drs. David Bodian and Thomas D. Pollard.

William Stewart Halsted Professorship in Surgery [2000]: Julie A. Freischlag, M.D.
Funding provided by Department of Surgery’s Unit Executive Fund.

Jacob Handelsman Professorship in Surgery [2004]: Michael A. Choti, M.D.
Funding provided by grateful patient of Dr. Handelsman

Elizabeth Treide and A. McGhee Harvey Chair in The History of Medicine [1992]: Occupied by Harry M. Marks, Ph.D.
Funding provided by Dr. and Mrs. Harvey, Dr. Harvey’s colleagues in the Department of Medicine, and many friends and relatives of the Harveys. This Professorship was placed in the Department of the History of Medicine to recognize Dr. Harvey’s (class of 1934) second interest in history after 27 years as Director of the Johns Hopkins Department of Medicine. Mrs. Harvey (class of 1943) was named to recognize her and other faculty wives for their contributions to this Institution.

Isaac Morris and Lucille Elizabeth Hay Professorship in Embryology [1996]: Peter Devreotes, Ph.D.
Funding provided by a commitment made in 1996 by Elizabeth D. Hay in memory of her parents.

Kyle Haydock Professorship in Oncology [2003]: Donald Small, M.D., Ph.D.
Endowed by author Tom Clancy memorializing a young friend who lost his life to cancer. To be used in perpetuity by a distinguished faculty member in Oncology for the purpose of advancing outstanding childhood cancer research and patient care.

Sherlock Hibbs/Eugene VanDyke Professorship for Research [2004]: Theodore M. Bayless, M.D.
Dean’s Office Professorship

The Charles J. Homcy, M.D. Professorship in Neurosciences and Kennedy Krieg er School of Arts and Sciences [2009]: Unoccupied.
Funding provided by Charles J. Homcy,
M.D. to provide direct salary support for the Homcy Professor for research and teaching in the Department of Neurosciences in the School of Medicine and the teaching of undergraduates and graduate neuroscience at the Krieger School of Arts and Sciences as well as in the sponsorship of undergraduate research at the Krieger School of Arts and Sciences.

**Johns Hopkins Family Professorship in Oncology Research** [2004]: Chi V. Dang, M.D., Ph.D.
Funds provided by the descendants of the parents of Johns Hopkins.

**John Eager Howard Chair in Endocrinology and Metabolism** [1990]: Paul W. Ladenson, M.D.
Funding provided by family, friends, colleagues, and grateful patients of Dr. John Eager Howard (class of 1928), who was a long time member of the Johns Hopkins faculty and Chief of the Division of Endocrinology. He was a superb internist, as well as investigator. His research contributions include the elucidation of the relationship between unilateral renal disease and high blood pressure, and the role of a protein factor in urine preventing the formation of kidney stones.

**R. Dale Hughes Professorship in Oncology** [2000]: Mario A. Eisenberger, M.D.
Established through commitments made in 1999 by R. Dale Hughes and Frances M. Hughes and other donors. Mr. Hughes is a grateful patient of the Oncology Center and made this commitment because of the care he has received since 1987.

**David S. Hungerford, M.D. Chair in Orthopaedic Surgery (Good Samaritan Hospital)** [2001]: David S. Hungerford, M.D.
Established through a commitment made in 1997 by Good Samaritan Hospital and patients of Dr. David S. Hungerford.

**Charles E. Iliff III, M.D. Professorship in Ophthalmology** [2007]: Nicholas T. Iliff, M.D.
Funding for this professorship provided by Dr. Helen Ossofsky-Iliff to honor Dr. Charles Iliff and to provide support for research which will improve the outcome of ophthalmic surgery.

Funded by Julius H. Jacobson, II, M.D. to establish a chair in vascular surgery in the Department of Surgery.

Funding provided by Janssen Pharmaceutica, Inc., Jeremy and Nancy Halbreich, Theodore H. Strauss, Janie Strauss McGarr and various donors to create a professorship at the Marvin M. Schuster Center for Digestive and Motility Disorders at the Johns Hopkins Bayview Medical Center.

**Robert D. Jeffs Professorship in Pediatric Urology** [2010]: John P. Gearhart, M.D.
Funding provided by the Zanvyl and Isabelle Krieger Fund. Income from the principal will be used for a professorship in pediatric urology. The endowment will be held in the Brady Urological Institute at the School of Medicine.

**Richard T. Johnson Professorship in Neurology** [1997]: Unoccupied.
To be established by commitments made in 1997 by colleagues of Richard T. Johnson and residents in the Department of Neurology. Dr. Johnson was a member of the Department of Neurology when it was created in 1969 and served for many years as director of the department.

**Henry J. Knott Directorship of the McKusick/Nathans Center for Medical Genetics and Professorship in Medical Genetics** [1999]: David Valle, Ph.D.
Funding provided by Marion I. Knott in honor of her late husband who served as a Trustee of the Hospital and, with his wife, was an extremely generous supporter of Hopkins.

**Marion I. Knott Directorship of the Oncology Center and Professor in Oncology** [1999]: William Nelson, M.D.
Funding provided by Marion I. Knott in honor of her late husband who served as a Trustee of the Hospital and, with his wife, was an extremely generous supporter of Johns Hopkins.

**Arlene and Robert Kogod Professorship in Mood Disorders in the Department of Psychiatry** [2008]: James Potash, M.D., Ph.D.
Funding will be provided by Arlene and Robert Kogod to provide the financial support and stability for research, education, and clinical activities of individual faculty members in the Department of Psychiatry.

**Everett and Margorie Kovler Professorship in Pancreas Cancer Research** [2009]: Scott Kern, M.D.
Funding provided by Everett and Marjorie Kovler to provide support of pancreatic cancer research. The endowment will be held in the Sidney Kimmel Comprehensive Cancer Center at the School of Medicine.

**Zanvyl Krieger Professorship in Pediatric Ophthalmology** [1991]: David L. Guyton, M.D.
Funded by a contribution from Mr. Zanvyl Krieger, a 1928 graduate of the Johns Hopkins University, a successful business man and philanthropist. He is a benefactor of many components of the Johns Hopkins University.

**Zanvyl and Isabelle Krieger Professorship in Urology** [2000]: Unoccupied.
Funded by a contribution from Mr. Zanvyl Krieger, a 1928 graduate of the Johns Hopkins University, a successful business man and philanthropist. He is a benefactor of many components of the Johns Hopkins University. Additional funds to be solicited to complete the professorship.

**Lapides Professorship in Otolaryngology** [1997]: *Unoccupied.* Funding provided by Linda S. and Julian L. Lapides.

**George LeBoff Professorship for Research in Digestive Diseases** [1999]: Mark Donowitz, M.D. Funding provided by the estate of George LeBoff for support in the Division of Gastroenterology.

**Lederer Professorship of Pediatric Epilepsy** [1920]: Eileen P.G. Vining, M.D. Funded by a gift for research in the care and cure of pediatric epilepsy.

**Legum Professorship in Acute Neurological Medicine** [1999]: Daniel Hanley, M.D. Funding provided by Mr. and Mrs. Jeffrey Legum. Appointment to the Professorship will be made by the Dean on the recommendation of the Chairman of the Department of Neurology. The recipient will be a leader in research of severe brain injury and disease.

**Doris Lescher and John G. Bauernschmidt II Professorship in Ophthalmology** [2004]: *Unoccupied.* Both donors stipulated that funds were to be used for research into retinal disease.

**David Levine Professorship** [2004]: Daniel E. Ford, M.D., M.P.H. Established to be occupied by the Vice-Dean for Clinical Research.

**Julia L. Levy Ph.D. Professorship in Ophthalmology** [2004]: Susan Bressler, M.D. Funding provided by QLT, Inc. of Vancouver, BC.

**Robert L. Levy Chair in Cardiology** [1975]: Lewis C. Becker, M.D. Funding provided by a bequest of Dr. Robert L. Levy, a graduate of the School of Medicine in 1913 and a highly respected practicing cardiologist in New York City. Previous occupants: Drs. J. O’Neal Humphries, Myron L. Weisfeldt, and Eduardo Marban.

**Wayne Lewis Professorship in Orthopaedic and Shoulder Surgery** [2006]: Edward McFarland, M.D. Funding provided by Dextra Bank and Trust Co., Ltd. to create a professorship in orthopaedics and shoulder surgery.

**Donlin M. Long Chair in Neurosurgery** [1999]: Ziya L. Gokaslan, M.D. Established in 1999 by patients, colleagues and friends in honor of Donlin Long who served as Director of the Department of Neurosurgery from 1973 to 2000.

**Mason F. Lord Chair in Geriatric Medicine** [1976]: Samuel Durso, M.D. Funding provided by an anonymous gift to honor Dr. Mason F. Lord a 1954 graduate of the School of Medicine, member of the faculty of the Department of Medicine and Director of the Geriatrics Program at the Baltimore City Hospitals, now the Johns Hopkins Bayview Medical Center.

**The Raymond and Anna Lublin Professorship in Medicine** [1989]: Jeremy D. Walston, MD. Funding provided by Dr. and Mrs. Raymond Lublin to support the leader of the Division of Geriatrics in the Department of Medicine. Dr. Lublin was a 1929 graduate of the Johns Hopkins School of Medicine and practiced general surgery in East Hartford, CT. Previous occupant: Jesse Roth, M.D.

**Eddyne Harris Lucas and Clara Lucas Lynn Chair in Hematology** [1992]: Robert A. Brodsky, M.D. Funding provided by Clara Lucas Lynn, a grateful patient of Dr. William R. Bell.

**Virginia and Daniel K. Ludwig Chair in Cancer Research** [1996]: Stephen Baylin, M.D. Funding provided by Daniel K. Ludwig, one of the world’s great ship owners, who dedicated his fortune to medical research on an international scale for the understanding and eradication of cancer.

**Virginia and Daniel K. Ludwig Chair in Clinical Investigation of Cancer** [1999]: Ross C. Donehower, M.D. Funding provided by Daniel K. Ludwig, one of the world’s great ship owners, who dedicated his fortune to medical research on an international scale for the understanding and eradication of cancer.

**James and Debra Lustig Professorship** [2000]: *Unoccupied.* Funding provided by James and Debra Lustig to support research in corneal disease and microbiology at the Wilmer Institute.

**MacMillan Family Professorship in Clinical Pancreatic Cancer Research** [2008]: Occupied by Daniel Laheru, M.D. Funding provided by the MacMillan Family to be used for clinical pancreatic cancer research at the Sidney Kimmel Comprehensive Cancer Center.

**David Marine Professorship of Medicine** [1985]: Landon S. King, M.D. Funding provided by the estate of Dr. David N. Marine, a 1947 graduate of the Johns Hopkins School of Medicine. He specialized in the study of pulmonary disease and tuberculosis.
Funding provided by Dr. Thomas H. Maren, class of 1951, who was a faculty member in the Department of Pharmacology directed by Dr. Marshall.

Eli Kennerly Marshall, Jr. Professorship in Oncology [1978]: Gary L. Rosner, M.D.
E. K. Marshall succeeded Abel as Professor of Pharmacology. This Professorship was initially in the Oncology Division of the Department of Medicine, but moved to Oncology when Oncology became a department. Previous occupant: Dr. Albert H. Owens.

Bessie Darling Massey Chair in Biomedical Engineering [1958]: Elliot McVeigh, Ph.D.
Funding provided by Mr. and Mrs. Massey, grateful patients of John Bordley. Previous occupant: Richard J. Johns, M.D.

The A. Edward Maumenee Professorship in Ophthalmology [1993]: Harry A. Quigley, M.D.
Funding provided by Mrs. Margaret Mosher and other friends, colleagues, and grateful patients of Dr. Maumenee who was Director of the Wilmer Eye Institute and Director of the Department of Ophthalmology from 1955-1979.

David Hall McConnell Professorship of Urology [1973]: Alan W. Partin, M.D., Ph.D.
Funding provided by Admiral H. P. John Duberg, a grateful patient of Dr. W. W. Scott. Adm. Duberg was married to Dorys McConnell Duberg, a daughter of David Hall McConnell who was the founder of the Avon Corporation. Previous occupant: Dr. W. W. Scott.

The Hugh P. McCormick Family Professorship in Endocrinology and Metabolism [2003]: Unoccupied.
Funding provided by Hugh P. McCormick of McCormick Spice.

The Paul R. McHugh Chair in Motivated Behaviors [1998]: Timothy H. Moran, Ph.D.
Funding provided by Mr. William F. Scandling and various donors in honor of Dr. Paul McHugh, Director of the Department of Psychiatry and Behavioral Sciences.

Victor A. McKusick Professorship in Medicine and Genetics [2004]: Harry C. Dietz, III, M.D.
Funding provided by anonymous donor & friends of Dr. McKusick.

Eugene Meyer III Professorship in Psychiatry and Medicine [1982]: Phillip R. Slavney, M.D.
Funding provided by Dr. Eugene Meyer, family and friends. Dr. Meyer, a 1941 graduate of the School of Medicine, trained in both Medicine and Psychiatry and the Professorship supports joint activities in these two departments.

Harry and Betty Meyerberg/Thomas R. Hendrix Professorship in Gastroenterology [2006]: Steven Meltzer, M.D.
Funding for this professorship provides faculty support in the Division of Gastroenterology in the Department of Medicine.

Harvey M. Meyerhoff Professorship in Bioethics [1999]: Jeremy Sugarman, M.D.
Established by commitment made in 1999 by Harvey M. Meyerhoff, a long time University and Hospital Trustee and the founding Chairman of the Hopkins Health System Board.

Robert E. Meyerhoff Professorships [2007]: Occupied by Frederick Korley, M.D.
Funding provided to enable Johns Hopkins Medicine to recruit junior faculty members with exceptional promise.

Catherine Iola and J. Smith Michael Distinguished Professor in Urology [1988]: Donald S. Coffey, M.D.
Funding provided by Mrs. Catherine Iola Michael and Mr. Smith Michael. Mr. Michael was president and board chairman of the First National Bank of Aberdeen, which was later acquired by Equitable Trust Company. Both Mr. Michael and Mrs. Iola Michael grew up in Hartford County, Maryland. Mr. Michael died in 1978. This Professorship was established in memory of Mr. J. Smith Michael.

Edward D. Miller Professorship in Anesthesiology Research [2007]: Nicholas A. Flavahan, M.D.
Funding provided from the Johns Hopkins Hospital Endowment Fund, Inc. Funds will be used to support research activities and research infrastructure in the Department of Anesthesiology and Critical Care Medicine.

Michel Mirowski, M.D. Professorship in Cardiology [1998]: Gordon F. Tomaselli, M.D.
Funding provided by the Mirowski Family Foundation, Inc., to provide faculty support in the Division of Cardiology in the School of Medicine. The Chair memorializes Dr. Mirowski, a cardiologist at Johns Hopkins who played a key role in the development of the implanted defibrillator.

Arthur B. and Patricia B. Modell Professorship in Thoracic Surgery [2007]: Stephen C. Yang, M.D.
Funding provided by Mr. and Mrs. Arthur B. Modell to honor a faculty member in the Department of Surgery. This gift will allow the Department of Surgery to have a profound impact on the field of thoracic surgery.

Russell H. Morgan Professorship in Radiology [1994]: Paul Bottomley, M.D.
Funding provided by friends and colleagues of Dr. Russell H. Morgan, Director of the
Department of Radiology from 1946-1971.

**Richard and Kate Morton Chair in Genetic Research [2003]: Unoccupied.**
Funding provided by Richard F. Morton and Kathleen C. Morton to provide faculty support in the Institute for Genetic Medicine. Dr. Richard Morton completed an Ob/Gyn internship at Johns Hopkins and also serves on the Public Health faculty. Dr. Kathleen Morton is a pediatrician who served on the School of Medicine faculty and became the first woman named a dean there.

**Margaret C. Mosher Professorship in Ophthalmology [2002]: John D. Gottsch, M.D.**
Established in 2002 by a one-life gift annuity from the estate of Margaret C. Mosher of Santa Barbara, California.

**James B. Murphy Professorship in Oncology [2000]: Richard F. Ambinder, M.D., Ph.D.**
Established in 2000 by an anonymous donor in memory of James B. Murphy, Class of 1909.

**George T. Nager Professorship in Otolaryngology/Head and Neck Surgery [2001]: John K. Niparko, M.D.**
Funding provided by numerous friends, patients, and colleagues of Dr. Nager.

**Daniel Nathans Directorship of the Department of Molecular Biology and Genetics and Professorship in Molecular Biology and Genetics [1999]: Carol Greider, Ph.D.**
Funds provided by several anonymous donors in honor of Daniel Nathans. Dr. Nathans joined the faculty in 1962 and went on the direct the Department of Microbiology and Molecular Biology and Genetics. He served as interim president of the University from 1995 to 1996. He won the Nobel Prize in medicine in 1978 for his discovery and use of a restriction enzyme as “biochemical scissors” to cut and analyze DNA. In 1993 he received the nation’s highest scientific award, the National Medal of Science. Dr. Nathans died in 1999.

**Paul K. Neumann Professorship in Pancreatic Surgery [1998]: Steven Leach, M.D.**
Funding provided by Mark D. and Robin Neumann in memory of Mr. Mark Neumann’s father to support a prominent surgeon in determining the causes, prevention and management options for pancreatic cancer research.

**Noxell Chair in Dermatology [1995]: Sewon Kang, M.D.**
Funding provided by the Noxell Foundation. The Noxell Company was a cosmetics company founded and based in Maryland which became a part of the Proctor and Gamble Co. Previous occupant: Thomas T. Provost, M.D.

**Odd Fellows Professorship in Ophthalmology [1963]: Henry D. Jampel, M.D., M.H.S.**
Funding provided by a grant for research in eye disease and eye pathology. Previous occupant: Dr. Arthur M. Silverstein.

**Lewis J. Ort Professorship in Ophthalmology [1989]: Unoccupied.**
Funded by a gift from the Lewis J. Ort family for the support of diagnosis and management of hereditary eye diseases.

**William Osler Professorship in Medicine [1978]: Myron L. Weisfeldt, M.D.**
Funding provided by a bequest in the will of Dr. J. Earle Moore, a prominent Baltimore internist and pioneer in the chemotherapy of syphilis. He was director of the Syphilis Clinic at Johns Hopkins. The Professorship is named for the first Director of the Department of Medicine, Dr. William Osler, and has been occupied by Directors of the Department. Previous occupants: Drs. Victor A. McKusick and John D. Stobo.

**Arnall Patz Distinguished Professorship in Ophthalmology [1993]: Unoccupied.**
Funded by gifts from family, friends, colleagues, and grateful patients of Dr. Arnall Patz, who was Director of the Wilmer Eye Institute and Director of the Department of Ophthalmology from 1979-1989.

**Helen Golden Paulson Professorship in Gastroenterology [1982]: Anthony Kalloo, M.D.**
Funding provided by the estate of Helen G. Paulson in honor of Dr. Moses Paulson who was a practitioner of internal medicine and gastroenterology in Baltimore. He was a member of the part-time faculty of the Department of Medicine. Previous occupant: Drs. Thomas R. Hendrix, Mark Donowitz, and Francis Giardello.

**Virginia M. Percy and William Algernon Percy Chair in Orthopaedic Surgery [1979]: Kristen Weber, M.D.**
Mrs. Percy was a grateful patient of Dr. Lee H. Riley, Jr. Previous occupant: Dr. A. Hari Reddi.

**Aliki Perroti Chair in the Department of Medicine [2006]: David B. Hellmann, M.D.**
Funding provided by Mrs. Aliki Perroti. The recipient is to be a superior clinician committed to meeting the medical challenges of the twenty-first century and beyond.

**Henry Phipps Professorship in Psychiatry [1908]: J. Raymond DePaulo, Jr., M.D.**
Created by a gift from Mr. and Mrs. Henry Phipps of Philadelphia for whom the Phipps Psychiatric Clinic is named. Previous occupants: Drs. Adolf Meyer, John C. Whitehorn, Seymour S. Kety, and Joel Elkes.
Boone Pickens Professorship in Ophthalmology [2005]: Walter Stark, M.D.
Funding provided by Mr. Boone Pickens of Dallas, Texas out of his respect and admiration of Dr. Stark.

Rainey Professorship in Pediatric Hematology [1992]: James F. Casella, M.D.
Funding provided by Dr. and Mrs. Rainey, family and friends. Dr. Rainey was a 1933 graduate of the Johns Hopkins School of Medicine and practiced internal medicine in Greenville, SC. A family member was a patient of Dr. William Zinkham. Its purpose is to provide stable support for the Division of Pediatric Hematology. Previous occupant: George J. Dover, M.D.

John G. Rangos, Sr. Professorship in Adult Medicine [2001]: Francis M Giardiello, M.D.
Funding provided by the John G. Rangos, Sr. Charitable Foundation to be designated for terms of at least five years, to a physician-scientist pursuing promising areas of research in gastrointestinal medicine and demonstrating exceptional promise in advancing new discoveries and treatments in the area of colon cancer.

Mark M. Ravitch Endowed Professorship in Surgery [1985]: Occupied by Jonathan E. Efron, M.D.
Funding provided by friends, patients, and colleagues of Dr. Mark M. Ravitch to promote surgical scholarship. Dr. Ravitch, a 1934 graduate of the Johns Hopkins School of Medicine, trained in surgery with Dr. Alfred Blalock. He held numerous posts in American academic surgery and finished his career as Professor of Surgery at the University of Pittsburgh. He was a general, thoracic, and pediatric surgeon best known for the introduction of surgical stapling and the surgical repair of pectus excavatum.

Rose-Lee & Keith Reinhard Professorship in Urologic Pathology [2001]: Jonathan I. Epstein, M.D.
Funding provided by Rose-Lee and Keith Reinhard to honor Patrick Walsh, M.D. and to further prostate cancer research by establishing an endowed professorship in the Brady Urological Institute. Dr. Walsh is the Director of the Department of Urology.

Richman Family Professor for Alzheimer’s and Related Diseases [2008]: Peter V. Rabins, M.D., M.P.H.
Funding provided by the Richman Family for the Department of Psychiatry and Behavioral Sciences for Alzheimer’s and related disorders.

Lee H. Riley, Jr., M.D., Chair in Orthopaedic Surgery [1994]: Xu Cao, Ph.D.
Funding provided by the family, friends, colleagues, and patients of Dr. Riley to provide support for a clinical scholar in Orthopaedic Surgery. Dr. Riley was Director of the Department of Orthopaedic Surgery from 1979-1991.

Alfredo Riviere and Norma Rodriguez de Riviere Professorship in Endocrinology [1997]: Gary S. Wand, M.D.
Funding provided by Alfredo Riviere and Norma Rodriguez de Riviere for thyroid related research.

Robert A. Robinson Chair in Orthopaedic Surgery [1972]: Frank J. Frassica, M.D.
Established by contributions from grateful patients and colleagues of Dr. Robert A. Robinson, who was Director of the Department of Orthopaedic Surgery from 1953-1979. Previous occupants: Drs. Lee H. Riley, Jr. and Richard N. Stauffer.

Mark C. Rogers Chair in Anesthesiology and Critical Care Medicine [1992]: John A. Ulatowski, M.D., Ph.D.
Funding provided by the Unit Executive Fund of the Department of Anesthesiology and Critical Care Medicine. Dr. Mark C. Rogers was Director of the Department of Anesthesiology and Critical Care Medicine from 1980-1993.

Barbara B. Rubenstein Professorship in Oncology [2002]: Saraswati Sukumar, Ph.D.
Funding provided by Trustee Mark Rubenstein and his children, David, Jonathan, and Hilary in memory of their wife and mother.

Salisbury Family Professorship in Neurosurgery [2008]: Daniel Rigamonti, M.D.
Funding provided by the Salisbury family.

Herman and Walter Samuelson Foundation Professorship in Oncology [1999]: Unoccupied.
Funding provided by The Herman and Walter Samuelson Foundation for the purpose of advancing outstanding cancer research.

Samsung Professorship in Medicine [1997]: David M. Levine, M.D., Sc.D.
Funding provided by the Samsung Corporation to endow a chair in the Department of Medicine, Division of Internal Medicine.

D. William Schlott Professorship in Medicine [2001]: John A. Flynn, M.D.
Funding provided by friends, patients and colleagues of Dr. D. William Schlott.

Bernard L. Schwartz Distinguished Professorship in Urological Oncology [1997]: Mark P. Schoenberg, M.D.
Funding provided by Dr. and Mrs. Bernard Schwartz. Dr. Schwartz is the CEO of Loral Space and Communications, Ltd. and a grateful patient of Johns Hopkins. Previous occupant: Dr. Fray F. Marshall.

Lawrence Cardinal Shehan Chair in Physi-
cal Medicine and Rehabilitation [1993]: Jeffrey B. Palmer, M.D.
Funding provided by the Good Samaritan Hospital to support the Director of Physical Medicine and Rehabilitation.

Irving J. Sherman M.D. Professorship in Immunology [2003]: Gregory J. Riggins, M.D.
Funds provided by Mr. and Mrs. Irving Sherman for the Department of Neurosurgery.

Raj and Neerah Singh Professorship in Biomedical Engineering [2008]: Raimond L. Winslow, Ph.D.
Funding provided by the Raj and Neerah Singh Charitable Foundation and will be used by the Department of Biomedical Engineering to recruit, retain, or support a distinguished faculty member specializing in computational medicine.

W.W. Smith Charitable Trust Professorship in Immunology [2002]: Daniel Drachman, M.D.
Established by a grant from the W.W. Smith Charitable Trust as a reflection of Bill Smith's exceptional vision and his desire to enhance medical excellence.

Alfred Sommer Professorship in Ophthalmology [2004]: David S. Friedman, M.D., Ph.D.
Funds set aside by the Department of Ophthalmology for retinal research.

Lewis Cass Spencer Chair of Orthopaedic Surgery [1997]: Thomas L. Clemens, Ph.D.
Funding provided by Dr. Rowena Spencer, a member of the class of 1947, in honor of her father, the late Lewis Cass Spencer, M.D., an alumnus of the class of 1911 and the first orthopaedic surgical resident at Johns Hopkins.

Paul D. Sponseller, M.D. Professorship in Pediatric Orthopaedic Surgery [1997]: Unoccupied.

Theodore and Vada Stanley Distinguished Chair in Neurovirology in Pediatrics [1998]: Robert H. Yolken, M.D.
Funding provided by the Stanley Foundation. The endowment will support research in brain disorders, especially schizophrenia and bipolar disorders, which may be caused by infections in infancy and childhood.

Mary Wallace Stanton Professorship for Education [2004]: David Nichols, M.D.
Funds provided by donor to endow Professorships in the School of Medicine.

Mary Wallace Stanton Professorship for Faculty Affairs [2004]: Janice Clements, Ph.D.
Funds provided by donor to endow Professorships in the School of Medicine.

Walter J. Stark Chair in Ophthalmology [1992]: Walter J. Stark, Jr., M.D.
Funding provided by grateful patients of Dr. Stark: Mrs. Margaret Mosher, Ralph S. O’Connor, Ray Stark, and Mr. and Mrs. Albert Broccoli.

Stermer Family Professorship in Pediatric Inflammatory Bowel Disease [2001]: Occupied by Maria Oliva-Hemker, M.D.
Funding provided by the Stermer Family for the Director of the IBD Center in the Department of Pediatrics.

Dr. Mary Betty Stevens Professorship in Rheumatology [1989]: Antony Rosen, M.D.
Funding provided by colleagues, friends and former patients of Dr. Mary Betty Stevens to support a clinical scholar in the Division of Rheumatology. Dr. Stevens, a 1955 graduate of the Johns Hopkins School of Medicine, specialized in clinical rheumatology and directed the division within the Department of Medicine.

Sunshine Natural Wellbeing Foundation Professorship in Chronic Fatigue Syndrome and Related Disorders in Pediatrics [2006]: Peter C. Rowe, M.D.
Funding provided to support a deserving faculty member.

Dr. Frank V. Sutland Chair in Pediatric Genetics [1991]: Ada Hamosh, M.D.
Funding provided by Mrs. Frank V. Sutland and family. Previous occupant: Dr. Haig H. Kazazian, Jr.

Helen B. Taussig Professorship [1987]: Jean S. Kan, M.D.
Funding provided by the sale of Dr. Taussig’s property on Cape Cod to provide support for the Division of Pediatric Cardiology. Dr. Helen B. Taussig, a 1927 graduate of the Johns Hopkins School of Medicine, founded the specialty of pediatric cardiology. In association with Dr. Alfred Blalock, she developed the first surgical procedure for treatment of cyanotic congenital heart disease (blue baby operation). Previous occupants: Drs. Richard Rowe and Langford Kidd.

Richard W. TeLinde Distinguished Professorship of Gynecological Pathology [1989]: Robert J. Kurman, M.D.
Funding provided by the estate of Dr. Richard W. TeLinde, Director of the Department of Gynecology and Obstetrics from 1939-1960. He was an advocate of a close relationship between pathology and gynecology and insisted that there be a pathology unit within the Department of Gynecology and Obstetrics. Previous occupant: Dr. J. Donald Woodruff.

Therapeutic Cognitive Neuroscience Professorship [2000]: Barry Gordon, M.D., Ph.D.
Funding by an anonymous donor to support wide ranging efforts to improve mental functions in people with brain disorders (The Department of Neurology).

Richard J. Traystman Professorship in Anesthesiology and Critical Care Medicine [2003]: Myron Yaster, M.D.
Endowed Chair of Pediatric Anesthesia and Intensive Care Medicine was renamed to honor Dr. Traystman.

Philip A. Tumulty Associate Professorship in Medicine [1994]: D. William Schlott, M.D.
Established in 1994 by various donors including Helena Hendrickson, a patient of Dr. Schlott.

Thomas and Dorothy Tung Professor in Anesthesiology and Critical Care Medicine [2010]: Unoccupied
Funded by Dr. Thomas and Dorothy Tung. Income from the principal will support the Tung Professor.

Hans and Ilza Veith Professorship in the History of Medicine [1998]: Unoccupied.
Funded by Ilza Veith, Ph.D. to endow the Hans & Ilza Veith Professorship in the History of Medicine at the School of Medicine in memory of Professor Henry A. Siegerist.

Philip Franklin Wagley Chair in Biomedical Ethics [1995]: Ruth Faden, Ph.D.
Funding is provided by Dr. and Mrs. Wagley, family, friends, colleagues, and grateful patients. Dr. Philip F. Wagley, a 1943 graduate of the Johns Hopkins School of Medicine, practiced internal medicine in Baltimore. As a member of the faculty, he directed the course in medical ethics for medical students.

Henry N. Wagner, Jr., M.D. Professorship in Nuclear Medicine [2001]: Richard L. Wahl, M.D.
Funding provided by two anonymous donors and departmental funds to provide faculty support in the Division of Nuclear Medicine in the Department of Radiology.

A. Earl Walker, M.D. Professorship in Functional Neurosurgery [2008]: Frederick A. Lenz, M.D.

Frank B. Walsh Professor of Neuro-ophthalmology [1981]: Neil R. Miller, M.D.
Funding provided by friends and trainees. Dr. Frank B. Walsh was the founder of the subspecialty of neuro-ophthalmology.

Patrick C. Walsh Professorship in Urology [1998]: Arthur L. Bumett, M.D.
Dr. Patrick C. Walsh has been the Director of the Department of Urology since 1974. Funding was provided by an anonymous donor.

Abraham & Virginia Weiss Professorship in Cardiology [2004]: David A. Kass, M.D.
Funded by the Abraham & Virginia Weiss Trust.

Robert Bond Welch Professorship in Ophthalmology [2005]: James T. Handa, M.D.
A group of donors expressed their interest in making their donations in recognition of their respect and admiration for Dr. Robert B. Welch. Dr. Welch obtained his M.D. degree from Johns Hopkins in 1953. He completed his internship and residency at the Wilmer Eye Institute.

William H. Welch Professorship in the History of Medicine: [1934]: Randall M. Packard, Ph.D.
This Professorship honors Dr. William H. Welch, the first Dean of the Johns Hopkins School of Medicine. Previous occupants: Henry E. Sigerist, M.D., Richard H. Shryrock, Ph.D., Oswei Temkin, M.D., and Lloyd G. Stevenson, M.D.

Wellcome Professorship in Clinical Pharmacology [1971]: Theresa A. Shapiro, M.D., Ph.D.
Funds were provided by the Burroughs-Wellcome Fund. Previous occupants: Drs. Pedro Cuatrecasas and Paul Lietman.

Lawson Wilkens Professorship in Pediatric Endocrinology [2005]: Sally Radovick, M.D.
Funds will be used to support faculty and to honor Dr. Lawson Wilkins, the father of Pediatric Endocrinology.

William Holland Wilmer Professorship in Ophthalmology [1925]: Peter J. McDonnell, III, M.D.
Funding provided by charitable contributions of Col. and Mrs. Henry Breckenridge and the Wilmer Foundation. Dr. Wilmer was the first Director of the Wilmer Eye Institute and the first Director of the Department of Ophthalmology from 1925-1934. Previous occupants: Drs. William H. Wilmer, Alan C. Woods, A. Edward Maumenee, and Arnall Patz.

J. Donald Woodruff Chair in Gynecology and Obstetrics [1993] Edward W. Wallach, M.D.
Funding provided by colleagues and friends of Dr. J. Donald Woodruff, a 1937 graduate of the Johns Hopkins School of Medicine. Dr. Woodruff was a distinguished teacher and clinician in the Department of Gynecology and Obstetrics from 1942-1996.

Funding provided by the Department of Ophthalmology Unit Executive Funds to support this professorship.

A date in brackets indicates year the named professorship was established.
LECTURESHIPS AND VISITING PROFESSORSHIPS

The Herter Lectureship: In November, 1902 Dr. and Mrs. Christian A. Herter of New York offered to the Medical Department of the Johns Hopkins University the sum of $25,000 “for the formation of a memorial lectureship designed to promote a more intimate knowledge of the researches of foreign investigators in the realm of medical science.” This gift was accepted by the Trustees of the University on November 3, 1902. According to the present terms of the gift, some eminent worker in the medical sciences is to be asked each year to deliver lectures at the Johns Hopkins University upon a subject with which he or she has been identified. The selection of a lecturer is to be left to a committee representing the departments of pathology, physiological chemistry, and clinical medicine, and if “in the judgment of the committee it should ultimately appear desirable to open the proposed lectureship to leaders in medical research in this country there should be no bar to so doing.”

William Sydney Thayer and Susan Read Thayer Lectureship in Clinical Medicine: On May 16, 1927 “a group of admirers of Dr. William Sydney Thayer” donated a fund to the Johns Hopkins University to endow a lectureship to be known as “The William Sydney Thayer and Susan Read Thayer Lectureship in Clinical Medicine”.

According to the terms of the gift, the income of this fund is to be used to defray the expenses of one or more annual lecturers on subjects “in Clinical Medicine, Pediatrics, Neurology or border line branches.” The selection of the lecturer or lecturers is to be made by a “Committee composed of those who are from time to time occupying the chairs of Professor of Medicine, Pathology, Pediatrics and Neurology at the Johns Hopkins Medical School.”

Hideyo Noguchi Lectureship: In 1929 Dr. Emanuel Libman of New York generously gave the University $10,000 for the establishment of a lectureship in the History of Medicine. In accordance with Dr. Libman’s desires, the lectureship was named after the distinguished investigator, Hideyo Noguchi.

The Dohme Lectureship: In June, 1916 Mrs. Charles E. Dohme of Baltimore generously offered to pay annually the sum of $1,000 to the Trustees of the Johns Hopkins University to make it possible to offer each year a course of lectures in memory of her deceased husband, Charles E. Dohme, a well-known pharmaceutical chemist of Baltimore. The purpose of these lectures was to promote the development of a more intimate relationship between chemistry, pharmacy, and medicine.

The donations made by Mrs. Dohme for this purpose up to the time of her death in December, 1937, made it possible to offer prior to 1938 thirteen courses of lectures by distinguished scientists either from this country or abroad. Upon her death the University received from her estate a legacy amounting to the sum of $18,500 after the payment of inheritance taxes to be used as an endowment fund, the income of which is to be devoted to the continuation of these lectures.

The lectureship is open to scientists from any part of the world, and the selection of the lecturer is made by a committee representing the departments of pharmacology, chemistry, and medicine.

The Daniel Coit Gilman Lectureship: Through a generous gift from the Avalon Foundation, the School of Medicine has been able to establish a distinguished lectureship designed to further understanding between medical science and the humanities. The lectureship has been named in honor of the first president of The Johns Hopkins University, Daniel Coit Gilman, who was so influential in establishing the graduate character of the School of Medicine. This lectureship was inaugurated in the academic year 1960-61 with the first Gilman Lecture being appropriately given by Dr. Milton Stover Eisenhower, eighth president of the Johns Hopkins University.

The David M. Gould Lectureship in Radiology: In 1962 friends and former associates of Dr. David M. Gould generously created a lectureship in his memory in the field of Radiology. Dr. Gould was a member of the Johns Hopkins faculty from 1947 to 1955. During this time, he left a lasting impression on student and physician alike for his warm understanding of their daily problems. His unusual skill as a clinical radiologist, teacher and investigator was admired and respected by all who knew him. At the time of his early death, Dr. Gould was Professor of Radiology at the University of Colorado. The lecturers are selected from scholars distinguished in clinical radiology or related disciplines in accordance with the action of a committee headed by the Chairman of the Department of Radiology.

The Lawson Wilkins Lectureship: Through generous gifts from the colleagues, the students and the friends of Dr. Lawson Wilkins, it has been possible to establish a distinguished lectureship designed to commemorate his great contribution to pediatric endocrinology. The Stanhope Bayne-Jones Memorial
Lectureship: An anonymous donor has established an annual lectureship to honor Dr. Stanhope Bayne-Jones, a distinguished alumnus of the Johns Hopkins University School of Medicine.

In view of his long interest in infectious diseases, microbiology, epidemiology, and preventive medicine, it has been decided to orient the Bayne-Jones Memorial Lecture ship to problems in these fields of medical science.

The Alfred Blalock Lectureship: The Section of Surgical Sciences in 1982 established a commemorative lectureship to honor Dr. Alfred Blalock. Lecturers are selected from individuals who have made important contributions in clinical or investigative surgery and the selection is made by a committee representing the Section of Surgical Sciences.

The David Barap Brin Visiting Professorship in Medical Ethics: This visiting professorship, established by his family and friends, honors the memory and reflects the interests of David Barap Brin (1957-1980). The purpose of this visiting professorship is to foster the appreciation and understanding of ethical issues in basic and clinical research and patient care.

The Samuel Novey Lectureship in Psychological Medicine: The family, friends and colleagues of Dr. Samuel Novey wished to establish a lectureship to honor his contributions as practicing physician, and as a teacher of psychiatry and psychoanalysis.

At the time of his death, Dr. Novey was director of training at the Sheppard and Enoch Pratt Hospital. He had also for many years been actively engaged in teaching and research at the Johns Hopkins University School of Medicine. Because he held joint appointments in the Departments of Psychiatry and Medicine, it seemed especially appropriate to designate the broad field of psychological medicine as the topic to which the lectures would be addressed.

The Willard Sears Simpkins Lectureship Fund An annual lectureship has been established in memory of Willard Sears Simpkins, a former trustee of the John F. Kennedy Institute. Dr. Frederick L. Richardson, former director of the Institute, was instrumental in assuring this memorial. The lecturers are to be selected from scholars distinguished in clinical or investigative surgery and the selection is made by a committee representing the Section of Surgical Sciences.

The William M. Shelley Visiting Professorship: Following the accidental death of Dr. William M. Shelley in 1974, his colleagues, friends and former students generously created a Visiting Professorship in his memory, formally established in 1977. A graduate of the Johns Hopkins School of Medicine and former member of the Pathology house staff, Dr. Shelley served on the Pathology faculty from 1960 to 1970. In recognition of Dr. Shelley’s commitment and contributions to teaching and residency training, the Visiting Professor spends several days with the residents and staff of the Department of Pathology in addition to delivering a formal lecture. The

William F. Rienhoff, Jr. Lectureship: In 1971 a grateful patient announced her intention to endow a lectureship in clinical surgery in honor of Dr. William F. Rienhoff, Jr. Through her generous gifts to the University, the Lectureship was formally established in 1973. The lecturers are to be selected from scholars distinguished in clinical or investigative surgery, and the selection will be made by a committee representing the Section of Surgical Sciences.

The Paul Ehrlich Lectureship: In 1957 Dr. Emanuel Libman of New York generously gave to the School of Medicine a sum of $10,000 for the establishment of a lectureship in honor of Dr. Paul Ehrlich. The lectures under this endowment are given each year by the recipients of the Paul Ehrlich Awards and are presented on Young Investigators’ Day.

The Alan Coopersmith Visiting Professorship: The family, colleagues, and friends of Dr. Alan Coopersmith have established a lectureship (or in special circumstances, a visiting professorship) in his memory in the field of Pediatric Hematology-Oncology. Dr. Coopersmith was a member of the Pediatric House Staff (1971-1973) and a Fellow in Pediatric Hematology from 1973 until the time of his death on December 5, 1974. His concern for patients and their problems and his incisive approach to complex clinical situations demonstrated his excellence as a clinician. Also evident was his desire to explore the unknowns of medicine by developing investigative skills in the laboratory. Lecturers will be chosen from distinguished scholars in clinical and/or research Pediatric Hematology-Oncology.

The Sir Henry Hallett Dale Memorial Lectureship: In 1971 the Burroughs Wellcome Fund generously provided an endowment to the Johns Hopkins University School of Medicine for the establishment of an annual Visiting Professorship of Clinical Pharmacology in honor of the distinguished pharmacologist. The purpose of the lectureship is the promotion of a wider appreciation of the importance of clinical pharmacology and its scientific base.
Visiting Professor is chosen from scholars distinguished in diagnostic pathology by a committee representing Pathology, Surgery and Oncology.

The Philip Bard Lectureship: In 1978 the friends, colleagues, and family of Philip Bard donated funds to the Johns Hopkins University to endow a lectureship to be known as the Philip Bard Lecture in Medical Physiology.

According to the terms of this endowment, the income from the fund is to be used to defray the expenses of one or more annual lectures in Physiology, particularly as related to Medical Science. The selection of the lecturer or lecturers is to be made by a committee of those who are from time to time occupying the chairs of Physiology, Biological Chemistry, Pediatrics, and Medicine.

The John Howland Visiting Professorship: During the 1930’s the Harriet Lane Board of Managers set aside funds toward a tribute to Dr. John Howland, who, in 1911, succeeded Dr. Clemens Von Pirquet as Professor of Pediatrics at the Johns Hopkins University. He is widely credited with establishing academic pediatrics as it is known today, and with creating the first successful full-time university clinical department in this country. He was a superb clinician, teacher, and clinical investigator, for example, concerning acidosis and diarrhea, and calcium metabolism in tetany and in rickets. The Visiting Professor is to be selected from leading pediatric clinician investigators, recommended by the Academic Affairs Committee of the Department of Pediatrics.

The Henry G. Kunkel Lectureship: The family, friends and former students of Henry G. Kunkel have endowed a lectureship in immunology commemorating this outstanding immunologist and clinical investigator. Dr. Kunkel, a graduate of the Johns Hopkins University School of Medicine, was Professor and Senior Physician at the Rockefeller University. During the course of his career he made outstanding contributions to immunology, genetics, and clinical medicine. His demonstration that myeloma proteins closely resemble normal immunoglobulins laid the foundation upon which the present knowledge of immunoglobulin structure and led to the recognition of IgM and IgA as separate antibody classes. Dr. Kunkel’s pioneering work in systemic lupus erythematosus and rheumatoid arthritis contributed in a seminal manner to knowledge of the underlying pathogenesis of these autoimmune diseases.

The Leslie Hellerman Lectureship: The Leslie Hellerman Lectureship was established in 1983 by the Department of Physiological Chemistry (now Department of Biological Chemistry) of the Johns Hopkins University School of Medicine, and by the family, friends, and former students of Professor Hellerman (1896-1981) to honor his memory. In 1927 he joined the Department of Physiological Chemistry and formally retired from his productive career in 1961. His pioneering work related to the structure of enzymes, metallo-enzyme function and the application of mechanistic organic chemistry to explain enzymatic processes.

The Walter E. Dandy Visiting Professorship: Established in 1985, the Walter E. Dandy Visiting Professorship enables outstanding persons to be invited to spend a short period of time at Johns Hopkins reviewing research, meeting with students and faculty, and delivering the Dandy lecture. Among the goals of the professorship is to increase communication between basic and clinical neuroscientists.

Walter E. Dandy was a Hopkins neurosurgeon, whose outstanding research and neurosurgical abilities were summarized by his colleague Warfield Longcope, Professor of Medicine, who wrote that Dandy “had the genius of Lister combined with the brilliant technique of Horsley. He commanded respect and admiration from everyone who came in contact with him, and for those of us who saw him often, these were combined with great affection.”

The Ray A. Kroc and Robert L. Kroc Lectureship: In 1985 The Kroc Foundation endowed a visiting scientist and lectureship. The funds are intended for the advancement of multiple sclerosis and other neurological disease research at Johns Hopkins University. Each year an eminent neuroscientist is invited for a visit of several days to meet informally with colleagues and to present a lecture. The selection of the lecturer is made by a committee chaired by the Director of the Department of Neurology.

The Nicholson J. Eastman Professorship and Lecture: Dr. Nicholson J. Eastman, one of the most influential and important American obstetricians, served for more than 20 years as Obstetrician-in-Chief at The Johns Hopkins Hospital and Director of the Department of Obstetrics in The Johns Hopkins University School of Medicine. Dr. Eastman was responsible in large part for the scientific development of obstetrics and his numerous publications probably represent the first efforts to scientifically delineate what we now recognize as maternal fetal medicine. On behalf of his former students, residents and friends, the Johns Hopkins University School of Medicine

98 GENERAL INFORMATION
is happy to perpetuate his contributions to obstetrics and gynecology through the Nicholson J. Eastman Professorship and Lecture.

The Israel Zeligman Lectureship in Dermatology: The Israel Zeligman Lectureship in Dermatology was established in 1983 to honor the contributions of Israel Zeligman, M.D., who had been on the faculty of The Johns Hopkins University School of Medicine since 1946. He had been responsible for the teaching of all the residents that had passed through the Department of Dermatology Residency Program at that time. Dr. Zeligman was highly respected in the private practice of Dermatology and one who gave freely of his time to promote the clinical training program at The Johns Hopkins University School of Medicine. The Lectureship is supported by revenues generated by donations from former residents and friends.

The Vernon B. Mountcastle Lectureship: Upon the retirement of Vernon Mountcastle from the Hopkins' faculty in 1992, his friends and colleagues contributed funds to establish a lectureship in his name. The lectureship honors the major contributions of Dr. Mountcastle to neuroscience and to Johns Hopkins University. Each year a world class researcher is invited to the Medical School to lecture on an area relevant to the neurosciences.

The Albert Lester Lehninger Memorial Lectureship: In 1989 family, friends and former associates of Dr. Albert L. Lehninger established a lectureship in his memory in the field of biochemistry. Dr. Lehninger served as Professor and DeLamar Professor of the Department of Biological Chemistry from 1952 to 1978. He was then appointed University Professor of Medical Science, a position created to honor his distinguished service to the University, his scientific discoveries, and his teaching and writing achievements. He served in this position until his death in 1986. This Lectureship was inaugurated in 1990.

The Dean’s Lecture Series: This series of lectures is designed to bring the work of senior members of the faculty to the attention of the Hopkins community.

The Mary Elizabeth Garrett Lectureship: In 1996, the Women’s Leadership Council in cooperation with the Dean’s Office inaugurated the Mary Elizabeth Garrett Lectureship. The lectureship honors Ms. Garrett who in 1890 provided the final funding necessary to open The Johns Hopkins University School of Medicine with the provision that women be admitted under the same terms as prescribed for men.

The Ira and Jean Belfer Lectureship: The Belfer Lectureship was established in 1992 by Dr. and Mrs. Myron Belfer in honor of his parents, Ira and Jean Belfer. Dr. and Mrs. Belfer created the Ira and Jean Belfer Lectureship to allow leaders in the field of pediatric and adult cardiology to come to Johns Hopkins to share their most recent discoveries.

Ira and Jean Belfer established the Peter Belfer Laboratories at the Johns Hopkins Medical Institutions in 1973 in memory of their youngest son, Peter, who was a patient at Hopkins from the age of 6 months until his death from heart disease in 1991 at the age of 25. Since that time, the Belfer family and their friends have displayed unflagging interest and continued generosity in the support of Belfer Laboratories.

The Professor Carol J. Johns Memorial Lecture in Lung Health and Disease: This lecture was established within the Division of Pulmonary and Critical Care Medicine at the Johns Hopkins School of Medicine following the death of Dr. Johns on February 24, 2000. This lectureship attests to the esteem in which she was held by the division as well as her commitment to excellence, the humanistic missions of the clinicians, and the contribution of women to medicine.

LECTURERS 2009-2010

THE CHARLES E. DOHME LECTURESHIP
Jerrold Meinwald, Ph.D.
Goldwin Smith Professor of Chemistry Emeritus
Department of Chemistry and Chemical Biology
Cornell University
Exploring the Chemistry of Biotic Interactions

THE DEAN’S LECTURE SERIES
Lecture I
L. Mario Amzel, Ph.D.
Professor and Director, Biophysics and Biophysical Chemistry
Johns Hopkins University School of Medicine
Capitalizing on Tumor Genotyping: Toward the Design of Mutation-Specific Drugs

Lecture II
Jennifer Van Eyk, Ph.D.
Johns Hopkins University Bayview Proteomics Center, Director
Johns Hopkins University ITCR Biomarker Development Group, Director
Professor of Medicine, Biological Chemistry, and Biomedical Engineering
Johns Hopkins University School of Medicine
Integrating Proteomics: Tackling the Unknowns in Heart Disease

Lecture III
Lisa A. Cooper, M.D., M.P.H., FACP
Professor of Medicine
Welch Center for Prevention, Epidemiology, and Clinical Research
Johns Hopkins University School of Medicine
Patient-Physician Relationships and Solving the
Health Disparities Conundrum

Lecture IV
Brooks Jackson, M.D., M.B.A.
Baxley Professor and Director of Pathology
Johns Hopkins University School of Medicine
Advances in the Prevention of HIV Transmission from Mother to Child

THE DANIEL NATHANS LECTURESHP
Hamilton O. Smith, M.D.
Scientific Director

Synthetic Biology and Bioenergy Groups
J. Craig Venter Institute
San Diego, CA
Building a Synthetic Cell

THE WILLIAM F. RIENHOFF JR. LECTURESHP
Nancy L. Ascher, M.D., Ph.D.
Professor and Chair of Surgery
University of California, San Francisco
Hepatocellular Carcinoma and Reflections on John Singer Sargent
TUITION AND OTHER FEES

Medical students matriculating in September 2010 will be charged tuition at the rate of $41,200 per year. The 2010-2011 tuition for graduate students registered in the School of Medicine is $41,200. These tuitions cover all normal charges. The tuition fee is payable in two equal installments, one at the opening of the academic year, and one at the beginning of the second half of the year. Living expenses, health insurance, a $200 imaging fee for first and second year students, and a $740 matriculation fee are in addition to the tuition charge. The matriculation fee is a general University assessment and is collected once only from new students at the time of their initial enrollment as full-time students and/or as degree candidates in the University. Special schedules for payment of fees can be arranged with the Office of Financial Affairs.

Students will not be admitted to the regular courses until they have registered at the Office of the Registrar of the School of Medicine and arranged for payment of their fees for the first half of the academic year. Registration is not required for the second half but arrangements must be made for the payment of second half tuition before students can be admitted to classes.

A late charge may be imposed in connection with all tuition and fees due to the School of Medicine as follows: Tuition, imaging and matriculation fees are due and payable at the beginning of each term. The late charge will be 1-1/2% per month of the unpaid balance, and will be added to each unpaid account on the first of each month. For insurance and parking fees, the 1-1/2% late charge will be assessed thirty days after billing and on the monthly anniversary thereafter. When late payments result from delayed receipt of loans for which timely application has been made, the late charge may be waived by the Associate Dean for Student Affairs. All fees and charges must be paid in full in order for a student to be approved for graduation.

TUITION POLICIES

M.D. Candidates

Tuition rates are determined annually by the Board of Trustees. Annual tuition covers studies carried out during the entire 12 month period between enrollments (ordinarily September-August).

All M.D. candidates will be charged at the M.D. rate for a total of four years. Irrespective of the actual scheduling of the medical and graduate portions of their education students in M.D.-Ph.D. programs will ordinarily be required to pay M.D. rate tuition for the first four years in such programs. Tuition for the remaining years will be assessed annually at the M.D. rate or at the established University Ph.D. rate, whichever is lower. Alternative schedules for payments at the M.D. rate by students in M.D.-Ph.D. programs must be approved by the Vice Dean for Education.

Students who repeat a portion of the M.D. program will be assessed tuition at the annually established rate. Tuition is prorated to period of enrollment.

There is a $25 annual fee for Student in Residence status.

Graduate Students-Ph.D. and M.A. Candidates

Tuition for each 12 month period (September-August) of enrollment will be at the rate established by the University for Ph.D. candidates.

Visiting Medical Students

Visiting medical students from LCME accredited schools registered for clinical electives will be assessed a $300 registration fee per quarter or fraction thereof. Students from non-LCME accredited schools accepted for clinical electives will be assessed a $1,000 tuition fee and $300 registration fee for each nine week period or fraction thereof. The registration fee for research electives is $300 per quarter or fraction thereof. Enrollment of visiting medical students is usually limited to one quarter per academic year. Some surgical departments/divisions provide partial registration fee support.

Part-Time Degree Candidates

These students will be assessed tuition at the part-time rate established for the degree for which they are a candidate.

Special Students (Non-Degree Candidates)

Tuition will be assessed at the part-time rates established by the University for Ph.D. candidates.
Postdoctoral Students (Fellows)
Tuition for postdoctoral students who are not members of the Johns Hopkins Hospital house staff is $800 per annum, pro-rated in relation to period of enrollment. Tuition may be remitted as specified by the Executive Committee of the Board of Trustees.*

*The policy concerning tuition for fellows and postdoctoral students is based upon action of the Executive Committee of the Board of Trustees on January 19, 1966, as follows: "where special circumstances do not make payment of such fees feasible, it will be remitted."

REFUND POLICY

Full Time Students
Full time students are billed on a semester basis. A total refund of tuition payments will be made for a full time student withdrawing before completion of four weeks of a semester. Students withdrawing after completion of four weeks will receive a pro-rated refund up to 60 percent calculated from day one of the semester. Students withdrawing after completion of 60 percent of a semester will receive no refund of tuition.

The date of withdrawal will be calculated from the date the student's written statement of withdrawal is submitted to the Office of the Associate Dean for Student Affairs. Exceptions to this policy must be approved by the Vice Dean for Education.

Part Time Special Students
Part time special students are billed on a per course basis. Students withdrawing after the start of a course will receive a pro-rated refund up to 60 percent calculated from day one of the course. Students withdrawing after completion of 60 percent of a course will receive no refund of tuition.

HEALTH FEES AND INSURANCES

Health Insurance
All students, their spouses, and dependent children must have medical insurance that meets minimum standards of coverage as determined by the School of Medicine. Coverage is also available to same-sex domestic partners. If you have alternative coverage and want to opt out of the student health insurance offered by the School of Medicine for yourself and/or your dependents, you must complete the Waiver of SOM Student Health Program form. If you do not have alternative coverage, or if your alternative plan does not meet the minimum standards as outlined on the waiver form, you must enroll in the Student Health Program. To enroll, complete the Johns Hopkins Student Health Program Benefits Election Form. The annual cost to the student is as follows: single-$3,072, husband/wife-$7,590, parent/child-$7,590, family-$10,140. These rates are subject to annual change. All bills are payable in the Office of Financial Affairs.

University Health Service (UHS)
All students are required to pay the fee for access to University Health Services at the cost of $450 annually (September-August). An application is not required. University Health Services provides adult outpatient primary care and adult outpatient mental health care at no cost to you once you have paid the required annual fee. Your spouse/ssdp may also use UHS for adult primary care and adult mental health if covered under our Student Health Program. SHP will be billed for spouse/ssdp services.

Dental Insurance
All students are required to subscribe to the Student Dental Insurance Plan. The annual cost to the student is $192.

Life Insurance
In January of the second year the School of Medicine purchases a $100,000 term life insurance policy for each second year medical student. This policy remains in effect until the M.D. degree is awarded or until the student withdraws from the M.D. program. This insurance is provided at no cost to the student.

Disability Insurance
The School of Medicine provides a disability plan for all students enrolled as M.D. candidates. This coverage will provide benefits should a student develop a disability while enrolled as a student.

STUDENT RESEARCH SCHOLARSHIPS AND AWARDS

Most students at the School of Medicine engage in research projects at some time during their period of residence. Many students continue their investigative studies for three consecutive years during summer vacations and elective time of the regular medical curriculum. The results of original research are often published in leading scientific journals and presented at national meetings of scientific societies. Major contributions have been made by medical students participating in the research program at Johns Hopkins and other institutions. Research fellowships are frequently available to them in support of such studies. The stipends of these scholarships vary from $500 to $2,000.
Predoctoral Research Program for Medical Students The Predoctoral Research Program provides an opportunity for candidates for the M.D. degree at this institution to spend one year in an intensive research experience with a faculty member of the School of Medicine. Medical students participating in the program may elect to either: 1) interrupt their regular medical curriculum to take an additional year devoted to research, thereby delaying their date of graduation by one year, or 2) aggregate their elective quarters into one consecutive 12 month period in order to graduate with their class. Four stipends equivalent to that of a graduate student plus the individual health insurance premium will be available each year. All participants in the program will be responsible for only four years of tuition. Additional information and application requirements are available from the Associate Dean for Student Affairs.

Class of 1964 Physician of Letters Scholarship To provide scholarship support to students in the School of Medicine on a merit basis, recognizing students with the potential to excel as especially well-rounded physicians.

Harold Lamport Biomedical Research Prize The memory of Dr. Harold Lamport, a distinguished investigator, is honored by this prize established in 1976 by the Lamport Foundation. It is offered in the hope of stimulating interest in research in those students who had not made previous efforts in the laboratory. The Committee on Student Awards will determine the winner after careful study of essays and papers submitted by the students. The work must be original and must have been performed during a period in which the student was a matriculated student in the medical school pursuing the regular curriculum.

Dr. Harold Lamport Research Fund Mrs. Golden S. Lamport established the Dr. Harold Lamport Research Fund in honor of her husband, a Distinguished Service Professor of Physiology and Biophysics. The Lamport Fund will support the effort of medical students interested in research in the basic science areas of medicine.

A renowned investigator and educator, Dr. Lamport contributed to research in physiology, biophysics and circulation. He was first recognized internationally when he published a series of incisive studies of hemodynamics, including the first comprehensive analysis of the renal afferent and efferent arteriolar resistances in relation to kidney function in health and disease.

The Lamport Fund is available on a competitive basis to medical students at the Johns Hopkins University School of Medicine. The awards are to be used in support of a research effort which involves the summer or at least one quarter of the academic year at Johns Hopkins or in other settings which will provide similar opportunity.

W. Barry Wood Student Research Fund The W. Barry Wood Student Research Fund was established in 1971 by the family and friends of Dr. W. Barry Wood, Jr. Dr. Wood had a long association with the School of Medicine as student, house officer, Vice President of the University in charge of medical affairs, and Director of the Department of Microbiology. The fund commemorates Dr. Wood’s deep commitment to medical research and teaching. Income from this fund is to be used to support a student in the School of Medicine who is undertaking biomedical research at the Johns Hopkins University or at another appropriate institution. Each Wood Fellow is selected by the Committee on Student Awards on the basis of present commitment and future promise in research.

Brantigan Clinical Research Fund. The fund was established in 1998 by a gift from John W. Brantigan, M.D. The purpose of the fund is to provide financial support for students to conduct research and/or present their findings at professional meetings.

Henry Strong Denison Fund for Medical Research By agreement dated September 23, 1937, the Johns Hopkins University received from the Henry Strong Denison Medical Foundation, Incorporated, an endowment fund of $100,000, to be known as The Henry Strong Denison Fund for Medical Research in memory of Henry Strong Denison, M.D., 1908. While the gift is made broadly for the support of medical research, the income will be used for the specific purpose of aiding in the training for research of young people deemed by the medical faculty to be especially gifted for a career in medical investigation.

To fulfill the provisions of this gift, the income each year may be allocated for scholarships to students of the School of Medicine considered by the committee to give promise of achievement in research. These scholarships will be awarded on recommendation of the directors of departments and not upon application from the student.

William L. Straus, Jr., Scholar in Anatomy Award This fund was established in 1982 by an alumnus to honor Dr. Straus, former associate professor of anatomy and Acting Director of the Department of Anatomy. The donor specified that the award be made to a student with strong interests in basic research, people and the history of medicine at the Johns...
Hopkins University School of Medicine and Hospital.

**Franklin Paine Mall Prize in Anatomy** The income from an endowment account established by Dr. Miley B. Wesson, an alumnus of the School, is used as an award for a deserving student particularly interested in anatomy. The grant is given in the name of Franklin Paine Mall, the first professor of anatomy in the School of Medicine, as a token of appreciation. Selection is made by the First Year Committee on Student Promotions.

**Alan P. Trimakas Award in Cardiovascular Research** This award was established by contributions from the Class of 1979 to honor the memory of their classmate who died on January 15, 1979. In keeping with Dr. Trimakas' intentions to pursue a career in academic cardiology, for which he had shown exceptional ability, this award will be given to a medical student who has demonstrated unusual promise in the area of cardiovascular research. The award will be made during the third year for a student planning an extended commitment to a research project to be completed during the final year of the curriculum. The recipient of this award will be selected by a committee representing the Cardiovascular Division of the Department of Medicine. Applications should be submitted to the director of the division.

**Helen and Harold Harrison Award for Outstanding Proficiency in Pediatrics** This award was established by the Alumni/ae of Dr. Harold Harrison's Residency Program in Pediatrics at the Francis Scott Key Medical Center. It is intended to give honor to the outstanding contributions made by the Harrisons over the many years of their tenure at the Johns Hopkins Hospital and the Francis Scott Key Medical Center, and it will, in addition, recognize each year senior students whose efforts in pediatrics have been distinguished.

**Sylvan Shane Prize in Anesthesiology and Critical Care Medicine** Dr. Sylvan Shane, a member of the Department of Anesthesiology and Critical Care Medicine at Johns Hopkins from 1980 to 1984, has created an endowment to recognize an outstanding medical student making a career choice in anesthesiology. Dr. Shane's lifetime was devoted toward the search for ways to prevent pain and suffering in patients undergoing surgical procedures. His generous gift is designed to give support and encouragement to graduating medical students who are committed to the same efforts.

**William R. McAlpin Research Fund** The purpose of this fund, made possible by a cash award to Dr. Jerome D. Frank from the National Mental Health Association, is to encourage research by students in the Johns Hopkins University School of Medicine and the Johns Hopkins University School of Public Health into any aspect of mental illness and mental health, but with preference given to studies relevant to clinical care, psychotherapy, or public health. Recipients will be selected by a committee composed of the Chairman of the Department of Psychiatry and Behavioral Sciences of the Johns Hopkins School of Medicine, The Chairman of the Department of Mental Hygiene of the Johns Hopkins School of Public Health, or persons they designate, and Dr. Frank. To apply for a grant, the student must submit a letter to the chairman of either department stating the amount requested and the reasons for the request, with a supporting letter from a faculty member. Requests will be received and reviewed at any time. The amount of any single grant, or the total multiple grants to any one person, shall not exceed $500.

**Leo Kanner Student Research Fund** The Leo Kanner Student Research Fund was established in 1982 by Mrs. June Kanner to encourage medical student research in child psychiatry. Dr. Kanner, the first professor of child psychiatry at Johns Hopkins, was division director from 1930 to 1959 and is often called the Father of Child Psychiatry. Income from the fund is used to provide a student in the School of Medicine the opportunity to participate in a summer research project with a Child Psychiatry faculty member.

**Harry C. Saltzstein Prize for Medical Writing** This prize was established in 1990 through an endowment provided by the family of Dr. Saltzstein, a graduate of the Johns Hopkins University School of Medicine, Class of 1914. Dr. Saltzstein was the founder of Sinai Hospital of Detroit as well as its first Chief of Staff. He founded the Bulletin, Sinai Hospital of Detroit and ultimately became its editor. He maintained a life long interest in medical writing. His nephew, Dr. Sidney Saltzstein, graduated from the Johns Hopkins University School in 1954. This annual prize will recognize excellence in medical writing by a student of the Johns Hopkins University School of Medicine.

**Summer Research Stipends for Medical Students** Summer research stipends are awarded each year if funds are available. Funds are at times available from special training and research grants awarded to faculty members of individual departments and from the General Research Support Grant. These stipends may be given to students...
who are interested in participating in research projects under the supervision of faculty members of the School of Medicine and of certain departments of the School of Public Health and the Homewood Schools. The Johns Hopkins University School of Medicine does not offer stipends for summer research at other institutions, but many medical students are assisted in obtaining support for summer programs of research and study at other institutions in this country and abroad. Updated information is available in the Office of Student Affairs.

YOUNG INVESTIGATORS’ DAY
The Young Investigators’ Day was established in 1978 to recognize student investigators in the School of Medicine and to provide them with a forum for presentation of their work. All degree candidates and postdoctoral fellows in the School of Medicine are invited to submit abstracts for the following awards:

The Johns Hopkins Medical and Surgical Association Awards for Postdoctoral Investigation were established in 1981 by the School of Medicine to recognize excellence in research by clinical or research fellows in the School of Medicine. These awards are designated for clinical research, laboratory research with direct clinical relevance, and basic laboratory research. The awards for the 2009-2010 academic year were:

- The A. McGehee Harvey Research Award. The 2009-2010 recipient was Wenqin Luo, Ph.D.
- The Helen B. Taussig Research Award is awarded for clinical research with active or historical patient involvement. The 2009-2010 recipient was Eva Andres-Mateo, Ph.D.
- The Alfred Blalock Research Award The 2009-2010 recipient was Tracy S. Tran, Ph.D.
- The W. Barry Wood, Jr. Research Award is awarded for laboratory research with direct clinical relevance. The 2009-2010 recipient was Nilkantha Sen, Ph.D.
- The Albert L. Lehninger Research Award is awarded for laboratory research without direct clinical relevance. The 2009-2010 recipient was Rahul M. Kohli, M.D., Ph.D.
- The Daniel Nathans Research Award The 2009-2010 recipient was Srinivasa Subramaniam, Ph.D.
- The Michael A. Shanoff Research Award The award, consisting of an honorarium and a certificate, is made annually to a candidate in the M.D., Ph.D., or M.D.-Ph.D. program in the Johns Hopkins University School of Medicine who, among all similarly eligible students, is considered to have made the most significant research contribution.

The award will be given in recognition of a substantial and sustained contribution to research, preferably undertaken over more than one elective quarter. Thoroughness and originality of research are to be primary considerations in the selection of awardees. Most of the research must have been undertaken during the candidates’ studies at the Johns Hopkins Medical Institutions. The award may be shared by two or more students who have collaborated on a research project. If the award committee finds no meaningful way to distinguish between the relative merit of the contribution and achievement of candidates who have worked on different research projects, then the award may be divided equally between such candidates. The awardee(s) will be selected by a committee comprised of members of the Basic Science and Clinical faculties. The recipient for the 2009-2010 academic year was Tiffany Link.

The David Israel Macht Research Award
This award was established in 1983 through an endowment provided by the family of Dr. Macht to commemorate the centenary of his birth. Dr. Macht was a graduate of the Johns Hopkins School of Medicine, Class of 1906 and was a member of the faculty of the Departments of Pharmacology and Medicine from 1910 to the middle 1930’s. He was a versatile and pioneering investigator and had a special interest in opiate alkaloids, the absorption of drugs, and a number of other areas.

The award is intended to recognize excellence in investigation by a student in the School of Medicine, registered in M.D., Ph.D. or combined M.D.-Ph.D programs. The award will consist of an honorarium and an inscribed plaque.

The selection of the awardee will be made by a Committee composed of Basic Science and Clinical Faculty members on the basis of an essay in medical science submitted in competition for the award. The award will be awarded annually to a single individual. If in the opinion of the Committee, no meaningful distinction between the qualities of two essays can be made, the award may be divided among not more than two individuals. The recipient for the 2009-2010 academic year was Xuting Rebecca Sheng.

The Martin and Carol Macht Research Award
This award was established in 1993 to recognize outstanding investigation by an M.D. or Ph.D., or M.D.-Ph.D. student in the School of Medicine. Dr. Martin B. Macht, who received both M.D. and Ph.D. degrees from Johns Hopkins, has been a Trustee of the University since 1975. Dr. Macht is an internist who has been affiliated with the University of Cincin-
nati as Professor of Medicine and Psychiatry. Dr. Carol Macht received M.A. and Ph.D. degrees from Johns Hopkins in the History of Art and Archeology. The award was established through an endowment gift from the Macht family.

The selection of the awardee will be made by a committee composed of basic science and clinical faculty members on the basis of an essay in medical science submitted in competition for the award. The award will be awarded annually to a single individual. If in the opinion of the Committee, no meaningful distinction between the qualities of two essays can be made, the award may be divided among not more than two individuals. The award consists of an honorarium and certificate. The recipient for 2009-2010 academic year was Xin Ye.

The Paul Ehrlich Research Awards
These awards are made annually to candidates in the Ph.D., M.D., or Masters programs in the Johns Hopkins University School of Medicine. They are given in recognition of contributions to research undertaken during the candidate’s studies at this institution. The recipients for the 2009-2010 academic year were Melanie Issigonis, Clara Bien, Greg M. Delgoffe, and Rebecca J. Leary.

The Alicia Showalter Reynolds Research Award
This award was created by the School of Medicine Dean’s Office in 1997, to honor the memory of Alicia Showalter Reynolds, a Ph.D. student in the Department of Pharmacology and Molecular Sciences from 1992 until her untimely death in 1996. It is given in recognition of outstanding research by a Ph.D. candidate in the School of Medicine. The recipient for the 2009-2010 academic year was Catherine J.C. Weisz.

The Mette Strand Research Award
This award was established in 1998 by Dr. Strand’s colleagues and friends as a tribute to Dr. Strand, a Professor of Pharmacology and Molecular Sciences from 1977 to her untimely death in 1997. This award honors Dr. Strand’s contributions to humanity, her unyielding devotion to science, and her role in training a generation of graduate students. Preference is given to a Ph.D. student. The award was awarded at Young Investigators’ Day in April 2010 to Jihye Yun.

The Hans Joaquim Prochaska Research Award
This award was established in 1998 by his mentor and friend Paul Talalay to honor the excellence that Dr. Prochaska exemplified, and the distinction he brought to the Hopkins M.D.-Ph.D. program. This award is awarded annually to a student in the School of Medicine who has made an outstanding discovery with preference given to an M.D.-Ph.D. candidate. It was awarded at Young Investigators’ Day in April 2010 to Xiaoyue Wang.

The Bae Gyun Jung Research Award
This award was established by an endowment in 2007 by friends and family and awarded in 2010 to Saurabh Paliwal.

The Nuper Dinesh Thekdi Research Award
This award was established in 2002 in memory of Nupur Dinesh Thekdi, M.D.-Ph.D. student at Johns Hopkins. The 2009-2010 recipient was Diana Mandelker.

STUDENT FINANCIAL ASSISTANCE
Financial aid for students at the Johns Hopkins University School of Medicine is awarded solely on the basis of demonstrated financial need. The aid program consists of loans from the federal government and University funds, as well as scholarship funds made available through the generosity of many donors. Students who require aid are first awarded a Unit Loan before they are considered for scholarship support, which is reserved for those students with greatest need. The Financial Aid Office is responsible for certifying the eligibility of students for educational loans with deferred interest and long-term payback provisions. The Federal Government is the largest source of educational loans. Financial aid applications will be provided to all admitted students. Financial considerations do not in any way influence admission decisions. Applicants will receive a financial aid award notice shortly after they have submitted a complete aid application. Foreign applicants who do not hold a permanent resident visa or an immigrant visa are not eligible for the financial aid program from the Johns Hopkins University School of Medicine. Qualified foreign students will be issued conditional acceptances into the School of Medicine under the following terms: on or before July 1 of the year of matriculation the accepted student must deposit an escrow account to be established in the state of Maryland under terms acceptable to the School funds sufficient to meet all tuition, mandatory fees and living expenses for the anticipated period of enrollment. Details of financial requirements will be included in letters of acceptance.

Scholarships
Recognizing the pressing need for financial assistance to students in the School of Medicine, many individuals and organizations have established funds for this purpose. Over the years many students now prominent
in the field of medicine have been aided by one or another of these scholarships funds. In each instance the student is informed of the source of this scholarship aid.

**Vivian B. Allen Scholarship Fund** Mrs. Vivian B. Allen (Mrs. Beaumont Allen) established an endowment fund in 1955 to provide tuition aid to medical students with financial need.

**Warde B. Allan Fund** Established in 1968 by an anonymous gift to honor Warde B. Allan, M.D. for his eminent record at the School of Medicine and among his private patients. The fund is perpetuated by gifts from his widow, Mrs. Warde B. Allan.

**Alumni Class Scholarships** Through the auspices of the Medical Annual Fund (Roll Call), alumni support medical students through class scholarship funds.

**American Medical Association Education and Research Foundation (A.M.A.-E.R.F.) Scholarships** The A.M.A.-E.R.F. annually makes grants to medical schools, which at the Johns Hopkins University School of Medicine have been used to support student low interest loans.

**Marcia Anderson Memorial Fund** An endowed fund established in 1989 by the husband, R. David Anderson, M.D., Class of 1990 and her family in memory of Marcia Anderson. The income is to provide scholarships to students with special needs.

**E. Cowles Andrus Fund** This endowed fund was established by Mrs. E. Cowles Andrus in memory of her husband, Dr. E. Cowles Andrus, a distinguished Johns Hopkins physician, teacher and pioneer in the treatment of cardiovascular disease. In recognition of his devotion to Johns Hopkins, this fund provides financial assistance to needy medical students, with preference given to those who are planning a career in cardiovascular medicine.

**Ralph and Ellen Anthony Medical Scholarship Fund** Ralph and Ellen Anthony, good friends of the School of Medicine, established the Anthony Medical Scholarship Fund in January of 1984 for the purpose of providing scholarship aid to financially needy students in the School of Medicine.

**Richard Westcott Appleton Scholarship Fund** An endowment fund was established in 1973 in honor of Dr. Richard Westcott Appleton, the income of which is to be awarded to “a medical student of moral worth and intellectual promise.”

**Dr. and Mrs. Fred B. Aurin Scholarship Fund** Established in 1998 by Fred B. Aurin, M.D. and his wife, this fund will provide scholarship support for medical students, with preference to those from the University of Oklahoma or Texas.

**Charles R. Austrian Fund for Medical Education** An endowment fund was established in 1956 by friends and colleagues of the late Dr. Austrian, with income allocated to medical education and training of young physicians.

**Robert I. Avery, M.D. Endowed Scholarship Fund** This endowment fund was established in 2003 to provide financial assistance to medical students.

**David Graham Baird and Mildred Batchelder Baird Memorial Scholarship Fund** The endowed fund was established by the Winfield Baird Foundation to perpetuate the memories of David and Mildred Baird. The income from this fund is to be used to support the needs of students in the School of Medicine.

**Frances Ward Banks Memorial Scholarship Fund** The Frances Ward Banks Memorial Fund was established by Elizabeth B. Banks in memory of her mother. The income from this fund is to be used to support meritorious students in the School of Medicine.

**Dr. John W. Barnaby Scholarship Fund** This fund was established in 1997 through the estate of Dr. John Barnaby to provide scholarships to deserving medical students.

**Jeremiah A. Barondess Scholarship Fund** This fund was established in 1999 by Jeremiah A. Barondess, M.D., in honor of his 50th graduation anniversary from the School of Medicine. Recipients should be M.D. candidates who also pursue a degree in the history of medicine.

**Jennie Lee Batson, M.D., Memorial Scholarship Fund** This fund was established in 1999 by members of the class of 1984 upon their 15th Reunion. Dr. Batson was a member of the class of 1984 who died of cancer. The fund provides assistance to needy students.

**Dudley Beaumont Memorial Scholarship** In 1945 the Trustees of The Louis D. Beaumont Trust contributed to the Johns Hopkins Hospital a fund in memory of a son, Dudley. The Hospital makes an annual contribution from this fund to the School of Medicine for scholarship support.

**Thomas Allen Beetham and Ida Covert Beetham Memorial Scholarship Fund** The Thomas Allen Beetham and Ida Covert Beetham Memorial Scholarship Fund was established by Miss Martha E. Beetham to perpetuate the memories of Thomas and Ida Beetham. Miss Beetham specifically requested that the monies in this endowment fund be used for supporting the scholarship needs of students in the School of Medicine.

**Elston L. Belknap Family Scholarship Fund** The Elston L. Belknap Family Scholarship was established in July of 1981 by a bequest

**TUITION, FEES, FINANCIAL AID, SCHOLARSHIPS AND AWARDS** 107
from Dr. Elston L. Belknap, a graduate of the School of Medicine in the Class of 1923. Its purpose is to provide assistance to deserving students in the School of Medicine, either in the form of loans or as scholarship aid.

**Fredericka Benton, M.D. Memorial Scholarship Fund** Established in 1995 by John J. Benton, M.D., this fund is to be used to provide scholarship aid to medical students with demonstrated financial need.

**Barnett Berman, M.D. Scholarship Fund** Established in 1999 anonymously by a former student, in recognition of Dr. Berman's long-time service and commitment to Johns Hopkins. Dr. Berman was an associate professor of medicine at Hopkins.

**Isidor S. L. Bermann Memorial Fellowship** Established in honor of her husband by the bequest of Mrs. Lillian Hunt Bermann to support fellowships for scientific and medical research for students in the School of Medicine.

**Laurence H. and Ida Lea Blackburn Endowed Scholarship for Medical Education** Established in 2000 by Laurence H. Blackburn, Jr., M.D., and his wife, Rose, in honor of his parents. Dr. Blackburn, Jr. is a 1955 School of Medicine graduate.

**Dr. Alfred Blalock Scholarship Fund** This scholarship, established by Dr. and Mrs. Thomas Harrold, commemorates the great service to human kind and the many contributions of one of Johns Hopkins' most distinguished surgeons, Alfred Blalock, who developed the blue baby operation designed to correct congenital abnormalities of the heart.

**Joseph N. and Elisa Bongiovanni Medical Student Aid Fund** This endowed fund was established in 1987 by the estate of Dr. Alfred M. Bongiovanni in honor of his parents. Dr. Bongiovanni was a member of the faculty in the Department of Pediatrics from 1952 to 1955. The income from the fund is to provide financial aid to needy students in the School of Medicine.

**Samuel H. Brethwaite, M.D. Scholarship Fund.** Dr. Brethwaite was a member of the Class of 1935. The fund was established by his estate in 1998.

**William and Wendyce Brody Fund** This fund was established in 1992 to fund medical students pursuing a degree in one of the engineering disciplines.

**Dr. Patrick and Mrs. Judith Brookhouser Scholarship Fund** Established in 1999 by Dr. & Mrs. Brookhouser to provide scholarships to needy medical students.

**Grafton Rayner Browne and Edna Spriggs Browne Scholarship Fund** Dr. Grafton Brown died in 1973, leaving a Trust to provide scholarships for Hopkins medical students.

**Art Buchwald Scholarship Fund** Established by Mr. Art Buchwald in 1989 in honor of the Centennial of Johns Hopkins Medicine. The income from this fund will provide scholarships for students in the School of Medicine who demonstrate financial need.

**Harlan P. Burbage Fund** Established in 1989 by the Ernest E. Burbage, Jr. Trust Fund. The income from this trust is to provide scholarships to pre-medical and medical students who, due to financial need, could not otherwise attend The Johns Hopkins University.

**Alden H. and Mary K. Burkholder Scholarship in Medical Education** This fund was established in 1996 by Dr. and Mrs. John A. Burkholder to provide scholarships for qualified medical students.

**Laura L. and Kenneth I. Berns, M.D., Ph.D. Scholarship** Established in 1999 to commemorate Dr. Berns' 35th reunion and his lifelong devotion to medicine.

**Douglas G. Carroll, Jr. Student Aid Fund** Established in 1976 by Dr. Douglas G. Carroll, Jr. to provide financial aid to deserving students in the School of Medicine.

**David J. Carver Scholarship Fund** An endowed scholarship was established in 1957 by Dr. David J. Carver for students in the School of Medicine. Chinese students are to have preference insofar as there may be qualified applicants; second preference is for students of other Asian nationalities; third preference is for American students.

**Centennial Scholarship and Loan Fund** Established in 1989 by the Johns Hopkins Medical and Surgical Association to commemorate the Johns Hopkins Medical Centennial. The fund is to be used to aid deserving students in the School of Medicine.

**Jerry and Ruth Chang Scholarship Fund** This fund was established in 2003 by Helena Chang Chui, M.D. to honor her parents, Jerry and Ruth Chang. Income from principal will be used to provide scholarship assistance to medical students. Special consideration is given to students that are pursuing an Master's in Public Health.

**Dean Alan M. Chesney and Dean Thomas B. Turner Scholarship Fund** Established by friends and admirers of Dr. Alan M. Chesney and Dr. Thomas B. Turner to be used for scholarships for deserving medical students.

**Class of 1915 Memorial Fund** A fund established through gifts and bequests from and as a tribute to the Class of 1915 for the purpose of awarding scholarship aid to a deserving student or students at the Johns Hopkins University School of Medicine.
Class of 1926 and Charles O’Donovan Scholarship Fund This fund was established in 1950 by members of the School of Medicine Class of 1926 to provide income for a scholarship.

Class of 1936 Fund Established in 1987 by the Class of 1936, this endowed fund is to provide scholarships for students in the School of Medicine.

Class of 1937 Philip Bard Scholarship Established as an endowed fund by the Class of 1937 in 1987 in honor of their 50th Reunion. The income is to provide scholarships to needy medical students in the School of Medicine.

Class of 1956 Memorial Fund Endowed in 1971 by members of the Class of 1956, the income to be used to provide scholarships to medical students with financial need.

Class of 1965 Scholarship Fund Endowed by the members of the Class of 1965 in honor of their 25th Reunion, the income to provide scholarships to needy medical students.

Class of 1966 Scholarship Fund Endowed in 1989 by the members of the Class of 1966 in honor of their 25th Reunion, the income to provide scholarships for needy medical students.

Class of 1976 Scholarship Fund Endowed by the members of the Class of 1976 in honor of their 25th Reunion, the income to provide scholarships to medical students exhibiting financial need.

Class of 1978 Scholarship Fund Endowed by the Class of 1978 to commemorate their 25th Reunion; the income will provide scholarships to needy medical students in the School of Medicine.

Class of 1980 Scholarship Fund Dr. John T. Thompson and other Class of 1980 School of Medicine alumni established the Class of 1980 Scholarship Fund in 1995 to provide scholarship aid to financially needy medical students.

Class of 1983 Scholarship Fund This fund was created by members of the Class of 1983 upon their 15th Reunion to provide assistance to needy medical students.

Class of 1986 Scholarship Fund Endowed by the members of the Class of 1986 to commemorate their 15th Reunion, the income to provide scholarship assistance to needy medical students in the School of Medicine.

William A. Crawley, M.D., D.D.S, M’79 Endowed Scholarship Fund Established in 2004; the income is to be used to provide financial assistance to worthy students in the School of Medicine.

Richard S. D’Agostino, M.D. Endowed Scholarship Fund This fund was created by Dr. D’Agostino, Class of 1978, to honor his devotion to medicine and his lifetime affiliation with the School of Medicine. Income from this fund will provide financial assistance to medical students at the School of Medicine.

Virginia Wells Davies Fund The Virginia Wells Davies Fund was established by Virginia Wells Davies in November of 1981. Its purpose is to provide scholarship assistance to financially needy students pursuing the degree of Doctor of Medicine.

Marguerite T. Doane Scholarship Fund Mrs. Marguerite T. Doane established an endowment fund in 1952 to provide tuition aid to certain students with financial need.

The Oscar and Victoria Dorsch Scholarship for Medical Education This fund was established in June 2003. Income from the principal will be used to provide financial support for medical students in the School of Medicine.

Victoria S. Doust, M.D. Scholarship Fund Established in 1999 by Brewster C. Doust, M.D., Class of 1951. The fund is a tribute to his wife, Victoria.

Denise Dufer, M.D. Memorial Fund Established in 1990 by the family, friends, and colleagues of Dr. Denise Dufer, Class of 1988. This endowed fund is to provide scholarships to needy medical students.

Marcia Thomas Duncan Memorial Scholarship This scholarship, established in 1980 in memory of Marcia Thomas Duncan, is awarded annually to a first year medical student. In addition to a four-year scholarship covering tuition and fees, the Duncan Scholar receives a small monthly stipend to offset living expenses while in medical school.

Joseph C. Eggleston Memorial Fund An endowed fund established in 1989 by family, friends and colleagues of Dr. Joseph Eggleston, Class of 1962. Dr. Eggleston served on the medical staff in pathology from 1962 to 1989. The income is to provide scholarship assistance to needy medical students in the School of Medicine.

Robert Biggs Ehrman Scholarship Fund Established in 1970 at the death of Mr. Ehrman to provide scholarships for medical students.

Ralph Engle Memorial Scholarship Established in 2000 by friends and family in memory of Dr. Engle, Class of 1945. Dr. Engle previously served as his class representative.

Epps Family Fund Established in 1999 by Charles H. Epps, Jr., M.D., and Roselyn Payne Epps, M.D., M.P.H., M.A. The Epps family has extensive connections to Johns
Hospkins and wishes to acknowledge the importance of the University in their lives. The fund was established in honor and memory of various family members.

Jean Epstein Memorial Fund This endowment fund was established in 1985 by Mr. and Mrs. Alvin Epstein and the Alvin and Louella Epstein Foundation. The income from this fund provides a scholarship to deserving women who have an interest in neurology.

Mrs. Richard P. Ettinger Scholarship Fund Established by Mrs. Ettinger to provide scholarship assistance for students in the School of Medicine.

Dorothy A. Evans Graduate Research Fellowship Fund The fund was established to endow graduate fellowships for research in any field.

Larry Evans Student Aid Fund Scholarship Fund This fund is in memory of Larry Evans to assist students with special interest in the area of drug addiction.

Eugenio Fernandez-Cerra, M.D. Scholarship Fund This fund was established in 1999 by Dr. Eugenio Fernandez-Cerra, a 1943 alumnus of the School of Medicine. Preference is given to students from Puerto Rico.

Dr. Edward M. Finesilver Memorial Scholarship Fund This fund was established in 1999 by Mrs. Frances Blumenthal in memory of her father, an alumnus of the Class of 1924.

Warfield M. Firo Fund An endowed scholarship established in 1989 by the estate of Mrs. Thomasena Allen. The income is to provide financial aid to needy medical students.

Fischer Family Scholarship for Medical Education This scholarship fund recognizes the Hopkins family legacy of Janet Fischer, M.D., Class of 1948; Newton Fischer, M.D., former faculty in Otolaryngology; and Anne Crowe Fischer, M.D., Ph.D., Class of 1991. The purpose of this endowed fund is to provide financial assistance to medical students.

Waldo Emerson Floyd III Scholarship Fund The income from this endowment account is to be used for scholarship support for needy students. Students from the state of Georgia are to have preference insofar as there may be qualified applicants: second preference will be given to students from the southeastern part of the United States.

Eric W. Fonkalsrud, M.D. and Margaret Z. Fonkalsrud Endowed Scholarship Fund This fund was established in 2002 by Eric W. Fonkalsrud, Class of 1957; and his wife, Margaret Fonkalsrud. The couple has a life-long affiliation with the Johns Hopkins School of Medicine. Dr. Fonkalsrud served on the faculty in the School of Medicine’s Department of Surgery and as a surgeon at the Johns Hopkins Hospital. The income from this fund will provide financial support to medical students who have demonstrated financial need.

Sharon Fox Scholarship Fund in Memory of Henrietta B. Fox An endowment fund established in 1967 under the will of Mr. Sharon Fox in memory of Henrietta B. Fox, the income from which is to be used for student aid in the School of Medicine.

Bernard S. French Scholarship Fund Established as a bequest from the estate of Sallye Lipscomb French as a memorial to her husband, Bernard S. French, to provide scholarship support at the School of Medicine.

Dr. Gottlieb C. Friesinger II Endowed Scholarship Fund This fund was endowed in 1996 by Dr. Gottlieb C. Friesinger II to fund a scholarship for students at the School of Medicine.

I. Phillips Frohman, M.D. Scholarship Fund Established in 2000 by a gift from Dr. Frohman.

Bernice and Joseph Fuld Memorial Scholarship Fund This fund was established in 1998 by Stuart L. Fuld, M.D., Class of 1963, and Ulrike L. Fuld. The income is to be used for financial assistance to medical students.

Dr. J. Alex and M. Arlene Gardner Scholarship Fund This fund was established in 1996 by Dr. and Mrs. J. Alex Gardner to provide scholarship support to students in the School of Medicine, preferably to any acceptable candidate applying for admission to the Johns Hopkins University School of Medicine, from southwestern Michigan.

Dr. and Mrs. Abraham Genecin Memorial Scholarship This fund was established in 1999 by Mrs. Rita Genecin and other donors to provide assistance to needy medical students.

Gilliam Family Scholarship Fund This endowed fund, established in 2001 by the Gilliam Foundation and Mr. James H. Gilliam, Jr., is to provide financial assistance to Morgan State University graduates enrolled at the Johns Hopkins University School of Medicine who have demonstrated need.

The Anita Desch Gipe Memorial Scholarship Established in 1999 by the estate of R. Norman Gipe of Heathsville, Virginia, in memory of his wife.

Maurice H. Givens-David E. Rogers Scholarship Fund Established by a gift from the estate of Dr. Maurice H. Givens to provide scholarships for students in the School of Medicine.

Emil Goetsch Fund for Medical Students The income from this endowment, established in 1963, is used for scholarships for medical students.

Morton F. Goldberg, M.D. Scholarship Fund
Established to honor Dr. Goldberg’s (Class of 1975) leadership at the Wilmer Eye Institute. Income from this fund will be used to provide assistance to deserving medical students.

David Goldfarb Family Endowment Established in 1995 by David Goldfarb, M.D., this fund is to be used to provide scholarship assistance to medical students with financial need.

Lillian Ruth Goldman Scholarship Fund Established in 1986 as a bequest from the estate of Lillian Ruth Goldman to provide scholarship assistance to needy and deserving medical students.

Gerald L. Gordon and Florence J. Gordon Memorial Fund The fund was established in 1998 by the estate of Florence Gordon. It is to be used for the education of medical students specializing in the study of arthritic diseases, or for research in that field.

Scholarship Fund in Memory of Leonard L. Greif This fund was established in 1957 as an endowment, with income to be allocated to aid deserving students in the School of Medicine.

Norman M. and Eleanor H. Gross Scholarship Fund This fund was established in 2002 by the Norman M and Eleanor H. Gross Trust. Mr. and Mrs. Gross were well known for their care and compassion for others. The Norman M. and Eleanor H. Gross Scholarship Fund provides financial need students the opportunity to pursue their education at the Johns Hopkins Medical School.

Gorham Family Scholarship for Medical Education Established in 2000 by George W. Gorham, M.D., class of 1954. It recognizes the legacy of George E. Gorham and L. W. Gorham both medical graduates of the Class of 1910.

Helen L. and William D. Guynn Memorial Scholarship Fund Established in 1995 by Dr. Robert W. Guynn, the income from this fund will be used to provide scholarship assistance to needy medical students.

Richard D. Hahn Scholarship Fund This endowment fund was established in 1980 by the Myers Family of Baltimore to recognize the competence and compassion with which Dr. Hahn, a member of the Class of 1936, serves his patients. The income from this fund provides a scholarship to a third year medical student who intends to specialize in internal medicine.

Rowena Sidbury Hall, M.D., Scholarship This fund was established in 2002 by Rowena Sidbury Hall, Class of 1943 (February), of Silver Spring, Maryland. She served as a member of the faculty in the School of Medicine’s Department of Pediatrics and as a pediatrician at the Johns Hopkins Hospi-
This fund was established in 1992 by Dr. Jesse Donald Hubbard and his brother Dr. John Stanley Hubbard in memory of their parents. This income is used for scholarship aid to needy medical students in the School of Medicine.

**George Skaife and Fredericka Louise Hughes Family Scholarship** This scholarship was established in 1998 by Mr. William Hughes and Ms. Gail Hughes Deets. It provides scholarship support for students with an interest in geriatrics.

**Evelyn H. Hurlburt and Irene H. Sluckis Scholarship Fund** This fund was established in 1997 by Mr. Charles O. Banks and Ms. Irene Sluckis to provide scholarship assistance in the School of Medicine.

**Waddie Pennington Jackson Scholarship Fund** This scholarship fund was established in 1963 by Dr. W. P. Jackson, Class of 1917, in memory of his wife, Bessie Gills Jackson, income from which is to provide scholarship support for needy students in the School of Medicine.

**Edwin Bosley and Dorothy Duncan Jarrett Memorial Fund for Medical Scholarships** Established in 1977 by a gift from Mr. and Mrs. Edward Foss Wilson in honor of Dr. Edwin B. Jarrett, a distinguished graduate, to provide endowed scholarships to worthy students in the School of Medicine.

**William H. Jarrett II Scholarship Fund** This fund was established in 1993 by Dr. William H. Jarrett II, a graduate of the Johns Hopkins University School of Medicine 1958, in honor of his 35th anniversary class. The scholarship monies will be made available to financially needy medical students to help defray their costs of medical education.

**Dr. Nancy Jenison Scholarship Fund** Through a generous bequest from Dr. Nancy Blanche Jenison, a member of the Class of 1911, a scholarship fund was established in 1963 to provide financial assistance for deserving women medical students.

**The Johns Hopkins Hospital Women's Board Scholarship Fund** The Women's Board of the Johns Hopkins Hospital makes an annual contribution to the School of Medicine to provide financial assistance to deserving students.

**The Johns Hopkins Medical and Surgical Association Scholarships** These scholarships are provided annually by The Johns Hopkins Medical and Surgical Association. Each year the Association designates for honor distinguished former members of the Johns Hopkins medical community.

**Morris Joseph Medical Residence Fund** Dr. Morris Joseph has created a scholarship fund to defray the cost of a room in Reed Hall for a deserving medical student.

**Dr. Thomas J. Kennedy, Jr. Scholarship Fund** In honor of Dr. Kennedy's 50th Class Reunion, this fund was established in 1993 to provide scholarship assistance to financially needy students in the School of Medicine.

**Dr. John T. King, Jr. Scholarship Fund** Established in 1978 by a gift from Dr. John T. King, Jr., one of Johns Hopkins’ most distinguished physicians for more than six decades, to provide endowed scholarships for medical students.

**Herbert Koteen, M.D. Scholarship Fund** This fund was established in honor of Dr. Koteen upon his eightieth birthday by his family. The income is to be used for scholarship aid to financially needy students in the School of Medicine.

**Milton B. Kress Scholarship Fund** Established in 1987 by a bequest from the estate of Milton Kress. The income from this endowed gift is to be used as scholarships for needy students in the School of Medicine. The students and amounts of each scholarship is to be selected by the Dean of the School of Medicine.

**Louis F. Krumrein, M.D. Scholarship Fund** Established as a bequest from Dr. Louis F. Krumrein, Class of 1918, for the benefit of deserving students who could not otherwise afford a medical education.

**Oliver and Elizabeth Laster Scholarship for Medical Education** This fund was established in 2001 by Oliver and Elizabeth Laster of Hewlett, New York. This fund honors their children, Andrew J. Laster, A&S 1975, Med. 1979; Steven Laster, Med. 1986; and Geraldine Laster Macomber; and memorializes their parents, Alan and Caroline Laster and Dr. Bernard and Hannah Aschner. Drs. Andrew and Steven Laster served as members of the Johns Hopkins Hospital staff in the Department of Medicine. The income is to be used to help medical students finance their education.

**Dr. Maurice Lenarsky Scholarship Fund** This fund was established in 1991 by Jane Lenarsky in honor of her father Dr. Maurice Lenarsky upon his eightieth birthday. The income is to be used for scholarship aid to financially needy medical students with preference given to fourth year students with an interest in pediatrics.

**Eleanor I. Leslie Fund** Established to pro-
vide aid to graduate students in the School of Medicine.

Dr. Martin Macht and Dr. Joseph Spaulding Scholarship This scholarship was established by Mrs. Ruth Spaulding in memory of her son, Joseph Spaulding, Jr. and in honor of Dr. Martin Macht, an alumnus of the School of Medicine. This fund is to provide a financially needy student in the School of Medicine through the four years of study.

John I. Mandler, M.D. and Marilyn S. Mandler, R.N. Scholarship for Medical Education This scholarship fund will be used to support a medical student with financial need.

Rex R. Martin, M.D. and Ann Y. Martin Scholarship Fund Established in 2000. Dr. Martin is a 1950 graduate of the School of Medicine. This fund is in honor of his 50th graduation anniversary.

Bessie Darling Massey Scholarship Fund for Medical Students Established in 1967 at the death of Mrs. Bessie Darling Black Massey; the income is to be used for scholarships in the School of Medicine.

Keith D. Maxwell, M.D., Memorial Scholarship Fund This fund was established in 1999 by members of the Maxwell family and other members of the Class of 1973 in honor of their 25th Reunion. Funds provide scholarship support to needy medical students.

Manfred Mayer Scholarship Fund Established in 1985 by the colleagues and friends of Dr. Manfred Mayer to provide scholarships to support needy medical students with special consideration given to displaced persons or refugees.

John Scott McFarland Scholarship Fund An endowment fund established in 1965 under the will of Dr. John S. McFarland, a member of the Class of 1902. The income from the fund is to be used to assist worthy students in the School of Medicine.

Robert S. McGraw Scholarship Fund This scholarship was established by The McGraw Foundation in April 1983 with the purpose of providing assistance to financially needy students in the School of Medicine. It honors Dr. Robert S. McGraw, who was a member of the Class of 1954.

Dr. Victor A. McKusick Scholarship Fund This fund was established in 1974 by an anonymous donation to honor Dr. Victor A. McKusick. The income is to be used to support financially needy students in the School of Medicine.

Dr. Edwin Leonard McQuade Scholarship Fund The income from this endowment, established in 1954, is used for scholarships for medical students.

Dorothy Reed Mendenhall Scholarship Fund An endowment fund, to provide an annual scholarship to a deserving woman medical student, was established in 1957 by members of the family of Dr. Dorothy Reed Mendenhall.

Rose Meinhardt Fund An endowed scholarship established by the estate of Rose Meinhardt to provide assistance to needy, deserving and outstanding students who wish to pursue a career in medical research.

H. Houston Merritt Scholarship Fund Established in 1980 with a gift from the estate of H. Houston Merritt, this fund provides scholarship aid to students in the School of Medicine. Preference is given, whenever possible, to students from the state of North Carolina.

Adolf Meyer Scholarship Established by a former student of Dr. Adolf Meyer, to be used for scholarship aid for students of the School of Medicine.

Mildvan Alumni Endowed Scholarship Fund This fund was established in 2003 by the Mildvan family to honor their devotion to medicine and help needy M.D. or M.D./Ph.D. students in good standing at the School of Medicine.

Orville and Kathryn Miller Scholarship Fund An endowed fund established in 1965 by Mrs. Orville R. Miller and her son, Mr. Orville Miller, of Portland, Oregon. The income from this fund is to be used to assist students in the Five Year Program with preference to be given to students from the state of Oregon.

Daniel L. Moore, M.D. Scholarship Fund The scholarship was established in honor of Dr. Moore’s 35th School of Medicine Reunion, with income to be used to provide scholarship assistance to financially needy medical students.

Dr. L. F. Morawetz Scholarship Endowed Scholarships in memory of the late Dr. L. F. Morawetz are available to students in the School of Medicine who are in need of financial support.

William W. More Memorial Scholarship Fund Established in 1995 by Dr. Thomas H. Powell to provide scholarship support to needy students in the School of Medicine.

M. Sandra Morse Scholarship Fund This fund was established in 1993 by M. Sandra Morse to show gratitude for the joy the medical school students had given her during her 29 year tenure as Director of Financial Aid. The endowment income is to be used to provide assistance to financially needy students in the School of Medicine.

Morris J. Moskowitz, M.D. Scholarship Established in 2000 by the estate of Morris J.
Established by the
This fund was endowed in 2001
This
was established in 1985 at the
Fund Established
In 1995, Dr. and Mrs. Donald
An
An endowment fund
This
Established in 1995 by
Dr. E. Paul O’Sullivan Scholarship Fund
This fund was established in 1993 by Dr. E.
Dr. E. Paul O’Sullivan, a graduate of the School
of Medicine in 1943, to provide scholarships to
financially needy medical students.
Parents Fund for Medical Students
Endowed in 1990 by parents of medical stu-
dents with financial need.
Sheila S. and Dr. Lawrence C. Pakula
Scholarship for Medical Education
This scholarship was established in 1999 through
a gift from Dr. Lawrence C. Pakula and Mrs.
Sheila S. Pakula.
The Emanuel and Patricia M. Papper
Scholarship
This fund was established to provide
tuition scholarships to medical
students.
Gertrude Wills Parker and Edward Milton
Parker Endowed Scholarship Fund
Established in 1996 by Ronald E. Parker, M.D., to
provide scholarship support to students in the
School of Medicine.
Edwards A. Park Scholarship Fund
An endowment fund, established by
friends, former
students, and professional colleagues
of Dr. Park at the time of his eightieth birth-
day, December 30, 1957, with income
allocated to student scholarships in the
School of Medicine.
Dr. John W. and Isabella Hunner Parsons
Scholarship Fund
An endowment fund
was established in 1969 to provide financial
assistance to needy and worthy students in
the School of Medicine. The fund was estab-
lished by Mrs. Roger G. Walker in memory of
her late parents, Dr. John W. and Isabella
Hunner Parsons and their devotion to and
lifelong involvement with the Johns Hopkins
University. Dr. Parsons, the recipient of B.A.
and M.D. degrees from the John Hopkins
University, was an internist, allergist and
member of the School of Medicine faculty.
Mrs. Parsons was a Baltimore portrait painter
whose paintings hang in the Johns Hopkins
University and Hospital.
Samuel H. Payne Memorial Scholarship Fund
This endowment fund was established by
Mr. Mosby H. Payne to honor the memory of
Samuel Payne and to provide scholarships
for deserving students from the state of
Virginia.
Willis C. Penney Memorial Scholarship Fund
An endowment fund was established in
1986 by Della N. Penney and Susan E. Pen-
ney to provide financial assistance to needy
and worthy students in the School of Medicine.
Virginia Romberger Reber Pettijohn
Scholarship Fund
Established in 1995 by the
Estate of Virginia R. R. Pettijohn, this fund
is to be used to provide scholarship assis-
tance to medical students with financial need.
Giacomo and Jan Pirzio-Biolo
Scholarship Fund
This fund was endowed in 2001 by
the estate of Giacomo Pirzio-Biolo, Class
of 1951, and his wife, Jan M. Pirzio-Biolo
of Mercer Island, Washington. Prior to his death
in 1998, Dr. Pirzio-Biolo often expressed
his gratitude for the medical education he
received after World War II from the Johns
Hopkins University School of Medicine. The
establishment of this fund, in his memory, will
assist future generations of medical students to experience similarly enlightened medical education in the tradition of Johns Hopkins.

**Gregory L. Plock Memorial Scholarship Fund** Family, friends, and former classmates established this endowed fund in 2002 in memory of Gregory L. Plock, Med. 1987, to create a lasting legacy of their friend and classmate. The fund provides financial assistance to deserving students in the School of Medicine.

**Warner M. and Lora Kays Pomerene Fund** Established in 1980 with a gift from the estate of Warner M. Pomerene, this fund provides scholarship aid to students in the School of Medicine. Preference is given to the extent possible, to students who plan to become general practitioners in the field of family medicine.

**Jeanette B. and Loring W. Pratt Scholarship Fund** The income from this endowment, established in 1993, is used to provide scholarships for students in the School of Medicine.

**Radiology Fund for Medical Students Scholarship** The Russell H. Morgan Department of Radiology and Radiological Science has established a scholarship fund for medical students which is enhanced from time to time by donations deriving from the earnings of the department.

**Harry A. Raider Scholarship Fund** Established by Mr. Raider to pay the tuition and/or other expenses of worthy students enrolled in the School of Medicine.

**Rita Meena Raju Memorial Scholarship for Medical Education** Established in 1999. Rita Meena Raju entered Johns Hopkins Medical School in 1993, and died suddenly after a brief illness in 1995. The purpose of this fund is to provide scholarship support to students who exemplify the highest ideals in the medical profession. Donors to the fund include her family and friends.

**Randall Scholarships** The scholarship fund was endowed in 1961 by an alumna of the School of Medicine who wished to remain anonymous. The purpose of the Randall Scholarships is to assist able and deserving medical students in a low income bracket. To qualify for renewal of these scholarships, students must maintain academic standing in the highest third of the class.

**Rosemarie Hope Reid, M.D. Memorial Fund** This fund was established in 1994 in memory of the School of Medicine 1992 graduate Rosemarie Hope Reid by her family, friends, and former classmates. The income is to be used to help medical students finance their educations.

**Ferdinand O. Reinhard Medical Scholarship** These endowed scholarships made possible in 1951 by a bequest from the late Dr. Ferdinand O. Reinhard, a graduate of the School of Medicine.

**Herbert Remmer Memorial Scholarship Fund** This endowment fund was established by Hilda Remmer in 1986. The income from this fund provides scholarships for medical students with preference given to Jewish students.

**Dr. Maurice L. Richardson Fund** Established as a bequest from the estate of Dr. Maurice L. Richardson. The income from this fund is to be used for scholarships for worthy students in the School of Medicine.

**C. Alvin Riebling Scholarship Fund** A gift from Dr. Jean Riebling Sherman, in memory of her father, to provide partial tuition for a student in the School of Medicine.

**Louis M. Rosenfeld Scholarship Fund** Established in 1990 by the Estate of Madalyn Schwentker Rosenfeld, this fund in memory of Louis M. Rosenfeld's father, Jesse Rosenfeld, his mother, Rose R. Rosenfeld, and his sister, Carolyn Rosenfeld, is to be used to provide students residing in the state of Maryland with scholarship support.

**Florence Rena Sabin Scholarship Fund** The Johns Hopkins Women's Medical Alumnae Association, Incorporated established this fund in 1959 in memory of an eminent graduate of the School of Medicine, Class of 1900. The income is available for scholarships for deserving women medical students of academic distinction and promise, preferably a student entering the first year.

**Arun B. Sapre, M.D. Memorial Scholarship Fund** An endowed fund established in 1996 by Mrs. Arun B. Sapre, family, friends, and colleagues of Dr. Arun B. Sapre. The income is to provide scholarship assistance to needy medical students in the School of Medicine.

**Morris Schapiro Scholarship Fund** An endowment was established by the Morris Schapiro and Family Foundation in February, 1954, to aid needy, promising students. This gift was in commemoration of Mr. Morris Schapiro's seventieth birthday.

**Oscar B. Schier Memorial Scholarship Fund** This fund was established in 1996 by Hilda Remmer in 1986. The income from this fund is to be used for scholarships for worthy students in the School of Medicine.

**Herbert Remmer Memorial Scholarship Fund** This endowment fund was established by Hilda Remmer in 1986. The income from this fund provides scholarships for medical students with preference given to Jewish students.

**C. Alvin Riebling Scholarship Fund** A gift from Dr. Jean Riebling Sherman, in memory of her father, to provide partial tuition for a student in the School of Medicine.

**Louis M. Rosenfeld Scholarship Fund** Established in 1990 by the Estate of Madalyn Schwentker Rosenfeld, this fund in memory of Louis M. Rosenfeld's father, Jesse Rosenfeld, his mother, Rose R. Rosenfeld, and his sister, Carolyn Rosenfeld, is to be used to provide students residing in the state of Maryland with scholarship support.

**Florence Rena Sabin Scholarship Fund** The Johns Hopkins Women's Medical Alumnae Association, Incorporated established this fund in 1959 in memory of an eminent graduate of the School of Medicine, Class of 1900. The income is available for scholarships for deserving women medical students of academic distinction and promise, preferably a student entering the first year.

**Arun B. Sapre, M.D. Memorial Scholarship Fund** An endowed fund established in 1996 by Mrs. Arun B. Sapre, family, friends, and colleagues of Dr. Arun B. Sapre. The income is to provide scholarship assistance to needy medical students in the School of Medicine.

**Morris Schapiro Scholarship Fund** An endowment was established by the Morris Schapiro and Family Foundation in February, 1954, to aid needy, promising students. This gift was in commemoration of Mr. Morris Schapiro's seventieth birthday.

**Oscar B. Schier Memorial Scholarship Fund** This fund was established in 1996 by Hilda Remmer in 1986. The income from this fund is to be used for scholarships for worthy students in the School of Medicine.

**Ottulie Schillig Scholarship Fund** The monies for the Schillig Scholarship Fund were dedicated during her lifetime by Ottulie Schillig. She asked that this fund be used
to provide scholarships for deserving young students and to assist them in obtaining an education as doctors of medicine.

**School of Medicine Alumni Scholarship Fund** Income from an endowment provided by graduates of the School.

**School of Medicine Scholarship Fund** By action of the Board of Trustees of the Johns Hopkins University, a capital sum of $400,000 has been set aside, the income from which is to provide financial assistance to needy and deserving students.

**Henry M. Seidel, M.D., Scholarship Fund** was established by the Class of 1984 and endowed by gifts from the Classes of 1978-1990 to honor Dr. Henry M. Seidel, Associate Dean for Student Affairs. An alumnus of the Class of 1946, Dr. Seidel is recognized for his outstanding service to the students in their career development. The fund will provide scholarships to needy students in the School of Medicine.

**Ezra S. Shaya Fund** An endowed fund established by Dr. Ezra S. Shaya, Class of 1954. The income is to provide scholarships to needy medical students.

**Daniel Marsh Shrewbrooks, M.D. Memorial Loan Fund** was established to commemorate the life of Dr. Daniel Marsh Shrewbrooks, a member of the Class of 1915. Its purpose is to provide a loan resource for "deserving and needy students of the Johns Hopkins School of Medicine."

**Andrew Watson Sellards Graduate Traveling Research Fellowship Fund** Established for the purpose of providing traveling scholarships or fellowships for clinical study and observation or for investigation in Latin America or perhaps at times in the Orient, especially the Philippines.

**Dr. Barnard E. Simon and Bitten H. Simon, R.N. Scholarship Fund** Established in 2000 through the estate of Dr. Bernard E. Simon to provide scholarships for medical students. Dr. Simon, Class of 1937, was a plastic surgeon whose work with the Hiroshima Maidens, after World War II, won him international acclaim.

**J. Morris Sieemons Scholarship Fund** Established by a bequest from Anne G. Sieemons to be used for scholarships for medical students.

**Elizabeth A. Small Endowment Fund** The fund was established by Elizabeth Anne Small, M.D., to provide scholarship support for women who are interested in dermatology.

**Herbert Sloan, M.D. and Doris Edwards Sloan Scholarship for Medical Education** This scholarship fund was established in 2003. Income from this fund will provide financial support for deserving medical students.

**Wladimir Solowiej, M.D. Scholarship Fund** This endowment fund was established with a gift from the estate of Dr. Wladimir Solowiej, a Baltimore physician who emigrated from Poland. Although he was never on the staff, Dr. Solowiej nevertheless had high regard for Johns Hopkins. The income from this fund provides two scholarships, one in his name and one in the name of his sister, Augenia Zebrowska.

**Alberta Speaks Scholarship Fund** Established in 1986 as a bequest from the estate of Alberta Speaks to provide scholarship assistance for needy black students.

**Lisa Marie Sprague Memorial Scholarship Fund** Established in 1998 by Arthur Sprague, Class of 1960, and Mrs. Sprague in memory of their daughter.

**Paul Luther Stine Memorial Scholarship Fund** Established in 1996 from the Estate of Mildred C. Stine, to provide scholarship support to students in the School of Medicine, preference to be given to otherwise eligible applicants who are graduates of Brunswick High School, Frederick County, Maryland, residents of Frederick County, Maryland, or residents of the State of Maryland.

**Barry and Evelyn Strauch Scholarship Fund** Barry S. Strauch, A&S 1962, Med. 1965, and his wife Evelyn M Strauch established this fund to commemorate his 35th class reunion. Their gift reflects the couple's devotion to medical excellence and their lifelong affiliation with the Johns Hopkins University School of Medicine. The income is to be used to provide financial assistance to worthy students in the School of Medicine.

**Josephine S. Sutland Scholarship for Medical Education** This scholarship was established in 1999 to provide assistance for needy medical students.

**Helen B. Taussig Fund** Established in 1986 by the Life Income Gift Annuity of Dr. Helen B. Taussig. The income of this fund is to provide scholarships to needy medical students.

**Owsei Temkin Scholarship Fund** In 1993 Dr. Barbara P. Wasserman and Dr. Martin P. Wasserman established this fund in honor of Dr. Owsei Temkin. This fund provides financial assistance to needy medical students, with preference given to those who have a special interest in the humanities.

**Vander Salm Family Scholarship Fund** The Johns Hopkins University gratefully acknowledges the receipt of a gift from Thomas J. Vander Salm, M.D. to establish a permanent named endowed scholarship fund. Dr. Vander Salm graduated from the School of Medicine in 1966. The fund will provide assistance to medical students.
Roger L., M.D. and Mary J. von Heimburg Scholarship Fund Established in 2000. Dr. von Heimburg a graduate of the School of Medicine in 1955, passed away in September 1999. He lived for a long time in Green Bay, Wisconsin and asked that preference be given to students from the midwest.

William D., M.D., and Selma S. Voorhees Scholarship for Medical Education Established in 2000. Mrs. Selma Voorhees opened the fund in honor of her husband, William, a graduate of the medical class of 1945.

Elmer Wakefield, M.D. Scholarship Fund This fund was established in 1998 by the estate of Dr. Wakefield to provide scholarships for students in need of additional funds to continue their education.

Dr. Arthur Nathan Wang Memorial Scholarship Fund This fund was created in 1988 in honor and in memory of Dr. Arthur Nathan Wang, an alumnus of the School of Medicine. Dr. Wang's promising career as a neurosurgeon was tragically ended early in his life by a fatal accident. The income from the fund each year will provide a scholarship to a needy and deserving student who intends to pursue a career in clinical neurosurgery. In establishing the fund, the family and friends of Dr. Wang hope to help others to complete the contribution to medicine and society begun by him.

James Johnston Waring Memorial Scholarship Fund Through a generous gift from Mrs. James J. Waring, an endowment in memory of her husband has been established in the School of Medicine, the income from which is to be used as a scholarship fund for needy and worthy students. Although a member of the class of 1908, Dr. Waring subsequently received his degree from another school, having found it necessary to withdraw from the Medical School at the end of his junior year. Nevertheless, Dr. Waring was active in Hopkins' alumni affairs until his death in June, 1962.

Frederick and Gladys C. Waring Memorial Scholarship Fund This fund was established in 1996 from the Gladys C. Waring estate to provide scholarships for students in the School of Medicine.

Watt/Hansell Endowment This fund was established in 1994 by James Watt, and Dr. Myron E. Wegman to provide and opportunity for medical students to pursue public health training, and vice versa. The fund is managed jointly by the Deans of the School of Medicine and Public Health.

David R. Weakley, M.D. Scholarship Fund An endowment fund established in 1995 by Dr. David R. Weakley, to provide scholarship support to medical students in the School of Medicine.

Margaret Morris Weiss, M.D., and Robert A. Weiss, M.D. Endowed Scholarship Fund This fund was established by Dr. Margaret Morris Weiss, and Dr. Robert A. Weiss to honor their devotion to medicine and lifetime affiliation with the School of Medicine. Income from this fund will provide financial assistance to medical students.

Doris and Harry Wexler Award This endowed fund was established by Mrs. Doris P. Wexler in 1995 to provide an annual award for a graduating student with an interest in multiple sclerosis, heart disease, blindness/diseases of the eye, cancer/oncology-hematology, or diabetes.

Frances Turner White Fund This fund, established with a gift from the estate of Frances Turner White, provides scholarships for needy and deserving medical students.

Dr. Raymond Wing Memorial Scholarship Fund This fund was established in 1981 by Mrs. Raymond Wing to honor the memory of her husband, a member of the School of Medicine Class of 1927. It will provide support for students in their first year of study at the School of Medicine.

Winslow Foundation Scholarship Fund Gifts have been received annually since 1974 to fund scholarships for medical students, with preference for residents of Maryland, the District of Columbia, or North Carolina.

Charles Marion Wolfe Scholarship Fund The Fund was established in 1997 through the estate of Doris L. Wolfe in memory of her husband, Charles Marion Wolfe, to be used for a worthy medical student.

Ruth P. Young and Joseph M. Young, M.D. Endowed Scholarship Fund Established in 2004; the income is to be used to provide financial assistance to worthy students in the School of Medicine.

Evers P. and Adeline E. Zepp Scholarship Fund A fund was established as a bequest from the estate of Adeline E. Zepp to be used in support of the education of medical students.

Lionel J. Zheutlin, M.D. Scholarship Fund This fund was established in 1998 in memory of Dr. Zheutlin, a graduate of the Class of 1947. It provides assistance to needy students with preference to those planning careers in pediatrics.

Loan Funds

Harold L. Amoss Loan Fund In 1956, Mrs. Harold L. Amoss and friends of the late Dr. Amoss established an endowment fund with the
income to be used for loans to aid deserving medical students.

**Katharine K. Barton Memorial Fund** A group of friends of the late Miss Katharine K. Barton have contributed a memorial fund in her name. In view of Miss Barton's interest in young people, the fund is used to assist medical students who are not in a position to meet all of their own expenses.

**J. G. Boswell Loan Fund** This fund provides loans for medical students.

**Dr. Charles M. Cargille Student Loan Fund** The Dr. Charles M. Cargille Student Loan Fund was established in recognition of Dr. Cargille's great interest in the Johns Hopkins University School of Medicine.

**Class of 1932 Student Loan Fund** The Class of 1932 established a long term fund for medical students in January of 1983, recognizing thereby the growing need for financial assistance of this kind.

**Class of 1934 Revolving Loan Fund** Established in 1985 by a 50th Reunion Class to provide long term loans to needy medical students.

**Class of 1935 Revolving Loan Fund** Established in 1985 by a 50th Reunion Class to provide long term loans to needy medical students.

**Class of 1949 Student Loan Fund** Established in 1985 by the 35th Reunion Class of 1949 to provide loans to needy medical students.

**Class of 1952 Revolving Loan Fund** Established in 1987 by the 35th Reunion Classes of 1952 to provide loans to needy medical students.

**Class of 1959 Loan Fund** Established in 1985 by the Class of 1959 for the 50th Reunion to provide loans to needy medical students.

**Daniels Memorial Loan Fund** This fund was established in 1980 by Josephine J. Daniels, M.D., Class of 1924, in memory of her husband and medical school classmate, Worth B. Daniels, Sr., an internist who practiced and taught in Washington, D.C. for 50 years. Following Josephine Daniels’ death in 1990, their sons requested that her name be added to the Fund, which provides loans for financially needy medical students.

**Lydia B. Edwards, M.D. Revolving Loan Fund** This fund was established in 1999 to provide Loans to students in their 2nd, 3rd, or 4th year of medical school. Dr. Edwards is a 1932 graduate of the School of Medicine.

**Filbert Foundation, Inc. Medical Student Loan Fund** A $10,000 revolving loan fund established by the Filbert Company Foundation of Baltimore.

**Warfield Firor Loan Fund** This fund was established in 1962 to provide loans for medical students.

**J. Theron Hunter Loan Fund** Established by Dr. J. Theron Hunter, of the Class of 1925, to be used for aid in the form of loans to deserving students in the third and/or fourth year classes of the School of Medicine.

**The Johns Hopkins Women’s Medical Alumnae Association Student Loan Fund** Established in 1971 by The Johns Hopkins Women's Medical Alumnae Association to provide financial assistance to medical students, preferably women.

**Robert Wood Johnson Foundation Loan Fund** Established to provide aid to needy medical students who are female, members of designated racial minority groups and/or from rural areas.

**W. K. Kellogg Loan Fund** Established in 1942 to provide financial assistance to students in the School of Medicine.

**Halford B. and Lillian S. Kneale Loan Fund** Dr. Kneale was a member of the Class of 1920 who pursued a distinguished career in Urology. He and Mrs. Kneale planned the Fund which was established after Dr. Kneale's death in July 1983. It is a source of loans to medical students who, as one of the requirements for a loan, must be in the upper third of their class.

**Pearl Konttas, M.D. Loan Fund** This Loan Fund was established by Dr. Konttas in 1982. She was a member of the Class of 1923 and, during her professional career, served as a pediatrician.

**Gertrude D. Maengwyn-Davies Loan Fund** This is an endowed loan fund established in 1986. The income from the fund is to provide loans to deserving graduate and medical students interested in research in the basic health sciences.

**George C. McKinstry Medical Loan Fund** This fund was established to be used for individuals of character who are in need of assistance to complete their medical education.

**The Nannie J. (Mrs. Ashby) Monroe Memorial Loan Fund** This fund was established by James Monroe, M.D., JHUSOM ’34, in memory of his mother, Nannie J. (Mrs. Ashby) Monroe. It provides loans for needy students in the School of Medicine.

**Morris Morgenstern Student Loan Fund** This fund was established in 1971 to provide loans for medical students in need of financial assistance.

**Willey H. Norton Loan Fund** The Willey H. Norton Loan Fund was established in July 1983 upon the receipt of a bequest from the...
estate of Dr. Willey H. Norton. Its purpose is to make loan monies available to financially needy students in the School of Medicine. Dr. Norton was a member of the Class of 1910 who pursued a distinguished career in obstetrics and gynecology.

**Revolving Fund for Loans to Medical Students** This fund was established in 1952 by donations from Mrs. Elbert Dent and the late Dr. Joseph Earle Moore for students in the School of Medicine.

**School of Medicine Loan Fund** In 1962 the Trustees of the University set aside $100,000 to be used as revolving loan funds for medical students.

**Arnold A. Schwartz Fund** A loan fund for students in the School of Medicine established in 1964 under the will of the late Arnold A. Schwartz.

**Surdna Foundation Loan Fund** This fund was established in 1971 to provide loans for medical students.

**Jimmie Swartz Foundation Loan Fund** The friends of Jimmie Swartz, who lived his life to help others, established this memorial loan fund in order to assist needy medical students who have demonstrated their intention to give more to their patients and their profession than they take from them.

**Miley B. Wesson Memorial Loan Fund** The fund was established in 1999, and provides low interest loans to medical students.

**Dr. Lawrence R. Wharton Loan Fund** Gifts from a grateful patient of Dr. Wharton have established a loan fund for students in the School of Medicine.
Anesthesiology and Critical Care Medicine

JOHN A. ULATOWSKI
Mark C. Rogers Professor and Director of the Department of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery, Professor of Neurology

DAN E. BERKOWITZ
Professor of Anesthesiology and Critical Care Medicine, Professor of Biomedical Engineering

ROBERT H. BROWN
Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Medicine, Joint Appointment in Radiology

TODD DORMAN
Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Medicine, Associate Professor of Surgery

NICHOLAS A. FLAVAHAN
Edward D. Miller, M.D. Professor of Anesthesiology Research

CLARA FRONTICELLI, Professor Emerita

DANIEL F. HANLEY
Jeffrey and Harriet Legum Professor of Acute Neurological Medicine in the Department of Neurology, Professor of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery

MEREL H. HARMEL, Visiting Professor

CHARLES W. HOGUE, JR., Professor

ROGER ANTHONY JOHNS
Professor of Anesthesiology and Critical Care Medicine, Professor of Medicine

RAYMOND C. KOEHLER, Professor

JACKIE L. MARTIN, Professor

EDWARD D. MILLER
Professor of Anesthesiology and Critical Care Medicine, Dr. Frances Watt Baker and Dr. Lennox D. Baker, Jr. Dean of the School of Medicine

MAREK A. Z. MIRSKI
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurology, Professor of Neurological Surgery

DAVID G. NICHOLS
Professor of Anesthesiology and Critical Care Medicine, Professor of Pediatrics, Mary Wallace Stanton Professor of Education

DANIEL NYHAN
Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery

PETER JOHN PRONOVOST
Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Health Sciences Informatics, Associate Professor of Surgery

SRINIVASA NAGA RAJA
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurology

MARK CHARLES ROGERS, Adjunct Professor

ARTIN A. SHOUKAS
Professor of Biomedical Engineering, Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Physiology

THOMAS J.K. TOUNG
Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Neurological Surgery

CHRISTOPHER L. WU, Professor

MYRON YASTER
Richard J. Traytsman Professor of Anesthesiology and Critical Care Medicine, Professor of Pediatrics

SEAN MICHAEL BERENHOLTZ
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

LAUREN CLAIRE BERKOW
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Otolaryngology-Head and Neck Surgery

IVOR D. BERKOWITZ
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics

JUAN RICARDO CARHUAPOMA
Associate Professor of Neurology (from 11/01/2010), Assistant Professor of Neurology (to 10/31/2010), Associate Professor of Anesthesiology and Critical Care Medicine (from 11/01/2010), Assistant Professor of Anesthesiology and Critical Care Medicine (to 10/31/2010), Associate Professor of Neurological Surgery (from 11/01/2010), Assistant Professor of Neurological Surgery (to 10/31/2010)

STEVEN P. COHEN, Associate Professor

1 Corrected to 7/1/10. Primary appointments listed first.
JEFFREY M. DODD-O
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
ROBERT T. DONHAM, Associate Professor
SYLVAIN DORE
Associate Professor of Anesthesiology and Critical Care Medicine (to 08/31/2010), Associate Professor of Pharmacology and Molecular Sciences (to 08/31/2010)
DAVID THOMAS EFRON
Associate Professor of Surgery, Associate Professor of Anesthesiology and Critical Care Medicine
JAMES COURTNEY FACKLER, Associate Professor
NAUDER FARADAY
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
STEVEN FRANK, Associate Professor
WEI DONG GAO, Associate Professor
ROMERGRYKO GUANCE GEOCADIN
Associate Professor of Neurology, Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Neurological Surgery
ALLAN GOTTSCALK, Associate Professor
ROBERT S. GREENBERG, Associate Professor
ANDREW PETER HARRIS
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Gynecology and Obstetrics
ELLIOTT RICHARD HAUT
Associate Professor of Surgery, Associate Professor of Anesthesiology and Critical Care Medicine
EUGENIE S. HEITMILLER
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics
SABINE KOST-BYERLY, Associate Professor
KAREN S. LINDEMAN, Associate Professor
GEFFREY SHIU FEI LING
Adjunct Associate Professor of Neurology, Adjunct Associate Professor of Anesthesiology and Critical Care Medicine
LYNETTE J. MARK
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Otolaryngology-Head and Neck Surgery
ELIZABETH ANNE MARTINEZ
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
WILLIAM T. MERRITT
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery
DOLORES B. NJOKU
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Pathology, Assistant Professor of Pediatrics
EDWARD J. NORRIS, Associate Professor
L. REUVEN PASTERNAK, Adjunct Associate Professor
RICHARD J. RIVERS
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Ophthalmology
LEWIS HARTLEY ROMER
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Biomedical Engineering, Associate Professor of Cell Biology, Associate Professor of Pediatrics
ADAM SAPIRSTEIN
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
JAMES F. SCHAUBLE, Associate Professor
DONALD H. SHAFFNER, JR.
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics
FREDERICK E. SIEBER, Associate Professor
PETER S. STAATS, Associate Professor
ROBERT DAVID STEVENS
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Associate Professor of Radiology
JUDITH L. STIFF, Associate Professor Emerita
YUAN-XIANG TAO, Associate Professor
PETER B. TERRY
Professor of Medicine, Associate Professor of Anesthesiology and Critical Care Medicine
DAVID ERIC TUNKEL
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics
REBECCA ANN ASLAKSON
Assistant Professor of Anesthesiology and Critical Care Medicine
SIMON ERIC ASPLAND
Assistant Professor of Anesthesiology and Critical Care Medicine
VIACHASLAU M. BARODKA, Assistant Professor
MELANIA MARIA BEMBEA
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Pediatrics
RAMOLA BHAMBHANI, Assistant Professor
MARI A. BIRZESCU, Assistant Professor
SALLY BITZER, Assistant Professor
RENEE J. BLANDING, Assistant Professor
CRAIG WILLIAM BOWEN, Assistant Professor
MARY BETH BRADY, Assistant Professor
E. DAVID BRAVOS, Assistant Professor
CHRISTOPHER DAMIAN BREDER, Assistant Professor
MATTHEW J. BRENNAN, Assistant Professor
ANNA TODARO BROWN
Assistant Professor of Anesthesiology and Critical Care Medicine (from 10/01/2010)
ZENOBIA ANN CASEY, Assistant Professor
KRISTIN CHEUNG, Assistant Professor
STEVEN J. SCHWARTZ
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

DEBORAH A. SCHWENGEL, Assistant Professor

JANEL D. SEXTON, Assistant Professor

PUNITA T. SHARMA, Assistant Professor

JOANNE E. SHAY, Assistant Professor

NICOLE ANN SHILKOFSKI
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Pediatrics

MARTIN KONRAD SLODZINSKI, Assistant Professor

TRACEY L. SMITH-STIERER, Assistant Professor

JOSEPH WILLIAM STAUFFER, Assistant Professor

SHAWN MICHELLE SUMIDA, Assistant Professor (from 09/27/2010)

FENG TAO, Assistant Professor

DAVID A. THOMPSON, Assistant Professor

ROBERT WILLIAM THOMSEN
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

A. TERRY WALMAN, Assistant Professor

JIAN WANG, Assistant Professor

WEILI WENG, Assistant Professor

KAYODE AYODELE WILLIAMS, Assistant Professor

BRADFORD D. WINTERS
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Assistant Professor of Surgery

CHRIS PARK YANG, Assistant Professor

WENDY CATHARINA ZAI
Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery

RHONDA L. ZUCKERMAN
Assistant Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Gynecology and Obstetrics

ABDULLAH SHAFIQUE AHMAD
Instructor in Anesthesiology and Critical Care Medicine (to 10/24/2010)

ARUN K. BHASIN, Instructor

BRIAN MICHAEL BLOCK, Instructor

JASENKA BORZAN, Instructor

WANGSEN CAO, Instructor

CINDY HSIN-I CHEN, Instructor (to 07/31/2010)

CALVIN ENG, Instructor

STACIE NICOLE JOHNSON, Instructor

ANN ELIZABETH JONES, Instructor

MARTHA M. KENNEDY, Instructor

CHARLES MITCHELL LEVE, Instructor

LENORE NII, Instructor

JEAN-PIERRE OUANES, Instructor (from 07/26/2010)

KATHLEEN GAGE PARR, Instructor

MICHAEL ALAN PHELPS, Instructor

LAKSHMI SANTHANAM, Instructor

RICHARD MORRIS SHAPIRO, Instructor

TINA PHAM TRAN, Instructor

DAWN YAN, Instructor (to 07/31/2010)

ZENG-JIN YANG, Instructor

DANIEL JOHN ANGELINI, Research Associate

ANIL KUMAR BHUNIA, Research Associate

SUJIT CAO, Research Associate

FUMIN CHANG, Research Associate

IRINA A. KOLOSOVA, Research Associate

HERMAN E. A. KWANSA, Research Associate

XIAOGUANG LIU, Research Associate

KAZUYO YAMAJI-KEGAN, Research Associate

JIAN ZHANG, Research Associate

JIANHONG ZHU, Research Associate (from 07/16/2010)

TSUNG YUAN CHUANG, Visiting Scientist

WENGANG DING, Visiting Scientist

SUNG MEE JUNG, Visiting Scientist (from 08/02/2010)

YUN WANG, Visiting Scientist

TAO WU, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF ANESTHESIOLOGY AND CRITICAL CARE MEDICINE HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

NASIR ISLAM BHATTI
Associate Professor of Otolaryngology-Head and Neck Surgery

JIMMIE T. SYLVESTER
Professor of Medicine

The Bloomberg School of Public Health:

WAYNE MITZNER
Professor of Environmental Health Sciences

MACHIHO SHIRAHATA
Professor of Environmental Health Sciences

The School of Nursing:

MARGUERITE KARNEY
Associate Professor of Nursing

ELECTIVE OPPORTUNITIES—Curriculum Consultant: Dr. Brad Winters. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

Clinical Electives

E 1. Advanced Clinical Clerkship in Anesthesiology. Dr. Winters. 2-4 weeks.

This course is designed to provide more experience for the student interested in anesthesiology. Students may rotate through the various anesthesia subspecialties or concentrate their time in one particular area of anesthesiology such as cardiac, obstetric, pediatric, regional anesthesiology, or pain medicine. The emphasis of the course will continue
to be the physiology and pharmacology underlying the practice of anesthesiology with students taking a more central role in active patient management. Attendance and participation in departmental conferences and seminars is expected. Additionally, for students interested in a clerkship in Neuro-critical Care, this rotation is arranged as an Advanced Clerkship in Anesthesiology currently and will show up on your transcript as such. A fully separate elective does not yet exists. Other ICU rotations are arranged through Surgery (SICU) or Internal Medicine (MICU). Please see the separate course description for the Pediatric Intensive Care clerkship administered by Dr. Shilkofski.

Limited to four students. Students must have completed the core anesthesia clerkship prior to this elective.

**E 2. In-depth Case Discussion.** Monday 4:00-5:00 p.m. CMSC 706.

Selected cases illustrating common and uncommon clinical problems in anesthesiology are presented and discussed in a structured conference setting. Participation is required for students taking other anesthesia electives and highly recommended to students on all surgery electives.

**E 3. Pediatric Intensive Care Subinternship Care.** Dr. Nicole Shilkofski

The course is designed for students planning a career in anesthesiology, pediatrics, or a pediatric surgery specialty and encourages students to become familiar with problems of critically ill infants and children. Basic pathophysiology and pharmacology will be stressed. Students should be prepared to help contribute to the care of these patients on rounds and are expected to attend didactic sessions and in-depth case discussions. Overnight call with the resident they are “paired” with is optional but encouraged. Limited to one student per rotation.

**E 4. Grand Rounds.** Staff and visiting professors. Thursday 7:00-8:30 a.m.

Didactic lecture on a topic in anesthesiology or an anesthesiology related subject such as intensive care, clinical pharmacology, emergency medicine, respiratory care or pain is presented on a regular basis. This lecture series often features distinguished visiting professors from other universities and provides an opportunity to hear specialists in their particular fields.

**E 5. Basic Science Lecture Series.** Tuesday 4:15-5:30 p.m. Garrett Room.

Each quarter, a continuing lecture series on topics such as neuroscience, cardiac physiology, and renal disease will be discussed by visiting experts. A two-hour lecture will be given each week so that a total of 12 such lectures (24 hours) will be devoted to each area covered.

**E 6. Clinical Preceptorship in Anesthesiology.** Dr. Winters. 2 or 4 weeks; not available in July.

**Prerequisites:** Core clerkships in Medicine and Surgery recommended prior to rotation, but not necessary.

This basic elective presents the challenges, rewards, science, and technical aspects of caring for patients pre-operatively, intra-operatively, and post-operatively. The elective is intended both for students who are considering a career path in anesthesiology and for those choosing other specialties who wish to increase their understanding of physiology and pharmacology.

The specific learning topics include the following: basic airway management; evaluation of the patient and assessing readiness for anesthesia/surgery; introduction to general and regional anesthetic techniques; basic pain management; cardiopulmonary and cerebral physiology; anesthetic, anagogic, and cardiovascular pharmacology; complications of anesthesia; and intravenous cannulation and introduction to intra-arterial cannulation.

In addition, a didactic series is provided specifically for students; students are encouraged to participate in all departmental conferences and educational opportunities.

This course is a necessary prerequisite for most of the advanced anesthesiology electives.

**E 7. Advanced Clinical Clerkship in Pediatric Anesthesia.** Drs. Winters, Shaffner, Schwegel, and staff. 2 or 4 weeks; by arrangement.

**Prerequisite:** Core clerkship in Pediatrics and Clinical Preceptorship in Anesthesiology.

Students will be responsible for the preoperative evaluation, intraoperative management, and postoperative evaluation of children. This course is designed for students planning careers in pediatrics, anesthesiology or pediatric surgery.

**E 8. Management of Pain and Suffering.** Drs. Winters, Christo, Hartset, and staff. 2-4 weeks; by arrangement; one student per rotation.

**Prerequisite:** Clinical Preceptorship in Anesthesiology preferred, but not required.

This course is intended for students who have an interest in the assessment and treatment of pain and its attendant emotional manifestations. The focus will be on the use of analgesics, nerve blocks, and other behavioral modifications. The problems associated with cancer pain will also be part of this experience. It is hoped that this course will provide the student with some tools and insight into the management of pain and suffering in patients presenting either to routine medical practices or to specialty pain clinics.

**E 9. Anesthesiology Research.** Dr. Winters and staff. Minimum of one-half quarter; available all year; as arranged.

**Prerequisites:** Clinical Preceptorship in Anesthesiology preferred, but not required.

Many opportunities exist within the department for research in areas of basic science (molecular, genetic, cell biology, basic pathophysiology, biochemistry), clinical trials, biomedical engineering, information management, outcomes research and data mining, and health policy & safety initiatives. Specific research opportunities should be reviewed on the departmental website. The interested student should contact the faculty member supervising the research prior to registering for the elective.

**E 10. Clinical Clerkship in Surgical Intensive Care (SICU).** Dr. Lipsett. Three students; 4 weeks minimum.
Prerequisites: Core clerkships in Medicine and Surgery.
Students function as subinterns, participating in all SICU activities under the supervision of the SICU/Weinberg ICU housestaff and attending physicians. The rotation offers exposure to the care of critically ill patients undergoing extensive surgical procedures. The rotation includes formal training in the pathophysiology of critical illness, exposing the student to invasive procedures, obtaining and interpreting physiologic measurements, and pharmacologic manipulation of the cardiovascular system.
Biological Chemistry

GERALD WARREN HART  
DeLamar Professor of Biological Chemistry,  
Director of the Department of Biological Chemistry

MICHAEL JERRY CATERINA  
Professor of Biological Chemistry, Professor of Neuroscience

SUSAN W. CRAIG  
Professor of Biological Chemistry, Professor of Pathology

PETER N. DEVREOTES  
Isaac Morris Hay and Lucille Elizabeth Hay Professor of Embryology in the Department of Cell Biology, Professor of Biological Chemistry

PAUL T. ENGLUND, Professor Emeritus

STEPHEN J. GOULD, Professor

ROBERT E. JENSEN  
Professor of Cell Biology, Professor of Biological Chemistry

M. DANIEL LANE  
University Distinguished Service Professor Emeritus of Biological Chemistry

SIMEON MARGOLIS  
Professor Emeritus of Medicine, Professor Emeritus of Biological Chemistry

ALBERT S. MILDVAN, Professor Emeritus

CRAIG MONTELL  
Professor of Biological Chemistry, Professor of Neuroscience

DENISE J. MONTELL, Professor

AKHILESH PANDEY  
Professor of Biological Chemistry in Genetic Medicine, Professor of Oncology, Professor of Pathology

PETER L. PEDERSEN, Professor

DANIEL M. RABEN  
Professor of Biological Chemistry, Professor of Oncology, Professor of Physiology

GABRIELE VALERIA RONNETT  
Professor of Neuroscience, Professor of Biological Chemistry, Professor of Neurology

GREGG L. SEMENZA  
C. Michael Armstrong Professor of Pediatrics, Professor of Biological Chemistry, Professor of Medicine, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences

DAVID ROBERT SHORTLE  
Professor of Biological Chemistry, Professor of Biophysics and Biophysical Chemistry

BARBARA T. SOLLNER-WEBB, Professor

Qi-QUN TANG, Adjunct Professor

JENNIFER EILEEN VAN EYK  
Professor of Medicine, Professor of Biological Chemistry, Professor of Biomedical Engineering

MEHBOOB ALI HUSSAIN  
Associate Professor of Pediatrics, Associate Professor of Biological Chemistry, Associate Professor of Medicine

LANDON STUART KING  
Associate Professor of Medicine, Associate Professor of Biological Chemistry

GEORGE H. SACK, JR.  
Associate Professor of Medicine, Associate Professor of Biological Chemistry

SRIRAM SUBRAMANIAM, Visiting Associate Professor

YOLANDA M. FORTENBERRY  
Assistant Professor of Pediatrics, Assistant Professor of Biological Chemistry

TAKANARI INOUE  
Assistant Professor of Cell Biology, Assistant Professor of Biological Chemistry, Assistant Professor of Pharmacology and Molecular Sciences

MOLLIE K. MEFFERT  
Assistant Professor of Biological Chemistry, Assistant Professor of Neuroscience

JOEL L. POMERANTZ, Assistant Professor

KAREN L. REddy  
Assistant Professor of Biological Chemistry, Joint Appointment in Medicine

BALTAZAR REYNARFAJE, Visiting Assistant Professor

MICHAEL J. WOLFGANG, Assistant Professor

NATASHA ELIZABETH ZACHARA, Assistant Professor

ROBERT NORMAN COLE, Instructor

XINYAN WU, Instructor

SEUNG HUN CHA, Research Associate

JODIE G. FRANKLIN, Research Associate

CHAD ERIC SLAWSON, Research Associate

WILLIAM P. TEW, Research Associate

KARTIK VENKATACHALAM, Research Associate

MOHAMMED ABDUL MAJID, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF BIOLOGICAL CHEMISTRY HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

RICHARD L. HUGANIR  
Professor of Neuroscience

FRANCIS KUHAJDA  
Professor of Pathology

PAUL A. WATKINS  
Professor of Neurology

The Bloomberg School of Public Health:

PETER C. AGRE  
Professor of Molecular Microbiology and Immunology

PIERRE A. COULOMBE  
E.V. McCollum Professor and Chair of the Department of Biochemistry and Molecular Biology

The Department of Biological Chemistry has two major instructional functions. It provides required and elective instruction in biochemistry for medical students and also offers organized programs of graduate study in biochemistry and molecular biology toward the degree of Doctor of Philosophy. Two graduate programs are available: the departmental graduate program in Biological Chemistry.
and the joint graduate program in Biochemistry, Cellular and Molecular Biology (BCMB). The BCMB graduate program is a joint effort of the Departments of Biological Chemistry, Molecular Biology and Genetics, Biophysics and Biophysical Chemistry, Pharmacology and Molecular Sciences, Cell Biology, Neuroscience, and Physiology (see Graduate Program Section: Biochemistry, Cellular and Molecular Biology, and Biological Chemistry).

The staff and the facilities of all seven departments provide opportunities to medical students, graduate students, and postdoctoral fellows for carrying out research projects in many different areas of biochemistry and molecular biology.

REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year —

340.600 Scientific Foundations of Medicine. Drs. Pedersen, Raben, Gould, and staff. First eight weeks of medical school; one week in November, M.-F., 8:00-2:00; Clinical Correlations, schedule varies. Biochemistry, Cell Biology, Genetics, and Pharmacology are fully integrated into a combined course of study presented by the basic science departments. The course provides a comprehensive, fully integrated coverage of the molecular basis of cellular metabolism and function. The course will emphasize small group learning and problem solving. The student will participate in “Journal Club”, in which important papers in the front-line biomedical literature will be discussed. Clinical Correlations related to basic science concepts will be held at various days and times. Enrollment of non-medical students requires approval from the course director.

Prerequisites: Elementary courses in inorganic chemistry, organic chemistry, general biology, and general physics. At least one upper-level course in Biochemistry or Cell Biology is strongly recommended.

OTHER COURSES AND ELECTIVE OPPORTUNITIES—The courses described below are required for Ph.D. candidates but are available to medical students as elective opportunities.

Curricular Consultants: Drs. Pedersen and Raben. Elective courses for medical students must be approved by the preceptor; any member of the department may act as preceptor.

Biological Chemistry

800.708 BCMB Core Discussion. Meets Fridays, first three quarters.

This course, which is limited to BCMB students, is required for all first year BCMB students. Critical discussion of current research articles in biochemistry, molecular and cell biology.

340.801 Advanced Topics in Biochemistry and Molecular Biology. 2-3 hours per week. Time to be arranged.

Prerequisite: Scientific Foundations of Medicine 340.600; enrollment limited to approximately eight students.

Systematic study and discussion of the current literature pertaining to the particular topics under consideration that quarter; topics will vary from year to year.

340.808 Research Seminar.

Reports on current research by the staff, visiting scientists, and advanced students form the basis of this seminar which meets weekly throughout the year.

340.805 Research in Biochemistry and Molecular Biology. Staff.

Properly qualified individuals are accepted for graduate and postdoctoral research training. Medical students are also accepted for research training in elective quarters and summers. By arrangement with staff members.

Research areas represented in the department are as follows:

1. DNA replication and topology.
2. Transcription and the control of gene expression.
3. Cellular differentiation.
4. Protein folding and mechanism of enzyme action.
5. Cytoskeletal, contractile, and cell surface proteins.
6. Membranes, receptors, and intra- and intercellular communication.
8. Signal transduction.

340.699 Developmental Biology. Dr. Deborah Andrew.

Prerequisite: Molecular biology, cell biology, and genetics.

A graduate-level course covering the basis of embryology in multicellular organisms.

340.702 Current Topics in Biological Chemistry. This course allows first-year Biological Chemistry students to explore areas relevant to the Biological Chemistry curriculum at a level of depth greater than that available in the core courses. Students meet every one to two weeks as a group with individual faculty members to discuss current or classic papers from the literature related to the faculty member’s broad range of interests. Emphasis is placed not only on the scientific questions being explored, but also on a critical approach to papers from the primary literature. The small group size allows for an extremely interactive forum in which students can scrutinize both the theoretical and practical aspects of a given study and evaluate the study’s relevance to the greater biological picture.

340.806 Research Projects in Biochemistry, Biophysics and Molecular Biology.

Brief, open-ended research projects of about two months duration. Graduate students participate in three projects during four quarters in laboratories of various faculty members in Biological Chemistry, Molecular Biology and Genetics, Biophysics and
Biophysical Chemistry, Pharmacology and Molecular Sciences, and Cell Biology.
Research interests of individual staff members in the Department of Biological Chemistry are as follows:

DR. CATERINA
Molecular mechanisms of pain and temperature sensation; roles of transient receptor potential ion channels in immunity

DR. CRAIG
Cell adhesion and cytoskeleton.

DR. GOULD
HIV/AIDS; retrovirology; exosome biogenesis; alloimmunity.

DR. HART
Dynamic glycosylation of nuclear and cytoskeletal proteins in transcription, signal transduction, cancer, diabetes, and Alzheimer’s disease.

DR. MEFFERT
The regulation of neuronal gene expression in health and disease.

DR. C. MONTELL
Molecular genetics of sensory signaling; animal behavior and TRP channels.

DR. D. MONTELL
In vivo analysis of morphogenetic cell movements and cell invasion using genetics and live imaging.

DR. PANDEY
Global analysis of signal transduction pathways using mass spectrometry; bioinformatics; protein-protein interactions; databases; cancer biomarkers.

DR. PEDERSEN
Mitochondria; metabolism; motors & medicine with emphasis on understanding and treating/ curing cancer and heart disease.

DR. POMERANTZ
Functional specificity and design of signal transduction pathways.

DR. RABEN
Biochemistry and chemistry of lipids and lipid metabolizing enzymes involved in signaling cascades.

DR. REDDY
Understanding how the nuclear periphery and other subcompartments contribute to general nuclear architecture and to specific gene regulation.

DR. SACK
Structure of human amyloid A proteins and their role in inflammation.

DR. SHORTLE
Experimental and computational strategies for solving the protein folding problem. NMR spectroscopy of unfolded proteins.

DR. SOLLNER-WEBB
Analysis of forces that organize the DNA in the cell nucleus: an in vivo self-association of DNA sequences directs sub-nuclear localization in mammalian cells.

DR. WOLFGANG
CNS control of metabolism; neuronal metabolism; neurochemistry.

DR. ZACHARA
The role of intracellular glycosylation, O-GlcNAc, in mediating life and death decisions in response to cellular injury.

GRADUATE PROGRAM—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs).
Biomedical Engineering

ELLIOT R. MCVEIGH
Bessie Darling Massey Professor of Biomedical Engineering, Professor of Radiology and Radiological Science, Director of the Department of Biomedical Engineering

RONALD D. BERGER
Professor of Medicine, Professor of Biomedical Engineering

DAN E. BERKOWITZ
Professor of Anesthesiology and Critical Care Medicine, Professor of Biomedical Engineering

PAUL A. BOTTOMLEY
Russell H. Morgan Professor of Radiology, Professor of Biomedical Engineering, Professor of Medicine

HENRY BREM
Harvey Cushing Professor of Neurosurgery, Professor of Biomedical Engineering, Professor of Oncology, Joint Appointment in Ophthalmology

JEFF W.M. BULTE
Professor of Radiology, Professor of Biomedical Engineering

PAUL ALBERT FUCHS
John E. Bordley Professor of Otolaryngology-Head and Neck Surgery, Professor of Biomedical Engineering, Professor of Neuroscience

HENRY R. HALPERIN
David J. Carver Professor of Medicine, Professor of Biomedical Engineering, Professor of Radiology

JUSTIN SCOT HANES
Professor of Ophthalmology, Professor of Biomedical Engineering, Professor of Neurological Surgery, Professor of Oncology

JOSHUA MICHAEL HARE
Adjunct Professor of Medicine, Adjunct Professor of Biomedical Engineering

STEVEN SHIH-TING HSIAO
Professor of Neuroscience, Professor of Biomedical Engineering

RICHARD J. JOHNS
University Distinguished Service Professor Emeritus of Biomedical Engineering, Professor Emeritus of Medicine

DAVID A. KASS
Abraham and Virginia Weiss Professor of Cardiology in the Department of Medicine, Professor of Biomedical Engineering

MAYURESH V. KOTHARE, Visiting Professor

JONATHAN S. LEWIN
Martin W. Donner Professor of Radiology, Professor of Biomedical Engineering, Professor of Neurological Surgery, Professor of Oncology

W. LOWELL MAUGHAN
Professor of Medicine, Professor of Biomedical Engineering

LLOYD B. MINOR
University Distinguished Professor of Otolaryngology-Head and Neck Surgery, Professor of Biomedical Engineering, Professor of Neuroscience

ALEKSANDER S. POPEL
Professor of Biomedical Engineering, Professor of Medicine, Professor of Oncology

DAVID A. ROBINSON
University Distinguished Service Professor Emeritus of Ophthalmology, University Distinguished Service Professor Emeritus of Biomedical Engineering, University Distinguished Service Professor Emeritus of Neuroscience

MURRAY B. SACHS
University Distinguished Service Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

LAWRENCE P. SCHRARM
Professor of Biomedical Engineering, Professor of Neuroscience

REZA SHADMEHR
Professor of Biomedical Engineering, Professor of Neuroscience

ARTIN A. SHOUKAS
Professor of Biomedical Engineering, Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Physiology

NITISH V. THAKOR
Professor of Biomedical Engineering, Professor of Neurology

BENJAMIN M.W. TSUI
Professor of Radiology, Professor of Biomedical Engineering

LESLIE TUNG, Professor

JENNIFER EILEEN VAN EYK
Professor of Medicine, Professor of Biological Chemistry, Professor of Biomedical Engineering

XIAOQIN WANG
Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

RAIMOND L. WINSLOW
Ray and Neera Singh Professor of Biomedical Engineering, Joint Appointment in Health Sciences Informatics, Professor of Medicine

ERIC D. YOUNG
Professor of Biomedical Engineering, Professor of Neuroscience

ELIAS A. ZERHOUNI
Professor of Radiology, Professor of Biomedical Engineering

CHARLES COLEMAN DELLA SANTINA
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Biomedical Engineering

PETER L. GEHLBACH
Associate Professor of Ophthalmology, Associate Professor of Biomedical Engineering

EDITH DIAMENT GUREWITSCH
Associate Professor of Gynecology and Obstetrics, Associate Professor of Biomedical Engineering
AKHIL JAY KHANNA  
Associate Professor of Orthopaedic Surgery,  
Associate Professor of Biomedical Engineering

SCOT C. KUO  
Associate Professor of Biomedical Engineering,  
Associate Professor of Cell Biology

ALBERT CLARK LARDO  
Associate Professor of Medicine,  
Associate Professor of Biomedical Engineering

XINGDE LI, Associate Professor

ROBERT E. MILLER  
Associate Professor of Pathology, Joint  
Appointment in Health Sciences Informatics,  
Associate Professor of Biomedical Engineering

LEWIS HARTLEY ROMER  
Associate Professor of Anesthesiology and  
Critical Care Medicine,  
Associate Professor of Biomedical Engineering,  
Associate Professor of Cell Biology,  
Associate Professor of Pediatrics

RICHARD DAVID SCHULICK  
John L. Cameron Professor of Alimentary  
Tract Diseases in the Department of Surgery,  
Associate Professor of Biomedical Engineering,  
Associate Professor of Gynecology and  
Obstetrics, Professor of Oncology

MARK J. SHELHAMER  
Associate Professor of Otolaryngology-Head  
and Neck Surgery,  
Associate Professor of Biomedical Engineering

JEFFREY H. SIEWERDSEN, Visiting Associate  
Professor

JOE ALEXANDER, JR., Adjunct Assistant  
Professor

ANGELO HOMAYOUN ALL  
Assistant Professor of Biomedical Engineering,  
Assistant Professor of Neurology

MOHAMAD EZZEDDINE ALLAF  
Assistant Professor of Urology,  
Assistant Professor of Biomedical Engineering

ISAAC N. BANKMAN, Assistant Professor

MICHAEL A. BEER  
Assistant Professor of Biomedical Engineering  
in Genetic Medicine, Joint Appointment in  
Molecular Biology and Genetics

HARRY RANDALL GOLDBERG  
Assistant Professor of Biomedical Engineering,  
Joint Appointment in Health Sciences  
Informatics

WARREN L. GRAYSON, Assistant Professor

JORDAN J. GREEN, Assistant Professor

DANIEL ALFREDO HERZKA, Assistant Professor

SCOTT MITCHELL PAUL, Adjunct Assistant  
Professor

JOHN JEREMY RICE, Adjunct Assistant Professor

LEW C. SCHON  
Assistant Professor of Orthopaedic Surgery,  
Assistant Professor of Biomedical Engineering

THOMAS B. WOLF  
Professor of Physiology, Joint Appointment in  
Biophysics and Biophysical Chemistry,  
Assistant Professor of Biomedical Engineering

YOUSEPH YAZDI, Assistant Professor

KECHEN ZHANG  
Assistant Professor of Biomedical Engineering,  
Assistant Professor of Neuroscience

JASON J. BENKOSKI, Research Associate

POPPY A.C. CRUM, Research Associate (to  
08/31/2010)

XIAOFENG JIA  
Research Associate in Biomedical Engineering,  
Research Associate in Physical Medicine and  
Rehabilitation

NIRANJAN PANDEY, Research Associate

DAVID LEE SHERMAN, Research Associate (from  
08/01/2010)

TUCK WAH SOONG, Research Associate

JOSEPH WEBSTER STAYMAN, Research  
Associate

HAIYAN DING, Visiting Scientist

RAHUL R. KALIKI, Visiting Scientist (from  
09/01/2010)

H YOUNG-NAM KIM, Visiting Scientist

MASAKI KYOSO, Visiting Scientist (to 08/31/2010)

RONG LIU, Visiting Scientist (from 09/15/2010)

FACULTY ASSOCIATED WITH THE  
DEPARTMENT OF BIOMEDICAL ENGINEERING  
HOLDING A PRIMARY APPOINTMENT IN:

The G.W.C. Whiting School of Engineering:

JOEL S. BADER  
Associate Professor of Biomedical Engineering

ANDREW S. DOUGLAS  
Professor of Mechanical Engineering

JUSTIN HANES  
Professor of Chemical Engineering

KALINA HRISTOVA  
Associate Professor of Materials Science and  
Engineering

PABLO A. IGLESIAS  
Professor of Electrical and Computer  
Engineering

KONSTANTINOS KONSTANTOPOULOS  
Professor of Chemical and Biomolecular  
Engineering

JERRY L. PRINCE  
William B. Kouwenhoven Professor of Electrical  
and Computer Engineering

The Bloomberg School of Public Health:

WAYNE A. MITZNER  
Professor of Environmental Health Sciences

REQUIRED COURSE WORK—The Department of Biomedical Engineering provides three educational programs. The Medical School program is described below, the Graduate Program leading to the Ph.D. degree is described on page 37, and the Graduate Program leading to the M.S.E. in Biomedical Engineering is described on page 40. Course work in the Graduate Programs is available to qualified medical students on an elective basis.

The required work for medical students in this area is integrated with the required work
in Physiology 360.600 and Neuroscience 440.600. It includes lectures and laboratory exercises on control systems, signal analysis, hemodynamics and modeling.

**COURSES AND ELECTIVE OPPORTUNITIES**—Curricular Consultant: Dr. McVeigh. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

**Biomedical Engineering E**
Courses are listed below by both School of Medicine and School of Engineering course numbers. For additional undergraduate courses, consult the Arts and Sciences/Engineering catalog.

**Special Studies and Research.** Dr. McVeigh and staff.
Students may participate in current research activities in the department or may arrange to conduct independent work under the guidance of a preceptor. Students may, in addition, participate in the regular seminars and conferences. A list of faculty in Biomedical Engineering and faculty associated with Biomedical Engineering can be found on page 126.

**Ethics of Biomedical Engineering Innovation.**
(580.415 School of Engineering) Drs. Rice, Logsdon, MacGabhann, and Yazdli.
Engineers confront problems and make decisions that hold long term social consequences for individuals, organizations, communities, and the profession. For biomedical engineers, these decisions may relate to: inventions such as medical devices and pharmaceuticals; neural prosthetics and synthetic biological organisms; responsible and sustainable design; availability of biotechnology in the developing world. Using a combination of cases, fieldwork, and readings, we examine the ethical issues, standards, theory and consequences of recent and emerging engineering interventions as a way to understand the profession and to form a basis for future decisions. In addition students will learn and practice multiple forms of communication, including oral, visual, and written rhetoric. A particular focus will be communication targeted to different stakeholders including other professionals and the public. Students will apply good communication principle to the discussion of biomedical engineering ethics, develop their own ethical case and group projects to aid ethical decision-making, and to improve communication of complex biomedical ethical issues to others.

**Systems Biogengineering I.** (580.421 School of Engineering) Dr. Trayanova

**Prerequisites:** 580.221 Molecules and Cells; 580.222 Systems and Controls; 110.302 Differential Equations (or equivalent).
A quantitative, model-oriented approach to the study of the cardiovascular system. Topics are organized to probe the cellular mechanical properties are introduced and the connection between the models and experiments is demonstrated. We also discuss the role of proteins, membranes and cytoskeleton in cellular function and how to describe them using mathematical models.

**Biomechanics of Cells and Organisms.** (580.448 School of Engineering) Drs. Sun and Spector.

**Prerequisites:** 171.101-102 Physics I and II; 110.202 Calculus III.

The significance of the mechanical factors to cell biology under normal and pathological conditions is shown based on concepts of continuum and statistical mechanics. The main experimental techniques to probe the cellular mechanical properties are introduced and the connection between the models and experiments is demonstrated. We also discuss the role of proteins, membranes and cytoskeleton in cellular function and how to describe them using mathematical models.

**Statistical Methods in Imaging.** (580.466 School of Engineering) Dr. Jednak.

**Prerequisites:** 110.202 Calculus III; 550.310 Probability and Statistics (or equivalent).
Denoising, segmentation, texture modeling, tracking, object recognition are challenging problems in imaging. We will present a collection of statistical models and methods in order to address these, including the E.M. algorithm, Maximum Entropy Modeling, Markov Random Fields, Markov Chain Monte Carlo, Boltzmann Machines, and Multilayer Perceptrons.

**Medical Imaging Systems.** (580.472 School of Engineering) Dr. Prince.

Prerequisite: 520.214 Signals and Systems or equivalent (Same as 520.432).

An introduction to the physics, instrumentation, and signal processing methods used in general radiography, X-ray computed tomography, ultrasound imaging, magnetic resonance imaging, and nuclear medicine. The primary focus is on the methods required to reconstruct images within each modality, with emphasis on the resolution, contrast, and signal-to-noise ratio of the resulting images.

**Modern Biomedical Imaging, Instrumentation, and Techniques.** (580.473 School of Engineering) Dr. Tsui.

Prerequisite: 580.472 Medical Imaging Systems.

An intermediate biomedical imaging course covering modern biomedical imaging instrumentation and techniques as applied to diagnostic radiology and other biomedical applications. It includes recent advances in various biomedical imaging modalities, multimodality imaging and molecular imaging. The course is team taught by experts in the respective fields and provides a broad based knowledge of modern biomedical imaging to prepare students for graduate studies and research in biomedical imaging. Also, the course will offer tours and practical experience with modern biomedical imaging equipment in clinical and research settings.

**Quantummechanical Basis of Nuclear Magnetic Resonance.** (580.475 School of Engineering) Drs. Van Zijl and Pekar.

Prerequisites: Basic physics and mathematics. Basics of NMR spectroscopy theory, data acquisition and processing. Topics include phenomenological/semi-classical description of NMR, introduction to quantum mechanics, quantum mechanics of NMR, density matrix, Cartesian spin operator formalism, homonuclear and heteronuclear pulse sequences for coupled spins, polarization transfer and coherence transfer, coherence transfer formalism, phase cycling for coherence selection, pulse sequences for multidimensional NMR, phase-sensitive and amplitude detection, and coherence selection using pulsed magnetic field gradients.

**Microfabrication Laboratory.** (580.495 School of Engineering) Drs. Andreou and Wang.

Prerequisite: Permission of instructor.

This laboratory course is an introduction to the principles of microfabrication and microengineering of devices and structures for medicine, biology and the life sciences. Course comprises of laboratory work and accompanying lectures that cover photolithography, soft-lithography, silicon oxidation, physical deposition, electrochemical deposition, etching, packaging, design and analysis CAD tools, and foundry services. Permission of instructor is required.

**Micro/Nanoscience and Biotechnology.** (580.496 School of Engineering) Dr. J. Wang.

An introduction to the physical and chemical principles important to MEMS, BioMEMS, and bionanotechnology. Topics include scaling laws, colloids and surfaces, micro and nanofluids, thermal forces and diffusion, chemical forces, electrophoresis, electric aspects of surface chemistry, capillary forces and surface tension, and top-down and bottom-up nanofabrication.

**Computational Functional Genomics** (580.610 School of Engineering) Dr. Goutsias.

Prerequisite: Working knowledge of elementary probability and statistics.

An introduction to mathematical and computational techniques for Functional Genomics, a growing area of research in cell biology and genetics whose objective is to understand the biological function of genes and their interactions. Computational functional genomics focuses on the problems of collection, processing, and analyzing data related to genome-wide patterns of gene expression with the objective to discover mechanisms by which a cell's gene expression is coordinated. This has become feasible with the development of DNA micro array technology, which allows the simultaneous measurement of gene expression levels of thousand of genes. Topics include: an introduction to cell biology (cells, genome, DNA, transcription, translation, control of gene expression, DNA and RNA manipulation); DNA micro array technology and experimental design; processing and analysis of micro array data (data reduction and filtering, clustering); and computational models for genetic regulatory networks (Boolean networks, Bayesian networks, ODE-based networks).

**Introduction to Linear Systems** (580.616 School of Engineering) Dr. Sarma.

This course examines linear, discrete- and continuous-time, and multi-input-output systems in control and related areas. Least squares and matrix perturbation problems are considered. Topics covered include state-space models, stability, controllability, observability, transfer function matrices, realization theory, feedback compensators, state feedback, optimal regulation, observers, observer-based compensators, measures of control performance, and robustness issues using singular values of transfer functions.

**Structure and Function of the Auditory and Vestibular System.** (580.625-6 School of Engineering) Hearing Science Center Staff.

Prerequisites: 580.421-422 Systems Bioengineering I and II; 580.302 Differential Equations; 580.221 Systems and Controls (or equivalent).

Physiological mechanisms of hearing and balance. Topics include transmission of sound in the ear, transduction of sound and head orientation by hair cells, biophysics and biochemistry of hair cells, representation of sound and balance in eighth-nerve discharge patterns, anatomy of the central auditory and vestibular systems, and synaptic transmission and signal processing in central neurons. Aspects of hearing and balance such as speech perception,
sound localization, vestibular reflexes and vestibular compensation are discussed with an integrated perspective covering perceptual, physiological and mechanistic data.

**Topics in Systems Neuroscience** (580.628 School of Engineering) Drs. X. Wang and Zhang.

**Prerequisite:** 580.421-422 Systems Bioengineering I and II (or equivalent).

This course consists of weekly discussions of current literature in systems neuroscience. The selected readings will focus on neural mechanisms for perception, attention, motor behavior, learning, and memory, as studied using physiological, psychological, computational, and imaging techniques. Students are expected to give presentations and participate in discussions.

**Topics in Systems Neuroscience.** (580.629 School of Engineering) Drs. X. Wang and Shadmehr.

**Prerequisite:** 580.421-422 Systems Bioengineering I and II (or equivalent).

This course consists of weekly discussions of current literature in systems neuroscience. The selected readings will focus on neural mechanisms for perception, attention, motor behavior, learning, and memory, as studied using physiological, psychological, computational, and imaging techniques. Students are expected to give presentations and participate in discussions.

**Theoretical Neuroscience.** (580.630 School of Engineering) Drs. X. Wang, Young, and Zhang.

**Prerequisites:** 580.422 Systems Bioengineering II; 550.420 Probability; 580.222 Signals and Systems (or equivalent).

Theoretical methods for analyzing information encoding and functional representations in neural systems. Models of single and multiple neural spike trains based on stochastic processes and information theory; detection and estimation of behaviorally relevant parameters from spike trains; system theoretic methods for analyzing sensory receptive fields; network models of neural systems. Both theoretical methods and the properties of specific well studied neural systems will be discussed.

**Computational Motor Control.** (580.631 School of Engineering) Dr. Shadmehr

**Prerequisites:** 580.422 Systems Bioengineering II; 110.302 Differential Equations; 110.201 Linear Algebra (or equivalent).

This course introduces tools from robotics, control theory, and computational neuroscience to understand in some depth the primate motor system. Our approach is to use mathematics to explore functions of muscles, spinal reflex systems, integration of vision and proprioception in the posterior parietal cortex, formation of motor plans, and online control. Our focus is on how various parts of the cortical and sub-cortical motor system contribute to the control and learning of movements, and how motor disorders arise from damage to these neural structures.

**210.632 Ionic Channels in Excitable Membranes.** (580.632 School of Engineering) Dr. Yue.

**Prerequisites:** Differential Equations (110.302 School of Arts and Sciences), Physiological Foundations for Biomedical Engineering (580.421-422 School of Engineering) or Cell Biology (020.306 School of Arts and Sciences); Introductory Probability (550.310 School of Engineering). Permission of instructor may be substituted for these courses.

Comprehensive quantitative introduction to the function of ionic channels. Topics include: Hodgkin-Huxley theory; Markov models of gating charge movement identified by histogram approaches, linear systems theory, and noise analysis; models of ion permeation; and Guoy-Chapman-Stern theory of surface layers. Includes exercises with stochastic simulation of theoretical concepts.

**Bioelectric Magnetic Phenomena in Cardiac Muscle.** (580.635 School of Engineering) Dr. Tung.

**Prerequisites:** 110.202 Calculus III; 110.302 Differential Equations; 520.213 Circuits; 520.214 Signals and Systems; 520.219 Fields, Matter and Waves; 580.421 Systems Biomedical Engineering I (or equivalent).

This course reviews theoretical concepts and experimental approaches used to characterize electric, magnetic, and electromagnetic phenomena that arise in biological tissues. Topics include volume conductor models of cells and tissues, complex conductive properties of tissue and cell suspensions, bioelectric and biomagnetic measurements, electric and magnetic stimulation, and impedance plethysmography. Selected topics will be chosen for oral presentations by class participants.

**Feedback Control in Biological Signaling Pathways.** (580.636 School of Engineering) Dr. Iglesias.

**Prerequisites:** 110.302 Differential Equations; 520.353 Control Theory.

Signal transduction pathways in biological systems need to be precisely regulated. This control is done through feedback regulatory loops. Students in this course will formulate mathematical models of signaling pathways and analyze their behavior using engineering control theory.

**Contemporary Topics in the Engineering of Cells.** (580.637 School of Engineering) Dr. Tung.

Cardiac ionic currents, molecular correlates and blockers, calcium clock repolarization reserve, alternans, electrical remodeling, cardiac memory, defective calcium cycling, ion channel mutations, human embryonic stem cells, paracrine signaling, extracellular matrix and cytoskeleton, synthetic tissue scaffolds, in vitro experimental models.

**Models of Physiological Processes in the Neuron.** (580.639 School of Engineering) Dr. Young.

**Prerequisites:** School of Engineering 580.420-422 or equivalent; School of Arts and Sciences 110.302, or 500.303 or equivalent; 520.213 recommended.

Single-neuron modeling, emphasizing the use of computational models as links between the properties of neurons at several levels of detail. Topics include thermodynamics of ion flow in aqueous environments, a biology and biophysics of ion channels, gating, nonlinear dynamics as a way of studying the collective properties of channels in a membrane, synaptic transmission, and integration of electrical activity in multi-compartment dendritic tree models. Students will study the properties of computational models of neurons; graduate stu-
students will develop a neuron model using data from

Cellular Engineering. (580.641 School of Engineering) Drs. Green and Yarema.

Prerequisite: 580.221 Molecules and Cells (or equivalent). Recommended: Matlab

This course focuses on principles and applications in cell engineering. Class lectures include an overview of molecular biology fundamentals, experimental and mathematical techniques, binding equilibrium, cell-cell interactions, cell-matrix interactions, and cell dynamics at both theoretical and experimental levels. Lectures will cover the effects of physical (e.g., shear stress, strain), chemical (e.g., cytokines, growth factors), and electrical stimuli on cell function. Furthermore, topics in metabolic engineering, enzyme evolution, polymeric biomaterials, and drug and gene delivery will be discussed.

This course is intended as part 1 of a two-semester sequence.

Tissue Engineering. (580.642 School of Engineering) Drs. Elissseff and Grayson.

Prerequisite: 580.221 Molecules and Cells (or equivalent). Recommended: 580.441/580.641

This course focuses on the application of engineering fundamentals to designing biological tissue substitutes. Concepts of tissue development, structure, and function will be introduced. Students will learn to recognize the majority of histological tissue structures in the body and understand the basic building blocks of the tissue and clinical need for replacement. The engineering components required to develop tissue-engineered grafts will be explored including biomechanics and transport phenomena along with the use of biomaterials and bioreactors to regulate the cellular microenvironment. Emphasis will be placed on different sources of stem cells and their applications to tissue engineering. Clinical and regulatory perspectives will be discussed.

This course is intended as part 2 of a two-semester sequence.

Introduction to Nonlinear Dynamics in Physiology. (580.651 School of Engineering) Dr. Shelhamer.

Prerequisites: Knowledge of signals and systems or instructor's consent.

This course is designed for students who may be interested in applying the techniques of nonlinear dynamics and chaos to the analysis of physiological data. Topics covered will include: fractals; strange attractors; bifurcations; state-space attractor reconstruction; Poincaré sections; dimension calculations; Lyapunov exponents; entropy, tests for determinism; and nonlinear forecasting. Examples will be drawn from studies in cardiology, brain function, and the oculomotor system.

Introduction to Orthopaedic Biomechanics. (580.655 School of Engineering) Dr. Allen.

Prerequisite: 110.302 Differential Equations.

This course will cover static and dynamic forces in the musculoskeletal system, joint reactions, soft and hard tissue response to force loads, muscle mechanics, material properties, biomechanical lumped parameter systems, modeling, and injury mechanisms.

Statistical Mechanics in Biological Systems. (580.671 School of Engineering) Dr. Sun.

Principles of statistical physics are discussed in the context of biological problems. After an introduction, topics covered will include equilibrium theory of liquids and polymers, theory of chemical reactions in complex environments, stochastic models, dynamics of membrane and channels, theory of biological motors, computer simulation of liquids and proteins. (Co-listed as 530.671)

Biosensing and BioMEMS. (580.672 School of Engineering) Dr. J. Wang.

The course discusses the principles of biosensing and introduces micro- and nano-scale devices for fluidic control and molecular/cellular manipulation, measurements of biological phenomena, and clinical applications. (Colisted as 530.672)


This course provides the student with a complete introduction to the physical principles, hardware design, and signal processing used in magnetic resonance imaging. Biomedical Engineering and magnetic resonance spectroscopy. The course is designed for students who wish to pursue research in magnetic resonance. Prerequisite: 580.222 Systems and Controls or 520.214 Signals and Systems. (Co-listed as 520.673 and 520.673)

Advanced Topics in Magnetic Resonance Imaging. (580.677 School of Engineering) Dr. Herzka.

Prerequisites: Basic physics and mathematics; MATLAB; 580.476/676 Magnetic Resonance in Medicine.

An advanced imaging course with in-depth quantitative coverage of topics central to magnetic resonance imaging, ranging from techniques currently used in the radiology practice to new developments at the cutting edge of MRI research. Topics include: steady-state imaging and contrast mechanisms, MRI simulations, RF pulse and coil design, flow imaging and angiography, cardiac imaging, diffusion imaging, functional MRI, parallel imaging, and high-field imaging. As part of the course, students will be expected to read and understand classic and current literature. The course is taught by a team of experts in the respective fields and will provide an excellent foundation for students interested in deep understanding of magnetic resonance imaging.

Advanced Topics in Computer Vision. (580.681 School of Engineering) Dr. Vidal.

Prerequisites: 110.202 Calculus III; 600.461 Computer Vision or instructors permission (co-listed as 500.681)

State-of-the-art methods in dynamic vision, with an emphasis on segmentation, reconstruction, and recognition of static and dynamic scenes. Topics include reconstruction of static scenes (tracking and correspondence, multiple view geometry, self-calibration), reconstruction of dynamic scenes (2-D and 3-D motion segmentation, nonrigid motion analysis), recognition of visual dynamics (dynamic textures, face and hand gestures, human gaits, crowd motion analysis), as well as geometric and statistical methods for clustering and unsupervised learning, such as K-means, Expectation Maximization, and Generalized Principal Component Analy-
sis. Applications in robotics and biomedical imaging are also included.

**Computational Models of the Cardiac Myocyte.** (580.682 School of Engineering) Drs. Winslow and Greenstein.

*Recommended prerequisites:* 580.421-22 Systems Bioengineering I and II; 110.201 Linear Algebra; 110.302 Differential Equations (or equivalent); knowledge of C/C++ or Matlab.

The cardiac myocyte is one of the most extensively studied cells in biology. As such, it serves as an important example of how to develop quantitative, dynamic, computational models of cell function. “Computational Models of the Cardiac Myocyte” will present a comprehensive review of all aspects of modeling of the cardiac myocyte as an introduction to the discipline of computational cell biology. The course will be presented in an innovative way. Students will be expected to review web-based course material prior to weekly lab meetings. Weekly three-hour lab session will be used to interact with the instructors, and to implement and study computational models.

**Foundations of Computational Biology I.** (580.687 School of Engineering) Dr. Sun.

This course presents the fundamental concepts in equilibrium and non-equilibrium statistical mechanics and apply them to topics in modern molecular computational biology. Monte Carlo and statistical ensembles are presented. Field theories are introduced to describe the mechanics of membranes, cytoskeleton, and biofluids. Kinetic theory, master equations, and Fokker-Planck equations are discussed in the context of ion channels and molecular motors (co-listed with 530.687).

**Foundations of Computational Biology and Bioinformatics II.** (580.688 School of Engineering) Dr. Karchin.

*Prerequisites:* Mathematics through Linear Algebra and Differential Equations; Molecular Biology and Genetics at the level of 580.221 or equivalent; 660.226 or equivalent; homework assignments will require programming in Python; Foundations of Computational Biology and Bioinformatics is not a prerequisite for this course.

This course will introduce probabilistic modeling and information theory applied to biological sequence analysis, focusing on statistical models of protein families, alignment algorithms, and models of evolution. Topics will include probability theory, score matrices, hidden Markov models, maximum likelihood, expectation maximization and dynamic programming algorithms.

**Systems Biology of Cell Regulation.** (580.690 School of Engineering) Dr. Levchenko.

*Prerequisites:* 110.201 and 110.302 or equivalent; advanced biology.

This course will explore the recent advances in Systems Biology analysis of intracellular processes. Examples of the modeling and experimental studies of metabolic, genetic, signal transduction, and cell cycle regulation networks will be studied in detail. The classes will alternate between consideration of network-driven and network element (gene, metabolite or protein)-driven approaches.

**Learning Theory.** (580.691 School of Engineering) Dr. Shadmehr.

*Prerequisites:* 550.291 or equivalent linear algebra; probability theory.

This course introduces the probabilistic foundations of learning theory. We will discuss topics in regression, estimation, optimal control, system identification, Bayesian learning, and classification. Our aim is to first derive some of the important mathematical results in learning theory, and then apply the framework to problems in biology, particularly animal learning and control of action.

**Advanced Topics in Machine Learning: Modeling and Segmentation of Multivariate Mixed Data.** (580.692 School of Engineering) Dr. Vidal.

The aim of this two-semester course is to describe the foundations of computational methods for the statistical and dynamical modeling of multivariate data. The emphasis of the second semester is to use methods from algebraic geometry, probability theory and dynamical systems theory to build models of data. Topics include nonlinear dimensionality reduction (PCA, LLE), unsupervised learning (central clustering, subspace clustering, GPCA), and estimation and identification of dynamical systems (Kalman filtering, subspace identification, hybrid system identification). We will apply these tools to model data from computer vision, biomedical imaging, neuroscience, and computational biology.

**Sensorimotor Systems.** (580.701 School of Engineering) Dr. Shadmehr.

A weekly seminar course that covers recent research papers in the field of sensorimotor neuroscience. The papers address questions of interest in both basic neuroscience and clinical neuroscience. The papers are presented by students, and the audience typically includes a number of clinical and basic science faculty, as well as graduate students and postdocs. The course web page is at jhu.motor.lab.googlepages.com.

**Neuroengineering Seminar.** (580.702-703 School of Engineering) Dr. Thakor.

Neuroengineering represents the application of engineering principles to develop systems for neurological research and clinical applications. Examples of research in this area include design of instrumentation for brain monitoring, development of signal processing methods to analyze brain rhythms, contemporary imaging methods ranging from optical/CT/MRI, use of micro- and nanotechnologies to probe from neurons and brain, and development and application of neural stimulators, prosthesis, and deep brain stimulations and robotic/image-guided therapeutic devices. This two-semester course will have one-hour-long weekly lectures and seminars by training program faculty (from BME, EE, Radiology, Neurology, and Neurosurgery). During the second semester, the students will then engage in a short project of clinical (or scientific) significance to increase awareness of the literature, work with the faculty members and their lab and gain hands-on experience. Ph D students only

**Pattern Theory: From Representation to Inference.** (580.744 School of Engineering) Dr. Miller.

This course examines the metric pattern theory of Ulf Grenander in which shapes and patterns...
are studied as random processes on graphs. The course begins with the study of Markov processes on directed acyclic graphs, including Markov chains and branching processes, and on random fields on regular lattices. Moving to the continuum, the course examines Gaussian random fields, second order representation theory and random processes of geometric shape through Gaussian fields on manifolds. Numerous examples are examined in image understanding and image analysis.

**Principles of the Design of Biomedical Instrumentation.** (580.771 School of Engineering) Dr. Thakor.

*Prerequisite:* 520.45 ECE Laboratory.

This course is designed for graduate students interested in learning basic biomedical instrumentation design concepts and translating these into advanced projects based on their research on current state-of-the-art. They will first gain the basic knowledge of instrumentation design, explore various applications, and critically gain hands-on experience through laboratory and projects. At the end of the course, students would get an excellent awareness of biological or clinical measurement techniques, design of sensors and electronics (or electro-mechanical/chemical, microprocessor system and their use). They will systematically learn to design instrumentation with a focus on the use of sensors, electronics to design a core instrumentation system such as an ECG amplifier. Armed with that knowledge and lab skills, students will be encouraged to discuss various advanced instrumentation applications, such as brain monitor, pacemaker/defibrillator, or prosthetics. Further, they will be “challenged” to come up with some novel design ideas and implement them in a semester-long design project. Students will take part in reading the literature, learning about the state-of-the-art through journal papers and patents, and discussing, critiquing, and improving on these ideas. Finally, they will be implementing a selected idea into an advanced group project.

**Molecular and Cellular Imaging.** (580.774 School of Engineering) Drs. Bulte, Gilad, Glunde, and Pathak.

*Prerequisite:* 580.221 Molecules and Cells or equivalent or approval of instructor.

Introduction to non-invasive techniques as applied to an early diagnosis of disease, altered gene expression, cellular therapeutics, and fundamental molecular or metabolic changes. Includes magnetic resonance imaging, radionuclide imaging, and optical imaging techniques. Covered will be: principles of specific targeting and non-specific uptake of diagnostic contrast agents; NMR spectroscopy of metabolic changes in cancer; use of cell tracking using exogenous tags; imaging of stem cells, imaging using reporter genes, theranostics (combined therapeutics and diagnostics), imaging cancer, imaging of neurodegenerative disease, and imaging of cardiovascular disease. The emphasis of the overall course is to learn how molecular/cellular imaging will change the way future diagnostic radiology and drug development will be practiced.

**210.801-802 Special Studies in Biomedical Engineering.** (580.801-802 School of Engineering) Staff.

Studies conducted in any area of biomedical engineering on a tutorial basis by prior arrangement with a member of the faculty. May be taken more than once.
Biophysics and Biophysical Chemistry

L. MARIO AMZEL, Professor of Biophysics and Biophysical Chemistry, Director of the Department of Biophysics and Biophysical Chemistry

ROBERT J. COTTER
Professor of Pharmacology and Molecular Sciences, Professor of Biophysics and Biophysical Chemistry

HOWARD M. DINTZIS, Professor Emeritus

DANIEL J. LEAHY
Professor of Biophysics and Biophysical Chemistry, Professor of Oncology

JON R. LORSCH, Professor

DAVID ROBERT SHORTLE
Professor of Biological Chemistry, Professor of Biophysics and Biophysical Chemistry

PETER C.M. VAN ZIJL
Professor of Radiology, Professor of Biophysics and Biophysical Chemistry, Professor of Oncology

CYNTHIA WOLBERGER
Professor of Biophysics and Biophysical Chemistry, Investigator of the Howard Hughes Medical Institute

WEI YANG, Adjunct Professor

RENEE Z. DINTZIS
Associate Professor of Cell Biology, Associate Professor of Biophysics and Biophysical Chemistry

DOMINIQUE FRUEH, Assistant Professor

ALBERT Y. LAU, Assistant Professor (from 12/15/2010)

JUNGSAN SOHN, Assistant Professor (from 02/01/2011)

HERSCHEL V. WADE, Assistant Professor

JIE XIAO, Assistant Professor

MARIO ANTONIO BIANCHET, Instructor

SANDRA BEATRIZ GABELLI
Instructor in Biophysics and Biophysical Chemistry, Instructor in Art as Applied to Medicine, Instructor in Oncology

SILVIA A. PINEIRO, Visiting Scientist

SEAN T. PRIGGE
Assistant Professor of Molecular Microbiology and Immunology

REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year

100.600 Scientific Foundations of Medicine. Dr. Lorsch. Monday-Friday, 8:00 a.m.-1:00 p.m.; Clinical Correlations, F., 2:00-3:30 p.m.

Biochemistry, Cell Biology, Genetics, and Pharmacology are fully integrated into a combined course of study presented by the basic science departments. The course provides a comprehensive coverage of the fundamental principles underlying the molecular basis of cellular metabolism and function. The course emphasizes small group learning and problem solving. The student will participate in “Journal Club,” in which important papers in the front-line biomedical literature will be discussed. Clinical Correlations related to basic science concepts will be held. Enrollment of non-medical students requires approval from the course director.

Prerequisites: Elementary courses in basic chemistry, organic chemistry, general biology, and general physics. At least one upper-level course in Biochemistry or Cell Biology is strongly recommended.

COURSES AND ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Amzel. Elective courses must be approved by the preceptor; any member of the department can act as preceptor.

Biophysics

100.801/100.807 Research in Biophysics. By arrangement with the staff. Research will be conducted in various aspects of molecular biology. In particular the molecular structures of proteins and nucleic acids, their biosynthesis and functional interrelationships will be studied.

Research interests represented in the Department of Biophysics and Biophysical Chemistry are as follows:

DR. AMZEL
Structure enzymology of redox and phosphoryl transfer enzymes: MICAL, peptidyl amidating monooxygenase, PI3K, and Nudix hyrolases; selected areas of structural thermodynamics.

DR. DINTZIS
Receptor oligomerization of cell function.

DR. FRUEH
Structural and dynamic studies of active enzymatic systems by Nuclear Magnetic Resonance (NMR); mechanisms of domain communication in non-ribosomal peptide synthetases- NMR method development.

DR. LAU
Characterization of receptor-ligand interactions and macromolecular conformational transitions using computational and crystallographic approaches.

DR. LEAHY
Molecular mechanisms governing signaling.

DR. LORSCH
Mechanisms of eukaryotic translation.
100.704 Topics in Macromolecular Structure and Function. Dr. Leahy. One hour per week throughout the academic year. Wednesdays, 9:30-10:30.

This is a seminar course covering a variety of topics involving the structure and function of proteins and nucleic acids. Recent topics have included: protein folding, evolutionary significance of introns, protein-DNA interactions, solution structure of peptides, prospects for designing novel proteins, and two-dimensional NMR.

100.705 Lecture: Computer Modeling of Biological Macromolecules. Drs. Amzel, Garcia-Moreno, Rose, Shortle and Woolf. Two hours per week; second semester.

Lectures will offer an introduction to the mathematical aspects of computer representation and manipulation of macromolecules followed by discussions of important topics in the computational chemistry of macromolecules including: forces and potential fields, molecular mechanics, Monte Carlo methods and others. A laboratory course can be taken simultaneously as a complement.

100.710 Biochemical and Biophysical Principles. Dr. Woodson and Dr. Bowman. Interdivisional Course. Given every year during the first and second quarters (fall semester); three hours per week. Offered at the Homewood Campus. Tu/Th in the morning.

Prerequisites: Calculus, elementary physics, and basic biochemistry, or consent of Instructor.

The graduate-level course provides an introduction to macromolecular structure, with emphasis on the physical underpinnings. Topics include: primary, secondary, tertiary and quaternary structure of proteins and RNA; energetics, folding, protein and protein-nucleic acid interactions, and dynamics of macromolecular complexes. Format is class discussion of assigned readings from primary scientific literature with computer-based lab assignments. The course begins with an intensive introduction to the Python computer scripting language and the Unix operating system.

100.711 Structure Determination. Dr. Leahy and faculty. Fourth quarter; three hours per week. Alternate offerings.

This course will cover macromolecular structure determination by x-ray crystallography, nuclear magnetic resonance (NMR), and other methods. The course will build on the introduction to protein and nucleic acid structure and analysis given in the course, "Macromolecular Structure and Analysis." The course will emphasize structure determination methods and will cover the basic theory underlying x-ray crystallography and NMR, the steps in structure deter-
mation, and the application of these methods to addressing various questions in protein structure and function.

**100.713 Using Structure to Understand Biology.**
Dr. Wolberger and department faculty.

*Prerequisites:* Molecular Structure and Analysis or the equivalent

The thousands of structures in the Protein Data Bank (PDB) that are the product of x-ray crystallography and NMR spectroscopy comprise a rich resource for understanding many processes in biology, provided that one knows how to use and interpret the information. The goal of this course is to teach students how to make use of structural information in the PDB using commonly available tools that are accessible to the non-expert. Students will learn how to read a structure paper, understand structure quality and limits of interpretation, and use coordinates from the Protein Data Bank to explore a structure and make figures. Topics covered will include non-covalent interactions, modeling point mutants, identifying binding pockets, making homology models, and calculating electrostatic surface potentials. Classes will combine lectures with real-time demonstrations. Homework will involve exercises using structure modeling software.

**GRADUATE PROGRAM**—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs-Program in Molecular and Computational Biophysics Program).
Cell Biology

PETER N. DEVREOTES
Isaac Morris Hay and Lucille Elizabeth Hay Professor of Embryology in the Department of Cell Biology, Professor of Biological Chemistry, Director of the Department of Cell Biology
DEBORAH JEAN ANDREW, Professor
CHI VAN DANG
Johns Hopkins Family Professor for Oncology Research in the Department of Medicine, Professor of Cell Biology, Joint Appointment in Molecular Biology and Genetics, Professor of Oncology, Professor of Pathology
ANN L. COX HUBBARD
Professor of Cell Biology, Joint Appointment in Medicine, Professor of Physiology
ROBERT E. JENSEN
Professor of Cell Biology, Professor of Biological Chemistry
ABRAHAM KUPFER, Professor
STEVEN D. LEACH
Paul K. Neumann Professor of Pancreatic Cancer in the Department of Surgery, Professor of Cell Biology, Professor of Oncology
CAROLYN E. MACHAMER, Professor
SUSAN MICHAELIS, Professor
DOUGLAS B. MURPHY, Adjunct Professor
KATHERINE LEE WILSON, Professor
RENEE Z. DINTZIS
Associate Professor of Cell Biology, Associate Professor of Biophysics and Biophysical Chemistry
PETER J. ESPENSHADE, Associate Professor
SCOT C. KUO
Associate Professor of Biomedical Engineering, Associate Professor of Cell Biology
ERIKA L. MATUNIS, Associate Professor
DOUGLAS N. ROBINSON
Associate Professor of Cell Biology, Associate Professor of Pharmacology and Molecular Sciences
LEWIS HARTLEY ROMER
Associate Professor of Anaesthesiology and Critical Care Medicine, Associate Professor of Biomedical Engineering, Associate Professor of Cell Biology, Associate Professor of Pediatrics
PAMELA LYNNE TUMA, Visiting Associate Professor
JOY T. YANG, Associate Professor
SHUKTI CHAKRAVARTI
Associate Professor of Medicine, Assistant Professor of Cell Biology, Associate Professor of Ophthalmology
ANDREW J. EWALD
Assistant Professor of Cell Biology, Assistant Professor of Oncology
MIHO IIJIMA, Assistant Professor
TAKANARI INOUE
Assistant Professor of Cell Biology, Assistant Professor of Biological Chemistry, Assistant Professor of Pharmacology and Molecular Sciences
PERE PUIGSERVER, Visiting Assistant Professor
HIROMI SESAKI, Assistant Professor
LELITA TALAMANTEZ BRAITERMAN, Research Associate
SERMET CAN, Research Associate (to 09/17/2010)
MARGARET DE CUEVAS, Research Associate
HIROSHI IGE, Research Associate
LAURA MARIE KALLAY
Research Associate in Cell Biology (08/16/2010-08/20/2010), Research Associate in Physiology (to 08/15/2010)
YOICHIRO KAMIMURA, Research Associate
HANNAH KUPFER, Research Associate
THOMAS R. HYNES, Visiting Scientist
CHRISTIAN JAMES KETCHUM
Visiting Scientist in Physiology, Visiting Scientist in Cell Biology
YAOHUI SUN, Visiting Scientist (07/06/2010-07/15/2010)
MIN ZHAO, Visiting Scientist (07/06/2010-07/15/2010)
FACULTY ASSOCIATED WITH THE DEPARTMENT OF CELL BIOLOGY HOLDING A PRIMARY APPOINTMENT IN:
The Bloomberg School of Public Health:
MICHAEL JOSEPH MATUNIS
Professor of Biochemistry and Molecular Biology
REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year

100.600 Scientific Foundations of Medicine. Drs. Lorsch, Nathans, Robinson, Raben and staff. M.-F., 8:00-1:00; Clinical Correlations, F., 2:00-3:30 p.m.
Biochemistry, Cell Biology, Genetics, and Pharmacology are fully integrated into a combined course of study presented by the basic science departments. The course provides a comprehensive, fully integrated coverage of the molecular basis of cellular metabolism and function. The course will emphasize small group learning and problem solving. The student will participate in "Journal Club," in which important papers in the front-line biomedical literature will be discussed. Clinical Correlations related to basic science concepts will be held at various days and times. Enrollment of non-medical students requires approval from the course director.
Prerequisites: Elementary courses in inorganic chemistry, organic chemistry, general biology, and general physics. At least one upper-level course in Biochemistry or Cell Biology is strongly recommended.
OTHER COURSES AND ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Devreotes. Elective courses must be approved by preceptor; any member of the department may act as preceptor.
Cell Biology

ME110.700 Advanced Study and Teaching in Cell Biology.

Prerequisite: Consent of course director.

Residents and advanced students who wish additional training may serve as teaching Assistants in Scientific Foundations of Medicine. Individual supervision of reading and laboratory work is available. Year course.

340.703 Graduate Cell Structure and Dynamics.

Taught in cooperation with other faculty of the program in Biochemistry, Cellular and Molecular Biology by Dr. Espenshade and staff.

The objective of this course is to provide the basics of cell biology, including the structure, function, and biogenesis of cellular organelles. Also covered are essential concepts on the cytoskeleton, cell-cell and cell-extracellular matrix interactions, cell motility, chaperones, and protein turnover.

ME110.800 Advanced Work and Research.

By arrangement with the staff.

Opportunities for training in cell and developmental biology, physical anthropology and vertebrate paleontology are available for qualified predoctoral and postdoctoral students. Fellowships covering normal living costs and tuition are available.

Research interests represented in the Department of Cell Biology are as follows:

DR. ANDREW
Developmental genetics of organ formation; Drosophila.

DR. CHAKRAVARTI
Corneal cell and extracellular matrix biology; pathobiology of inflammatory bowel disease (Crohn's disease and ulcerative colitis).

DR. DANG
Transcriptional regulation and neoplasia of cell metabolism.

DR. DEVREOTES
Chemotactant directed cell migration; signal transduction.

DR. DINTZIS
Experimental immunology; differentiation signals.

DR. ESPENSHADE
Cellular regulation of cholesterol homeostasis and adaptation to hypoxia.

DR. EWALD
Cellular mechanisms and molecular regulation of epithelial morphogenesis in development and cancer.

DR. HUBBARD
Pathways and mechanisms of protein trafficking in polarized epithelia; Wilson and Menkes Diseases; copper ATPases.

DR. IIJIMA
Lipid signaling in chemotaxis.

DR. INOUYE
Directed cell migration; tumor metastasis; primary cilia; synthetic chemical biology; technology development.

DR. JENSEN
The dynamics of mitochondria and their DNA in yeast; tyransomes and mammalian cells.

DR. KUO
Mechanical functions of cells; actin-based protrusion and cell motility; nanoscale biophysics; laser-based imaging and bioinstrumentation.

DR. KUPFER
Cellular interactions in the immune system; the immunological synapse; mechanisms of T cell activation and induction of tolerance.

DR. LEACH
Pancreatic development and differentiation using both mouse and zebrafish model systems.

DR. E. MATUNIS
Molecular genetics of germ line stem cell function.

DR. M. MATUNIS
Molecular mechanisms and functions of SUMOylation; nuclear pore complexes and control of nucleocytoplasmic transport.

DR. MACHAMER
Intracellular protein trafficking; enveloped virus assembly.

DR. MICHAELIS
Yeast and mammalian cell biology; progeria and lamin A processing; ER quality control and cystic fibrosis; ABC transporters.

DR. D. ROBINSON
Probing the molecular, biochemical, and mechanical basis for cytokinesis and cellular morphogenesis.

DR. SESAKI
Mitochondrial dynamics; membrane fusion and fission.

DR. WILSON
Nuclear envelope; lamins and nucleoskeleton; Emery-Dreifuss muscular dystrophy.

DR. YANG
Cell migration and integrin signaling.

ME110.730 Membrane Traffic.

Dr. Machamer. Fourth quarter; four weeks.

Prerequisites: Cell Structure and Dynamics or permission of course director.

This course addresses the pathways and mechanisms of membrane traffic (exocytosis and endocytosis) in eukaryotic cells. Topics include historical and current experimental approaches, as well as dissection of the pathways for cargo trafficking, signals on cargo proteins, and the required cellular machinery. The format will be a combination of lectures and student-led discussions of landmark and current papers.

ME110.807 Fundamentals of Fluorescence and Confocal Microscopy.

Dr. Kuo and staff. First quarter; see course director for dates.

Prerequisites: Cell Structure and Dynamics or permission of course director.

How does a light and fluorescence microscope form an image? What are the limits of optical resolution and how does it mesh with digital imaging? What is fluorescence and why are dichroic mirrors important? What are the different types of confocal microscopy (laser-spot scanning, slit scanning, spinning disk), why are they special, and when is each appropriate? What are the other methods for high-resolution imaging (TIRF, deconvolution, etc) and what are the trade-offs? For live-cell imaging, what are the latest optical techniques (FRAP, FRET, uncaging, FLIM, etc), and which biological processes can they probe (trafficking, association/
dissociation kinetics, second messenger signalling, membrane fusion, etc)?

**ME110.808 Essentials of Electron Microscopy.** Dr. Kuo and staff. Fourth quarter.
Theory and use of electron microscopy. Sessions cover specimen preparation, exposure and image interpretation of specimens prepared for transmission electron microscopy (TEM) by embedding and thin sectioning, negative staining, heavy metal shadowing and other methods. Time on microscopes available for demonstrations by Microscope Facility staff.

**260.706 Fundamentals of Genetics.** Dr. Seydoux. Dec.-Jan., Tu & Thur, 9:00-10:30 a.m.
Taught by Dr. Seydoux (Molecular Biology and Genetics) in cooperation with other faculty in the BCMB program. This short lecture course will cover fundamental principles of genetics, focusing primarily on the genetics of model eukaryotes. Required problem sets will supplement the lecture material.

**ME110.726 The Nucleus.** Dr. Wilson and Associates. Fourth quarter; four weeks.
Structure and functions of the nuclear envelope (NE) including LINC complexes and other adhesions, the nucleoskeleton (lamins, actin/myosins, spectrin/4.1, titin, NUMA), nuclear pore complexes and nucleocytoplasmic transport, subnuclear organelles, higher-order chromatic organization, signaling in the nucleus, evolution of the nucleus, and human “laminopathy” diseases including muscular dystrophy, lipodystrophy, and accelerated aging.

**ME110.727 The Cytoskeleton.** Dr. Robinson and Associates. Fourth quarter; four weeks.
In this course, we will explore the fundamental mechanisms of the cytoskeleton that the cell uses to drive motility and dynamic shape changes. We will emphasize the breadth of research on the cytoskeleton ranging from classic studies of muscle, cytoskeletal structure, enzymological and single molecule studies of motor proteins, rheology, polymer dynamics, cytoskeletal signaling, the cytoskeleton in disease, and chemical approaches to the cytoskeleton. The course format will be a combination of lecture and student-led discussions of hallmark papers.

**ME340.704 Developmental Biology.** Dr. Gaiano and Associates. Fourth quarter; four weeks.
Team taught by BCMB faculty, this course covers the molecular and cellular basis of embryonic development in multiple organisms. Topics include stem cell biology, cloning, and the relationship between development and disease in addition to the fundamental molecular and cellular mechanisms that control the development of a mature organism from a single cell, the fertilized egg. Emphasis will be place on key experiments or experimental approaches that have yielded significant insight into developmental mechanisms. Some descriptive embryology will be discussed to provide an anatomical basis for the cellular and molecular mechanisms.

**GRADUATE PROGRAM**—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs)
Dermatology

SEWON KANG
Noxell Professor of Dermatology, Director of the Department of Dermatology

GRANT J. ANHALT
Professor of Dermatology, Professor of Pathology

CHARLES M. BALCH
Professor of Surgery, Professor of Dermatology, Professor of Oncology

LIEPING CHEN
Professor of Oncology, Professor of Dermatology

BERNARD A. COHEN
Professor of Dermatology, Professor of Pediatrics

GERALD S. LAZARUS
Professor of Dermatology, Professor of Medicine

STEPHEN M. MILNER
Professor of Plastic and Reconstructive Surgery, Professor of Dermatology, Professor of Pediatrics

WILLIAM H. WESTRA
Professor of Pathology, Associate Professor of Dermatology, Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery

S. ELIZABETH WHITMORE, Associate Professor

RACHEL ABUAIV, Assistant Professor (to 09/14/2010)

ROBERT S. BERGER, Assistant Professor

DEREK KOFI BOAHENE
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Dermatology

ELIZABETH M. BURKE, Assistant Professor

ANNA CHIEN, Assistant Professor

ISRAEL S. ECKMAN, Assistant Professor

JEANNE STEMAN FINDLAY, Assistant Professor

LUIS ANDRES GARZA, Assistant Professor

JON HAMILTON MEYERLE, Assistant Professor

MANISHA J. PATEL, Assistant Professor

MARGARET A. WEISS, Associate Professor

YIPING HUANG, Research Associate
The Department of Dermatology provides instruction directed at the basic science aspects of the skin and at clinical cutaneous disease during each of the medical school years. The emphasis of the department is upon the pathophysiology of cutaneous reaction patterns, a correlation of skin lesions (gross Pathology) with microscopic changes, the recognition and treatment of diseases that primarily affect the skin and the identification of skin changes that reflect diseases in other organ systems.

REQUIRED WORK

Dermatology-First and Second Years

Preclinical (first/second) years of Genes to Society (GTS) curriculum. Dr. Kang and staff.

During the first two years of GTS; a group of lectures, case discussions, and workshops dealing with clinical presentation and the mechanisms of cutaneous disease.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Sewon Kang. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

E 1. Clinical Clerkship in Dermatology. Dr. Sewon Kang and staff. Offered all year; one month; four students; two month drop.

Prerequisites: Internal Medicine, Surgery, and Pediatrics

Students may apply towards the end of their 3rd or 4th year of medical school for a clinical elective in dermatology where the focus is placed on intensive exposure to a large number of patients in different clinical settings. Students will spend time exclusively at the Johns Hopkins facilities (Outpatient Center, Greenspring Station, Bayview Medical Center and Harriett Lane Pediatric Center). Our clinical services at these locations provide an excellent opportunity for students to interact with different types of patients and to be exposed to a wide range of skin problems. Parallel to the clinical activities, there are didactic sessions most mornings and occasionally at the end of the workday as well. Formal lectures on basic dermatology topics are given by dermatology residents and sessions at a more advanced level are taught by faculty members. No formal exam is given and grading is based on the evaluations submitted by residents and faculty members.

E 2. Advanced Clinical Clerkship in Dermatology. Drs. Chien, Cohen, Hinds, Kang, Patel and Wang. Offered all year; one to three months; two month drop.

Students who have already taken the basic elective in dermatology and who are interested in a specific area of Dermatology, in dermatology research, and students interested in pursuing dermatology as a career may benefit from this elective. This elective gives the student the opportunity for more “in depth” participation in specific areas of interest within the department of Dermatology under guidance of a faculty mentor. Arrangements have to be made between the interested student and the faculty member who will be mentoring him/her. The main objective of this elective is active participation in a small clinical research project, or clinical and scholarly work with faculty member with a certain specialty focus. The faculty mentor will provide the specific schedule. Students are encouraged to participate in all didactic activities including Grand Rounds and faculty lectures during the time spent in the department.

E 3. DermatoPathology Clinical Clerkship. Dr. Janis Taube. Offered all year; half quarter; one student; two month drop.

Prerequisites: Internal Medicine, Surgery, Pediatrics, Pathology, and Clinical Clerkship in Dermatology.

Students may apply during their 3rd or 4th year for an elective in dermatopathology. Students will attend daily sign out where they will be exposed to a large volume of cases. Additional exposure will come through the use of study sets which are available to the students. The students will attend the Dermatology weekly Grand Rounds where they will see patients and participate in the discussion and presentation of the Pathology for those patients. Additionally, the students will attend two formal dermatopathology teaching sessions per week.

Research opportunities in the Department of Dermatology

DR. ANHALT
Immunodermatology.

DR. CHIEN
Skin aging; pharmacology; translational research.

DR. COHEN
Pediatric dermatology.

DR. GARZA
Stem cells in dermatology, hair, wound healing.

DR. HINDS
Ethnic skin.

DR. KANG
Translational research in dermatology.

DR. PATEL
Acne; skin disease in solid organ transplant patients.

DR. PUTTGEN
Pediatric dermatology; hemangiomas.

DR. TAUBE
Melanoma; dermatopathology.

DR. WANT
Skin surgery; melanoma.
Emergency Medicine

GABOR D. KELEN
Professor of Emergency Medicine, Director of the Department of Emergency Medicine

JOSHUA M. EPSTEIN, Professor
J. ALEX HALLER, JR.
Professor Emeritus of Pediatric Surgery, Professor Emeritus of Emergency Medicine, Professor Emeritus of Pediatrics

ARJUN S. CHANMUGAM, Associate Professor
PETER MICHAEL HILL, Associate Professor
EDBERT BRIAN HSU, Associate Professor
THOMAS DEAN KIRSCH, Associate Professor
FREDERICK LEVY, Associate Professor

MELISSA LEE MCCARTHY, Associate Professor
RICHARD E. ROTHMAN
Associate Professor of Emergency Medicine, Joint Appointment in Medicine

NELSON TANG
Associate Professor of Emergency Medicine (from 10/01/2010), Assistant Professor of Emergency Medicine (to 09/30/2010)

EDWARD S. BESSMAN, Assistant Professor
DAVID A. BRADT, Assistant Professor
TERESA MARY CARLIN
Assistant Professor of Emergency Medicine, Assistant Professor of Pediatrics
CHRISTINA LYNNE CATLETT, Assistant Professor
ROBIN MARY CUDDY, Assistant Professor
HUGH F. HILL, III, Assistant Professor
BEATRICE HOFFMANN, Assistant Professor
WILLIAM T. HOSEK, Assistant Professor

YU-HSIANG HSIEH, Assistant Professor
JENNIFER LEE JENKINS, Assistant Professor
JULIANNA JOAN JUNG, Assistant Professor
MARK KING, Assistant Professor
FREDERICK K. KORLEY, Assistant Professor
SCOTT RYAN LEVIN, Assistant Professor

HORACE K. LIANG, Assistant Professor
HUBERT S. MICKEL, Assistant Professor
MICHAEL G. MILLIN, Assistant Professor
WILLIAM ELLIS NORTHINGTON, Assistant Professor

HARDIN ATTWOOD PANTLE
Assistant Professor of Emergency Medicine, Assistant Professor of Pediatrics

JULIUS CUONG PHAM
Assistant Professor of Emergency Medicine, Assistant Professor of Anesthesiology and Critical Care Medicine

LINDA ANN REGAN, Assistant Professor
ANDREW I. STOLBACH, Assistant Professor
ALEXANDER VU, Assistant Professor
SAMUEL PAI-SUN YANG, Assistant Professor
WALTER FLEMING ATHA, Instructor
SHARON P. BORD, Instructor
SEAN BOUVET, Instructor
BARTON S. BROWN, Instructor
EMILIE J.B. CALVELO, Instructor
JOY ELIZABETH CROOK, Instructor
SARA DAMEWOOD, Instructor
SAMIT PRAKASH DESAI, Instructor
ANDREA FREYER DUGAS, Instructor
DREW C. FULLER, Instructor
STEPHEN G. HOLTCLAW, Instructor
LIAM C. HOLTZMAN, Instructor
PAUL J. KALOUDIS, Instructor (to 07/31/2010)
BUDDY GENE KOZEN, JR., Instructor
TINA MARIE LATIMER, Instructor
MATTHEW JASON LEVY, Instructor
RODNEY OMRON, Instructor

MUSTAPHA SAHEED, Instructor
ESTEBAN SCHABELMAN, Instructor (from 09/01/2010)

MICHAEL A. SILVERMAN, Instructor
GABRIEL P. SIMON, Instructor
MARY WESTERGAARD, Instructor
DONALD W. ALVES, Assistant
CHARLES ANDREW BERGMAN, Assistant
EMILY STREYER CARLISLE, Assistant (from 08/01/2010)

JAMES E. CORWIN, Assistant
TYLER C. DELANGE, Assistant
HAMID EHSANI, Assistant
CAREN EUSTER, Assistant
ISADORE A. FELDMAN, Assistant
KAREN MARIE HLADIK, Assistant
NING HU, Assistant
MICHAEL E. HULL, Assistant
GAIL GLOTFELTY KRAMER, Assistant
SHANNON BANDY PUTMAN, Assistant
RICHARD G. S. SPENCER, Assistant

ALICE L. WILKENFELD
Assistant in Emergency Medicine (to 10/31/2010)

FREDERICK M. BURKLE, JR., Research Associate
JAMES J. SCHEULEN, Research Associate
JUDY B. SHAHAN, Research Associate
MERIDITH HILL THANNER, Research Associate

FACULTY ASSOCIATED WITH THE DEPARTMENT OF EMERGENCY MEDICINE HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

NANCY CODORI
Assistant Professor of Medicine
GIORGIO GIOVANNI GALETTO
Assistant Professor of Medicine
CHARLOTTE A. GAYDOS
Professor of Medicine
REQUIRED WORK

Emergency Medicine—Second, Third and Fourth Years

Basic Clerkship in Emergency Medicine. Offered all year except July; 4 1/2 weeks; 12 students per half quarter; one month drop.

This course is a required basic clerkship in the medical curriculum. During the clerkship, students work closely with Emergency Medicine faculty and resident staff focusing on the initial assessment, management, stabilization and resuscitation of patients presenting to the Emergency Department. Appropriate history-taking and physical diagnosis, recognition of life-threats, rationale for ordering ancillary laboratory and radiographic tests, and a systematic approach to evaluating and stabilizing acute medical and surgical emergencies are emphasized. The students will be expected to attend a comprehensive lecture series as well as a variety of small group sessions, and department conferences. Students will rotate through the Johns Hopkins Bayview and Johns Hopkins Hospital Emergency Department, where they will be encouraged to manage their own patients in the context of a supervised physician team. In this clerkship students can expect to develop the skills and knowledge to independently care for patients with a wide variety of emergency problems.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Julianna Jung. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.


Prerequisite: Basic Clerkships in Surgery, Medicine, and Emergency Medicine; Ob/Gyn strongly recommended.

Students in the third and fourth years who wish an in depth experience in emergency medicine may serve as sub-interns in the Adult Emergency Department. Further development of clinical reasoning/problem solving skills and selected procedural skills will be emphasized. Upon completion of this elective, students will demonstrate competency in the recognition and initial stabilization of life threats in trauma and non-trauma patients. Exposure to pre-hospital care can be made available. Sub-interns are required to attend departmental conferences. A formal case presentation may also be required.


This elective course is offered to any medical student with specific research interests in emergency medicine. Students are given the opportunity to participate in original or on-going research projects with a faculty member in the Department of Emergency Medicine. During the summer a specific course teaches the fundamentals of clinical research while engaging in a research project designed as part of the curriculum.

Research Interests:

DR. BAYRAM
Disaster medicine; surge capacity.

DR. CATLET
Health system emergency preparedness and response; disaster education and training; expedition medicine.

DR. CHANMUGAM
Psychiatric emergencies.

DR. P. HILL
Clinical outcomes, focus on neurologic emergencies.

DR. HOFFMANN
Ultrasound.

DR. HSIEH
Infectious diseases epidemiology in ED settings.

DR. HSU
Disaster preparedness; disaster training; pharmaceutical preparedness.

DR. J. LEVY
Epidemiology; disaster medicine.

DR. JUNG
Simulation in medical education

DR. KELEN
Disaster medicine; infectious disease; epidemiology and health services research.

DR. KIRSCH
Disaster management, response, and training; ED management.

DR. KORLEY
Acute cardiac care; resource utilization.

DR. LEVIN
Systems engineering in healthcare; healthcare resource utilization; ED crowding and patient outcomes.

DR. F. LEVY
Patient safety; tort reform; bioethics.

DR. MILLIN
Development of EMS system; out-of-hospital resuscitations; wilderness medicine; emergency preparedness.

DR. PHAM
Quality of care in the emergency department; quality of care in the ICU; patient safety.
DR. REGAN  
Medical education; curriculum development, feedback, and evaluation.

DR. ROTHMAN  
Infectious diseases and rapid diagnostics; disaster preparedness/response and clinical research studies.

DR. TANG  
EMS; operational emergency medicine; tactical medicine; law enforcement medical support; special event medical preparedness.

DR. YANG  
Rapid PCR-based lab diagnosis of emergent infection.
Epidemiology

The Department of Epidemiology is an academic department in the Johns Hopkins University Bloomberg School of Public Health and directs the Clinical Epidemiology Program in the School of Medicine. The department offers a required course, Clinical Epidemiology (described below), for first year students in the School of Medicine. In addition, elective opportunities, both formal courses and tutorials, are available. Interested students should consult the School of Public Health catalog for information on course offerings and areas of research represented in the department. Course information is also available on the Internet at http://commprojects.jhsph.edu/courses/.

A combined M.D.-Ph.D. Program in Epidemiology is available. A valuable resource for students is the Welch Center for Prevention, Epidemiology and Clinical Research which is located on the second floor of 2024 East Monument Street. Interested students are invited to contact the center regarding additional educational and research opportunities in clinical epidemiology. The department offers a wide range of training opportunities in cancer epidemiology, cardiovascular diseases, aging and related disorders, vision and ophthalmology, genetics, infectious diseases, and occupational and environmental epidemiology, as well as extensive coursework in methodology.

DAVID CELENTANO
Professor and Chairman of the Department of Epidemiology, School of Public Health

TERRI H. BEATY
Professor and Deputy Chair of Epidemiology, School of Public Health

CHRIS BEYRER
Professor of Epidemiology, School of Public Health

JOSEF CORESH
Professor of Epidemiology, School of Public Health

CHRISTOPHER COX
Professor of Epidemiology, School of Public Health

ROSA CRUM
Professor of Epidemiology, School of Public Health

KAY DICKERSIN
Professor of Epidemiology, School of Public Health

MARGARET DANIELE FALLIN
Professor of Epidemiology, School of Public Health

HOMAYOON FARZADEGAN
Professor of Epidemiology, School of Public Health

STEPHEN J. GANGE
Professor of Epidemiology, School of Public Health

RONALD GRAY
Professor of Epidemiology, School of Public Health

LEON GORDIS
Professor Emeritus of Epidemiology, School of Public Health and Professor of Pediatrics, School of Medicine

MICHEL A. IBRAHIM
Professor of Epidemiology, School of Public Health

LISA JACOBSON
Professor of Epidemiology, School of Public Health

MICHAEL KLAG
Professor of Epidemiology, School of Public Health, Dean of the School of Public Health

GENEVIEVE M. MATANOSKI
Professor of Epidemiology, School of Public Health

CURTIS L. MEINERT
Professor of Epidemiology, School of Public Health

ALVARO MUNOZ
Professor of Epidemiology, School of Public Health

KENRAD NELSON
Professor of Epidemiology, School of Public Health

ELIZABETH A. PLATZ
Associate Professor of Epidemiology, School of Public Health

SHEILA WEISS SMITH
Professor of Epidemiology, School of Public Health

ALFRED SOMMER
Professor of Epidemiology, School of Public Health

MOYSES SZKLO
Professor of Epidemiology, School of Public Health and Joint Appointment in the Oncology Center, School of Medicine

TAHA TAHA
Professor of Epidemiology, School of Public Health

MARIA WAWER
Professor of Epidemiology, School of Public Health

BRAD ASTOR
Associate Professor of Epidemiology, School of Public Health

JEAN FORD
Associate Professor of Epidemiology, School of Public Health

NOYA GALAI
Associate Professor of Epidemiology, School of Public Health

THOMAS GLASS
Associate Professor of Epidemiology, School of Public Health

VIVIAN FEI-LING GO
Associate Professor of Epidemiology, School of Public Health
REQUIRED WORK FOR M.D. PROGRAM

First Year

800.620 Scientific Foundations of Medicine/Epidemiology. Dr. Gail Daumit

This section is designed to provide students with an introduction to epidemiologic methodology and approaches and its applications to clinical medicine and clinical investigation by providing students a basic understanding of epidemiological methods and study design. The course spans two full days and four half-days during the Introduction to Genes to Society week.

OTHER COURSES AND ELECTIVE OPPORTUNITIES

Research and Tutorials. (same as Epidemiology PH340.840, School of Public Health).

Students may undertake tutorials under the supervision of a member of the Department of Epidemiology faculty. These programs are individually planned and consist of reading in specific areas of epidemiologic and clinical interest or may comprise participation in research activities underway in the department.
Center for Functional Anatomy and Evolution

CHRISTOPHER B. RUFF
Professor of Functional Anatomy and Evolution, Professor of Orthopedic Surgery, Director of the Center for Functional Anatomy and Evolution

REBECCA Z. GERMAN
Professor of Physical Medicine and Rehabilitation, Professor of Functional Anatomy and Evolution

JEFFREY B. PALMER
Lawrence Cardinal Shehan Professor of Physical Medicine and Rehabilitation, Professor of Otolaryngology-Head and Neck Surgery, Professor of Functional Anatomy and Evolution

JOAN T. RICHTSMEIER, Visiting Professor

KENNETH D. ROSE, Professor

MARK F. TEAFORD, Professor

DAVID B. WEISHAMPEL, Professor

DONNA LYNN MAGID
Associate Professor of Radiology, Joint Appointment in Orthopaedic Surgery, Associate Professor of Functional Anatomy and Evolution

VALERIE BURKE DELEON, Assistant Professor

REQUIRED WORK FOR M.D. DEGREE

First Year —

130.600 Scientific Foundations of Medicine/Introduction to Human Anatomy. Dr. Mark Teaford.

This course is organized around a series of lectures (anatomical, functional, and clinical), small group activities, and intensive laboratory experience in dissection, accompanied by regular readings in the text. Lectures emphasize important aspects of descriptive and functional anatomy, embryology, introductory medical imaging, and clinical applications, and are given by the anatomy faculty, as well as a number of clinicians. In addition, small group activities will often be centered on clinical case histories of relevance to human anatomy. They will emphasize both team-work and reiteration of key concepts from different perspectives. Students are assessed with three written knowledge tests, as well as participation in lab, lab presentations, and team-based learning.

REQUIRED COURSE WORK FOR Ph.D. PROGRAM

First Year


An integrated coverage of functional anatomy including cadaveric dissection, clinical and basic science lectures, discussion groups and clinical correlation sessions.

OTHER COURSES AND ELECTIVE OPPORTUNITIES—Elective courses must be approved by preceptor; any member of the center may be a preceptor.

Research interests represented in the Center for Functional Anatomy and Evolution are as follows:

DR. DELEON
- Craniofacial development; quantitative morphology; morphological integration.

DR. ROSE
- Mammalian evolution; functional anatomy; paleontology.

DR. RUFF
- Biomechanics; human biological variation and evolution.

DR. TEAFORD
- Functional morphology; primate ecology and evolution.

DR. WEISHAMPEL
- Vertebrate paleobiology; functional and constructional morphology.

130.707 Mammals: Diversity, Structure, and Evolution. Dr. Rose. All year; two hours per week; offered in alternate years.

Prerequisite: Consent of instructor.

A survey of the recent and fossil orders of mammals, focusing on comparative skeletal and dental anatomy. Readings will be supplemented by regular examination of recent and fossil specimens and weekly discussions. Research paper required.

130.708 Biomechanics of the Skeleton. Dr. Ruff. First quarter. Offered in alternate years.

Prerequisite: Consent of instructor.

Basic mechanical principles and their application to analysis of skeletal form. Bone material and geometric properties, structural remodeling and adaptation to the mechanical environment.

130.710 Evolutionary Biology. Dr. Weishampel. Third quarter; offered in alternate years.

This course covers a variety of topics in evolutionary biology: biotic variation and diversity, development, natural selection, speciation theory, systematics, and macroevolution, among other subjects.

130.716 Primate Evolution. Drs. Teaford and associates. Third and fourth quarters; offered in alternate years. By arrangement with instructor.

This course surveys the mammalian order primates beginning with the origin of the group and ending with a brief survey of modern primates. Topics include the definition of primates, archaic primates, the first modern primates, oligocene primates and the origin of monkey and apes, the miocene hominoid radiation, the plio-pleistocene radiation of old world monkeys, and human ancestors.

130.724 Cladistics. Dr. Weishampel. First quarter; offered in alternate years.

Prerequisite: Consent of instructor.

This course covers the practical and theoretical basis for cladistics. This approach, otherwise known as the phylogenetic systematics, includes discussions of homology, the hierarchy of evolutionary common descent, parsimony, and computer algorithms that facilitate modern cladistic studies.

130.725 Applied Statistics for the Natural Sciences. Dr. DeLeon. First quarter. Offered in alternate years.

Prerequisite: Consent of instructor.
This course provides a survey of statistical methods commonly used in the natural sciences, with application to anthropological and paleontological data. Periodic assignment of problem sets gives students experience with formatting data for software input, addressing underlying assumptions of statistical methods, and interpreting software output.

130.726 Advanced Studies of Dinosaurs. Dr. Weishampel. Three hours per week. Offered upon request.
This course provides a detailed review of the evolution of Mesozoic Ornithodira including dinosaurs, stressing their comparative and functional anatomy, systematics, stratigraphy, and biogeography.

130.727 Morphometrics. Dr. DeLeon. Fourth quarter. Offered in alternate years.
Prerequisite: Consent of instructor.
In this course students will learn techniques that are used to quantify and compare shapes. A combination of lectures, discussion, and projects will give the students applied knowledge of these techniques. Different types of data will be discussed, including landmark coordinate data, outlines, and surfaces. The theory underlying different analytical approaches will be described and discussed.

130.728 Comparative Vertebrate Anatomy. Dr. DeLeon. Offered in alternate years.
Prerequisite: Consent of instructor.
Students will gain knowledge of the functional and evolutionary anatomy of vertebrates. Laboratory dissections assist the student in learning anatomical structure and nomenclature. Lectures provide an evolutionary biology context, focusing on the evolution and function of anatomic structures. Discussion sessions require critical thinking by the student to assess the role of genetic, developmental, and mechanical influences underlying observed anatomy in a phylogenetic context.

130.729 Current Topics in Evolutionary Morphology (Variation). Dr. German. Offered upon request.

130.809 Research Rotation in Functional Anatomy and Evolution. FAE Faculty.
This course is designed to provide first year students with research experience. The project is planned between one or more faculty members and a student. A research question or topic is chosen, appropriate data are collected, analysis is done and a report is written. Results of the study are presented at a seminar to the FAE faculty and students.

130.810 Dinosaurs. Dr. Weishampel. Offered in alternate years.

130.811 Topics in Allometry. Dr. Ruff. Offered upon request.
This course will consist of discussions of readings in both the theory and application of allometry to various zoological issues. Readings will include both “classical” sources as well as more recent articles dealing with this general topic.

130.812 Predissertation Research. FAE faculty. Second year students only.

130.813 Readings in Evolutionary Biology: J.B.S. Haldane. Dr. Weishampel. Offered upon request.

130.814 Readings in Evolutionary Biology: Mayr (1942) and Simpson (1944). Dr. Weishampel. Offered upon request.

GRADUATE PROGRAM—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs)
Constituted in 1999, the McKusick-Nathans Institute of Genetic Medicine (IGM) is the focal point for patient care; basic, translational and clinical research; and education in human genetics and genomics at Johns Hopkins. The IGM is a national and international leader in genetic medicine - the integration of our rapidly expanding knowledge of genetics and genomics into the practice of medicine. The goal of genetic medicine is to tailor prevention, diagnosis and treatment in a manner appropriate for each individual patient. In pursuit of the goal of individualized medicine, the IGM catalyzes interactions between physicians and scientists with diverse and complementary expertise to promote the application of genetic discoveries to human disease and genetics education to the public. Each IGM faculty member has a co-primary appointment in another department in the School of Medicine and serves to introduce and integrate genetics throughout the School and the University. Moreover, our faculty members...
have considerable strengths and expertise in the areas of genomics, developmental genetics, biochemical genetics, population genetics, computational biology and the genetics of complex disease. We aim to maintain Hopkins Medicine’s leadership role in the medicine of the 21st century, a medicine that increasingly individualized and focused on prevention.

RESEARCH INTERESTS

Research interests represented in the Institute are as follows:

**DR. ARKING**
Genetics of complex disease; cardiovascular disease and sudden cardiac death; development and implementation of novel genotyping technologies.

**DR. AVRAMOPOULOS**
Complex traits; neuropsychiatric disorders including schizophrenia and Alzheimer’s disease; linkage and association studies

**DR. BEER**
Combinatorial gene regulation; computational molecular biology and genomics; Bayesian networks and machine learning.

**DR. BLAKEMORE**
Prenatal diagnosis and genetic abnormalities of the fetus; intra partum maternal and fetal physiology; fetal therapy; in utero bone marrow transplantation red cell alloimmunization and platelet alloimmunization.

**DR. BOEHM**
DNA-based diagnostics of genetic disorders; identification of genes involved in common disorders; high throughput genotyping services.

**DR. CHAKRAVARTI**
Molecular basis of complex disease; genomics; population genetics; computational biology.

**DR. COHN**
Molecular mechanisms of muscle regeneration in various inherited and acquired myopathic states; molecular pathogenesis of cardiomyopathies associated with muscular dystrophy.

**DR. CORSON**
In utero stem cell therapy; prenatal diagnosis of congenital anomalies.

**DR. CUTTING**
Genetic variants that contribute to chronic lung disease; cystic fibrosis and CF modifiers.

**DR. DIETZ**
Pathogenesis of Marfan syndrome; molecular basis of inherited disorders of vascular development and homeostasis; genetics of aging; nonsense mediated mRNA decay.

**DR. FEINBERG**
Epigenetics and DNA methylation; genomic imprinting; cancer biology.

**DR. HAMOSH**
Genotype-phenotype correlations and modifier genes in cystic fibrosis; nonketotic hyperglycinemia; clinical implications of the human genome project.

**DR. HOOVER-FONG**
Clinical genetics; fatty acid abnormalities in cystic fibrosis; skeletal dysplasia; twin and sibling study of modifier genes in CF.

**DR. KAZAZIAN**
Biology of LINE-1 retrotransposons in humans and mice; Zebrafish models for understanding genetic factors in pancreatic cancer; development of the pancreas.

**DR. MAEGAWA**
Lysosomal storage diseases.

**DR. MCCALLION**
Applying functional genetics to human development and disease; transcriptional regulation in development and disease; genetics of neurological, neuropsychiatric, and neural crest disorders; genetic basis of congenital malformations.

**DR. MIGEON**
Molecular basis of X chromosome inactivation; genomic imprinting in human cells; relevance to human disease; sex determination.

**DR. PANDYE**
Signal transduction; proteomics; phosphorylation.

**DR. REEVES**
Mechanisms of gene action in Down syndrome.

**DR. SCOTT**
Genetic/genomic technology; SNP association studies for complex traits; genome annotation.

**DR. SEMENZA**
Molecular mechanisms of oxygen homeostasis; gene and stem cell therapy for ischemic cardiovascular disease; role of HIF-1 in cancer; protection of the heart against ischemia-reperfusion injury.

**DR. SMITH**
Genetic and pharmacologic modulation of inherited disease; X-linked adrenoleukodystrophy; genetics and treatment.

**DR. SPENCER**
DNA replication/repair and sister chromatid cohesion; genetic variation and genome evolution; synthetic lethal interaction analysis; genetic interaction map of yeast.

**DR. VALLE**
Clinical, biochemical and molecular basis of disease; genetic factors in neuropsychiatric disorders; inborn errors of metabolism; peroxisomal disorders; medical sequencing; genome sequencing and comparative genomics.

**DR. WANG**
Molecular basis of X linked mental retardation and human cognitive development; pathogenesis and therapy of inherited metabolic diseases with CNS involvement.

**GRADUATE PROGRAM**—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs in Human Genetics)

**RESIDENCY PROGRAM**—The Medical Genetics Residency Program is a two year program designed to train physicians to provide comprehensive diagnostic, management and counseling services for inherited diseases and the genetic factors pertinent to all diseases. The training experience also emphasizes the role of research in Medical Genetics so that trainees can pursue investigator-initiated research upon completion of the program.
Gynecology and Obstetrics

HAROLD EDWARD FOX
Doctor Dorothy Edwards Professor of Gynecology and Obstetrics, Director of the Department of Gynecology and Obstetrics

JEAN R. ANDERSON
Professor of Gynecology and Obstetrics, Joint Appointment in Medicine

KARIN J. BLAKEMORE
Professor of Gynecology and Obstetrics in Genetic Medicine, Professor of Oncology

DAVID S. ETTINGER
Alex Grass Professor of Oncology, Professor of Gynecology and Obstetrics, Professor of Medicine, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences

JOHN D. GEARHART, Adjunct Professor

VICTORIA L. HANDA, Professor

GEORGE R. HUGGINS, Professor Emeritus

HENDREE EVELYN JONES
Professor of Behavioral Biology (on leave of absence to 11/30/2010), Professor of Gynecology and Obstetrics (on leave of absence to 11/30/2010)

HOWARD W. JONES, JR., Professor Emeritus

ROBERT J. KURMAN
Richard W. Telinde Distinguished Professor of Gynecologic Pathology in the Department of Gynecology and Obstetrics, Professor of Oncology, Professor of Pathology

RICHARD B. S. RODEN
Professor of Pathology, Professor of Gynecology and Obstetrics, Professor of Oncology

BRIGITTE MARIA RONNETT
Professor of Pathology, Professor of Gynecology and Obstetrics

DOROTHY L. ROSENTHAL
Professor of Pathology, Professor of Gynecology and Obstetrics

ANDREW J. SATIN, Professor

IE-MING SHIH
Professor of Pathology, Professor of Gynecology and Obstetrics, Professor of Oncology

EDWARD E. WALLACH
J. Donald Woodruff Professor of Gynecology and Obstetrics

FRANK R. WITTER, Professor

TZYY-CHOOU WU
Professor of Pathology, Professor of Gynecology and Obstetrics, Professor of Oncology

HOWARD A. ZACUR
Theodore and Ingrid Baramki Professor of Reproductive Endocrinology in the Department of Gynecology and Obstetrics

JONATHAN M. ZENILMAN
Professor of Medicine, Professor of Dermatology, Professor of Gynecology and Obstetrics

DEBORAH K. ARMSTRONG
Associate Professor of Oncology, Associate Professor of Gynecology and Obstetrics

THEODORE A. BARAMKI
Associate Professor Emeritus of Gynecology and Obstetrics, Joint Appointment Emeritus in Pediatrics

JESSICA L. BIENSTOCK, Associate Professor

LINZHAO CHENG
Associate Professor of Medicine, Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology

VIRGINIA L. CORSON
Associate Professor of Gynecology and Obstetrics in Genetic Medicine, Associate Professor of Pediatrics

MARIAN D. DAMEWOOD, Associate Professor

JODI ANNE FLAWS, Adjunct Associate Professor

JAIRO E. GARCIA, Associate Professor

RENE R. GENADRY, Associate Professor

ERNEST MARSHALL GRAHAM, Associate Professor

EDITH DIAMENT GUREWITSCH
Associate Professor of Gynecology and Obstetrics, Associate Professor of Biomedical Engineering

ANDREW PETER HARRIS
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Gynecology and Obstetrics

CHIEN-FU HUNG
Associate Professor of Pathology, Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology

WILLIAM G. KEARNS, Adjunct Associate Professor

SUHEIL JAMIL MUASHER, Associate Professor

J. COURTLAND ROBINSON, Associate Professor Emeritus

ANNE M. ROMPAI
Professor of Medicine, Associate Professor of Gynecology and Obstetrics

RICHARD DAVID SCHULICK
John L. Cameron Professor of Alimentary Tract Diseases in the Department of Surgery, Associate Professor of Biomedical Engineering, Associate Professor of Gynecology and Obstetrics, Professor of Oncology

DAVID B. SCHWARTZ, Visiting Associate Professor

LILLIE SHOCKNEY
Visiting Associate Professor

SAMUEL SMITH, Associate Professor

GAIL STETTEN, Associate Professor Emerita

CORNELIA LIU TRIMBLE
Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology, Associate Professor of Pathology
REQUIRED WORK

Gynecology and Obstetrics—Second, Third, or Fourth Year

Clinical Clerkship in Obstetrics and Gynecology. Dr. Hueppchen and staff of the Department of Gynecology and Obstetrics, 6 weeks. Course may be taken at any time from the fourth quarter of the second year through the third quarter of the fourth year. Students are encouraged to complete this clerkship during the second or third year. Clinical experience in obstetrics will include antepartum, labor and delivery, as well as postoperative postpartum care. Clinical experience in gynecology will include care of inpatients and outpatients.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Hueppchen. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

Gynecology and Obstetrics E

E 1. Reproductive Endocrinology. Dr. Zacur. Four quarters. Open to fourth year students. In this clinical experience the student will function as a house officer at the first year level on the reproductive endocrinology service. The student will be responsible for providing inpatient and outpatient care to the patients who present to the respective services for care. A research component is encouraged.

E 2. Pathology. Drs. Kurman and Ronnett. Four quarters. Open to second, third, and fourth year students. Consideration is given to the gross and histologic pathology of lesions of the reproductive tract, with opportunity for special investigative work in areas such as papilloma virus, tumors of the female genital tract and gestational trophoblastic disease. Admission is by permission.

E 3. Advanced Work and Research. By arrangement with the staff. Research interests represented in the Department of Gynecology and Obstetrics are as follows:

DR. AINA
Maternal and fetal medicine.

DR. ARGANI
Maternal and fetal medicine.

DR. ANDERSON
Obstetrics/Gynecology infectious diseases; HIV.

DR. BIENSTOCK
Maternal and fetal medicine.

DR. BLAKEMORE
Maternal and fetal medicine; prenatal genetics.

DR. BRISTOW
Gynecologic oncology.

DR. CHENG
Embryonic stem cells; hematopoeisis.

DR. CORNELISON
Gynecologic oncology.

MS. CORSON
Prenatal genetics.

DR. CRINO
Maternal and fetal medicine; fetal ultrasound.
Subinternship in Gynecology and Obstetrics.

Dr. Hueppchen. Specific times during the year; 3 or 4 weeks.

Prerequisite: Completion of the Ob/Gyn Core Clerkship and an interview.

This clinical experience consists of a subinternship in obstetrics and gynecology. The student will function as a house officer at the first year level. In this capacity, the student will be responsible for the provision of inpatient and outpatient care to the patients who present to the respective service for care.

Subinternship in Gynecologic Oncology.

Dr. Diaz-Montes. Specific times during the year; 3 or 4 weeks.

Prerequisite: Completion of the Ob/Gyn Core Clerkship and an interview.

The student will function as a house officer at the first year level on the gynecologic oncology service. The student will be responsible for providing inpatient and outpatient care to the patients who present to the service for care.

Subinternship in HIV Infection in Women.

Dr. Anderson. Specific times during the year; 3 or 4 weeks.

Prerequisite: Completion of Ob/Gyn Core Clerkship and an interview.

Students will participate in the obstetric and gynecological care of HIV-positive women. A research component is encouraged.

Subinternship in Obstetric/Maternal Fetal Medicine.

Dr. Hueppchen and staff. Specific times during the year; 3 or 4 weeks.

Prerequisite: Completion of Ob/Gyn Core Clerkship.

This clinical experience consists of a subinternship in obstetrics. The student will function as a house officer at the first year level and will be responsible for the provision of inpatient and outpatient care to the patients who present to the respective services for care. A portion of each week can be spent in prenatal genetics, obstetrical sonography, and fetal assessment. This subinternship can be combined with the Gynecology Subinternship.

Subinternship in Gynecology.

Dr. Anderson and staff. Specific times during the year; 3 or 4 weeks.

Prerequisite: Completion of Ob/Gyn Core Clerkship and interview.

This clinical experience consists of a subinternship in gynecology. The student will function as a house officer at the first year level and will be responsible for the provision of inpatient and outpatient care to the patients who present to the respective services for care. This subinternship can be combined with the Obstetrics Subinternship.

Subinternship in Obstetrics and Gynecology at Bayview Medical Center.

Dr. Chou and staff. 3 or 4 weeks.

Prerequisite: Completion of Ob/Gyn Core Clerkship and interview.

This clinical experience consists of a subinternship in obstetrics and gynecology. The student will function as a house officer at the first year level and will be responsible for the provision of inpatient and outpatient care to the patients who present to the respective services for care. This subinternship can be combined with the Obstetrics Subinternship.
Health Sciences Informatics

NANCY K. RODERER
Associate Professor of Health Sciences Informatics, Associate Professor of Medicine, Director of the Division of Health Sciences Informatics

LEE ALAN FLEISHER, Adjunct Professor
NINA W. MATHESON, Emerita
WILLIAM A. YASNOFF, Adjunct Professor

HAROLD P. LEHMANN
Associate Professor of Health Sciences Informatics, Associate Professor of Pediatrics

ALLEN YIYEN TIEN, Adjunct Associate Professor
KATHERINE LIPSCOMB BALL, Visiting Assistant Professor

ALAN COLTRI, Assistant Professor
NKOSSI C. DAMBITA, Adjunct Assistant Professor
JOSEPH S. LOMBARDO, Assistant Professor
STEVEN F. MANDELL, Assistant Professor
EDUARDO ORTIZ, Visiting Assistant Professor
STEPHANIE L. REEL, Assistant Professor
P. ZOE STAVRI, Visiting Assistant Professor
TERRANCE SWIFT, Adjunct Assistant Professor
EDWARD BENTLEY BUNKER, Research Associate

SCOTT FINLEY, Research Associate
GEORGE ROBERT KIM
Research Associate in Pediatrics, Research Associate in Health Sciences Informatics

DEBORAH A. MCCLELLAN
Research Associate in Health Sciences Informatics, Research Associate in Pharmacology and Molecular Sciences

DONGMING ZHANG, Research Associate
ROBERT THOMAS KAMBIC, Visiting Scientist

FACULTY ASSOCIATED WITH THE DIVISION OF HEALTH SCIENCES INFORMATICS HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
MICHAEL V. BOLAND
Assistant Professor of Ophthalmology

G. STEVEN BOVA
Assistant Professor of Pathology

JOHN ENG
Associate Professor of Radiology and Radiological Science

JOSEPH FINKELSTEIN
Associate Professor of Medicine

HARRY R. GOLDBERG
Assistant Professor of Biomedical Engineering

PETER SCHUYLER GREENE
Associate Professor of Cardiac Surgery

AYSE P. GURSES
Assistant Professor of Anesthesiology and Critical Care Medicine

ELIZABETH ANNE HUNT
Assistant Professor of Anesthesiology and Critical Care Medicine

CHRISTOPH ULRICH LEHMANN
Associate Professor of Pediatrics

ROBERT E. MILLER
Associate Professor of Pathology

DAVID EDWARD NEWMAN-TOKER
Associate Professor of Neurology

MICHAEL F. OCHS
Associate Professor of Oncology

GIOVANNI PARMIGIANI
Professor of Oncology

JONATHAN PEVSNER
Associate Professor of Neuroscience

JAMES PHILBIN
Research Associate in Radiology

PETER J. PRONOVOST
Professor of Anesthesiology and Critical Care Medicine

STUART CAMPBELL RAY
Associate Professor of Medicine

KAREN A. ROBINSON
Assistant Professor of Medicine

DAVID R. THIEMANN
Associate Professor of Medicine

RAIMOND L. WINSLOW
Professor of Biomedical Engineering

The Bloomberg School of Public Health

MICHAEL CHRISTOPHER GIBBONS
Assistant Professor of Population, Family, and Reproductive Health

ANNA O. ORLOVA
Associate in Health Policy and Management

FERNANDO JAVIER PINEDA
Associate Professor of Molecular Microbiology & Immunology

DONALD M. STEINWACHS
Professor of Health Policy and Management

JONATHAN P. WEINER
Professor of Health Policy and Management

WILLIAM M. WEISS
Assistant Scientist in International Health

The School of Nursing:

PATRICIA A. ABBOTT
Associate Professor of Nursing

MARION J. BALL
Adjunct Professor of Nursing

CHERYL R. DENNISON
Associate Professor of Nursing

BARBARA L. VAN DE CASTLE
Instructor in Nursing

This interdisciplinary academic division brings together a wide range of resources and expertise in biomedical information management, communication and technology. Through the educational, research and service activities of its components, the Division of Health Sciences Informatics seeks to advance the development and use of electronic and other
information resources for decision-making, research, health care delivery and individual academic growth and to increase the awareness of these resources among the Johns Hopkins medical community.

Basic research and development involving the application of informatics to a variety of medical and basic science disciplines is also being carried out by individual members of the division, and the results of these efforts are being applied to research and educational initiatives throughout the Johns Hopkins Medical Institutions. Current research areas include: medical informatics, genome informatics, information management, consumer health informatics, computer based documentation systems for point of care, informatics and evidence based medicine, biomedical editing and communication, and electronic publishing.

The service component of the division is the Welch Medical Library. In addition to providing access to the published literature (printed and electronic) and numerous scientific databases, the Welch Library offers educational and outreach programs to assist clinical and basic science faculty, staff and students in using electronic information resources to access critical scientific information and to analyze and communicate their research findings.

Research Activities
Research interests represented in the Division of Health Sciences Informatics are as follows:

DR. FLEISHER
Technology assessment.

DR. LEHMANN
Evidence-based medicine; decision modeling.

DR. MCCLELLAN
Medical and technical writing.

MS. OLIVER
Patient information; information professional roles; public health information need and services.

MS. RODERER
Information use, systems, management, and organization

MR. ZHANG
UMLS applications in institutional repositories.

This course provides a framework for understanding the role of data, information, and knowledge in biomedicine and related domains. Fundamentals such as data structures, standards, and vocabularies, will be applied to the effects decisions in these areas have on the potential users of information and knowledge. Specific domains will be used to exemplify the underlying theoretical principles and issues and may include several of the following, depending upon the interests of the class: medicine, nursing, public health, consumer health, or biomedicine.

600.702 Health Science Informatics Knowledge Engineering and Decision Support. Dr. Lehmann. Third and fourth quarters.
This course provides a framework for understanding decision support in the workflow of the health sciences. The focus is on the types of support needed by different decision makers, and the features associated with those types of support. A variety of decision support algorithms is discussed, examining advantages and disadvantages of each, with a strong emphasis on decision analysis as the basic science of decision making. Students are expected to demonstrate facility with one algorithm in particular through the creation of a working prototype, and to articulate the evidence for efficacy and effectiveness of various types of decision support in health sciences and practice, in general.

600.705 Health Sciences Informatics Security, Confidentiality, and Privacy. Dr. Miller. Third quarter.
Security of health information is a central component of any information system in the health sciences. This course will address the security technologies, the confidentiality policies, and the privacy responsibilities in providing clinical care (e.g., HIPAA issues) and pursuing research (e.g., human subjects research).

600.711 Health Informatics for Disease Prevention and Management. Dr. Finkelstein. Third quarter.
Focusing on health information technology in ambulatory care, this course provides students with overview and theoretical underpinnings of health information systems supporting patient-centered primary care, health promotion, computer-guided disease management and prevention, telemonitoring and eHealth. Sample health information systems include ambulatory Electronic Medical Records, Disease Registries, Patient Portals, Provider Portals, secure patient-provider communication systems, home telemonitoring, telemedicine applications, interactive health education and counseling, computerized tools for shared decision making, team-based care management tools, decision support for quality assurance, and clinical guidelines implementation, system interoperability.

This course will provide students the knowledge to match algorithms to data types and data types to clinical needs and uses, both in current use and in research. The course will address data types used in EMR, Pathology, Radiology, Physician Order Entry, among others, and will include a broad range of data: discrete controlled vocabularies, imaging, natural language, to name a few.

600.807 Informationist Seminar: Bringing Evidence to Practice. Ms. Oliver. Fourth quarter.
This course is designed for professionals seeking to develop core competencies needed for an informationist role in the fields of clinical medicine and public health. Students will analyze and
present evidence to support decision-making in case scenarios drawn from clinical or public health practice. A combination of lecture and laboratory exercises will teach the skills involved in finding, analyzing, and delivering evidence for clinical and public health decision-making: identifying a question embedded in a case presentation; developing effective search strategies for relevant evidence to address the question; evaluating and synthesizing the identified evidence; and effectively presenting that evidence. Evaluations will be based on participation in class, exercise completion, and final oral and written presentations of assigned cases.
History of Medicine

RANDALL M. PACKARD
William H. Welch Professor of History of Medicine, Director of the Department of the History of Medicine

GERT H. BRIEGER
Distinguished Service Professor Emeritus in the Department of History of Medicine

ELIZABETH FEE, Professor
MARY E. FISSELL, Professor
ROBERT H. KARGON, Willis K. Shepard Professor of History of Science*
SHARON KINGSLAND, Professor*
STUART W. LESLIE, Professor*
RICHARD MACKSEY, Professor
GIANNA POMATA, Professor
DANIEL P. TODES, Professor
NATHANIEL CHARLES COMFORT, Associate Professor
HARRY MILTON MARKS
Associate Professor of History of Medicine, Occupying the Elizabeth Treide and A. McGehee Harvey Chair in the Department of the History of Medicine

MARTA HANSON, Assistant Professor
GRAHAM MOONEY, Assistant Professor
CHRISTINE A. RUGGERE, Lecturer
NANCY MCCALL, Research Associate

FACULTY ASSOCIATED WITH THE DEPARTMENT OF THE HISTORY OF MEDICINE HOLDING A PRIMARY APPOINTMENT IN:
The School of Medicine:

ARTHUR M. SILVERSTEIN
Odd Fellows Professor Emeritus of Ophthalmic Immunology in the Department of Ophthalmology

The department is organized to give instruction and opportunities for research in the history of medicine and kindred sciences, including the history of public health.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Comfort.

History of Medicine

Independent study program on a topic to be agreed upon with appropriate faculty member.

Each year a number of electives on varying topics is offered.

Courses run thirteen weeks.

AS 140.601 Methods, Approaches, and Perspectives. Dr. Hanson.

AS 140.695 Topics in Early Modern Medicine. Dr. Fissell. Fall.

This course examines themes in the social and cultural history of early-modern medicine, including patients, practitioners, medical theories, institutions, and practices.

150.701 History of Medicine I: Antiquity to the Scientific Revolution. Dr. Fissell. Fall.

This course will review the social, intellectual, and cultural history of Western medicine from ancient times to the seventeenth century, addressing in particular the following issues: a) the social definition of the physician's role and the relationship between healers and patients as regulated by social custom and by law; b) cultural perceptions of the body and definitions of health and illness; c) the intellectual exchange between medicine and other disciplines, such as natural philosophy and natural history; and d) the varying relationship between medicine and religious belief.

150.702 History of Medicine II: Enlightenment to the Present. Dr. Todes. Spring.

This course will review the social, intellectual, and cultural history of Western medicine from the 18th century to the present. Emphasis is on Western medical as the result of Western political-economic and institutional structures, cultural values, and the rise and complexities of “scientific medicine”.

150.706 History of Public Health in China. Dr. Hanson.

The modern term for public health “weisheng” in China has changed in the past two centuries from the “safe-guarding life” practices of individuals to the state’s responsibility for the health of its citizens. This course will examine the history of public health from the earliest evidence of a state medical bureaucracy in Chinese antiquity to the modern problems of STDs, HIV/AIDS, and SARS.

150.711 History of Disease and Disease Control: Comparative Perspectives. Drs. Mooney and Packard.

This course examines the long history of disease and disease control from the 14th century plague to the 20th century campaign for smallpox eradication, drawing on historical materials from Europe, Asia, Africa, and Latin American. Emphasis is on the ways in which political, social, and economic institutions and practices influence the history of disease, its understanding, and its control.

150.713 Oral History Theory and Method. Dr. Comfort.

Interviewing is a powerful technique that should be in the toolkit of almost any historian working the middle of late twentieth century. In this seminar, you will be introduced to the range of techniques and uses for interviewing, some examples of effective historical writing that uses interviewing, and some of the theory behind oral history. A key theme course-long will be the interpretation of oral statements: what, if anything, can the historian take at face value, and how can you tell? The centerpiece of the course is each student’s planning, carrying out, transcribing, and interpreting an oral history interview. In addition, there will be weekly reading (tapering off toward the end of the semester) and in-class discussion.
150.714 History of Twentieth Century Biomedicine. Drs. Comfort and Todes. Spring.
This seminar-style course is intended for students in the basic sciences and in the history of science and medicine. We will study classic experiments in twentieth-century physiology, immunology, genetics, and neuroscience using both original research papers and historians’ accounts. Themes under discussion will include theory and experiment, styles of research, ethics of experimental work and scientific publishing, and the impact of social interactions on laboratory work. This course will appeal to any science students interested in understanding the origins of biomedicine and in exploring what makes biomedicine unique in the history of science and medicine.

150.715 History of Health and Development in Africa. Dr. Packard.
This course will examine the impact of colonial and post-colonial development on patterns of sickness, health, and health care in Africa. It will also focus on African responses to changing patterns of health care and disease. Topics include: patterns of disease and therapeutic responses in pre-colonial Africa; colonial epidemics; industrialization, urbanization, and disease; agrarian transformations, malnutrition, and the political economy of famine; sexuality, colonial control, and disease; western medicine and the social construction of African identities; African reproductive health and family planning; recession, debt, and Africa’s health care crises; histories of AIDS in Africa.

150.716 History of Chinese Medicine. Dr. Hanson.
How did the Chinese conceptualize the human body, health and disease over the past 2,000 years? What were the range of responses from religious to therapeutic to disease in China? What are Chinese acupuncture, moxibustion, and herbal medicine? Who practiced medicine in China; what did they practice; and how do we know what we know about them? Students will engage these and other questions by discussing the latest historical and anthropological history of medicine in China. Students will be expected to attend the lectures of AS140.346, read relevant primary sources in Chinese, and write a research paper.

150.718 Analogy and Metaphor in Science and Medicine. Dr. Todes.
How do metaphors in science, technology, and medicine originate and how do they influence human thought? The course explores such examples as William Harvey’s analogy between the heart and a pump, Charles Darwin’s concepts of the struggle for existence and natural selection, military metaphors in the history of public health, the use of metaphors of production in medicine, and the comparison of the brain to a computer.

150.813 Medicine and Science in History: An Introduction to Historiography. Departmental Faculty.
Discussion of historiographical developments in, and various approaches to History of Medicine based on readings of important secondary works.

150.801 Research in the History of Medicine.
For doctoral candidates and other advanced students engaged in original research under faculty supervision.

150.802 Readings in the History of Medicine.
Available as an elective to both graduate and medical students.

Other Course offerings:
150.812 Introduction to the History of Public Health. Dr. Mooney. Fall.
SPH221.605 History of International Health and Development. Dr. Packard. Spring.
An examination of the history of western efforts to promote health and nutrition in the “developing world” from the beginnings of tropical medicine to recent efforts at disease eradication. The course will explore the various economic and political interests, as well as the cultural assumptions, that have shaped the development of ideas and practices associated with international health in “developing” countries. Topics include: history of international health organizations, strategies, and policies.

GRADUATE PROGRAM—Students are accepted for graduate work leading to the degrees of Master of Arts and Doctor of Philosophy (see Graduate Programs).
Medicine

MYRON L. WEISFELDT
William Osler Professor of Medicine, Director of the Department of Medicine

DARRELL R. ABERNETHY
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

STEPHEN C. ACHUFF, Professor
William Osler Professor of Medicine, Director of the Department of Medicine

N. FRANKLIN ADKINSON, JR., Professor
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

RICHARD FREDERICK AMBINDER
James B. Murphy Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

REUBIN ANDRES, Professor
Lawrence J. Appel, Professor

KAMAL F. BADR, Adjunct Professor
LEE RANDOL BARKER, Professor
KATHLEEN CAROLE BARNES, Professor
JOHN G. BARTLETT, Professor
ERIC B. BASS, Professor
JOAN M. BATHON, Professor
THEODORE M. BAYLESS
Sherlock Hibbs Professor of Inflammatory Bowel Disease in the Department of Medicine

STEPHEN B. BAYLIN
Virginia and Daniel K. Ludwig Professor of Cancer Research in the Department of Oncology, Professor of Medicine

DIANE M. BECKER, Professor
LEWIS C. BECKER
Robert L. Levy Professor of Cardiology in the Department of Medicine, Joint Appointment in Radiology

WILLIAM R. BELL
Edythe Harris Lucas and Clara Lucas Lynn Professor of Cancer Research in the Department of Oncology, Professor of Medicine

RICHARD GORDON BENNETT, Professor
ROBERT A. BRODSKY
Edyth Harris Lucas and Clara Lucas Lynn Professor of Medicine, Professor of Oncology

ROY GLENN BROWER, Professor

J. BURTON, Professor

HUGH G. CALKINS
Nicholas J. Fortuin, M.D. Professor of Cardiology in the Department of Medicine, Professor of Pediatrics

RICHARD E. CHAISSON, Professor

ARA VINDA CHAKRAVARTI
Professor of Medicine, Joint Appointment in Molecular Biology and Genetics, Professor of Pediatrics

NISHA CHANDRA-STROBOS, Professor

PATRICIA CHARACHE
Professor Emerita of Pathology, Professor Emerita of Medicine

SAMUEL CHARACHE
Professor Emeritus of Medicine, Professor Emeritus of Pathology

ARTHUR B. CHAUSMER, Adjunct Professor

BART CHERNOW, Adjunct Professor

HORACIO CINGOLANI, Visiting Professor

NANCY ABBEY COLLOP
Professor of Medicine (to 08/31/2010), Professor of Neurology (to 08/31/2010)

ROBERT A. BRODSKY
Edyth Harris Lucas and Clara Lucas Lynn Professor of Oncology, Professor of Medicine

ROSS C. DONEhower
Virginia and Daniel K. Ludwig Professor of Oncology Research in the Department of Medicine, Professor of Cell Biology, Joint Appointment in Molecular Biology and Genetics, Professor of Oncology, Professor of Pathology

ADRIAN S. DOBS
Professor of Medicine, Professor of Oncology

ROSS C. DONEHOWER
Virginia and Daniel K. Ludwig Professor of Clinical Investigation of Cancer in the Department of Oncology, Professor of Medicine

MARK DONowitz
George LeBoff Professor for Research in Digestive Diseases in the Department of Medicine, Professor of Physiology

SAMUEL C. DURSO
Mason F. Lord Professor of Geriatric Medicine

JERROLD JAY ELLNER, Visiting Professor

DAVID S. ETTINGER
Alex Grass Professor of Oncology, Professor of Gynecology and Obstetrics, Professor of Medicine, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences

NEAL S. FEDARKO, Professor

JEFFREY A. BRINKER
Professor of Medicine, Joint Appointment in Radiology

ROBERT A. BRODSKY
Edyth Harris Lucas and Clara Lucas Lynn Professor of Medicine, Professor of Oncology

ROY GLENN BROWER, Professor

J. BURTON, Professor

HUGH G. CALKINS
Nicholas J. Fortuin, M.D. Professor of Cardiology in the Department of Medicine, Professor of Pediatrics

RICHARD E. CHAISSON, Professor

ARA VINDA CHAKRAVARTI
Professor of Medicine, Joint Appointment in Molecular Biology and Genetics, Professor of Pediatrics

NISHA CHANDRA-STROBOS, Professor

PATRICIA CHARACHE
Professor Emerita of Pathology, Professor Emerita of Medicine

SAMUEL CHARACHE
Professor Emeritus of Medicine, Professor Emeritus of Pathology

ARTHUR B. CHAUSMER, Adjunct Professor

BART CHERNOW, Adjunct Professor

HORACIO CINGOLANI, Visiting Professor

NANCY ABBEY COLLOP
Professor of Medicine (to 08/31/2010), Professor of Neurology (to 08/31/2010)

ROBERT A. BRODSKY
Edyth Harris Lucas and Clara Lucas Lynn Professor of Oncology, Professor of Medicine

Ross C. Donehower
Virginia and Daniel K. Ludwig Professor of Oncology Research in the Department of Medicine, Professor of Cell Biology, Joint Appointment in Molecular Biology and Genetics, Professor of Oncology, Professor of Pathology

Adrian S. Dobbs
Professor of Medicine, Professor of Oncology

Ross C. Donehower
Virginia and Daniel K. Ludwig Professor of Clinical Investigation of Cancer in the Department of Oncology, Professor of Medicine

Mark Donowitz
George LeBoff Professor for Research in Digestive Diseases in the Department of Medicine, Professor of Physiology

Samuel C. Durso
Mason F. Lord Professor of Geriatric Medicine

Jerrold Jay Ellner, Visiting Professor

David S. Ettlinger
Alex Grass Professor of Oncology, Professor of Gynecology and Obstetrics, Professor of Medicine, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences

Neal S. Fedarko, Professor
ANDREW PAUL FEINBERG
King Fahd Professor of Molecular Medicine in the Department of Medicine, Joint Appointment in Molecular Biology and Genetics, Professor of Oncology, Joint Appointment in Psychiatry
LUIGI FERRUCCI, Adjunct Professor
THOMAS E. FINUCANE, Professor
CHARLES WILLIAMS FLEXNER
Professor of Medicine, Professor of Pharmacology and Molecular Sciences
JOHN A. FLYNN
D. William Schlott, M.D. Professor of Clinical Medicine, Joint Appointment in Psychiatry
DANIEL E. FORD
David M. Levine Professor of Medicine, Joint Appointment in Psychiatry
LINDA P. FRIED
Mason F. Lord Professor of Geriatric Medicine in the Department of Medicine
JOE E. GALLANT, Professor
STEVEN ROSS GAMBERT, Professor
CHARLOTTE A. GAYDOS
Professor of Medicine, Joint Appointment in Emergency Medicine
PATRICIA J. GEARHART
Adjunct Professor of Medicine, Adjunct Associate Professor of Pathology, Adjunct Associate Professor of Surgery
GAIL GELLER
Professor of Medicine in Genetic Medicine, Professor of Pediatrics
GREGORY G. GERMINO
Adjunct Professor of Medicine, Joint Appointment in Molecular Biology and Genetics
GARY GERSTENBLITH
Professor of Medicine, Joint Appointment in Radiology
FRANCIS M. GIARDIELLO
John G. Rangos Sr. Professor of Adult Medicine in the Department of Medicine, Professor of Oncology, Professor of Pathology
MICHAEL G. GOGGINS
Professor of Pathology, Professor of Medicine, Professor of Oncology
DAVID STANLEY GOLDSTEIN, Visiting Professor
WILLIAM B. GREENOUGH, III, Professor
LAWRENCE S. GRIFFITH
Professor of Medicine, Joint Appointment in Radiology
JACQUES H. E. GROSSET, Visiting Professor
STUART A. GROSSMAN
Professor of Oncology, Professor of Medicine, Professor of Neurological Surgery
HENRY R. HALPERIN
David J. Carver Professor of Medicine, Professor of Biomedical Engineering, Professor of Radiology
ROBERT G. HAMILTON
Professor of Medicine, Professor of Pathology
JOSHUA MICHAEL HARE
Adjunct Professor of Medicine, Adjunct Professor of Biomedical Engineering
PAUL M. HASSOUN, Professor
JENNIFER A. HAYTHORNTHWAITE
Professor of Psychiatry, Professor of Medicine
DAVID BRUCE HELLMANN
Aliki Perrot Professor of Medicine
CRAIG WALTER HENDRIX
Professor of Medicine, Professor of Pharmacology and Molecular Sciences
THOMAS R. HENDRIX
Moses and Helen Golden Paulson Professor Emeritus of Gastroenterology in the Department of Medicine and University Distinguished Service Professor
SHAU-KU HUANG, Professor
KIMISHIGE ISHIZAKA
Thomas P. O’Neill Professor Emeritus of Immunology in the Department of Medicine
TERUKO ISHIZAKA, Professor Emerita
ETHYLIN WANG JABS
Adjunct Professor of Pediatrics, Adjunct Professor of Medicine, Adjunct Professor of Plastic and Reconstructive Surgery
DAVID L. JACKSON, Adjunct Professor
DONALD R. JASINSKI, Professor (to 11/19/2010)
RICHARD J. JOHNS
University Distinguished Service Professor Emeritus of Biomedical Engineering, Professor Emeritus of Medicine
ROGER ANTHONY JOHNS
Professor of Anesthesiology and Critical Care Medicine, Professor of Medicine
RICHARD J. JONES
Professor of Oncology, Professor of Medicine
ANTHONY N. KALLOO
Moses and Helen Golden Paulson Professor of Medicine
JUDITH E. KARP
Professor of Oncology, Professor of Medicine
EDWARD KEVIN KASPER
E. Cowles Andrus Professor of Cardiology in the Department of Medicine
DAVID A. KASS
Abraham and Virginia Weiss Professor of Cardiology in the Department of Medicine, Professor of Biomedical Engineering
DAVID E. KERN, Professor
THOMAS S. KICKLER
Professor of Pathology, Professor of Medicine, Professor of Oncology
MICHAEL J. KLAG, Professor
HARVEY GORDON KLEIN
Adjunct Professor of Pathology, Adjunct Professor of Medicine
HIDEO KUSUOKA, Visiting Professor
PETER O. KWITEROVICH, JR.
Professor of Pediatrics, Professor of Medicine
PAUL W. LADENSON
John Eager Howard Professor of Endocrinology and Metabolism in the Department of Medicine University Distinguished Professor of Medicine, Professor of Oncology, Professor of Pathology, Professor of Radiology
EDWARD G. LAKATTA, Professor
RICHARD A. LANGE, Professor
MARCIA ROXANA CRUZ-CORREA, Visiting Assistant Professor
HENGMI CUI, Assistant Professor
DARSHAN DALAL, Assistant Professor
RACHEL LYNN DAMICO, Assistant Professor
SONYE KAREN DANOFF, Assistant Professor
JONATHAN DAVID DARER, Assistant Professor
KARL ERIC DEJONGE, Assistant Professor
DONALD H. DEMBO, Assistant Professor of Medicine (to 08/31/2010)
SANJAY VIRENDRA DESAI, Assistant Professor
TIMM-MICHAEL LUTZ DICKFELD, Adjunct Assistant Professor
ALBENA Todorova Dinkova-Kostova, Assistant Professor of Pharmacology and Molecular Sciences, Assistant Professor of Medicine
SAMEER DIXIT, Assistant Professor of Orthopaedic Surgery, Assistant Professor of Medicine
DANIELLE JOSSETTE DOBERMAN, Assistant Professor
MEG CAROLINE DOHERTY, Assistant Professor
JUN DONG, Adjunct Assistant Professor
KELLY ELISE DOOLEY, Assistant Professor of Medicine, Assistant Professor of Pharmacology and Molecular Sciences
XAVIER DRAY, Adjunct Assistant Professor
MALCOLM S. DRUSKIN, Assistant Professor
SHARON DUDLEY BROWN, Assistant Professor
KERRY BRANDT DUNBAR, Assistant Professor
SHAKER MAURICE EID, Assistant Professor
ZAYD ADNAN ELDAHAD, Adjunct Assistant Professor
LOIS J. ELDRED, Assistant Professor
NKRIRUKA UGOCHI EREKOSIMA, Assistant Professor (from 09/01/2010)
LOUIS KOFI ESSANDOH, Assistant Professor
MICHELLE MAE ESTRELLA, Assistant Professor
CAMELLUS OKWOCHI EZEUGWU, Assistant Professor
HENRY GEORGE FEIN, Assistant Professor
LEONARD S. FELDMAN, Assistant Professor of Medicine, Assistant Professor of Pediatrics
IRA T. FINE, Assistant Professor
DANA H. FRANK, Assistant Professor
BARUCH FRIEDMAN, Assistant Professor
WILLIAM F. FRITZ, Assistant Professor Emeritus
JYOTHI GADE, Assistant Professor
GIORGIO GIOVANNI GALETTO, Assistant Professor of Medicine, Joint Appointment in Emergency Medicine
CHARLENE EDIE GAMALDO, Assistant Professor of Neurology, Assistant Professor of Medicine
PEISONG GAO, Assistant Professor
DUVURU GEETHA, Assistant Professor
RICHARD T. GEORGE, Assistant Professor
KHALIL GEORGES GHANEM, Assistant Professor
BRIAN K. GIBBS, Assistant Professor
JON TYLER GILES, Assistant Professor (to 12/15/2010)
LUIS F. GIMENEZ, Assistant Professor
SEAN T. GLOTH, Assistant Professor
JONATHAN E. GOLUB, Assistant Professor
AMY H. GORDON, Assistant Professor
MADHAV GOYAL, Assistant Professor
AYSEGUL GOZU, Assistant Professor
THOMAS GRADER-BECK, Assistant Professor
DAVID R.M. GRAHAM, Assistant Professor of Molecular and Comparative Pathobiology, Assistant Professor of Medicine
RAQUEL CHARLES GREER, Assistant Professor
ROBERT I. GRIFFITHS, Assistant Professor
CORDELIA T. GRIMM, Assistant Professor
AMITA GUPTA, Assistant Professor
CHRISTINA Y. HA, Assistant Professor
DAVID NORTHROP HAGER, Assistant Professor
ABDEL-RAHIM A. HAMAD, Assistant Professor of Pathology, Assistant Professor of Medicine
JAMES PETER ADAM HAMILTON, Assistant Professor
JENNIFER LEIGH HAYASHI, Assistant Professor
ALLISON GAMBOA HAYES, Assistant Professor
CARLTON HAYWOOD, JR., Assistant Professor
CHARLES ALAN HENRIKSON, Assistant Professor of Medicine, Assistant Professor of Pediatrics
CARRIE ANN GILBERT HERZKE, Assistant Professor
WILLIAM R. HERZOG, JR., Assistant Professor
GLENN AARON HIRSCH, Assistant Professor
GLADIS G. HOFKIN, Assistant Professor
PETER ANTHONY HOLT, Assistant Professor
ERICA E. HOWE, Assistant Professor
CAROL ANN HUFF, Associate Professor of Oncology (from 10/01/2010), Assistant Professor of Oncology (to 09/30/2010), Assistant Professor of Medicine
MARK THOMAS HUGHES, Assistant Professor
MARY MARGARET HUIZINGA, Assistant Professor
LAURA KATHLEEN HUMMERS, Assistant Professor
DAVID F. HUTCHEON, Assistant Professor
PAUL MINGYOU HWANG, Assistant Professor
IREDELL WADDELL IGLEHART, III, Assistant Professor

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARCIA ROXANA CRUZ-CORREA</td>
<td>Visiting Assistant Professor</td>
</tr>
<tr>
<td>HENGMI CUI</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DARSHAN DALAL</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>RACHEL LYNN DAMICO</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>SONYE KAREN DANOFF</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>JONATHAN DAVID DARER</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>KARL ERIC DEJONGE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DONALD H. DEMBO</td>
<td>Assistant Professor of Medicine (to 08/31/2010)</td>
</tr>
<tr>
<td>SANJAY VIRENDRA DESAI</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>TIMM-MICHAEL LUTZ DICKFELD</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>ALBENA Todorova Dinkova-Kostova</td>
<td>Assistant Professor of Pharmacology and Molecular Sciences, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>SAMEER DIXIT</td>
<td>Assistant Professor of Orthopaedic Surgery, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>DANIELLE JOSSETTE DOBERMAN</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>MEG CAROLINE DOHERTY</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>JUN DONG</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>KELLY ELISE DOOLEY</td>
<td>Assistant Professor of Medicine, Assistant Professor of Pharmacology and Molecular Sciences</td>
</tr>
<tr>
<td>XAVIER DRAY</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>MALCOLM S. DRUSKIN</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>SHARON DUDLEY-BROWN</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>KERRY BRANDT DUNBAR</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>SHAKER MAURICE EID</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>ZAYD ADNAN ELDAHAD</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>LOIS J. ELDRED</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>NKRIRUKA UGOCHI EREKOSIMA</td>
<td>Assistant Professor (from 09/01/2010)</td>
</tr>
<tr>
<td>LOUIS KOFI ESSANDOH</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>MICHELLE MAE ESTRELLA</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>CAMELLUS OKWOCHI EZEUGWU</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>HENRY GEORGE FEIN</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>LEONARD S. FELDMAN</td>
<td>Assistant Professor of Medicine, Assistant Professor of Pediatrics</td>
</tr>
<tr>
<td>IRA T. FINE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DANA H. FRANK</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>BARUCH FRIEDMAN</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>WILLIAM F. FRITZ</td>
<td>Assistant Professor Emeritus</td>
</tr>
<tr>
<td>JYOTHI GADE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>GIORGIO GIOVANNI GALETTO</td>
<td>Assistant Professor of Medicine, Joint Appointment in Emergency Medicine</td>
</tr>
<tr>
<td>CHARLENE EDIE GAMALDO</td>
<td>Assistant Professor of Neurology, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>PEISONG GAO</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DUVURU GEETHA</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>RICHARD T. GEORGE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>KHALIL GEORGES GHANEM</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>BRIAN K. GIBBS</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>JON TYLER GILES</td>
<td>Assistant Professor (to 12/15/2010)</td>
</tr>
<tr>
<td>LUIS F. GIMENEZ</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>SEAN T. GLOTH</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>JONATHAN E. GOLUB</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>AMY H. GORDON</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>MADHAV GOYAL</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>AYSEGUL GOZU</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>THOMAS GRADER-BECK</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DAVID R.M. GRAHAM</td>
<td>Assistant Professor of Molecular and Comparative Pathobiology, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>RAQUEL CHARLES GREER</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>ROBERT I. GRIFFITHS</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>CORDELIA T. GRIMM</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>AMITA GUPTA</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>CHRISTINA Y. HA</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DAVID NORTHROP HAGER</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>ABDEL-RAHIM A. HAMAD</td>
<td>Assistant Professor of Pathology, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>JAMES PETER ADAM HAMILTON</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>FAYEZ MAHMOUD HAMZEH</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>NADIA NATHALIE HANSEL</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>LAURA ANNE HANYOK</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>UZMA JALAL HAJUE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>KATHARINE SANTOS HARRISON</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>JENNIFER LEIGH HAYASHI</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>ALLISON GAMBOA HAYES</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>CARLTON HAYWOOD, JR.</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>CHARLES ALAN HENRIKSON</td>
<td>Assistant Professor of Medicine, Assistant Professor of Pediatrics</td>
</tr>
<tr>
<td>CARRIE ANN GILBERT HERZKE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>WILLIAM R. HERZOG, JR.</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>GLENN AARON HIRSCH</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>GLADIS G. HOFKIN</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>PETER ANTHONY HOLT</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>ERICA E. HOWE</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>CAROL ANN HUFF</td>
<td>Associate Professor of Oncology (from 10/01/2010), Assistant Professor of Oncology (to 09/30/2010), Assistant Professor of Medicine</td>
</tr>
<tr>
<td>MARK THOMAS HUGHES</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>MARY MARGARET HUIZINGA</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>LAURA KATHLEEN HUMMERS</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>DAVID F. HUTCHEON</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>PAUL MINGYOU HWANG</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>IREDELL WADDELL IGLEHART, III</td>
<td>Assistant Professor</td>
</tr>
</tbody>
</table>
Jean R. Anderson
Professor of Gynecology and Obstetrics

Frank Michael Bengel
Associate Professor of Radiology and Radiological Science

Robert H. Brown
Professor of Anesthesiology and Critical Care Medicine

Ilene S. Browner
Instructor in Oncology

Karen C. Carroll
Professor of Pathology

Patrizio P. Caturegli
Associate Professor of Pathology

Todd Dorman
Professor of Anesthesiology and Critical Care Medicine

George J. Dover
Given Foundation Professor of Pediatrics

Dariush Elahi
Professor of Surgery

Daniel J. Freedenburg
Instructor in Psychiatry

Mark R. Ginsberg
Assistant Professor of Psychiatry

Ann L. Cox Hubbard
Professor of Cell Biology

Shenghan Lai
Professor of Pathology

Beth L. Laube
Professor of Pediatrics

Howard M. Lederman
Professor of Pediatrics

Ciro Roberto Martins
Associate Professor of Dermatology

Sridhar Nimmagadda
Assistant Professor of Radiology and Radiological Science

Richard J. O'Brien
Associate Professor of Neurology

Nael Fakhry Osman
Associate Professor of Radiology and Radiological Science

James B. Potash
Associate Professor of Psychiatry

Peter V. Rabin
Professor of Psychiatry

Karen L. Reddy
Assistant Professor of Biological Chemistry

Richard E. Rothman
Associate Professor of Emergency Medicine

Hyun S. Shin
Professor of Molecular Biology and Genetics

Philip Joel Spevak
Associate Professor of Pediatrics

Sean Dixon Taverna
Assistant Professor of Pharmacology and Molecular Sciences

George H. Thomas
Professor of Pediatrics in Genetic Medicine

Annie Umbrihct
Assistant Professor of Psychiatry

David L. Valle
Professor of Pediatrics in Genetic Medicine

Frederic E. Wondisford
Professor of Pediatrics

The Bloomberg School of Public Health:

Miriam H. Alexander
Assistant Professor of Population and Family Health Sciences

Cheryl Ann Marie Anderson
Assistant Professor of Epidemiology

Gerard F. Anderson
Professor of Health Policy and Management

Brad C. Astor
Assistant Professor of Epidemiology

Karen Bandeen-Roche
Professor of Biostatistics

Shyam Sundar Biswal
Professor of Environmental Health Sciences

Robert E. Black
Professor of International Health

Lee R. Bone
Associate Professor of Health Behavior and Society

Charles E. Boult
Professor of Health Policy and Management

Patrick N. Breyesse
Professor of Environmental Health Sciences

Donald Scott Burke
Professor of International Health

Gilbert M. Burnham
Professor of International Health

David Dupuy Celetnano
Professor of Epidemiology

Jeanne Charleton
Research Associate in Epidemiology

Lawrence J. Cheskin
Associate Professor of International Health

Josef Coresh
Professor of Epidemiology

Anna Palmer Durbin
Associate Professor of International Health

Sydney E Morss Dy
Associate Professor of Health Policy and Management

Ruth R. Faden
Professor of Health Policy and Management

Margaret Daniele Fallin
Professor of Epidemiology

Nancy E. Fink
Senior Scientist in Epidemiology

Robert S. Fitzgerald
Professor of Environmental Health Sciences

Jean G. Ford
Associate Professor of Epidemiology

Tiffany L. Gary
Adjunct Associate Professor of Epidemiology

Pearl S. German
Professor of Health Policy and Management

Michael Christopher Gibbons
Assistant Professor of Population, Family, and Reproductive Health
The courses in medicine have been arranged for the student with three principal objects in view. First, students are given training in accepted technical methods so that they may employ these fundamental procedures for the intelligent examination of patients. Second, they are trained in the principles of diagnosis and are given opportunities to study disease in the human being, including its treatment and prevention. Third, their attention is directed to the patient as a problem, and they are required to study the special needs of particular human beings and the peculiar reactions to the disease from which they suffer. The work is essentially practical and the three objects are pursued simultaneously. While the students are following these courses they have an opportunity to spend their entire time in the laboratories, and in the inpatient and outpatient units of the Osler Medical Service. In addition to the practical instruction students are expected to read textbooks and consult
Those students who wish to seek their area of concentration within the Department of Medicine will be assigned to a preceptor who will guide their clinical work, research, reading, and study, on a tutorial basis. It is particularly in the use of "elective time" that the preceptor will advise the student. To fit the interests and ability of the student, considerable flexibility in the choice of elective program will be possible.

REQUIRED WORK

**Medicine—First Year**

250.610 & 250.613 Genes to Society/Immunology I. Dr. Jonathan Schneck.

250.611 Genes to Society/Microbiology and Infectious Diseases. Dr. Khalil Ghanem.

The goal of the GTS Micro/ID section is to provide an overview of the four major classes of microorganisms that cause diseases in humans: bacteria, viruses, fungi, and parasites. After completing the four week course, students will be able to describe the factors that render microorganisms virulent and correlate these factors with disease processes. They will also be able to describe factors associated with susceptibility, prevention, and treatment of infectious diseases and understand how individual variability impacts manifestations observed on a population level.

800.621 Clinical Foundations of Medicine. Dr. Robert Shochet.

This 17 week course runs concurrently with Scientific Foundations of Medicine. Students spend 1-2 afternoons per week, usually working in groups of 5 with their college advisor, to learn and gain confidence with best practices in doctor-patient communication, how to obtain, organize, and communicate to colleagues a patient's medical history, and how to perform a multi-system physical examination. Students will be prepared for participation in the Longitudinal Clerkship beginning in January of Year 1. Resources to assist students in learning include volunteer outpatients, standardized patients, trained physical exam teaching associates, and actual hospital patients who agree to be interviewed and examined by beginning students. The small group format provides students with multiple opportunities to learn and practice these important skills in a safe environment, enriched by detailed feedback, and supplemental practice sessions are offered routinely with the teaching associates to allow individualized practice time for each student.

800.616 Longitudinal Clerkship. Dr. Maura McGuire.

The goal of the Longitudinal Clerkship is to integrate the learning of basic science and clinical sciences. Students are placed in a "home clinic" one half day per week beginning in January of Year 1 and remain through December of Year 2. Students are expected to practice and further develop clinical skills under the supervision of their preceptors, and experience first hand the professional, health system and ethical challenges in the practice of medicine. They record their reflections and structured patient exercises in an online Learning Portfolio. Once a month they return to the medical school for small group discussions and further instruction in clinical skills with their college faculty.

They are assessed by their preceptors and with structured observation of clinical skills in the Simulation Center, as well as for their written work and a knowledge examination.

**Medicine—Second Year**

In quarters 1-3, students take an integrated curriculum including the Genes to Society course and the Longitudinal Clerkship. After spring break, students may elect to start clinical electives in Medicine.

1. **Introduction to Medicine: Clinical Skills.** Dr. Shochet (Course Director) and members of the clinical faculty. First and second quarters, M., or W., 2-5; Third quarter, Tu., Wed., and Th., 2-5.

An interdepartmental course in the clinical techniques of patient evaluation. Students working in small groups with an instructor from the clinical faculty, take histories and perform physical examinations on patients, then present their findings in verbal and written form. A differential diagnosis is formed. Whereas the major instruction is from Internal Medicine, also included is instruction given by the following departments or subspecialty groups: Pediatrics, Neurology, Ophthalmology, Urology, Dermatology, Otalaryngology, and Gynecology.

2. **Advanced Clinical Skills.**

This course is a prerequisite for all clinical clerkships and ordinarily will be taken between the third and fourth quarters of the second year. Its purpose is to prepare new clerks for the daily activities of patient care. Through a combination of lectures, laboratory exercises and small group discussions, students will learn practical aspects of relating to patients and their families; to provide care according to diagnostic probabilities and relative priorities; to recognize and manage common acute problems; and to order, perform and interpret the results of basic laboratory tests.

**Medicine—Second, Third and Fourth Years**

This required clinical course is repeated each quarter of the academic year and in the summer.

**Clinical Clerkship.** Dr. Cayea and Dr. Leff.

An eight-week clerkship that can be taken at any time from the final quarter of the second year through the third quarter of the fourth year. Prerequisite for admission is satisfactory completion of the first two years of the curriculum at Johns Hopkins School of Medicine.

CLINICAL WORK AT THE JOHNS HOPKINS HOSPITAL, Dr. Cayea and staff; CLINICAL WORK AT JOHNS HOPKINS BAYVIEW MEDICAL CENTER,
Dr. Hellmann and staff; and CLINICAL WORK AT SINAI HOSPITAL, Dr. Charles Albrecht.

Students serve full time as clinical clerks for 4 weeks on the medical service of The Johns Hopkins Hospital and 4 weeks at either Johns Hopkins Bayview Medical Center or Sinai Hospital. Students are assigned appropriate patients on whom they perform a complete history and physical examination, follow their clinical course, and participate in medical decision making and treatment with the assistance of the housestaff team. Students participate in teaching attending rounds, house staff work rounds, and both student and housestaff focused conferences.

ELECTIVE OPPORTUNITIES
Curricular Consultants: Drs. Thomas, Ashar, and Fessler. Registration in elective courses is subject to:
1. -satisfactory completion of prerequisites
2. -for individual study and research, approval of the preceptor
3. -for some courses as noted in this catalog, approval of the course director

The elective opportunities offered by the Department of Medicine are organized as follows:

E 1. Clinical Clerkships
These courses generally involve clinical work in a medical subspecialty. The student participates in all clinical activities of the division, including consultations and outpatient clinics; there is a varying amount of initial evaluation and follow-up of inpatients admitted by faculty of the division. The Medicine Core Clerkship is often a prerequisite.

E 2. Advanced Clinical Clerkships
These courses involve direct management of inpatients to a degree expected of interns (hence the common appellation “subinternship”).

E 3. Lecture Courses, Tutorials, and Seminars
These courses have widely varying prerequisites and time commitments. Some are not for credit.

E 4. Individual Preceptorship
Each division has faculty and specialized clinical facilities for studying the diseases in its area of interest. Students have the opportunity to participate in the evaluation and management of patients in clinics and on the wards under the guidance of a preceptor. Opportunities exist for clinical investigations of various types, including the study of patients in a specialty clinic or in one of the clinical research centers, analysis of medical records, and literature review. There are also opportunities in most divisions for laboratory investigation. Depending on the background and interests of the student, he or she may participate in a current investigation or undertake independent investigation using the laboratory and clinical facilities of the department. Because of the fundamental nature of the laboratory research in some of the divisions, the student may find it advantageous to become identified with one of these research programs early in his or her medical school career.

E 5. Advanced Clerkship in Internal Medicine.
Drs. Ashar and Ranasinghe. Available four quarters and summer (except July).
Prerequisite: Basic Medicine Clerkship.

Students can serve as subinterns on one of the Carol Johns service, Osler firm services, the Polk unit (HIV), or the Hospitalist service. On most of these services students work under the supervision and tutelage of interns, residents, and the admitting physician. On the hospitalist service, students work directly with the attending hospitalist physicians. Patients are assigned to each subintern, who fulfills the responsibilities of a PGY-1. Didactic sessions with the course directors are also part of this clerkship.

Dr. Brower. One student each one-half quarter. Not available in July and August.
Prerequisite: Medicine Core Clerkship and at least one other rotation in medicine or surgery.

Medical students learn an approach to the critically ill patient, enhance their knowledge of respiratory and circulatory physiology and pathophysiology, and build on their abilities to evaluate and manage medical patients in general.

The medical team consists of an attending physician, the MICU nursing staff, four medical house officers, and a critical care fellow. Medical students may join the team, take night call with house staff, obtain histories and perform physical examinations, gather and integrate laboratory data and pertinent information from literature, participate in decision making, write admission and progress notes, etc. Students are encouraged to follow a few patients closely and report admission and progress information on daily morning rounds which are conducted from 8:30-10:30 a.m. The nursing staff will provide instruction in critical care skills such as endotracheal suctioning, management of multiple intravenous lines including Swan-Ganz and central venous catheters, proper administration of medications such as antibiotics and pressors, etc. The student will not be required to perform any laboratory tests except those associated with special procedures (such as a lumbar puncture) performed with, and under the direction of, the house officers.

(Johns Hopkins Bayview Medical Center). Dr. Herlong and staff. Available September through June; 3 students. One-half quarter. Two month drop notice.
Prerequisite: Medicine Core Clerkship.

The student will have the responsibilities of a medicine intern under the supervision of an assistant resident and an attending physician on one of the medical units. The responsibilities are similar of those of an intern on the service, but with fewer patients and with even more direct resident supervision. The student will admit patients in rotation, evaluate these patients thoroughly, and directly supervise appropriate therapy. The student functions as part of a ward team which takes long call every fourth day and short call in-between. Typically, the subintern admits one to two patients on long call and one patient on short call, with a total
service of about four patients. Students participate fully in the activities of the unit and attend conferences, including morning report, noon conference, and Grand Rounds.

E 8. Advanced Clinical Clerkship in Medicine. (Greater Baltimore Medical Center). Dr. Caccamese and staff. Available all year. One-half quarter. 
Prerequisite: Medicine Core Clerkship.

Students are assigned to a medical unit and assume charge of patients in rotation under the supervision of the resident, visiting staff, and Chief of Medicine. On-call schedule is every fourth night. Students participate fully in all teaching activities of residency training, including twice weekly rounds with the Chief of Medicine, rounds with the visiting physician, pathology rounds and combined service rounds. The elective provides an opportunity to participate in the care of both hospitalized and ambulatory patients in a community hospital.

E 9. Advanced Clinical Clerkship in Medicine. (Sinai Hospital). Dr. John Cmar, Dr. Charles Albrecht, and staff. Available all year; arrange through Dr. Albrecht. One-half or full quarter. 
Prerequisite: Medicine Core Clerkship.

This course is offered to provide a comprehensive and meaningful patient care experience in a supervised teaching environment. The student is assigned to a housestaff team on one of the general medicine units and functions as an integral member of the team at a level expected of interns. Supplemental rotations in the Intensive Care Unit, the Emergency Room, or a subspecialty division are available. Teaching is centered on patient care and is supplemented by departmental conferences.

CARDIOLOGY DIVISION

DR. TOMASELLI, DIRECTOR
DR. KASPER, CLINICAL DIRECTOR
DR. M.R. ABRAHAM
Clinical cardiology; stem cell engraftment in the heart.
DR. T. ABRAHAM
Echocardiography.
DR. ARBAB-ZADEH
Coronary circulation and disease; coronary/vascular imaging; coronary risk prediction.
DR. ACHUFF
Clinical cardiology.
DR. ARNETT
Clinical and invasive cardiology.
DR. BAROUCH
Molecular mechanisms of heart failure.
DR. BECKER
Myocardial blood flow; nuclear cardiology.
DR. BERGER
Cardiac electrophysiology; hemodynamics of cardiac pacing; autonomic influences on cardiovascular system.
DR. BLUMENTHAL
Atherosclerosis progression and regression; medical and interventional management of coronary artery disease.
DR. BRINKER
Angiography; angioplasty; myocardial function.
DR. BUSH* Cardiac CT.
DR. CALKINS
Clinical and cellular electrophysiology.

DR. CHACKO
Coronary artery disease; peripheral arterial disease; carotid artery disease; valvular heart disease; structural heart disease; acute coronary syndromes; stents; cardiac critical care.
DR. CHANDRA* Cardiopulmonary resuscitation.
DR. CHENG
Clinical electrophysiology.
DR. CINGOLANI
Heart failure; hypertension; cardiac remodeling and hypertrophy.
DR. CORRETTI
Ultrasound assessment of endothelial function/vascular physiology; echocardiography; valve disease.
DR. GEORGE
Cardiovascular CT; nuclear cardiology; myocardial perfusion imaging; non-invasive imaging of coronary atherosclerosis; subclinical atherosclerosis.
DR. GERSTENBLUTH
Age changes in cardiac function.
DR. S. H. GOTTLEIB* Ischemic heart disease, diabetes and heart disease.
DR. GRIFFITH
Clinical cardiology.
DR. HALPERIN
Biomedical engineering and biomechanics, electrophysiology.
DR. HAYS
Cardiac MR; proton spectroscopy; coronary endothelial function; diabetic cardiomyopathy; echocardiography.

DR. HENRIKSON
Clinical electrophysiology.
DR. HIRSCH*
Clinical cardiology; cardiovascular MRI; ischemic heart disease; cardiovascular epidemiology.
DR. JOHNSTON
Stem cell therapy; interventional cardiology; coronary disease.
DR. JONES
Lipids and cardiovascular risk stratification.
DR. JUDGE
Cardiac genetics; pathogenesis of Marfan Syndrome, identification of genes responsible for familial cardiomyopathies.
DR. KASPER
Cardiomyopathy; heart transplantation; clinical cardiology.
DR. KASS
Hemodynamics; left ventricular function.
DR. KELEMAN
Exercise.

DR. KOLANDAIVELU
MR imaging of intermingled arrhythmic and non-arrhythmic heartbeats.
DR. KRAL
Genetic and biological mechanisms of premature coronary artery disease; noninvasive imaging of coronary atherosclerosis; stress myocardial perfusion imaging; cardiovascular and genetic epidemiology; association of mental stress and cardiovascular disease.

DR. LARDO
Cardiovascular imaging.
DR. LIMA  
Left ventricular remodeling; mitral valve disease; transesophageal echocardiography; MRI, CT.  
DR. MARIE*  
Electrophysiology.  
DR. MAUGHAN  
Trinidad and Tobago Cardiology Program.  
DR. MAYER*  
Echocardiography.  
DR. MCCLEAN  
Beta receptor polymorphism and the pharmacogenics of beta blocker therapy; the treatment of cardiovascular disease in patients with chronic renal disease.  
DR. MICHOS  
Preventive cardiology; heart disease in women; subclinical atherosclerosis imaging; vitamin D deficiency and cardiovascular risk.  
DR. MILLER  
Acute coronary syndromes; antiplatelet and antithrombotic therapy; microvascular obstruction; multidetector computed tomography angiography; novel therapies for myocardial infarction; angiogenesis; peripheral vascular disease; novel therapies for peripheral vascular disease; claudication; angiogenesis.  
DR. NAZARIAN  
Clinical electrophysiology.  
DR. O’ROURKE  
Cellular physiology; mitochondrial metabolism.  
DR. OUYANG*  
Cardiovascular pharmacology.  
DR. PAOLOCCI  
Molecular mechanisms of heart failure.  
DR. POST  
Echocardiography and hypertension.  
DR. RADE  
Vascular biology and interventional cardiology.  
DR. RATCHFORD  
Claudication/peripheral arterial disease; carotid stenosis.  
DR. RESAR  
Interventional cardiology.  
DR. RILEY  
Clinical cardiology.  
DR. ROUF  
Heart failure.  
DR. RUSSELL  
Heart failure; cardiac transplantation.  
DR. SCHULMAN  
Clinical trials; hypertension.  
DR. SHAPIRO*  
Echocardiography.  
DR. SILBER*  
Acute coronary care; MRI.  
DR. SINHA  
Clinical electrophysiology.  
DR. SPRAGG  
Clinical electrophysiology.  
DR. STEWART*  
Exercise training for cardiovascular disease and heart failure; exercise training for diabetes and hypertension; weight loss effects through diet and exercise on body composition and CV health; exercise for cancer patients; increasing physical activity in the community.  
DR. STRAHAN  
Echocardiography.  
DR. TANIO  
Clinical cardiology.  
DR. THIEMANN  
Information systems; angioplasty.  
DR. TOMASELLI  
Cellular electrophysiology.  
DR. TRAILL  
Regional cardiac function; congenital heart disease.  
DR. TRUST  
Interventional cardiology.  
DR. J. L. WEISS  
Ultrasound imaging; ventricular function.  
DR. R. G. WEISS  
Cardiac metabolism; NMR.  
DR. M. WILLIAMS*  
Platelets and acute coronary syndromes.  
DR. WITTSTEIN  
Heart failure, clinical trials.  
DR. WU  
Echocardiography; MRI.  
DR. ZIEGELSTEIN*  
Clinical cardiology; depression and its effects on cardiac diseases.  

*Johns Hopkins Bayview faculty

Prerequisites: Medicine and Surgery Core Clerkships.  
The student participates in the activities of the Cardiovascular Division, particularly the clinical service. Through inpatient consultations, the inpatient service, and the outpatient clinics, the student gains experience in the cardiac examination, the use and interpretation of non-invasive studies (electrocardiography, exercise testing, nuclear cardiology, and echocardiography), and invasive procedures (angiography, angioplasty, electrophysiology studies).  

Prerequisites: Medicine and Surgery Core Clerkships.  
The student participates in the activities of the Cardiovascular Division, particularly the clinical service. Through inpatient consultations, the inpatient service, and the outpatient clinics, the student gains experience in the cardiac examination, the use and interpretation of both non-invasive and invasive studies.  

Prerequisites: Medicine and Surgery Core Clerkships.  
The student participates in the daily activities of the Coronary Intensive Care Unit and works closely with the medical housestaff, cardiology fellow, and attending physician. The student gains experience in: the evaluation and management of critically ill cardiac patients; dysrhythmias; interpretation of electrocardiograms, echocardiograms, and other non-invasive studies; invasive procedures such as line placement, circulation assist devices, angiog-
raphy, angioplasty; electrophysiologic studies; and hemodynamic monitoring. Prior significant background in cardiac physiology and hemodynamics is recommended.


Prerequisites: Medicine and Surgery Core Clerkships; Clerkship in Cardiology.

The student functions as a member of the medical team at the level of an intern, with the close supervision of the senior housestaff, cardiology fellow, and attending physician. Experience is gained in the evaluation and management of critically ill cardiac patient; dysrhythmia diagnosis and management; the interpretation of non-invasive studies; invasive procedures such as line placement and hemodynamic monitoring; and cardiovascular pharmacology. A sound understanding of cardiac physiology and hemodynamics is desirable, and completion of a clerkship in medicine is required.

E 5. Advanced Clinical Clerkship in Cardiology. (Union Memorial Hospital). Drs. R. Ferguson, J. Quarrter, and staff. Available all year. Half or full quarter. Lottery; 2-month drop notice required.

Prerequisite: Medicine Core Clerkship.

The goal is to provide the student with a clinical experience in inpatient cardiology centered around the coronary care unit. Patients will be evaluated by the student as the primary physician functioning at an internship level. Patients will be followed into progressive care with the student participating in decisions relating to diagnosis and management as well as discharge planning. Emphasis will be placed upon daily teaching rounds, through which the student will be exposed to bedside teaching providing experience in auscultation and other means of diagnosis. An active laboratory, including cardiac catheterization, will provide adjunctive information on hospitalized patients. These are four-week rotations. Hours of participation are full time, along the same schedule as housestaff, with every fourth night call. The day begins at 8:00 a.m. with morning report. On-call rooms, food tickets, free parking passes, and a full-service library with Medline search and photocopying privileges are provided.

E 6. Preventive Cardiology. Drs. Blumenthal, Kwiterovich, and Post. Available Quarter 4 and Summer. Elective requires permission of Dr. Blumenthal. Only one student can be accommodated per quarter.

Prerequisites: Medicine Core Clerkship and Clinical Epidemiology (Epidemiology 345.601)

This unique elective involves inpatient and outpatient clinical experiences, including participation in the Preventive Cardiology Center Clinic, participation in the Lipid Clinic, and participation in interpreting tests measuring subclinical atherosclerosis. In addition to regular conferences, students will learn about clinical research methods and risk factor reduction. We also offer participation in a number of community-based risk factor screening programs and in ongoing or new research projects in preventive cardiology. Interested students are encouraged to contact us with questions.

E 7. Practical Experience in the Physiology of Cardiovascular Disease. Dr. Kass and staff. Available as arranged through Dr. Kass; one student per year will be supported by the Alan P. Tramakas Memorial Fund.

Students are encouraged to initiate research work with faculty guidance within such clinical areas as the Coronary Care Unit, the Nuclear Cardiology Unit, the Heart Station and the Cardiac Catheterization Laboratory. There are outstanding opportunities for students to participate in basic research efforts. Students can productively engage in research activities dealing with left ventricular function, the physiology and biochemistry of ischemic heart disease, the pathophysiology of sudden death, and the pathophysiologic basis of cardiac disease.

ENDOCRINOLOGY AND METABOLISM DIVISION

DR. LADENSON, DIRECTOR

DR. BALL

Medullary thyroid carcinoma; multiple endocrine neoplasia; regulation of calcitonin gene expression.

DR. BROWN

Endocrine problems in HIV; diabetes mellitus.

DR. COOPER

Thyroid disorders; antithyroid drug pharmacology.

DR. DOBS

Hyperlipidemia and diabetes mellitus; gonadal disorders.

DR. DONNER

Diabetes mellitus.

DR. GOLDEN

Diabetes mellitus and lipid disorders.

DR. KALYANI

Diabetes mellitus.

DR. LADENSON

Thyroid disorders; thyroid hormone therapy; endocrine health economic analysis.

DR. SALVATORI

Neuroendocrine and pituitary disorders.

DR. WAND

Neuroendocrine and thyroid disease; cellular mechanisms of addiction.

DR. XING

Thyroid cancer; pituitary disorders.

E 1. Consultation Service in Endocrinology. Director, Dr. Ladenson, Drs. Ball, Brown, Cooper, Dobs, Donner, Golden, Kalyani, Salvatori, Wand, and Xing. Available all year. One-half or full quarter; 1 or 2 students.

Prerequisite: Any Core Clerkship.

This elective offers students an introduction to clinical endocrinology and metabolism by participating in the patient care and teaching activities of the division. Students see outpatients in daily ambulatory clinics (General Endocrine, Diabetes, Neuroendocrine-Pituitary, and Thyroid Clinics). They also perform inpatient endocrine consultations under supervision of a fellow and review them with the faculty on daily teaching rounds. In both settings, students perform the primary assessment.

In addition to attending all the division’s regular conferences (Endocrine Grand Rounds, Journal Club, and Research Conference, Endocrine Pathol-
ogy, Endocrine Surgery and Thyroid Tumor Center Conferences), students participate in a special lecture series targeted to their needs. This Core Endocrine Concepts seminar series (two per week) covers a range of core topics in clinical endocrinology and metabolism.

All students will have the opportunity of participating in the educational program in the Diabetes Center (JHOC-2nd Floor) for patients with diabetes. By special arrangement, students may pursue a clinical or laboratory research project under the preceptorship of a faculty member for a full quarter or longer.

Further details and application information can be found at www.jhu.edu/endocrinology.

GASTROENTEROLOGY DIVISION

DR. KALLOO, DIRECTOR
DR. ABRAHAM
Delivery of radioisotope to cancer cells by novel small peptides.

DR. AGARWAL
Understanding the molecular, cellular, and epigenetic features of esophageal and gastric adenocarcinomas.

DR. BAYLESS
Crohn's Disease; ulcerative colitis; genetics of inflammatory bowel disease.

DR. BRANT
Ulcerative colitis; genetics of inflammatory bowel disease; Crohn's Disease.

DR. CANTO
Endoscopic ultrasonography; therapeutic endoscopy; Barrett's esophagus; outcomes research in endoscopy.

DR. S. CHAKRAVARTI
Extracellular matrix changes in IBD, gene expression profiling using DNA microarray.

DR. CLARK
Swallowing disorders; esophageal disorders; gastroesophageal reflux disease; eosinophilic esophagitis; motility disorders.

DR. DONOWITZ
Diarrheal diseases; inflammatory bowel disease.

DR. DUDLEY-BROWN
Inflammatory bowel disease.

DR. GIARDIELLO
GI and liver complications following bone marrow transplantation; molecular genetics of hepatocellular carcinoma; transcriptional regulation of the c-Myc oncoprotein.

DR. KHASHAB
Pancreatitis; pancreatic cyst; endoscopic ultrasound; ERCP.

DR. KOYTEISH
Liver regeneration with special focus on alcoholic liver disease and the role of hematopoietic stem cells in liver regeneration.

DR. KOBASUK
Ion transport properties of ionophores in artificial bilayer lipid membranes; analytical and qualitative optical microscopy; quantitative fluorescence microscopy.

DR. LEE
GI and liver complications following bone marrow transplantation; molecular genetics of hepatocellular carcinoma; transcriptional regulation of the c-Myc oncoprotein.

DR. LENNON
Pancreatitis; pancreatic cyst; endoscopic ultrasound; ERCP.

DR. X. LI
Regulation of Na-H2 channels by lipid RAFTs; IBD research.

DR. Z. LI
Nutritional effects on hepatic innate immune system and their roles in liver injury and regeneration.

DR. MELTZER
Gastrointestinal cancer and precancer biomarker discovery, development, and validation; genomics, epigenomics, and bioinformatics; early detection of cancer; outcomes research in cancer and precancer.

DR. MEZEEY
Alcoholic liver disease and fibrosis; liver transplantation.

DR. MORI
Identification and characterization of novel tumor suppressor genes in gastric and colon cancers utilizing systematic genome-wide genetic and epigenetic screening methods. Mismatch-repair deficiency-associate cancers including HNPCC.

DR. MULLIN
The role of early intervention of nutritional support in the hospitalized setting to improve outcomes.

DR. OKOLO
ERCP; endoluminal stenting; interventional and innovative endoscopy; outcomes and decision analyses in gastroenterology; clinical epidemiology.

DR. POTTER
Effect of ethanol and its metabolites on the x2(l) and x1(l) collagen promoters; role of leptin on fibrogenesis; role of Kupffer cells; cytokines, retinoic acid, and leptin in stellate cell activation (transdifferentiation) and collagen production; hormonal regulation of rat class I alcohol dehydrogenase; transcriptional regulation of rat class I alcohol dehydrogenase promoter.

DR. RAVICH
Swallowing disorders; esophageal and gastro-esophageal reflux; Barrett's esophagus.

DR. SARKAR
Signaling pathways of human intestinal Na+/H+ exchanger 2 (NHE3) regulation; transactivation of NHE3; knock-down NHE3 regulatory proteins by shRNA.

DR. TSE

Prerequisites: Medicine Core Clerkship.
Students participate in evaluating inpatients and out-patients with a wide variety of gastroenterologic complaints and problems. Interpretation of radiologic procedures, biopsies, and tests of physiologic function is an integral part of the course. Students participate in ward rounds, the Inflammatory Bowel Disease Center, the weekly GI clinical conference, the bi-weekly GI seminar, journal club, and research conference. Circumscribed clinical investigation and clinical-pathologic correlation are possible by arrangement.


Prerequisites: Medicine Core Clerkship.
This elective rotation offers a broad based exposure to clinical gastroenterology in consultation on inpatient services, in outpatient referrals to individual faculty, and in outpatient clinic. Experience in the use and interpretation in upper and lower tract endoscopy, motility studies and biopsies is provided. Attendance at weekly Clinical Pathology and G.I. Conference is required.


Prerequisites: Medicine Core Clerkship.
Opportunities are available to participate in ongoing clinical and laboratory research projects and to participate in the design and execution of new projects. Areas of current research activity are molecular and cell biologic approaches to intestinal ion transport and epithelial cell differentiation, diarrheal disease mechanisms, inflammatory bowel disease, swallowing disorders, patch clamp studies of ion channels, fluorescence imaging of intracellular messengers, colonic control of gastric emptying, and experimental models of colon carcinogenesis, and differentiation.


Opportunities are available to participate in ongoing clinical and laboratory research projects and to assist in the design and development of new projects in the general field of hepatic metabolism of alcohol and drugs.

E 5. Seminar in Intracellular Mediators in G.I. Diseases. Dr. Donowitz.

A year long, one hour a week journal club attended by faculty, fellows, and students with themes relating to regulation of absorption and secretion by intracellular intermediates.

GERIATRIC MEDICINE DIVISION

DR. DURSO, DIRECTOR
DR. ABADIR
Basic research mitochondria/frailty.

DR. ARBAJE
Clinical services research health care transition.

DR. AWAN
Post hospital critical care.

DR. BARRON
Critical care/medical student training.

DR. BELLANTONI
Geriatric medicine; osteoporosis.

DR. BOULT
Subacute and chronic care of the elderly; history of medicine.

DR. BOYD
Physical function; hazards of hospitalization; health services research.

DR. BURTON
New approaches to treating elderly patients at home; geriatrics education.

DR. CAYEA
Educational outcomes research.

DR. CHAVES
Epidemiology/clinical translation.

DR. CHRISTMAS
Osteoporosis and hip fracture; subacute care.

DR. COLVIN
Hip fracture geriatrics co-management.

DR. CORDTS
Palliative care.

DR. DURSO
Management of diabetes; urinary incontinence; community-based geriatrics.

DR. FEDARKO
Bone metabolism; tumor progression.

DR. FINUCANE
Ethical issues regarding health care decisions.

DR. GREENOUGH
Wound care and hydration in the institutionalized elderly; ventilator care.

DR. HAYASHI
House calls.

DR. LEFF
New approaches to treating elderly patients at home.

DR. LENG
Molecular biology of frailty.

DR. MCNABNEY
Health care delivery in a capitated model; community-based long-term care.

DR. OH
Biomarkers of Alzheimer’s disease.

DR. ROY
Chronic inflammation and anemia.

DR. VARADHAN
Multisystem deregulation in frailty.

DR. WALSTON
Genetics and clinical research applications to diabetes in the elderly.

DR. XUE
Biostatistical models of frailty.

DR. YASAR
Dementia.

E 1. Clinical Clerkship in Geriatric Medicine. Drs. Cayea (Director), Arwam, Barron, Bellantoni, Boult, Boyd, Burton, Christmas, Colvin, Durso, Finucane, Greenough, and McNabney. Available all year; two students per period. One-half quarter or longer.

Prerequisite: Medicine Core Clerkship.

The course is designed to provide an in-depth exposure to geriatric medicine and gerontology.
The student will work closely with members of the faculty in the following programs:

Geriatric Rehabilitation Unit: The student will work directly in patient care gaining first-hand experience in managing patients with multiple health problems. The value of a multi-disciplinary approach to geriatric medicine will be emphasized, and the student will have ample opportunity to learn to evaluate and treat many of the important problems in patients in a long-term care institution. There is no night call.

Physician House Call Program: The student will evaluate and follow a selected group of patients who are home-bound because of illness. This involvement will permit the student further exposure to a multidisciplinary team, and sensitize the student to this important mode of geriatric health care delivery.

Ambulatory Care: The student may elect to spend a portion of the time working with a member of the faculty in the Beacham Ambulatory Care Center on the Johns Hopkins Bayview Medical Center campus, or one of the division’s other primary care sites- Johns Hopkins at White Marsh, or Johns Hopkins at Keswick.

Inpatient Care: Experiences are also available on the palliative care consult service and geriatrics consult service.

Teaching Conference: The student will participate in the weekly clinical hematology rounds and seminars attended by faculty members, the clinical and research fellows, and the housestaff on geriatric medicine rotation.

Research Seminars: If interested, the student may participate in the divisional research seminars which often include presentations by visiting professors.

Each student may elect to emphasize one or more aspects of the program.


Electives are available providing participation in research projects utilizing molecular biology, cell biology, mechanisms of metastasis and clinical research tools to study type II diabetes, obesity, frailty, aphasia, dementia, osteoporosis, enteric infection and other areas of faculty research activity.

The Sol Goldman Student Award in Geriatric Medicine. A fund was established in 1986 by the Goldman family to honor the late Sol Goldman. Income from this fund is to be used to support a student in the School of Medicine who is interested in the special health needs and issues of older adults. One or two awards of $1,000 are given annually to outstanding students who successfully complete an elective in geriatric medicine.

HEMATOLOGY DIVISION
DR. BRODSKY, DIRECTOR
DR. BRODSKY
Bone marrow failure disorder.
DR. DANG
Oncogenes and cell proliferation.
DR. EMADI
Molecular pharmacology.
DR. GERBER
Leukemic stem cell biology.
DR. KICKLER
Immunohematology.
DR. LANZKRON
Anemias and other bleeding disorders, with emphasis on sickle cell disorders.
DR. MCDEVITT
Myeloproliferative and myelodysplastic disorders.
DR. MERCHANT
Cancer stem cells.
DR. MOLITERNO
Polycythemia vera.
DR. NESS
Transfusion practices.
DR. RESAR
Oncogenes and cell proliferation.
DR. SHANBHAG
General hematology and lymphoproliferative disorders.
DR. SPIVAK
Myeloproliferative disorders.
DR. STREIFF
Hemorrhagic and thrombotic disorders.

E 1. Clinical Clerkship in Hematology, Drs. Streiff (Course Director), Brodsky, Dang, Emadi, Gelber, Kickler, Lanzkron, McDevitt, Moliterno, Ness, Resar and Spivak. Available all year; limited to 3 students per half-quarter.

This course will provide the student with a broad exposure to clinical hematology. Students will evaluate inpatients and outpatients with a wide range of blood disorders under the direct supervision of the division faculty. Clinical experience is supplemented by regularly scheduled conferences and lectures. Formal instruction is provided in the preparation and interpretation of blood and marrow slides, performance of bone marrow examination aspiration and biopsy, with unlimited access to the division’s collection of pathology specimens, teaching slides, library and journal collection. Students may also engage in an independent project.

E 2. Clerkship in Clinical Hematology and Medical Oncology. (Johns Hopkins Bayview Medical Center). Drs. Merchant, Purcell, and Shanbhag. Available all year. 4 to 6 weeks; limited to one student.

Prerequisite: Medicine Core Clerkship.

Senior elective in Hematology/Oncology in an academically-oriented community hospital setting. Students will participate on the inpatient consultation service as well as rounds with faculty on the inpatient Cancer Center. Students will also see patients in attendings’ offices and in the ambulatory chemotherapy setting. Participation in weekly Tumor Board and weekly conferences are encouraged.

ALLERGY AND CLINICAL IMMUNOLOGY DIVISION
DR. BOCHNER, DIRECTOR
DR. ADKINSON*
Drug hypersensitivity; immunotherapy; childhood asthma.
DR. BARNES*
The genetic epidemiology and molecular genetics/genomics of complex lung inflammatory diseases.
Students may participate in short-term clinical or laboratory investigation projects under the supervision of one of the faculty. Students will attend divisional educational activities including research conferences, journal review sessions, and clinical rounds.

**INFECTIOUS DISEASES DIVISION**

DR. THOMAS, DIRECTOR
DR. ANDRADE
- HIV medicine and pharmacology.
DR. AUWAERTER
- Lyme disease; general ID clinical care.
DR. BALAGOPAL
- HIV and HCV pathogenesis.
DR. BARTLETT
- Anaerobic infections; antibiotic-associated diarrhea and colitis; HIV/AIDS.
DR. BERRY
- HIV health outcomes.
DR. BISHAI
- Tuberculosis.
DR. BLANKSON
- HIV pathogenesis.
DR. BOLLINGER
- Host defense in HIV; tropical infections.
DR. CHAISSON
- Mycobacteria infections; HIV/AIDS.
DR. L. CHANG
- International HIV.
DR. COSGROVE
- Infection control and antibiotic control.
DR. COX
- Pathogenesis of Hepatitis C.
DR. DORMAN
- TB and atypical mycobacteria.
DR. FLEXNER
- AIDS; Clinical pharmacology.
DR. GALLANT
- Epidemiology of HIV.
DR. GAYDOS
- Chlamydia pneumoniae and STDs.
DR. GEBO
- HCV and HIV databases.
DR. GHANEM
- Sexually transmitted infections.
DR. GOUNDER
- TB operational research.
DR. GROSSET
- TB.
DR. GUPTA
- HIV and co-morbidities management research in resource-limited settings.
DR. HOFFMANN
- International HIV.
DR. HYNES
- STD’s; tropical medicine.
DR. KARAKOUSIS
- Tuberculosis.
DR. KERULY
- Epidemiology and service utilization in HIV management.
DR. LUCAS
- HIV and substance abuse.
DR. MANABE
- Tuberculosis.
DR. MARAGAKIS
- Infection control.
DR. MARR
- Transplant and oncology infectious diseases.

---

**E 1. Clerkship in Allergy and Clinical Immunology**


**Prerequisite:** Medicine Core Clerkship.

Students participate in the activities of the division, including; consultations requested on inpatients at the Johns Hopkins Bayview Medical Center and the Johns Hopkins Hospital; evaluation and management of inpatients at the Johns Hopkins Bayview Medical Center; evaluation of outpatients in the Asthma and Allergy Center; and training in the performance and interpretation of immunologic tests in clinical medicine. Students will attend divisional research and clinical conferences.

---

**E 2. Practicum in Clinical Immunology**

Drs. Bochner, Saini, and staff. Available all year. One-half quarter or longer.

**Prerequisite:** Second Year status.
Dr. McKenzie*  
Travel medicine; HIV.

Dr. Melia  
ID and HIV clinical care.

Dr. Neofytos  
Transplant and oncology infectious diseases.

Dr. Nuernberger  
TB and pneumonia.

Dr. Osburn  
Neutralizing antibody responses in HCV infection; role of CCR5 in clearance of HBV.

Dr. Page  
International and immigrant health.

Dr. Perl  
Hospital infection control.

Dr. Pham  
Pharmacology.

Dr. Quinn  
Sexually transmitted disease; chlamydia; AIDS.

Dr. Ray  
Hepatitis C virology.

Dr. Rompalo*  
Sexually transmitted diseases.

Dr. Sears  
Mechanisms of diarrhea.

Dr. Shah  
TB diagnosis.

Dr. Shoham  
Transplant and oncology infectious diseases.

Dr. Sinha  
International HIV.

Dr. Sulkowski  
Hepatitis.

Dr. Thomas  
Hepatitis.

Dr. Zililman*  
Sexually transmitted diseases; H. simplex; HIV.

* Bayview faculty

**E 1. Clinical Clerkship in Infectious Diseases.**  
Drs. Bartlett, Cosgrove, Maragakis, Nuernberger, Quinn, Ray and staff. Available all year. One-half quarter or longer; limited to 4 students per half quarter. Lottery elective.  
**Prerequisite:** Medicine Core Clerkship.

A clinically oriented clerkship devoted to the management of infectious diseases. Students answer consultation requests, review findings with fellows, and present cases to the attending on afternoon rounds held daily. There is extensive interaction with the microbiology laboratory, including group teaching sessions held 3-5 hours per week in bacteriology, virology, parasitology and mycology. Group teaching sessions are held weekly with Dr. Bartlett to discuss clinically oriented topics such as intraabdominal sepsis, pneumonia, antibiotics, fever of obscure origin, and so forth. Goals of the elective are to provide guidelines to an approach to patients with established or suspected infections on the medical and surgical services. Methods to establish an etiologic diagnosis and rational use of antibiotics are emphasized.

**E 2. Subinternship in Infectious Diseases-AIDS Service.**  
Dr. Blankson. Available all year.  
**Prerequisite:** Medicine Core Clerkship.

A subinternship on the inpatient AIDS service. Students will evaluate and manage inpatients with acquired immunodeficiency syndrome or advanced HIV infection. The inpatient AIDS service is a multidisciplinary geographic unit with strong support from neurology, dermatology, pulmonary, renal, nutrition, occupational and physical therapy, and other specialties. Rotation includes daily work rounds, twice-weekly educational seminars, and extensive readings. At the completion of the rotation, the student will be well acquainted with the diverse manifestations of HIV infection.

**GENERAL INTERNAL MEDICINE DIVISION**

Dr. Brancati, Director  
Dr. Flynn, Clinical Director  
Dr. Alvanzo  
Vascular disease; atherosclerosis and inflammatory biomarkers.

Dr. Amer  
Consultations in internal medicine, Johns Hopkins Medicine International.

Dr. Appel  
Prevention of blood pressure-related cardiovascular and kidney diseases through pharmacologic and non-pharmacologic approaches, often nutrition-based.

Dr. Ashar  
Complementary and alternative medicine; physician conflicts of interest; anemia; osteoporosis; medical education.

Dr. Bass  
Evidence-based medicine; medical and surgical outcomes research; cost-effectiveness; community health partnerships; medical education and curriculum development.

Dr. Beach  
Physician-patient relationships and communication; respect, bioethics, healthcare quality for vulnerable populations; HIV; sickle-cell disease.

Dr. Becker  
Genetics/epidemiology of premature CVD; molecular and physiologic aspects of CVD risk; community-based CVD prevention; social/behavioral science; health disparities.

Dr. Bennett  
Women’s health, diabetes, and obesity.

Dr. Berger  
Patient-provider communication in the hospital; agenda setting during the outpatient visit; patient-provider diagnostic concordance.

Dr. Berkenblit  
Improving resident training in HIV outpatient care; design and evaluation of an internet-based curriculum.
<table>
<thead>
<tr>
<th>Name</th>
<th>Research Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR. BOONYASAI</td>
<td>Care coordination; quality improvement/patient safety for chronic disease; teamwork; human factors.</td>
</tr>
<tr>
<td>DR. BOULWARE</td>
<td>Quality and access to care in chronic kidney disease; organ donation; racial and ethnic disparities.</td>
</tr>
<tr>
<td>DR. BRANCATI</td>
<td>Obesity, diabetes, and related conditions.</td>
</tr>
<tr>
<td>DR. BROTMAN</td>
<td>Hospital medicine; perioperative medicine; hemostasis and thrombosis; the physiological stress response.</td>
</tr>
<tr>
<td>DR. BROWN</td>
<td>Obesity.</td>
</tr>
<tr>
<td>DR. CHANDER</td>
<td>Clinical epidemiology of HIV/AIDS and hepatitis C.</td>
</tr>
<tr>
<td>DR. CLARK</td>
<td>Obesity, diabetes, and related conditions, including nonalcoholic fatty liver disease (NAFLD).</td>
</tr>
<tr>
<td>DR. CLEVER</td>
<td>Patient-physician communication; medical education.</td>
</tr>
<tr>
<td>DR. CODORI</td>
<td>Rapid HIV testing in emergency departments; MRSA prevalence in emergency departments; depression in medical students.</td>
</tr>
<tr>
<td>DR. COFRANCESCO</td>
<td>Medical education; HIV care and antiretroviral management; HIV lipodystrophy and metabolic complications.</td>
</tr>
<tr>
<td>DR. COOPER</td>
<td>Patient-physician relationship and communication; patient-centered care; race/ethnic disparities.</td>
</tr>
<tr>
<td>DR. DAUMIT</td>
<td>Medical comorbidity; access to and quality of primary medical care of individuals with severe and persistent mental illness; health disparities.</td>
</tr>
<tr>
<td>DR. FELDMAN</td>
<td>Resident education; evidence-based medicine; consult medicine.</td>
</tr>
<tr>
<td>DR. FITZGERALD</td>
<td>Primary care; physician leadership.</td>
</tr>
<tr>
<td>DR. FLYNN</td>
<td>Arthritis; ambulatory education and the delivery of primary care in an academic setting.</td>
</tr>
<tr>
<td>DR. FORD</td>
<td>Primary care research; epidemiology and treatment of depression; internet health applications; physician health.</td>
</tr>
<tr>
<td>DR. GELLER</td>
<td>Communication and decision-making; ethics and professionalism; genetics; women’s health; medical education; complementary and alternative medicine.</td>
</tr>
<tr>
<td>DR. GIBBS</td>
<td>Diversity in health.</td>
</tr>
<tr>
<td>DR. GORDON</td>
<td>Women’s health; medical education; role of diet and exercise in wellness and chronic illness prevention.</td>
</tr>
<tr>
<td>DR. GOYAL</td>
<td>Effects of meditation on chronic pain and symptoms; stress and overall health; low-cost means to improve health in rural India; ethics.</td>
</tr>
<tr>
<td>DR. GREER</td>
<td>Health disparities in chronic kidney disease.</td>
</tr>
<tr>
<td>DR. HERZKE</td>
<td>Resident and student education; infectious diseases, notably infection control; quality improvement.</td>
</tr>
<tr>
<td>DR. HILL-BRIGGS</td>
<td>Chronic disease self-management; disability; quality of life; minority health.</td>
</tr>
<tr>
<td>DR. HUGHES</td>
<td>Clinical bioethics, research ethics; palliative care; philosophy of medicine; ambulatory care.</td>
</tr>
<tr>
<td>MS. JENKES</td>
<td>Bioterrorism; HIV/AIDS; behavioral interventions; qualitative research methods.</td>
</tr>
<tr>
<td>DR. KEBEDE</td>
<td>Health policy/management; global health; medical education; health literacy; health disparities; health service quality and patient satisfaction.</td>
</tr>
<tr>
<td>DR. KOTTOOR</td>
<td>Benefits of genetic principles in delivery of primary care; transition of patients and families from pediatric to adult medical care; internal medicine; pediatrics; medical genetics.</td>
</tr>
<tr>
<td>DR. KEVIN</td>
<td>Community-based prevention of cardiovascular disease; behavioral aspects of prevention.</td>
</tr>
<tr>
<td>DR. LEVY</td>
<td>General internal medicine; genetics.</td>
</tr>
<tr>
<td>MR. LICHTMAN</td>
<td>Medical procedures; hospitalist medicine.</td>
</tr>
<tr>
<td>DR. MARINOPoulos</td>
<td>Evidence-based medicine; university health; health care administration.</td>
</tr>
<tr>
<td>DR. MARUTHUR</td>
<td>Primary care; individualized medicine for the prevention and treatment of type 2 diabetes and obesity; pharmacogenomics of type 2 diabetes; comparative effectiveness.</td>
</tr>
<tr>
<td>DR. MATHIAS</td>
<td>Genetics of asthma, allergy, and cardiovascular disease.</td>
</tr>
<tr>
<td>DR. E. MILLER</td>
<td>Hypertension; clinical trials; non-pharmacologic therapies; antioxidants.</td>
</tr>
<tr>
<td>DR. R. MILLER</td>
<td>Women’s health; physician practice issues; medical education.</td>
</tr>
<tr>
<td>DR. R. MOORE</td>
<td>Pharmacoepidemiology; outcomes research in HIV treatment; epidemiology of substance abuse and alcoholism.</td>
</tr>
<tr>
<td>MS. MOY</td>
<td>Cardiovascular disease and community based CVD prevention.</td>
</tr>
<tr>
<td>DR. ODUJEBO</td>
<td>Gastroenterology; liver disease.</td>
</tr>
<tr>
<td>DR. PAHWA</td>
<td>Hospitalist medicine.</td>
</tr>
<tr>
<td>DR. PEAIRS</td>
<td>Internal medicine; women's health.</td>
</tr>
<tr>
<td>DR. POLLACK</td>
<td>Cancer disparities; organization of cancer care; social determinants of health.</td>
</tr>
</tbody>
</table>
E 1. Internal Medicine Consultation Service. Dr. Feldman and staff. Available all year; one-half or full quarter.

Prerequisites: Medicine Core Clerkship.

Students care for all types of patients seen in the Internal Medicine Consultation Service, including surgical, gynecological, and psychiatric patients with internal medicine problems. Particular emphasis is given to perioperative medicine and increasingly to ambulatory consultation in areas such as same day surgery, general internal medicine and ambulatory psychiatry service. The students evaluate the patients initially and then present the patient care problem(s) to the attending faculty or senior clinical fellows in internal medicine. Students follow the inpatients daily during their hospitalization and, with the attending or fellow, make additional recommendations for evaluation and management. Selected articles regarding assessment and consultation are provided. Near the end of the experience, the students present a case they have seen on the service and discuss the essential features of the case at the regular Consultation Service Rounds with all faculty and fellows. Students also spend up to 2 1/2 days each week in the faculty ambulatory care clinic seeing patients with the faculty. The clerkship is particularly appropriate for students interested in entering a field of surgery, anesthesiology, psychiatry, or internal medicine.


Prerequisite: Medicine Core Clerkship.

Students can serve as subinterns on one of the Carol Johns service, Osler firm services, the Polk unit (HIV), or the Hospitalist service. On most of these services students work under the supervision and tutelage of interns, residents, and the admitting physician. On the hospitalist service, students work directly with the attending hospitalist physicians. Patients are assigned to each subintern, who fulfills the responsibilities of a PGY-1. Didactic sessions with the course directors are also part of this clerkship.

E 3. Advanced Clinical Clerkship in Internal Medicine. (Good Samaritan Hospital Internal Medicine Service) Dr. Chow and staff.

Prerequisite: Medicine Core Clerkship.

A mix of both outpatient and inpatient experiences which is designed to provide the student with a well-rounded view of General Internal Medicine. Students will serve as acting subinterns with direct patient care responsibilities on an inpatient general medical floor. They work with three medical interns under the direct supervision of a medical resident. Educational activities include attending rounds, daily conferences and morning report. In addition, each student spends at least two full afternoons...
per week evaluating ambulatory patients under the direct supervision of Drs. Carnivale and Rogers in a private office setting.

**OCCUPATIONAL MEDICINE DIVISION**

**DR. BERNACKI, DIRECTOR**

**DR. BERNACKI**
- Occupational epidemiology; cumulative trauma disorders.

**MR. SCHAEFER**
- Occupational health and safety.

**DR. SCHWARTZ**
- Lyme disease; occupational epidemiology.

**DR. TAO**
- Occupational epidemiology.

**DR. WEATHER**
- Biomarkers of occupational diseases.

**E 1. Clinical Clerkship in Occupational Medicine.** Drs. Bernacki, Schwartz, and Weaver. Available all year; one-half quarter or longer.

**Prerequisite:** Medicine Basic Clerkship.

Students participate in the clinical activities of the division. By evaluating patients with suspected occupational illness, students will expand their skills in medical history, physical assessment and differential diagnosis. The industrial setting from which the patient came will be evaluated and hazards quantified. The students will acquire new skills in clinical toxicology, industrial hygiene, and disability assessments. The emphasis during the course will be on a preventive approach to occupational medicine. Students may also participate in the clinical research activities of the division.

Students are invited to attend the regularly scheduled seminars and journal review sessions of the division.

See related courses in occupational medicine offered by the Department of Environmental Health Sciences in the School of Public Health.

**CLINICAL PHARMACOLOGY DIVISION**

**DR. SHAPIRO, DIRECTOR**

**DR. BUMPUS**
- Drug metabolism and hepatotoxicity.

**DR. DOOLEY**
- Antituberculosis drugs; co-treatment of HIV and tuberculosis.

**DR. FLEXNER**
- Anti-AIDS drugs.

**MR. FUCHS**
- Topical HIV microbicides.

**DR. HENDRIX**
- Drug development unit; phase I and II studies; antiviral drugs; chemoprophylaxis of infection; microbicides.

**DR. HUBBARD**
- Mass spectrometric analysis of small molecules.

**DR. LIETMAN**
- Antimicrobial chemotherapy; chemoprevention of infection.

**DR. PARSONS**
- Qualitative analysis of drugs and metabolites in clinical samples

**DR. PETTY**
- Clinical pharmacology; phase I and II studies of new drugs.

**DR. SCOCCA**
- Molecular studies of African trypanosomes.

**DR. SHAPIRO**
- Antiparasitic chemotherapy.

**Rational Therapeutics.** Dr. Petty and other selected clinical faculty. Required of all fourth year medical students when at the Johns Hopkins Hospital. Select Thursdays; September - March, 8:30-10:00 a.m.

**Prerequisite:** Three years of medical school.

This course is designed to consolidate student skills in the selection and use of drugs commonly prescribed in medical practice. This course will build on the foundation of the second year pharmacology course and third year clinical clerkship experiences. The course focuses on therapeutic decision-making based upon pharmacologic principles. Clinical topics in therapeutics to be covered will challenge the students frequently during their internship and will demonstrate the rational application of core pharmacologic principles with general applicability to clinical situations throughout a medical career. Widely respected clinicians from various departments within the School of Medicine will present the therapeutic decision-making process for a given clinical topic during the first hour of the sessions. In the final half hour, the guest faculty will facilitate a practical case-oriented discussion with students to interactively solve a series of clinical problems using the therapeutic tools just presented.

**E 1. 390.631.01 Principles of Drug Development.** Dr. Flexner. First quarter; Wednesdays, 1:30-2:50 p.m.

Present principles underlying the drug development process from discovery through pre-clinical to all clinical phases. Regulatory issues (FDA faculty) and industry perspectives (pharmaceutical industry faculty) are included. Throughout the course students develop, write, and present detailed drug development plans and clinical protocols for new drugs. Evaluation based on course project writing and presentations. Final exam is presentation of proposal to FDA reviewers.

**E 2. 330.807 Clinical Pharmacology Clinical Conference.** Dr. T. Shapiro, staff and visiting lecturers. First through fourth quarters; Wednesdays, 12:00-1:00 p.m.; one credit.

Journal club and research seminars explore contemporary issues in the discovery, development, and rational use of drugs. Required course for Clinical Pharmacology fellows.

**E 3. 330.808 Principles of Clinical Pharmacology.** Dr. Shapiro. Dates and times TBA; 1.5 credits.

**Prerequisite:** Permission of the instructor.

A series of fourteen lectures in DVD format taught by experts form around the country form the basis for a presentation/discussion course that covers the spectrum of clinical pharmacology: pharmacokinetics, drug metabolism and transport, assessment of drug effects, and drug therapy in special populations. One and one half hours for each lecture/discussion. Required course for Clinical Pharmacology fellows.

**E 4. 330.809 Analytical Methods in Clinical Pharmacology.** Dr. Hendrix. Dates and time TBA; 1.5 credits.

**Prerequisite:** Permission of the instructor.
A series of sixteen intensive one and one half hour small group session covering fundamental methods for compartmental and non-compartmental analysis of pharmacokinetic and pharmacodynamic data. Each topic is introduced with a teach-do-review sequence focusing on skill building exercises. Introduction to pharmacokinetic data analysis using Pharsight’s WinNonlin software. Required course for Clinical Pharmacology fellows.

E 5. Clinical Pharmacology/Internal Medicine Elective. Dr. Petty. Available all year; one half quarter.

Prerequisite: Medicine Core Clerkship.

This elective emphasizes the fundamentals of rational drug therapy in the context of a tertiary care hospital and primary care clinic. Students will participate in an outpatient primary care clinic at the Johns Hopkins Outpatient Center one half-day per week, as well as inpatient care of this clinic population when necessary. In addition, the student will participate in inpatient and outpatient consultations. Students will join in review sessions of questions posed to the Drug Information Center, and learn how to use various resources to answer these questions. Research conferences within the Clinical Pharmacology Division will be open to the student, and attendance at a weekly student journal club will be required. The student will be invited to attend the monthly Pharmacy and Therapeutics Committee meeting, and join the Hospital Pharmacologist and Drug Information Center staff in responding to questions and issues arising within the hospital.

RENAL DIVISION
DR. SCHEEL, DIRECTOR
DR. CHOI, CLINICAL DIRECTOR
DR. ALACHKAR
Kidney transplantation.
DR. ATTA
HIV Kidney disease; acute kidney injury; metabolic bone disease.
DR. M. J. CHOI
Electrolyte disorders; glomerulonephritis; nephro lithiasis.
DR. CREWS*
Chronic kidney disease.
DR. ESTRELLA
HIV kidney disease; chronic kidney disease.
DR. FINE
Lupus nephritis; HIV kidney disease; rhabdomyolysis.
DR. GIMENEZ
Calcium metabolism in renal disease; renal replacement therapy.
DR. KRAUS*
Kidney transplantation.
DR. MYERS
Diabetes and kidney disease; chronic kidney disease.
DR. RABB
Kidney transplantation.
DR. SCHEEL
Retroperitoneal fibrosis; renovascular disease; glomerulonephritis; dialysis.
DR. SCIALLA*
Chronic kidney disease; bone and mineral metabolism.

DR. SHAFI*
Hypertension; home dialysis; chronic kidney disease.
DR. SOZIO*
Chronic kidney disease; end stage kidney disease.
DR. SPECTOR*
Renal physiology; peritoneal dialysis.
DR. SPERATI
Hypertension; glomerular disease; electrolyte disorders.
DR. TURBAN
Hypertension; chronic kidney disease; diet and kidney disease.
DR. WATNICK
Hereditary kidney disease.
DR. WOMER
Kidney transplantation.

* Bayview faculty


Prerequisite: Medicine Core Clerkship.

This clinical elective is designed to provide the student with practical clinical work in nephrology including: diagnostic evaluations on inpatients; participation in hemodialysis and the management of chronic kidney disease; management of renal transplantation. The student works closely with the fellow and attending physician on the renal service, rounds daily on inpatient consults (which average four per day), and follows patients.

PULMONARY AND CRITICAL CARE MEDICINE DIVISION
DR. KING, DIRECTOR
DR. AGGARWAL*
Acute lung injury; critical care; sepsis.
DR. BECKER*
Acute lung injury; lung transplantation.
DR. BOYLE
Adult cystic fibrosis, gene therapy; clinical cystic fibrosis research.
DR. BROWER
Critical care; adult respiratory distress
DR. CHECKLEY
Critical care; global health; longitudinal data analysis; epidemiology.
DR. CHEN
Sarcoidosis; cytokines in granulomatous lung disease; bleomycin-induced pulmonary fibrosis.
DR. CLEMISE-BEATY*
Obesity in asthma; airway smooth muscle function.
DR. CROW*
Molecular biology; vascular remodeling; lung injury induced skeletal muscle wasting.
DR. D’ALESSIO*
Acute lung injury resolution; critical care.
DR. DAMARLA*
Ventilator-associated lung injury; vascular leak.
DR. DAMICO*
Endothelial cell apoptosis; pulmonary vascular disease.

MEDICINE 195
DR. DANOFF
Interstitial lung disease; myositis; transcription genes; neuronal development; BAP135 protein.

DR. DAUGHERTY
Critical care; medical emergency management; disaster medicine and public health preparedness.

DR. DESAI
Medical education; critical care.

DR. DIETTE
Asthma outcomes; quality of care, quality improvement.

DR. DRUMMOND*
COPD; COPD sub-phenotype development; COPD in HIV patients.

DR. FESSLER
Cardiopulmonary interaction; intensive care.

DR. FELLER-KOPMAN
Interventional pulmonology.

DR. GIRGIS
Pulmonary hypertension, scleroderma, Raynaud’s phenomenon, lung transplant.

DR. HAGER
Critical care medicine; mechanical ventilation strategies.

DR. HANSEL
Asthma; chronic obstructive pulmonary disease; indoor particulate matter; endotoxin exposure; epidemiology.

DR. HASSOUN
Pulmonary hypertension; vascular remodeling; regulation of xanthine oxidoreductase in acute lung injury.

DR. HORTON
Interstitial lung disease; idiopathic pulmonary fibrosis; extra cellular matrix, chemokines.

DR. KING
Critical care; resolution of acute lung injury.

DR. LECHTZIN
Adult cystic fibrosis; amyotrophic lateral sclerosis and motor neuron disease.

DR. LIU*
Studies of asthma pathogenesis and therapy.

DR. MATHAI
Pulmonary hypertension; scleroderma in pulmonary hypertension.

DR. MCCORMACK*
Asthma; environmental impacts on airway disease; chronic obstructive pulmonary disease; indoor particulate matter; epidemiology.

DR. MCDYER*
Lung transplantation; IL-2 receptor biology; autoimmune disease; innate/adaptive immunity.

DR. MERLO
Cystic fibrosis epidemiology; lung transplant.

DR. MOLLER*
Sarcoidosis; molecular and cellular immunology of lung diseases; mechanisms of T-cell activation.

DR. NEEDHAM
Critical care medicine; ventilator-induced lung injury outcomes; neuromuscular weakness in the ICU.

DR. NEPTUNE
Receptor signaling, neutrophils.

DR. ORENS
Lung transplantation; emphysema; lung volume reduction surgery; exercise physiology.

DR. PEARSE*
Ischemia; reperfusion lung injury; airway smooth muscle hyperresponsiveness.

DR. PIPELING*
Lung transplantation; immunology; cytokine regulation.

DR. POLOTSKY*
Metabolic abnormalities in obesity and sleep apnea.

DR. PUNJABI*
Clinical epidemiology; pulmonary and sleep medicine.

DR. RAND*
Behavioral pulmonology; patient compliance in asthma treatment; smoking cessation.

DR. RIEKERT*
Asthma disparities; cystic fibrosis.

DR. SCHWARTZ*
Respiratory and upper airway physiology; sleep apnea.

DR. SEVRANSKY*
Sepsis; septic shock; weaning of chronically ventilated patients.

DR. SHAM*
Electrophysiology and calcium homeostasis in pulmonary and cardiac myocytes; smooth muscle ion transport.

DR. SHIMODA
Pulmonary vascular biology; oxidative stress; endothelial cell signaling.

DR. SMITH*
Sleep disordered breathing.

DR. SOSNAY
Adult cystic fibrosis; gene therapy.

DR. STEPHENS
Lung endothelial dysfunction; cGMP signaling in pulmonary endothelium.

DR. SYLVESTER
Pulmonary vascular biology; medical intensive care.

DR. WISE*
Cardiopulmonary physiology; autoimmune pulmonary disease; chronic obstructive pulmonary disease.

DR. YARMUS
Interventional pulmonology.

DR. YUNG
Diagnosis of and therapy for early and advanced cancer; aerosolized cytokines.

DR. ZAIMAN
Pulmonary hypertension; vascular remodeling; modifying genes in pulmonary hypertension; pulmonary hypertension clinical trials.

* Bayview faculty

E 1. Clinical Clerkship in Pulmonary Diseases and Clinical Pulmonary Physiology. Dr. Boyle and staff. Available all year. One-half quarter or longer by prior arrangement.

Prerequisite: Medicine Core Clerkship.

Students participate in the consultation service of the Respiratory Division at the Johns Hopkins Hospital. Students are responsible for evaluating,
under the supervision of a fellow and an attending physician, patients with a wide variety of lung diseases, recommending diagnostic and therapeutic options, and following patients during the course of their pulmonary problems. Students attend radiology conferences and seminars of the division and may participate in the activities of the Pulmonary Function Laboratory.

E 2. Clinical Clerkship in Pulmonary Medicine. (Johns Hopkins Bayview Medical Center) Drs. Terry and staff. Available October-May. One-half quarter or longer by arrangement.

Prerequisite: Medicine Core Clerkship.

Students participate in the clinical evaluation of patients and daily consultation rounds. They receive instruction in performing and interpreting pulmonary function and exercise testing. Additional experience is available in sleep disorders, inhalation challenge (asthma), environmental/occupational lung diseases and critical care medicine. Students may conduct short-term clinical or laboratory investigative projects.

RHEUMATOLOGY DIVISION

DR. ROSEN, DIRECTOR
DR. WIGLEY, ASSOCIATE DIRECTOR
DR. ANDRADE*
  *Mechanisms of autoimmunity.
DR. BAER
  Evaluation and management of Sjogren’s syndrome; metabolic myopathies and gout.
DR. BINGHAM
  Clinical therapeutics of rheumatoid arthritis and osteoarthritis; oral health in rheumatic diseases; RA & OA clinical trial design.
DR. IRWIN
  Neurological manifestations of systemic rheumatic diseases with emphasis on Sjogren’s syndrome.
DR. BOIN*
  Translational research in scleroderma and related disorders.
DR. CASCIOLA-ROSEN*
  Mechanisms of autoimmunity, especially myositis and scleroderma.
DR. CHRISTOPHER-STINE*
  Epidemiology and therapy of inflammatory myositis.
DR. FLYNN
  Medical education; evaluation and management of spondyloarthropathies.
DR. FONTAINE
  Evaluation of exercise and psychological health in arthritis and fibromyalgia.
DR. GELBER*
  Evaluation of arthritis and rheumatic disorders.
DR. GILES*
  Cardiovascular morbidity and body composition in rheumatoid arthritis.
DR. GRADER-BECK
  Translational research in systemic autoimmunity.
DR. HAQUE
  Evaluation and management of inflammatory arthritis.
DR. HUMMERS*
  Epidemiology and treatment of scleroderma.
DR. LEVINE*
  Pathophysiology and therapy of systemic vasculitis.
DR. PETRI
  Lupus; coronary artery disease in SLE; autoimmune pregnancy loss; antiphospholipid antibodies.
DR. ROSEN
  Mechanisms of rheumatic disease.
DR. SEO
  Disease activity and novel therapeutics of systemic vasculitis.

* Bayview faculty

E 1. Clinical Clerkship in Rheumatology. Drs. Gelber and Rosen. One student at a time; available for two, three, or four week period.

Prerequisite: Medicine Core Clerkship.

This elective teaches a general approach to the differential diagnosis of rheumatic diseases, the rheumatology physical exam, and principles of treatment of common rheumatic disorders. Students will actively participate in the in-patient consultation service at the Johns Hopkins Hospital by working with the fellows and attending rheumatology consultant. There will be significant opportunity for one-on-one teaching. Students will also attend journal clubs and teaching conferences.

E 2. Advanced Clinical Clerkship in Medicine/Rheumatology. (Rheumatology Service at Good Samaritan Hospital) Dr. Ziminski. Available all year. One-half or full quarter.

Prerequisite: Medicine Core Clerkship.

The student functions under the guidance of housestaff and attending physicians. Patients with multi-system connective tissue disorders and inflammatory joint disease are admitted to the Rheumatic Disease Unit with a broad array of problems including flare in the underlying disease process, complications of the disease and/or its therapy for interdisciplinary illnesses. Students will also see patients in the Rheumatology Outpatient Department with faculty supervision. Students will be taught the approach/evaluation of patients presenting with musculoskeletal complaints, the appropriate history and physical examination, use of diagnostic studies, and approach to management. Students may also see rheumatology patients who are on the Orthopaedic and Physical Medicine and Rehabilitation services to provide a multidisciplinary experience. Students also participate in the in-patient consult service, working with residents, fellows, and attending rheumatologist faculty.

The curriculum includes teaching rounds and clinical and research conferences/seminars to complement the clinical experience.
E 3. Advanced Ambulatory Clinical Clerkship in Musculoskeletal Medicine. Dr. Flynn and faculty members of the divisions of Rheumatology, Immunology and General Internal Medicine in the Department of Medicine, as well as the Departments of Orthopaedic Surgery and Physical Medicine and Rehabilitation. Two students per month.

Prerequisite: Satisfactory completion of Medicine Core Clerkship, or courses completed elsewhere considered as equivalent.

This month-long clinical clerkship is designed for medical students interested in General Internal Medicine, Rheumatology, Rehabilitative Medicine, or Orthopaedics. The experience provides one-on-one and small group teaching for students with faculty members within the outpatient setting. Students will have the opportunity to work with faculty members of the Johns Hopkins University at the Outpatient Center, the Bayview Medical Center, Good Samaritan Hospital, and Johns Hopkins at Green Spring Station. Students will be involved in the evaluation of patients presenting in the outpatient setting for evaluation of musculoskeletal complaints. Students will be taught how to perform an appropriate history and physical examination of the musculoskeletal system as well as the determination of appropriate diagnostic evaluation and management. Participation in musculoskeletal medicine conferences as well as individualized musculoskeletal rounds will be expected. Students will develop a learning portfolio maintaining patient logs as well as demonstrate competency in musculoskeletal examination.
Molecular and Comparative Pathobiology

M. CHRISTINE ZINK
Professor of Molecular and Comparative Pathobiology, Professor of Pathology, Director of the Department of Molecular and Comparative Pathobiology

JANICE E. CLEMENTS
Mary Wallace Stanton Professor for Faculty Affairs, University Distinguished Service Professor of Molecular and Comparative Pathobiology, Joint Appointment in Molecular Biology and Genetics, Professor of Neurology, Professor of Pathology

ROBERT A. SQUIRE, Professor

ROBERT J. ADAMS, Associate Professor

SHEILA A. BARBER, Adjunct Associate Professor

CORY FLAGG BRAYTON, Associate Professor

KATHLEEN GABRIELSON
Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Pathology

DAVID L. HUSO
Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Oncology

DARA L. KRAITCHMAN
Associate Professor of Radiology, Associate Professor of Molecular and Comparative Pathobiology

JOSEPH LEONARD MANKOWSKI
Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Neurology, Associate Professor of Pathology

ANDREW S. MCCALLION
Associate Professor of Molecular and Comparative Pathobiology in Genetic Medicine, Research Associate in Medicine

MIKHAIL V. PLETNIKOV
Associate Professor of Psychiatry, Associate Professor of Neuroscience, Associate Professor of Molecular and Comparative Pathobiology

SARAH LOUISE POYNTON
Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Art as Applied to Medicine

R. MITCHELL BUSH, Assistant Professor

LUCY MINNICH CARRUTH, Adjunct Assistant Professor

DAVID R.M. GRAHAM
Assistant Professor of Molecular and Comparative Pathobiology, Assistant Professor of Medicine

BAKTIAR O. KARIM, Assistant Professor

RICHARD J. MONTALI, Assistant Professor

SRINIVAS S. RAO, Adjunct Assistant Professor

DAWN SHURESS RUBEN, Assistant Professor

DIANA GERARDI SCORPIO, Assistant Professor

SIMONA STAGER
Assistant Professor of Pharmacology and Molecular Sciences, Assistant Professor of Molecular and Comparative Pathobiology (from 09/01/2010)

JULIE WATSON, Assistant Professor

MICHAEL RILEY WEED
Adjunct Assistant Professor of Behavioral Biology, Adjunct Assistant Professor of Molecular and Comparative Pathobiology

MARK EMORY CARTWRIGHT, Lecturer

MICHAEL R. CRANFIELD, Lecturer

DAWN GOODMAN, Lecturer

LUCIO GAMA, Research Associate

ZHAOHAO LIAO, Research Associate

POLINA SYSA, Research Associate

YI XU, Research Associate

MARIA KAMBER, Visiting Scientist

CHUNG-TIANG LIANG, Visiting Scientist

NORIKO TSUCHIYA, Visiting Scientist (from 10/20/2010)

The Department of Molecular and Comparative Pathobiology provides instruction and consultation in animal medicine, experimental techniques and comparative pathology, with emphasis on the study of disease processes in animals which relate to human health and biomedical research. Postdoctoral training is offered in laboratory animal medicine, comparative pathology and in retrovirus biology. The department is equipped with medical, surgical, pathology, diagnostic and research laboratories as well as a research farm with domestic and exotic animal species.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Zink. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

680.800 Research Activities:
Research interests represented in the Department of Molecular and Comparative Pathobiology are as follows:

DR. ADAMS
Primatology; laboratory animal medicine.

DR. CLEMENTS
Molecular biology of lentiviruses; molecular basis of simian immunodeficiency virus disease.

DR. CRANFIELD
Zoo medicine.

DR. GABRIELSON
Cardiovascular toxicology.

DR. HUSO
Neurovirology; comparative pathology.

DR. MANKOWSKI
Viral pathogenesis; comparative pathology.

DR. POYNTON
Parasitology; protozoology; aquatic animal medicine.

DR. SCORPIO
Tick-borne infections; laboratory animal medicine.
DR. ZINK
Neurovirology; comparative pathology; viral pathogenesis.

680.700 Comparative Medicine Research Seminar Series. Dr. Zink and staff. One hour seminar; Fridays 1:00 p.m.; September through June.
One hour seminars given by faculty throughout the institution and outside guest speakers dealing with naturally occurring diseases of animals that relate to medical research and human disease, and with animal models of human disease.

680.701 Comparative Pathobiology and Genetically Engineered Mice. Dr. Huso and staff. Fourth quarter; alternate years. Lecture and laboratory 4 credits total.
Prerequisites: Courses in biology, histology and physiology or permission from course director
Lectures and laboratory (microscopy) introduction to comparative pathobiology of the major organ systems. Pathology and pathophysiology themes that are shared across many species are covered, particularly those relevant to mouse genetic models and human disease.

680.702 LAM/PATH Integrated Problem Solving. Dr. Scorpio. All quarters; Fridays, 10:00-11:45 a.m.
A survey of the use of animals in research with emphasis on biologic, nutritional and disease factors which may interfere with interpretation of research data, cause loss of experiments or serve as hazards to public health. Humane and ethical aspects receive consideration also.

680.703 Animal Pathology Laboratory. Throughout the year. Credit to be arranged. Dr. Zink and staff.
Prerequisite: 680.701, or Pathology 300.600, or their equivalents.

A limited number of persons may serve as prosecutors on the animal pathology diagnostic service. This entails responsibility for gross and microscopic examination of diseased animals and tissues submitted for diagnosis by investigators within the Institutions, by practicing veterinarians, and by the Baltimore Zoo. Complete necropsy and histopathology laboratories are available and prosecutors work under close faculty supervision. Rotational assignments may vary according to schedules.

680.710 Clinical Conference in Laboratory Animal Medicine. Staff. All year; Fridays.
Weekly conferences in clinical laboratory animal medicine and clinical pathology. Attendance by comparative medicine and comparative pathology fellows is expected. The course is open to all other students, fellows and faculty.

680.711 Comparative Pathology Conference. Dr. Zink and Staff. One hour seminar, Fridays, 12:00; all four quarters.
This is a weekly one hour diagnostic slide conference which focuses on the discussion of histologic and electron microscopic examples of unknown cases drawn from a wide variety of animal species. Cases are available for study during the week preceding the conference. Participants describe the cases, give differential diagnoses, and discuss etiology and pathogenesis with the guidance of faculty members.

680.802 Journal Club for Laboratory Animal Medicine Board Review. Dr. Scorpio. All quarters; Friday 10:00 am.

680.803 Journal Club for Pathology Board Review. Dr. Zink and Staff. All quarters; Tuesday 12:00

680.804 Clinical Rounds Conference. Dr. Adams. All quarters.
Molecular Biology and Genetics

CAROL WIDNEY GREIDER
Daniel Nathans Professor and Director of Molecular Biology and Genetics, Professor of Oncology

JEF D. BOEKE
Professor of Molecular Biology and Genetics, Professor of Oncology

JEFFRY L. CORDEN, Professor

NANCY L. CRAIG
Professor of Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

STEPHEN VINCENT DESIDERIO, Professor

RACHEL GREEN
Professor of Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

HAIG H. KAZAZIAN, JR.
Professor of Pediatrics in Genetic Medicine, Professor of Molecular Biology and Genetics

THOMAS J. KELLY, JR.
Professor of Molecular Biology and Genetics (on leave of absence)

SE-JIN LEE, Professor

JEREMY NATHANS
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Pharmacology and Molecular Sciences

DUOJIA PAN
Professor of Molecular Biology and Genetics, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

RANDALL R. REED
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

GERALDINE SEYDOUX
Professor of Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

HYUN S. SHIN
Professor of Molecular Biology and Genetics (on leave of absence), Joint Appointment in Medicine (on leave of absence)

HAMILTON O. SMITH
American Cancer Society Distinguished Research Professor Emeritus of Molecular Biology and Genetics

ALLAN C. SPRADLING, Adjunct Professor

YIXIAN ZHENG, Adjunct Professor

BRENDAN P. CORMACK, Associate Professor

PAUL H. HARDY, JR., Associate Professor Emeritus

SINISA URBAN, Associate Professor

ELIZABETH H. CHEN, Assistant Professor

NICHOLAS T. INGOLIA, Adjunct Assistant Professor

ROSANNA P. BAKER, Research Associate

THANH V. HUYNH, Research Associate

XIANGHONG LI, Research Associate

PAMELA BERNADETTE MELUH, Research Associate

AMIR RATTNER, Research Associate

YI XIE, Research Associate

DANIEL SHIH-EN YUAN, Research Associate

DAVID GORDON LONGSTAFF, Visiting Scientist

KAREN A. WEHNER, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF MOLECULAR BIOLOGY AND GENETICS HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

MICHAEL A. BEER
Assistant Professor of Biomedical Engineering in Genetic Medicine

ARAVINDA CHAKRAVARTI
Professor of Medicine in Genetic Medicine

JANICE E. CLEMENTS
University Distinguished Service Professor of Molecular and Comparative Pathobiology

CHI VAN DANG
Johns Hopkins Family Professor for Oncology Research in the Department of Medicine

HARRY C. DIETZ
Victor A. McKusick Professor of Medicine and Genetics in the Department of Pediatrics

ANDREW P. FEINBERG
King Fahd Professor of Molecular Medicine in the Department of Medicine

GREGORY G. GERMINO
Adjunct Professor of Medicine

NICHOLAS KATSANIS
Adjunct Associate Professor of Ophthalmology in Genetic Medicine

ALEX LEO KOLODKIN
Professor of Neuroscience

JOSHUA T. MENDELL
Associate Professor of Pediatrics in Genetic Medicine

PAULA M. PITHA-ROWE
Professor of Oncology

ROBERT F. SILICIANO
Professor of Medicine

MARK J. SOLOSKI
Professor of Medicine

FORREST SPENCER
Associate Professor of Medicine in Genetic Medicine

DAVID L. VALLE
Professor of Pediatrics in Genetic Medicine

BERT VOGELSTEIN
Clayton Professor of Oncology

DONALD J. ZACK
Guerrieri Family Professor of Ophthalmology

The programs of instruction and training in the Department of Molecular Biology and Genetics are designed to meet the needs of:

(a) students of Medicine, (b) candidates for doctoral degrees in Molecular Biology and Genetics and related medical sciences, and
(c) postdoctoral students wishing to prepare for careers in teaching and research.

REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year —

800.619 Scientific Foundations of Medicine. Dr. Jon Lorsch. M.-F., 8:00-1:00; Clinical Correlations, F., 2:00-3:30 p.m.

Biochemistry, Cell Biology, Genetics, and Pharmacology are fully integrated into a combined course of study presented by the basic science departments. The course provides a comprehensive, fully integrated coverage of the molecular basis of cellular metabolism and function. The course will emphasize small group learning and problem solving. The student will participate in "Journal Club", in which important papers in the front-line biomedical literature will be discussed. Clinical Correlations related to basic science concepts will be held at various days and times. Enrollment of non-medical students requires approval from the course director.

Prerequisites: Elementary courses in inorganic chemistry, organic chemistry, general biology, and general physics. At least one upper-level course in Biochemistry or Cell Biology is strongly recommended.

OTHER COURSES AND ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Carol Greider. Elective courses must be approved by the course director; any member of the department may act as preceptor.

Molecular Biology and Genetics E

The elective courses described below are open to medical students in the second, third and fourth years, as well as to predoctoral and postdoctoral students. (For other elective courses in microbiology, immunology, or molecular biology, see catalogues of the School of Public Health and the School of Arts and Sciences.)

100.804 Topics in Macromolecular Structure and Function. Drs. Leahy, Amzel, Wade, and Lorsch. One hour per week throughout the academic year. W., 9:30-10:30. (Same as Biophysics 100.804)

This is a seminar course covering a variety of topics involving the structure and function of proteins and nucleic acids. Recent topics have included: protein folding, evolutionary significance of introns, protein-DNA interactions, solution structure of peptides, prospects for designing novel proteins, and two-dimensional NMR.

260.708 Fundamentals of Genetics. Drs. G. Seydoux and staff. Second quarter; 17 lectures; Tues & Thurs 9:00-10:30 a.m.

Prerequisite: Molecular Biology.

This short lecture course will cover fundamental principles of genetics, focusing primarily on model eukaryotes. Problem sets will be an integral learning tool in this course.

260.709 Molecular Biology and Genomics. Dr. Rachel Green and staff. Second quarter. M.W. F 9:00-10:30.

This interdisciplinary course covers the structure and properties of genes and genomes, the mechanism of fundamental biological information transfer (replication, transcription, processing, and translation), the RNA world, chromosome structure and function, and mechanisms of genome instability. Open to students who have had courses in organic chemistry, Biochemical and Biophysical Principles (100.710), and are taking Macromolecular Structure and Analysis (100.709) concurrently, or by special permission.

260.802 Special Studies and Research.

Opportunities to carry out special studies and research in various branches of molecular genetics, immunology, and microbiology will be made available not only to candidates for advanced degrees but also to other qualified students. Arrangements for such work must be made with individual members of the staff.


In this course, we will read approximately 20 classic papers in the biological sciences. The course aims to expose students to some of the great experiments from 1700 to the present, and the creative thinking that inspired them. Authors include Benjamin Franklin, Robert Koch, Selig Hecht, Stephen Kuffler, Lubert Stryer, Alec Jeffreies, and Avram Hershko.

Research interests represented in the Department of Molecular Biology and Genetics are as follows:

DR. BOEKE
Retrotransposition; silent chromatin; genomics.

DR. CHEN
Molecular mechanisms of myoblast fusion; drosophila developmental genetics.

DR. CORDEN
Regulation of eukaryotic gene expression.

DR. CORMACK
Microbial pathogenesis; chromatin silencing.

DR. CRAIG
Mechanism of transposition; protein-nucleic acid interactions.

DR. DESIDERIO
Signal transduction in lymphocytes; immunoglobulin gene rearrangement; genetic basis of innate immunity.

DR. GREEN
Ribosome function; molecular mechanisms of translation.

DR. GREIDER
Chromosome structure and function; telomere synthesis and length regulation.

DR. LEE
Growth and differentiation factors in mammalian development.

DR. J. NATHANS
Molecular biology of vision; developmental neurobiology.

DR. PAN
Molecular genetics of tumor suppressor genes and oncogenes.
DR. REED
Molecular basis of olfaction; mechanisms of neurogenesis.

DR. SEYDOUX
Establishment of embryonic polarity and germ cell fate.

DR. URBAN
Proteolysis in membrane bilayers; cell signaling and malaria invasion.

Prerequisite: Basic knowledge of molecular and cellular biology.

This course presents basic principles of molecular virology and viral diseases, such as structure, replication, and virus-host cell interactions for the major virus families, as well as viral pathogenesis, immune responses, transformation, and epidemiology. Studies molecular biology of selected human pathogens in detail as examples of virus-induced diseases. Student evaluation based on mid-term and final exams.

Prerequisite: PH 260.623.

Lectures and student presentations cover a wide range of current research areas, including the molecular biology and pathogenesis of herpes viruses, hepatitis viruses, emerging viruses, and unconventional agents. Discusses bacteriophage and baculoviruses and their use in vector biology, as well as viral vectors in gene therapy and antiviral agents. Student evaluation based on class participation and exams.

250.603 Principles of Immunology. Dr. Siliciano and staff; 8:00 a.m.-1:00 p.m. M., Tu., Th., F.; 8:00-11:00 a.m. W.

This course, a required part of the first year medical school curriculum, provides an introduction to the genetics, biochemistry, and cellular and developmental biology of the immune system. Medical relevance is highlighted through clinical correlations, and basic principles are demonstrated in teaching labs. The course also includes small group discussions and a journal club. The lecture portion of this course is repeated as part of Graduate Immunology (250.703).

250.702 Advanced Topics in Molecular Immunology. Drs. Desiderio and Sadegh-Nasser. First quarter, T., Th., 9:00-10:30 a.m. Third and fourth quarters, every other year.

An advanced lecture course addressing current experimental findings related to the molecular aspects of development, recognition and effector functions of the immune system. Open to students who have had Medicine 250.603 or equivalent, or by special permission.

250.703 Graduate Immunology. Dr. Scheherazade Sadegh-Nasser. Fourth quarter; T., Th., 9:00-10:30 a.m.

This is an introductory course designed to provide graduate students with a comprehensive survey of modern cellular and molecular immunology. The course consists predominantly of lectures but also includes discussion sessions focusing on important recent research papers. This course is open to all graduate students and postdoctoral fellows.

440.707 Molecular Mechanisms in Synaptic Transmission. Drs. Huganir, Worley, and Bergles. Third quarter, every other year. (Same as Neuroscience 440.707)
Prerequisite: Consent of course director.

An advanced seminar and reading course devoted to the molecular and cellular mechanisms underlying synaptic transmission and the regulation of synaptic plasticity. The molecular and cellular mechanisms involved in neurotransmitter release, postsynaptic signal transduction, and modulation of synaptic efficacy will be covered. The role of these processes in higher brain function, including learning and memory and synaptic development will be discussed.

GRADUATE PROGRAM—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs).
Neurology

JUSTIN C. MCARTHUR
Professor of Neurology, Professor of Pathology,
Director of the Department of Neurology

MARIYLN S. ALBERT
Professor of Neurology, Professor of
Neuroscience, Professor of Psychiatry

GREGORY KENT BERGEY, Professor

DANA BOATMAN
Professor of Neurology, Professor of
Otolaryngology-Head and Neck Surgery

JASON BRANDT
Professor of Psychiatry, Professor of Neurology

THOMAS M. BRUSHART
Thomas M. Brushart Professor of Hand Surgery
in the Department of Orthopedic Surgery,
Professor of Neurology, Professor of Plastic and
Reconstructive Surgery

PETER ARTHUR CALABRESI, Professor

VINAY CHAUDHRY, Professor

JANICE E. CLEMENTS
Mary Wallace Stanton Professor for Faculty
Affairs, University Distinguished Service
Professor of Molecular and Comparative
Pathobiology, Joint Appointment in Molecular
Biology and Genetics, Professor of Neurology,
Professor of Pathology

NANCY ABBEY COLLOP
Professor of Medicine (to 08/31/2010), Professor
of Neurology (to 08/31/2010)

DAVID R. CORNBLATH
Professor of Neurology, Professor of
Neurological Surgery

TED M. DAWSON
Leonard and Madlyn Abramson Professor of
Neurodegenerative Diseases in the Department
of Neurology, Professor of Neuroscience

VALINA L. DAWSON
Professor of Neurology, Professor of
Neuroscience, Professor of Physiology

MARTHA BRIDGE DENCKLA
Professor of Neurology, Professor of Pediatrics,
Joint Appointment in Psychiatry

DANIEL B. DRACHMAN
W.W. Smith Charitable Trust Professor of
Immunology in the Department of Neurology,
Professor of Neuroscience

CHRISTOPHER J. EARLEY, Professor

JOHN M. FREEMAN
Professor Emeritus of Neurology, Professor
Emeritus of Pediatrics

GARY W. GOLDSTEIN
Professor of Neurology, Professor of Pediatrics

BARRY GORDON
The Therapeutic Cognitive Neuroscience
Professor of Neurology

JOHN W. GRIFiNN
University Distinguished Professor of Neurology,
Professor of Neuroscience, Professor of
Pathology

DANIEL F. HANLEY
Jeffrey and Harriet Legum Professor of Acute
Neurological Medicine in the Department of
Neurology, Professor of Anesthesiology and
Critical Care Medicine, Professor of Neurological
Surgery

ARGYE ELIZABETH HILLIS
Professor of Neurology, Professor of Physical
Medicine and Rehabilitation

AHMET HOKE
Professor of Neurology, Professor of
Neuroscience

RICHARD T. JOHNSON
University Distinguished Service Professor of
Neurology, Professor of Neuroscience

MICHAEL V. JOHNSTON
Professor of Neurology, Professor of
Pediatrics, Professor of Physical Medicine and
Rehabilitation

PETER W. KAPLAN, Professor

WALTER ERWIN KAUFMANN
Professor of Pathology, Professor of Neurology,
Professor of Pediatrics, Professor of Psychiatry,
Professor of Radiology

VASSILIS E. KOLIATSOS
Professor of Pathology, Professor of Neurology,
Associate Professor of Psychiatry

GREGORY LEWIS KRAUSS, Professor

JOHN J. LATERRA
Professor of Neurology, Professor of
Neuroscience, Professor of Oncology

RONALD P. LESSER
Professor of Neurology, Professor of
Neurological Surgery

RUSSELL LOUIS MARGOLIS
Professor of Psychiatry, Professor of Neurology

UNA DEIRDRE MCCANN
Professor of Psychiatry, Professor of Neurology

GUY MEAD MCKHANN
Professor of Neurology, Professor of
Neuroscience

NEIL RICHARD MILLER
Frank B. Walsh Professor of Neuro-
ophthalmology in the Department of
Ophthalmology, Professor of Neurology,
Professor of Neurological Surgery

MAREK A. Z. MIRSKI
Professor of Anesthesiology and Critical Care
Medicine, Professor of Neurology, Professor of
Neurological Surgery

MARK E. MOLLIVER
Professor Emeritus of Neuroscience, Professor
Emeritus of Neurology

HAMILTON MOSES, III, Adjunct Professor

SACKUBAI NAIDU
Professor of Neurology, Professor of Pediatrics

AVINDRA NATH
Professor of Neurology, Professor of
Neuroscience

ERNST F.L. NIEDERMEYER
Professor Emeritus of Neurological Surgery,
Professor Emeritus of Neurology

ERNST F.L. NIEDERMEYER
Professor Emeritus of Neurological Surgery,
Professor Emeritus of Neurology
DONALD L. PRICE  
Professor Emeritus of Pathology, Professor Emeritus of Neurology, Professor Emeritus of Neuroscience

SRINIVASA NAGA RAJA  
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurology

GERALD V. RAYMOND, Professor

GEORGE A. RICAURTE, Professor

GABRIELE VALERIA RONNETT  
Professor of Neuroscience, Professor of Biological Chemistry, Professor of Neurology

CHRISTOPHER A. ROSS  
Professor of Psychiatry, Professor of Neurology, Professor of Neuroscience, Professor of Pharmacology and Molecular Sciences

JEFFREY D. ROTHSTEIN  
Professor of Neurology, Professor of Neuroscience

NED CHARLTON SACKTOR, Professor

OLA A. SELNES, Professor

HARVEY S. SINGER  
Haller Professor of Pediatric Neurologic Diseases in the Department of Neurology, Professor of Pediatrics

HONGJUN SONG  
Professor of Neurology, Professor of Neuroscience

NITISH V. THAKOR  
Professor of Biomedical Engineering, Professor of Neurology

GEORGE R. UHL  
Adjunct Professor of Neurology, Adjunct Professor of Neuroscience

JOHN A. ULATOWSKI  
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurology, Professor of Neurological Surgery

EILEEN P.G. VINING  
Lederer Professor of Pediatric Epilepsy in the Department of Neurology, Professor of Pediatrics

PAUL ALLAN WATKINS  
Professor of Neurology, Joint Appointment in Biological Chemistry

PAUL F. WORLEY  
Professor of Neuroscience, Professor of Neurology

DAVID S. ZEE  
Professor of Neurology, Professor of Neuroscience, Professor of Ophthalmology, Professor of Otolaryngology-Head and Neck Surgery

ERIC MATTHEW ALDRICH  
Associate Professor of Neurology, Joint Appointment in Physical Medicine and Rehabilitation

RICHARD P. ALLEN, Associate Professor

AMY J. BASTIAN  
Associate Professor of Neuroscience, Associate Professor of Neurology, Associate Professor of Physical Medicine and Rehabilitation

MARY ELIZABETH BLUE  
Associate Professor of Neurology, Associate Professor of Neuroscience

KAREN I. BOLLA  
Associate Professor of Neurology, Joint Appointment in Psychiatry

DAVID BUCHHOLZ, Associate Professor

JUAN RICARDO CARHUAPOMA  
Associate Professor of Neurology (from 11/01/2010), Associate Professor of Anesthesiology and Critical Care Medicine (from 11/01/2010), Associate Professor of Neurological Surgery (from 11/01/2010), Assistant Professor of Neurology (to 10/31/2010), Assistant Professor of Anesthesiology and Critical Care Medicine (to 10/31/2010), Assistant Professor of Neurological Surgery (to 10/31/2010)

PABLO ARIEL CELNIK  
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Neurology

ANNE MARIE COMI  
Associate Professor of Neurology, Associate Professor of Pediatrics

KATHERINE CONANT, Adjunct Associate Professor

ANDREA M. CORSE  
Associate Professor of Neurology, Associate Professor of Neurological Surgery

BARBARA J. CRAIN  
Associate Professor of Pathology, Associate Professor of Neurology, Associate Professor of Oncology

THOMAS O. CRAWFORD  
Associate Professor of Neurology, Associate Professor of Oncology

NATHAN E. CRONE, Associate Professor

LAURIE E. CUTTING, Adjunct Associate Professor

JOHN E. DESMOND  
Associate Professor of Neurology, Associate Professor of Neuroscience

EARL RAY DORSEY, Visiting Associate Professor of Neurology (from 08/09/2010)

PIOTR J. FRANASZCZUK, Associate Professor

NICHOLAS ROGER GAIANO  
Associate Professor of Neurology, Associate Professor of Neuroscience, Associate Professor of Oncology

PHILIPPE EDMOND GAILLOUD  
Associate Professor of Radiology, Associate Professor of Neurology, Assistant Professor of Neurological Surgery

DEERAJ GANDHI  
Associate Professor of Radiology (from 10/01/2010), Associate Professor of Neurology (from 10/01/2010), Associate Professor of Neurological Surgery (from 10/01/2010), Assistant Professor of Radiology (to 09/30/2010), Assistant Professor of Neurology (to 09/30/2010), Assistant Professor of Neurological Surgery (to 09/30/2010)

SUZANNE GARTNER, Adjunct Associate Professor
ROMERGRYKO GUANCE GEOCADIN  
Associate Professor of Neurology, Associate  
Professor of Anesthesiology and Critical Care  
Medicine, Associate Professor of Neurological  
Surgery  
ROBERT D. GERWIN, Associate Professor  
NORMAN JAMES HAUGHHEY, Associate Professor  
S. DIANE HAYWARD  
Professor of Oncology, Associate Professor of Neurology, Professor of Pharmacology and Molecular Sciences  
MIR AHAMED HOSSAIN, Associate Professor  
JAMES H. KELLY  
Associate Professor of Otolaryngology-Head  
and Neck Surgery, Associate Professor of Neurology  
ERIC H.W. KOSSOFF  
Associate Professor of Neurology, Associate  
Professor of Pediatrics  
JOHN W. KRAKAUER, Visiting Associate  
Professor (from 10/01/2010)  
GEOFFREY SHIU FEI LING  
Adjunct Associate Professor of Neurology, Adjunct Associate Professor of Anesthesiology and Critical Care Medicine  
RAFAEL H. LLINAS, Associate Professor  
JOSEPH LEONARD MANKOWSKI  
Associate Professor of Molecular and  
 Comparative Pathobiology, Associate Professor of Neurology, Associate Professor of Pathology  
NICHOLAS JOHN MARAGAKIS, Associate  
Professor  
JOHN WOOD MCDONALD, III  
Associate Professor of Neurology, Associate  
Professor of Physical Medicine and  
Rehabilitation  
E. JEFFREY METTER, Associate Professor  
GUO-LI MING  
Associate Professor of Neurology, Associate  
Professor of Neuroscience  
HOWARD MOSES, Associate Professor  
STEWARD H. MOSTOFSKY  
Associate Professor of Neurology, Joint  
Appointment in Psychiatry  
BETH BRIANNA MURINSON, Associate Professor  
DAVID EDWARD NEWMAN-TOKER  
Associate Professor of Neurology, Joint  
Appointment in Health Sciences Informatics, Joint Appointment in Emergency Medicine, Joint Appointment in Ophthalmology, Associate Professor of Otolaryngology-Head and Neck Surgery  
RICHARD J. O’BRIEN  
Associate Professor of Neurology, Joint  
Appointment in Medicine, Associate Professor of Neuroscience  
CARLOS A. PARDO-VILLAMIZAR  
Associate Professor of Neurology, Assistant  
Professor of Pathology  
MICHAEL JAMES POLYDEKFIS, Associate  
Professor  
BARBARA LYNN STAUFSH, Associate Professor  
JOSEPH P. STEINER, Associate Professor  
PREM SAGAR SUBRAMANIAN  
Associate Professor of Ophthalmology,  
Associate Professor of Neurology, Associate  
Professor of Neurological Surgery  
JUAN C. TRONCOSO  
Professor of Pathology, Associate Professor of Neurology  
KATHRYN RAE WAGNER  
Associate Professor of Neurology, Associate  
Professor of Neuroscience  
HOWARD D. WEISS, Associate Professor  
MARY ANN WILSON  
Associate Professor of Neurology, Associate  
Professor of Neuroscience  
ROBERT J. WITYK  
Associate Professor of Neurology, Associate  
Professor of Medicine  
ANDREW W. ZIMMERMAN  
Adjunct Associate Professor of Neurology  
(from 10/11/2010), Adjunct Associate Professor of Pediatrics (from 10/11/2010), Associate  
Professor of Neurology (to 10/10/2010), Associate  
Professor of Pediatrics (to 10/10/2010), Associate Professor of Psychiatry  
(from 07/31/2010)  
JENNIFER ANNE ACCARDO  
Assistant Professor of Neurology, Assistant  
Professor of Pediatrics  
ANGELO HOMAYOUN ALL  
Assistant Professor of Biomedical Engineering, Assistant Professor of Neurology  
CLIFFORD G. ANDREW, Assistant Professor  
DANIEL BECKER, Assistant Professor  
JULIUS BIRNBAUM  
Assistant Professor of Medicine, Assistant  
Professor of Neurology  
JAISHRI O’NEILL BLAKELEY  
Assistant Professor of Neurology, Assistant  
Professor of Neurological Surgery, Assistant  
Professor of Oncology  
AMANDA M. BROWN, Assistant Professor  
PRESTON C. CALVERT, Assistant Professor  
NICHOLAS A. CAPOZZOLI, Assistant Professor  
MACKENZIE CARPENTER CERVENKA, Assistant  
Professor  
LISA CHRISTOPHER-STINE  
Assistant Professor of Medicine, Assistant  
Professor of Neurology  
LORA L. CLAWSON, Assistant Professor  
RONALD D. COHN  
Assistant Professor of Pediatrics in Genetic  
Medicine, Assistant Professor of Neurology  
ALEXANDER LEWIS COON  
Assistant Professor of Neurological Surgery, Assistant  
Professor of Neurology, Assistant  
Professor of Radiology  
CHRISTIANE SYLVIA COX, Assistant Professor  
GERALD J. DAL PAN, Adjunct Assistant Professor  
GIGI JASMINE EBENEZER, Assistant Professor  
JOSHUA BENJAMIN EWEN, Assistant Professor  
SEYED ALI FATEMI  
Assistant Professor of Neurology, Assistant  
Professor of Pediatrics
DAVID SOLOMON
Assistant Professor of Neurology, Assistant Professor of Otolaryngology-Head and Neck Surgery

LYNN JACKSON SPEEDIE
Associate Professor of Psychiatry, Assistant Professor of Neurology

STEPHAN LEWIS STEFFENSEN, Assistant Professor (from 09/01/2010)

STEVEN JEFFREY STEINBERG, Assistant Professor

ROBERT DAVID STEVENS
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Associate Professor of Radiology

MONIQUE F. STINS, Assistant Professor

CHARLOTTE JANE SUMNER, Assistant Professor

MADHAV THAMBISETTY, Adjunct Assistant Professor

BRYAN J. TRAYNOR, Adjunct Assistant Professor

TAKASHI TSUKAMOTO, Assistant Professor

KATHARINE ASHLEY WHARTENBY, Assistant Professor of Neurology, Assistant Professor of Oncology

BRADFORD D. WINTERS
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Assistant Professor of Surgery

MEGAN C. WRIGHT, Adjunct Assistant Professor (from 09/01/2010)

MARK N. WU
Assistant Professor of Neurology, Assistant Professor of Medicine

SHULI XIA, Assistant Professor

SARAH HUNG YING
Assistant Professor of Neurology (to 12/31/2010), Assistant Professor of Ophthalmology (to 12/31/2010)

KATHLEEN MARIE ZACKOWSKI
Assistant Professor of Physical Medicine and Rehabilitation, Assistant Professor of Neurology

STEVEN ROBERT ZEILER, Assistant Professor

WENDY CATHARINA ZIAI
Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery

MERRILL ANSHER, Instructor

RICHARD BABKES, Instructor

JEROLD H. FLEISHMAN, Instructor

ABRAHAM ALLAN GENUT, Instructor

BRAEME S. GLAUN, Instructor

ADRIAN J. GOLDSZMIDT, Instructor

HILARY EILEEN GWYNN, Instructor

WENXUE LI, Instructor

YUNQING LI, Instructor

DEEPA UNNIKRISHNAN MENON, Instructor

LYLE W. OSTROW, Instructor

XIANGCAN ZHAN, Instructor

JIANMIN ZHANG, Instructor

SYED SHAIDA AHMAD ANDRABI, Research Associate (from 09/01/2010)

VEERA VENKATA RATNAM BANDARU, Research Associate

VISAR BELEGU, Research Associate

LENA BEZMAN, Research Associate

MARTA BOSCH-MARCE, Research Associate

MAHENDRAN BOTLAGUNTA, Research Associate (from 10/01/2010)

WEIRAN CHEN, Research Associate

DOMINIC T. CHENG, Research Associate (from 10/01/2010)

KATHLEEN COSTELLO, Research Associate

MOHAMED HASSAN FARAH, Research Associate

ANNE E. GOCKE, Research Associate

SERGIO J. GUTIERREZ, Research Associate

MAGED MOHAMED HARRAZ, Research Associate

LINA HU, Research Associate

MELINA VIOLA JONES, Research Associate

RICHARD OWEN JONES, Research Associate

SHILDA P. KADAM, Research Associate

ANNA KORZENIEWSKA-JANISZEWSKA, Research Associate

CHITRA KRISHNAN, Research Associate

BACHCHU LAL, Research Associate

MYOUNG HWA LEE, Research Associate

ANGELO CARMEN LEPORE, Research Associate (to 01/31/2011)

GUANHAN LI, Research Associate

ZHAO BO LI, Research Associate

LIHUA LIANG, Research Associate

YIDENG LIANG, Research Associate

RUIFA MI, Research Associate

ANN B. MOSER, Research Associate

BAOHAN PAN, Research Associate

ZHENGTONG PEI, Research Associate

MASAYUKI SASAKI, Research Associate

XIAOYAN SHAN, Research Associate

KYONGJE SUNG, Research Associate

PAMELA TALALAY, Research Associate Emerita

JING TIAN, Research Associate

KYRANA TSAPKINI, Research Associate in Neurology

MARK J. VAAL, Research Associate

TONGGUANG WANG, Research Associate

XUEQING WANG, Research Associate

WILLIAM R.S. WEBBER, Research Associate

JIE YUAN, Research Associate

PING-WU ZHANG, Research Associate

SEUNG HAN LEE, Visiting Scientist

CHANGQING SHI, Visiting Scientist in Neurology (to 12/31/2010)

HAIYING WU, Visiting Scientist

YUN ZHOU, Visiting Scientist
FACULTY ASSOCIATED WITH THE DEPARTMENT OF NEUROLOGY HOLDING A PRIMARY APPOINTMENT IN:

The Bloomberg School of Public Health:
M. DIANE E. GRIFFIN  
Professor of Molecular Microbiology and Immunology  
J. MARIE HARDWICK  
Professor of Molecular Microbiology and Immunology

REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year —
1. Nervous System and Special Senses  
Director: Dr. Nicoline Schiess. Faculty from multiple departments. Offered fourth quarter (final 7 weeks).<br>This section of the new Genes to Society course integrates content across several clinical disciplines (neurology, neuropathology, neuroradiology, neurosurgery, ophthalmology, otolaryngology) with the fundamentals of basic neuroanatomy, neurophysiology, neuropharmacology, and molecular neuroscience. The section emphasizes the integration of content related to normal and abnormal functions of the nervous system and special sense organs focusing on the complex interplay between individuals and their environment (exploring links between genetic and individual human variation and societal influence on neurologic function).

Second, Third or Fourth Year —
1. Neurology Clerkship. Co-Directors: Dr. Charlene Gamaldo & Dr. Rachel Salas. Offered as part of the required Psychiatry/Neurology Clerkship. Four quarters and summer. Each student will spend four weeks on Clinical Neurology and four weeks on Clinical Psychiatry. Examination of the nervous system, formulation of clinical problems, and initial triage and management of patients with neurologic symptoms are stressed. Teaching occurs at the Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, and Sinai Hospital. All rotations include experiences in outpatient, inpatient consult, and inpatient ward neurology. Pediatrics may be requested as a focus for the inpatient ward experience at the East Baltimore campus.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Rachel Salas. Elective courses must be approved by the preceptor and the student's faculty advisor; any member of the department may act as preceptor.

Neurology E
The elective courses offered below are given in part for the instruction of house officers and fellows in Neurology. All courses are also open to students of the third and fourth years who wish more experience in clinical and basic neurology, and for students who propose ultimately to become neurologists.

E 1. Neurology Sub-Internship.  
Director: Dr. Rachel Salas, 4-6 weeks, offered year round. Coordinator: Nancy Woodey (nlippi1@jhmi.edu, 410-955-0623)  
Prerequisite: Basic Clerkships in Medicine and Neurology.

The Sub-internship in Adult Neurology is an elective rotation for students wishing additional experience in Clinical Neurology beyond the clerkship level. The rotation can be tailored to the specific interests of the student with rotation on the inpatient team, consult service, or specific outpatient clinics, or any combination of the three.

E 2. Pediatric Neurology Sub-Internship.  
Director: Drs. Rachel Salas and Eric Kossoff, 4-6 weeks, offered year round. Coordinator: Nancy Woodey (nlippi1@jhmi.edu, 410-955-0623)  
Prerequisite: Basic clerkships in Neurology and Pediatrics.

An elective clerkship in Pediatric Neurology is offered on both inpatient and outpatient Pediatric Neurology services.

E 3. Pediatric Epilepsy Elective.  
Director: Dr. Adam Hartman, 4 weeks, offered year round. Coordinator: Nancy Woodey (nlippi1@jhmi.edu, 410-955-0623)  
Prerequisite: Basic clerkships in Neurology and Pediatrics.

Students will gain a broad exposure to patients with epilepsy by spending time in the inpatient setting (Epilepsy Monitoring Unit), clinic (including Ketogenic Diet Clinic), education and patient management conferences, EEG reading sessions, and epilepsy surgeries.

Director: Dr. J. Ricardo Carhuapoma, 4 weeks, offered year round. Coordinator: Nancy Woodey (nlippi1@jhmi.edu, 410-955-0623)  
Prerequisite: Basic clerkship in Neurology.

E 5. Research Electives.  
Research interests represented in the Department of Neurology are as follows:

- DR. ALBERT  
  Alzheimer's disease.
- DR. CORNBLATH  
  Neurology peripheral nerve disease and electromyography.
- DR. T. DAWSON  
  Molecular mechanisms of neurodegenerative disease; neuronal cell death and survival.
- DR. V. DAWSON  
  Molecular mechanisms of neurodegenerative disease.
- DR. DRACHMAN  
  Neuromuscular diseases; neuroimmunology; gene transfer strategies for therapy of Myasthenia and ALS.
- DR. EARLEY  
  Sleep-related disorders; sleep-wake dysfunctions; restless leg syndrome; circadian rhythm disorders.
- DR. GAIANO  
  Molecular mechanisms regulating mammalian neural stem cells.
DR. GARTNER
Virologic studies of HIV infections of nervous system.

DR. GORDON
Neuropsychology.

DR. HANLEY
Brain injury outcomes; stroke; experimental neurosurgery.

DR. HILLIS
Neural basis of cognitive impairment and recovery after stroke.

DR. HOKE
Peripheral neuropathies; nerve regeneration and drug development for neuroprotection.

DR. JOHNSTON
Excitatory amines in cerebral anoxia.

DR. KOSSOFF
Ketogenic diet; hemispherectomy; infantile spasms; migraines; intractable epilepsy.

DR. LATERRA
Studies of brain tumors; neuro-oncology.

DR. LESSER
Epilepsy and electroencephalography.

DR. LLOYD
Neuroimmunology.

DR. McARTHUR
Therapies for HIV-associated dementia and sensory neuropathies; cutaneous innervation in diverse neuropathic states; multiple sclerosis, neurological infections.

DR. NEWMAN-TOKER
Clinical and health services research related to diagnosis and misdiagnosis of neurological symptoms and disorders in frontline healthcare settings such as the emergency department.

DR. SINGER
Pediatric movement disorders; neuroimmunology.

DR. SOLOMON
Vestibular ocular motor neurophysiology; biomechanics; gaze and postural stability during turning.

DR. SONG
Regulation and application of adult neural stem cells.

DR. SUMNER
Inherited motor neuron and peripheral nerve diseases.

DR. WITYK
Cerebrovascular disease; stroke; neuroradiology; critical care neurology.

DR. YING
MRI of cerebellar control of eye movements in hereditary ataxias.

DR. ZEE
Oculomotor and vestibular disorders.
The Solomon H. Snyder Department of Neuroscience

RICHARD L. HUGANIR
Professor of Neuroscience, Joint Appointment in Biological Chemistry, Investigator of the Howard Hughes Medical Institute, Director of the Department of Neuroscience

MARILYN S. ALBERT
Professor of Neurology, Professor of Neuroscience, Professor of Psychiatry

JAY M. BARABAN
Professor of Neuroscience, Professor of Psychiatry

JOSEPH V. BRADY
Professor of Behavioral Biology, Professor of Neuroscience

PETER ANTHONY CAMPOCHIARO
George S. and Dolores D. Eccles Professor of Ophthalmology, Professor of Neuroscience

Marilyn Jerry CATERINA
Professor of Biological Chemistry, Professor of Neuroscience

CHARLES EDWARD CONNOR, JR., Professor

TED M. DAWSON
Leonard and Madlyn Abramson Professor of Neurodegenerative Diseases in the Department of Neurology, Professor of Neuroscience

VALINA L. DAWSON
Professor of Neurology, Professor of Neuroscience, Professor of Physiology

DANIEL B. DRACHMAN
W.W. Smith Charitable Trust Professor of Immunology in the Department of Neurology, Professor of Neuroscience

PAUL ALBERT FUCHS
John E. Bordley Professor of Otolaryngology-Head and Neck Surgery, Professor of Biomedical Engineering, Professor of Neuroscience

DAVID D. GINTY
Professor of Neuroscience, Investigator of the Howard Hughes Medical Institute

JOHN W. GRIFFIN
University Distinguished Professor of Neurology, Professor of Neuroscience, Professor of Pathology

ROLAND R. GRIFFITHS
Professor of Behavioral Biology, Professor of Neuroscience

STEWARD H.C. HENDRY, Professor

A. Earl Walker Professor of Functional Neurosurgery, Professor of Neuroscience

MIN LI
Professor of Neuroscience, Professor of Physiology

DAVID J. LINDEN, Professor

LEE J. MARTIN
Professor of Pathology, Professor of Neuroscience

MARK P. MATTSON, Adjunct Professor

GUY MEAD MCKHANN
Professor of Neurology, Professor of Neuroscience

LLOYD B. MINOR
University Distinguished Professor of Otolaryngology-Head and Neck Surgery, Professor of Biomedical Engineering, Professor of Neuroscience

MARK E. MOLLIVER
Professor Emeritus of Neuroscience, Professor Emeritus of Neurology

CRAIG MONTELL
Professor of Biological Chemistry, Professor of Neuroscience

AVINDRA NATH
Professor of Neurology, Professor of Neuroscience

JEREMY NATHANS
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Ophthalmology, Investigator of the Howard Hughes Medical Institute

DONALD L. PRICE
Professor Emeritus of Pathology, Professor Emeritus of Neurology, Professor Emeritus of Neuroscience

RANDALL R. REED
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

DAVID A. ROBINSON
University Distinguished Service Professor Emeritus of Ophthalmology, University Distinguished Service Professor Emeritus of Biomedical Engineering, University Distinguished Service Professor Emeritus of Neuroscience

GABRIELE VALERIA RONNETT
Professor of Neuroscience, Professor of Biological Chemistry, Professor of Pharmacology and Molecular Sciences

CHRISTOPHER A. ROSS
Professor of Psychiatry, Professor of Neurology, Professor of Neuroscience, Professor of Pharmacology and Molecular Sciences
JEFFREY D. ROTHSTEIN  
Professor of Neurology, Professor of Neuroscience

DAVID K. RYUGO  
Professor of Otolaryngology-Head and Neck Surgery, Professor of Neuroscience

MURRAY B. SACHS  
University Distinguished Service Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

AKIRA SAWA  
Professor of Psychiatry, Professor of Neuroscience

RONALD L. SCHNAAR  
Professor of Pharmacology and Molecular Sciences, Professor of Neuroscience

LAWRENCE P. SCHRAMM  
Professor of Biomedical Engineering, Professor of Neuroscience

REZA SHADMEHR  
Professor of Biomedical Engineering, Professor of Neuroscience

SOLOMON H. SNYDER  
University Distinguished Service Professor of Neuroscience, University Distinguished Service Professor of Pharmacology and Molecular Sciences, University Distinguished Service Professor of Psychiatry

HONGJUN SONG  
Professor of Neurology, Professor of Neuroscience

GEORGE R. UHL  
Adjunct Professor of Neurology, Adjunct Professor of Neuroscience

RUDIGER VONDERHEYDT, Professor

XIAOQIN WANG  
Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

DEAN F. WONG  
Professor of Radiology, Professor of Neuroscience, Joint Appointment in Psychiatry

PHILIP CY WONG  
Professor of Pathology, Professor of Neuroscience

PAUL F. WORLEY  
Professor of Neuroscience, Professor of Neurology

KING-WAI YAU  
Professor of Neuroscience, Professor of Ophthalmology

ERIC D. YOUNG  
Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

DAVID TUCKCHOW YUE  
Professor of Biomedical Engineering, Professor of Neuroscience

DONALD J. ZACK  
Guerreri Family Professor of Ophthalmology, Joint Appointment in Molecular Biology and Genetics, Professor of Neuroscience

DAVID S. ZEE  
Professor of Neurology, Professor of Neuroscience, Professor of Ophthalmology, Professor of Otolaryngology-Head and Neck Surgery

AMY J. BASTIAN  
Associate Professor of Neuroscience, Associate Professor of Neurology, Associate Professor of Physical Medicine and Rehabilitation

DWIGHT EDWARD BERGLES  
Associate Professor of Neuroscience, Assistant Professor of Otolaryngology-Head and Neck Surgery

MARY ELIZABETH BLUE  
Associate Professor of Neurology, Associate Professor of Neuroscience

JOHN E. DESMOND  
Associate Professor of Neurology, Associate Professor of Neuroscience

NICHOLAS ROGER GAIANO  
Associate Professor of Neurology, Associate Professor of Neuroscience, Associate Professor of Oncology

ELISABETH B. GLOWATZKI  
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Neuroscience

ALFREDO KIRKWOOD, Associate Professor

JAMES J. KNIERIM, Associate Professor

GUO-LI MING  
Associate Professor of Neurology, Associate Professor of Neuroscience

ERNST NIEBUR, Associate Professor

RICHARD J. O’BRIEN  
Associate Professor of Neurology, Joint Appointment in Medicine, Associate Professor of Neuroscience

JONATHAN A. PEVSNER  
Associate Professor of Neuroscience, Joint Appointment in Health Sciences Informatics

MIKHAIL V. PLETNIKOV  
Associate Professor of Psychiatry, Associate Professor of Neuroscience, Associate Professor of Molecular and Comparative Pathobiology

ALFREDO QUINONES-HINOJOSA  
Associate Professor of Neurological Surgery, Associate Professor of Neuroscience, Associate Professor of Oncology

IRVING MICHAEL RETI  
Associate Professor of Psychiatry, Associate Professor of Neuroscience

SHANTHINI SOCKANATHAN, Associate Professor

KATHRYN RAE WAGANATHAN, Associate Professor

MARY ANN WILSON  
Associate Professor of Neurology, Associate Professor of Neuroscience

JIN ZHANG  
Associate Professor of Pharmacology and Molecular Sciences, Associate Professor of Neuroscience, Associate Professor of Oncology
The Department of Neuroscience investigates the nervous system using a variety of approaches, including molecular biologic, biophysical, biochemical, neurophysiological, and anatomical strategies.

REQUIRED COURSE WORK FOR PH.D. PROGRAM

Neuroscience

ME440.712 Science, Ethics, and Society. Dr. Marsh-Armstrong. Offered annually, one Wednesday per month, October-May.

Prerequisite: Consent of course director.
Science as a profession has undergone radical changes in the last decade. Central issues include mentoring, misconduct in science, preparedness of graduate students and postdoctoral fellows for careers in science, and the career choices currently available. To this end, this course will focus on mentoring and issues of ethics and scientific misconduct. Preparedness for a career in science issues will be discussed in the context of funding currently available to scientists and preparation strategies involved in grant writing. In addition, methods of oral presentation and slide preparation will be discussed.

ME440.800 Neuroscience Research.
Research interests represented in the Department of Neuroscience are as follows:

DR. ALBERT  
Cognitive processes in aging and neurodegenerative disorders.

DR. BALL  
Behavioral neuroendocrinology and neuroethology.

DR. BARABAN*  
Molecular mechanisms of neuronal plasticity.

DR. BASTIAN  
Mechanisms of human movement disorders.

DR. BERGLES*  
Sensory physiology; glutamate transporters and glial involvement in neuronal signaling.

DR. BLACKSHAW*  
Molecular basis of cell specification in vertebrate retina and hypothalamus.

DR. BLUE*  
Neurotransmitter mechanisms in development and activity-dependent plasticity.

DR. BRADY  
Behavioral biology (physiology and pharmacology).

DR. BROWN*  
Functional organization of local circuits of the neocortex.

DR. CAMPOCHIARO  
Molecular aspects of retinal repair and regeneration.

DR. CATERINA  
Molecular mechanisms of thermosensation and nociception.

DR. CELNIK  
Neurophysiological mechanisms underlying human motor learning.

DR. CONNOR*  
Object synthesis in higher level visual cortex.

DR. COURTNEY-FARUQUEE  
Functional organization of the neural system for human working memory.

DR. T. DAWSON  
Molecular mechanisms of neuronal cell death and signaling.

DR. V. DAWSON  
Molecular mechanisms of neuronal death and survival.

DR. DEANS  
Mechanisms of sensory system development and cellular morphogenesis.

DR. DESMOND  
Cognitive neuroscience: cerebro-cerebellar circuits in learning and memory.

DR. DOETZLOHER  
Cell fate specification and differentiation in the mammalian auditory system.

DR. DONG  
Molecular and genetic studies of pain-sensing neurons.

DR. DRACHMAN  
Nerve muscle interactions in health and disease.

DR. EGETH  
Perception and cognition; attention and attentional selectivity; eyewitness testimony.

DR. FORTUNE  
Neural basis of behavior; sensory processing; neuroethology.

DR. FOSTER*  
Neural ensemble mechanisms of learning and memory.

DR. FUCHS  
Excitability and synaptic function in cochlear hair cells.

DR. GAIANO*  
Molecular regulation of stem cell maintenance, proliferation, and differentiation in the mammalian brain.

DR. GALLAGHER  
Neural mechanisms of memory and attention.

DR. GINTY*  
Growth and survival signals controlling nervous system development.

DR. GLOWATZKI*  
Synaptic transmission at hair cell synapses in the inner ear.

DR. GRIBIN  
Cellular neurobiology of the peripheral nervous system.

DR. GRIFFIN  
Neural mechanisms of memory and attention.

DR. HATTAR  
Physiological effects of light on mammals; role of the novel melanopsin containing retinal ganglion photoreceptors.

DR. HENDRY*  
Functional organization of primate visual system.

DR. HOKE  
Neurobiology of peripheral neuropathies; development and regeneration of the peripheral nervous system.

DR. HOLLAND  
Neural systems in learning, motivation, and attention.

DR. HSIAO*  
Neurophysiology of the central nervous system.

DR. HUGANIR*  
Molecular mechanisms in the regulation of synaptic plasticity.

DR. KIRKWOOD  
Mechanisms of cortical modification.

DR. KNIEERIM*  
Behavioral neurophysiology of the hippocampal formation.

DR. KOLODIN*  
Molecular mechanisms of growth cone guidance.

DR. KURUVILA*  
Signaling and trafficking of growth factors in neuronal development.

DR. LATERRA  
CNS tumor biology and blood-brain barrier.

DR. LENZ  
Neurophysiology and psychophysics of sensory and motor processing in the human forebrain.
DR. LI*  
Signal transduction in the mammalian nervous system; structure and function of cell surface proteins.

DR. LINDEN*  
Cellular substrates of memory.

DR. LLOYD  
Vesicle trafficking in neurons; axonal and synaptic degeneration in disease.

DR. MARSH-ARMSTRONG*  
Gene regulation; development and disease of the vertebrate retina.

DR. MATTSON*  
Cellular and molecular mechanisms of brain aging and neurodegenerative disorders.

DR. MEFFERT  
Transcriptional regulation of neuronal function in health and disease.

DR. MING  
Molecular mechanisms of neuronal navigation during development and in adulthood.

DR. MINOR  
Neurophysiology of the vestibular system.

DR. MONTELL  
Sensory signaling and TRP channels.

DR. NATH  
Mechanisms of neurodegeneration in dementia due to HIV infection.

DR. NATHANS  
Molecular biology of the visual system.

DR. NIEBUR*  
Computational neuroscience.

DR. O'BRIEN  
Molecular aspects of synapse formation in the brain.

DR. O'HEARN  
Mechanisms of neuronal injury: excitotoxicity; purkinje cell degeneration; neurodegenerative diseases: spinocerebellar ataxias.

DR. PEVSNER*  
Molecular basis of neurological disorders.

DR. PLETNIKOV  
Gene-environment interactions in neurodevelopmental disorders.

DR. POTTER*  
Neural circuits required for drosophila olfaction.

DR. PRICE  
Neurobiology of degenerative brain diseases in animals and man.

DR. QUINONES-HINOJOSA  
Neural stem cells: their role in neurogenesis and pathogenesis.

DR. REED  
Molecular mechanisms of signal transduction and neurogenesis in the olfactory system.

DR. RETI  
Behavioral neuroscience and its clinical applications.

DR. RONNETT*  
Mechanisms of signal transduction in neuronal differentiation and olfaction.

DR. ROSS  
Biology of neuropsychiatric disorders.

DR. ROTHSTEIN  
Molecular mechanisms of neurodegeneration and transporters and their role in neurological disease.

DR. RYUGO  
Anatomy and physiology of the auditory nervous system.

DR. SAWA  
Neurobiology of psychiatric illnesses.

DR. SCHNAAR  
Cell surface molecules in neural cell-cell recognition; myelin maintenance; axon regeneration.

DR. SCHRAMM  
Regulation of sympathetic neurons.

DR. SHADMEHR  
Computational motor control and learning.

DR. SHELTON  
Cognitive neuroscience; spatial cognition; learning and memory.

DR. SHULER*  
Neural mechanisms of reward dependent learning.

DR. SNIKER*  
Molecular mechanisms of neuronal differentiation and olfaction.

DR. SONG  
Mechanisms of regulating adult neural stem cells of mammalian CNS.

DR. STUPHORN  
Neurophysiological mechanisms of decision making and self-control.

DR. SUMNER  
Genetic and cellular mechanisms of motor neuron diseases.

DR. UHL  
Molecular biology and genetics of drugs of abuse.

DR. VON DER HEYDT*  
Neurophysiology of the visual system.

DR. WAGNER  
Muscle growth and regeneration.

DR. J. WANG  
Mechanisms of neurodegeneration and protein quality control.

DR. X. WANG  
Neural basis of auditory perception and learning.

DR. WILSON  
Mechanisms of development, plasticity, and injury in the immature brain.

DR. D. WONG  
In vivo neurochemistry with PET, SPECT, and MRI.

DR. P. WONG  
Molecular mechanism and experimental therapeutic of neurodegerative diseases.

DR. WORLEY*  
Molecular mechanisms of neuronal plasticity.

DR. WU  
Genetic mechanisms and neuronal circuitry underlying sleep in drosophila.

DR. YANTIS  
Cognitive neuroscience of vision.

DR. YAU*  
Visual and olfactory sensory transduction.

DR. YOUNG  
Auditory perception and neurophysiology; organization of central auditory system.

DR. YUE  
Molecular physiology of calcium channels and calcium signaling.

DR. ZACK  
Molecular approaches to the study of retinal development and disease.
DR. ZEE
Regulation of eye movements.

DR. J. ZHANG
Spatiotemporal regulation of protein kinases and second messengers.

DR. K. ZHANG
Theoretical neuroscience.

DR. ZHOU
Molecular mechanisms of axon growth and guidance during development CNS regeneration.

* Holds primary appointment in Neuroscience; all others hold primary appointments in another department.

**ME440.801 Readings in Neuroscience.** Dr. Dong. Tuesday, 1:00 all year.
Prerequisite: Consent of course director.
This course can be taken instead of ME440.811.
A weekly lunchtime talk on current literature topics of special interest. Graduate students receive close faculty guidance in preparing presentations.

**ME440.802 Current Topics in Neuroscience.** Dr. Foster. Thursday, 1:00; all year.
Prerequisite: Consent of course director.
Weekly lecture on current research by active researchers. Topics are chosen so that an overall balance of subjects in neuroscience are covered in the course of a year. Students receive a reading list before the seminar and will be given an opportunity to meet with outside speakers.

**ME440.803 Teaching in Neuroscience.** Staff. All quarters.
Prerequisite: Consent of instructor.
Designed for preparation to become a teaching assistant in any Neuroscience Course. When registering for this course, please indicate the course number for which you will serve as a teaching assistant.

**ME440.811 Readings in Systems Neuroscience.** Drs. Stuphorn, and Niebur. All year; yearly.
This course can be taken instead of ME440.801.
The course will focus on neural mechanisms of perception, attention, learning and memory from the perspective of systems neuroscience and will be based on the current original literature.

**ME440.811 Neuroscience and Cognition I.** Dr. Blackshaw. First and second quarters yearly.
Prerequisites: Basic Cell and Molecular Biology (may be taken concurrently) or permission from course directors.

This is the first half of a four-quarter course on the cellular and molecular basis of neural function and the neural basis of perception, cognition, and behavior. Topics covered in this half include (1) perception of objects, space, and self, (2) movement and balance, (3) learning and memory, (4) neurologic and psychiatric disorders, and (5) global function in the nervous system. Lectures will be presented by faculty in the Neuroscience, Neurology, Biomedical Engineering, Psychology, and Cognitive Science departments. The course will also have a laboratory component. This course is required of all students in the Neuroscience Graduate Program. Students outside the program may take this course independent of Neuroscience and Cognition I with permission from course directors.

OTHER COURSES AND ELECTIVE OPPORTUNITIES—Curriculum Consultant: Drs. David Ginty and Steven Hsiao.

In addition to the core courses, each student selects advanced electives offered by members of the Neuroscience Training Program or other departments at the Medical School. Students in the Neuroscience Training Program are required to complete six elective courses by the end of their second year. These may be a combination of small seminar-style elective courses in neuroscience, listed below, and advanced courses in other fields relevant to their research interests, such as molecular biology, genetics, immunology, biochemistry, biomedical engineering, biostatistics, pharmacology, physiology, anatomy and computer science.

**ME440.701 Diseases of the Brain.** Dr. Ross. Fourth quarter, bi-yearly.
Prerequisites: Neuroscience Cognition I and II or consent of course director.

This course will consist of lectures and discussions concerning the application of molecular techniques in the study of neurologic and psychiatric illnesses. Specific diseases shall serve as examples for analysis of abnormal genes, protein products and neurotoxicity.

**ME440.705 The Cellular and Molecular Basis of Neural Development.** Drs. Ginty, Kolodkin and Sockanathan. Fourth quarter; every year.
Prerequisite: Completion of Neuroscience Cognition I or consent of course director.

A seminar and reading course devoted to the discussion of the cellular and molecular processes underlying neuronal development. Topics include...
cell proliferation and migration, nervous system patterning, differentiation of neurons and glia, morphogen and growth factor signaling mechanism, neuronal polarity, among others. Examples from vertebrate and invertebrate model systems will be covered. This course is designed to complement The Cellular and Molecular Basis of Neurodevelopment II: Axon Guidance and Synaptogenesis, offered alternate years.

Prerequisite: Consent of course director.
A seminar and reading course devoted to the molecular mechanisms underlying synaptic transmission and the regulation of synaptic plasticity. The structure and function of neurotransmitter receptors, ion channels and synaptic vesicle proteins will be discussed. In addition, the molecular mechanisms involved in the control of synaptic transmission such as the trans-synaptic regulation of the function and expression of synaptic proteins will be examined.

ME440.709 Neuropharmacology. Drs. Baraban and Snyder. First quarter, bi-yearly. Three hours per week plus assigned reading.
Prerequisite: Consent of course director.
Classical studies elucidating the mechanisms of action of psychoactive substances led to seminal discoveries about how the brain works. Conversely, our ability to exploit modern advances in molecular neurobiology to treat neurological and psychiatric diseases will depend on successful development of new drugs based on these findings.
The instructors present an overview of the mechanisms of action of several, widely used drug classes and the broad range of methods used to elucidate their effects on the brain. Furthermore, students present papers describing recent advances in this dynamic field of research.

Prerequisite: Completion of Neuroscience Cognition I or consent of course directors.
This is a state-of-the-art course on molecular mechanisms of cell death. A multi-disciplinary approach spanning multiple organ systems will be utilized to illustrate key features of cell death programs. The course will highlight research ongoing at Johns Hopkins University as well as additional current advances in the molecular biology of cell death. Each week will be composed of a lecture reviewing critical features of a cell death pathway followed by journal review of recently published seminal papers. Topics will include anti-apoptotic proteins, intracellular proteases, p53, c-myc, excitotoxicity, free radicals, Fas, TNFa death programs, ER stress response and developmental programmed cell death.

ME440.711 Cellular and Molecular Basis of Neural Development II: Regulation of Neural Connectivity. Drs. Ginty, Kolodkin, and Sockanathan. Fourth quarter; every other year.
A seminar and reading course devoted to the discussion of the cellular and molecular processes underlying neuronal development. Topics include guidance mechanisms, target selection, synaptogenesis, dendritic growth, target derived signals, activity dependent plasticity of synapse formation, and regeneration, among others. Examples from vertebrate and invertebrate model systems will be covered. This course is designed to complement The Cellular and Molecular Basis of Neural Development I: Neuronal Differentiation, offered alternate years. Students must have completed Introduction to Neuroscience and Cognition I or receive the consent of course directors prior to registering for this course.

ME440.715 Trends in the Neurobiology of Aging. Dr. Mattson. First quarter every other year.
As the average lifespan of humans increases, age-related dysfunction of the nervous system, and neurodegenerative disorders such as Alzheimer’s and Parkinson’s diseases, are becoming major concerns in our society. Recent advances in understanding the molecular and cellular underpinnings of nervous system aging and neurodegenerative disorders will be the focus of this course. Emerging findings of genetic and environmental factors that either promote successful brain aging or predispose to age-related neurological disorders, and elucidation of their underlying molecular and cellular mechanisms, will be emphasized. The course will consist of several introductory lectures and subsequent sessions in which hot topics in the field are discussed.

ME440.720 The Retinal Ganglion Cell. Dr. Marsh-Armstrong. Fourth quarter every other year.
The course will focus on one cell type: the retinal ganglion cell (RGC). From the perspective of cell biology, developmental biology, physiology, and pathobiology, RGCs share many features with other projection neurons, including a susceptibility to disease. Thus, this course will be directed not only at students who study the retina, but also to neurobiology students who want to take an in depth and holistic look at all aspects of neurobiology pertaining to one particular neuron. The course will take a comprehensive approach to understanding from a cellular and molecular perspective all aspects about the life and death of RGCs. First, the course will cover the structure and function of RGCs: anatomy, morphology, and physiology of RGCs, focusing on the diversity of RGC subtypes and their interaction with various glial cells. Second, the course will cover the development of RGCs: how they are specified; how they differentiate; how they sprout processes; how their axons reach central targets; and RGC dependence on trophic support for survival. The third part of the course will focus on diseases affecting retinal ganglion cells, focusing principally on glaucoma, but also covering other optic neuropathies as well as the response of RGCs to axotomy. The disease section will cover similarities to other neurodegenerations, and will integrate information regarding the structure/function as well as development parts of the course.
The course will have the format of lectures on Mondays by experts in the field, followed by student led discussions on Wednesdays. The discussions will encourage students to critically evaluate the literature, to assess the strength and weaknesses offered by various hypotheses, and to iden-
This is a special topics course centered around understanding the generation, logic of neuronal connectivity in the spinal cord. Previous topics included an in-depth assessment of the corticospinal tract (CST), and used the CST as a focus for examining broader issues of axon guidance, axon sprouting and regeneration, and synaptic specificity. Future topics will include development and function of neuronal subtypes in the spinal cord, regeneration and degeneration of spinal circuitry, and integration of spinal circuits in the context of CNS and PNS function.

ME440.722 Visual System. Dr. Hendry. First and second quarter every year.
From outer segments of photoreceptors to the Fusiform Face Area of the cerebral cortex we have come to understand how the visual system works at each of many fundamental levels. This course examines the basis for perception of visible objects at each of these levels. We will use the secondary literature (scientific reviews) to accent the hard-won truths about visual system functional organization and to highlight ongoing controversies. Students will be lead through carefully chosen reviews in a series of lectures and written summaries prepared by faculty. Three exams and a final exam will test students not on their memorization of minutiae but on their understanding of fundamental principles.

ME440.723 Writing About the Brain. Dr. Linden. Third quarter; every other year.
The goal of this course is to train neuroscientists to effectively and clearly communicate ideas about nervous system function to a general audience. Students shall read and analyze writings about neuroscience and shall interact with established science writers. More importantly, they shall develop, research and write both news and feature-length stories that shall be presented, critiqued and revised each week in a workshop format. Enrollment limited to 10 students. Prerequisites: Neuroscience and Cognition I and approval of instructor.

ME440.803 Teaching in Neuroscience. Staff. All quarters.
Prerequisite: Consent of instructor.
Designed for preparation to become a teaching assistant in any Neuroscience Course. When registering for this course, please indicate the course number for which you will serve as a teaching assistant.

ME440.804 Directed Reading in Neuroscience. Staff. All quarters.
Directed, independent reading and discussion of current neuroscience literature in a personalized tutorial.

ME440.807 Topics in Somatosensory Research. Dr. Hsiao. Fourth Quarter; offered every year.

Prerequisite: Students must have completed a basic neuroscience course such as Neuroscience A or have permission from one of the instructors.
A seminar and reading course devoted to current research into information processing in the nervous system. Neural coding, the neural representation of images and information, and the neural mechanisms of pattern recognition, association, perception, memory and attention will be discussed. The investigation of information processing depends equally on psychophysical, neurophysiological and computational approaches; the course will draw from the literature in each of these areas.

ME440.808 Physiology of Sensory Transduction. Drs. Fuchs and Yau. Second quarter every other year.
Prerequisite: Consent of instructor.
A seminar and reading course that covers current research in sensory transduction from a physiological perspective. Visual, chemical and auditory transductions will be covered.

Prerequisites: Neuroscience A or Neuroscience & Cognition I or permission from course directors. Must be taken concurrently with Readings in Systems Neuroscience, ME440.810.
The brain is an information processing system without parallel. It excels at recognizing objects and substances, reconstructing space, analyzing sound environments, controlling complex behaviors, and storing a lifetime’s worth of events and experiences. The neural mechanisms underlying these abilities are studied by a large community of systems and cognitive neuroscientists. This research has generated a rapidly evolving field of high-profile discoveries and lively debates between competing laboratories. This course aims to convey a clear sense of this field by focusing on current experimental and conceptual controversies regarding organization and function in the vertebrate nervous system. Each week will focus on a different topic represented by two or more recent papers (selected by an instructor) reflecting opposing points of view. Students will present the papers informally and direct a debate over the relative merits of the conflicting viewpoints. The quarter-long course will be divided into 2-3 week sections covering different sensory, motor, or cognitive systems, in addition to computational neuroscience. There will be one 2-hour debate each week, and participation in the 1-hour Systems Journal Club (Readings in Systems Neuroscience, ME440.810) will also be required.

ME440.814 Stem cells: Unit of Development and Unit of Regeneration. Drs. Ming and Song. Third quarter; bi-yearly.
This is a seminar and reading course devoted to the discussion of different type of stem cells. The course is designed to give a broad view of mammalian stem cells. The topics will range from pluripotent stem cells (embryonic stem cells and embryo-
onic germ cells) to multipotent somatic stem cells (in brain, heart, blood, etc.) during development as well as in adult. We will cover the basic biology of these stem cells as well as bioengineering and application of these stem cells to potential treatments of human diseases. This elective course is limited to 20 (25) students.

**Elective Course Co-Sponsored by Wilmer Eye Institute and the Department of Neuroscience.**

ME280.700 Cellular and Molecular Biology of Photoreceptors in Health and Diseases. Dr. Zack. Third quarter every year.

The course will present a multidisciplinary approach to the biology and pathology of photoreceptor cells. The first block of lectures will discuss the development, organization, cell biology and biochemistry of photoreceptor cells, and the metabolic bases of their susceptibility to injury; emphasis will be on vertebrate photoreceptors, but contributions from studies with invertebrates will also be included. The next block will be devoted to the photoreceptor microenvironment, including retinal pigment epithelial and Muller cells, the interphotoreceptor matrix, trophic factors and retinoids, light, oxygen and neuromodulators. The third block will be devoted to photoreceptor physiology, including the visual cycle, phototransduction, dark adaptation, spectral sensitivity and color mixture, electoretinography, and rod and cone response dynamics. The next section, dealing with pathology of photoreceptors and related outer retinal structures, will cover some hereditary diseases of known genetic origin, such as retinitis pigmentosa, gyrate atrophy, and abnormalities of color vision, as well as hereditary photoreceptor dystrophies of unknown origin. One lecture will be devoted to strategies for the search for genetic defects responsible for these diseases. After a discussion of macular degeneration and retinal detachment, the last block of lectures will review recent progress in the search for preventive and therapeutic approaches for these diseases, including the development of animal models, gene therapy, transplantation techniques, possible uses of stem cell therapy, and growth factor administration.
Oncology Center

WILLIAM G. NELSON
Marion I. Knott Director and Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences, Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

RICHARD FREDERICK AMBINDER
James B. Murphy Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

ROBERT J. ARCECI
King Fahd Professor of Pediatric Oncology, Professor of Pediatrics

PEDRAM ARGANI
Professor of Pathology, Professor of Oncology

J. THOMAS AUGUST
University Distinguished Service Professor of Pharmacology, Professor of Oncology

CHARLES M. BALCH
Professor of Surgery, Professor of Dermatology, Professor of Oncology

PETER B. BARKER
Professor of Radiology, Professor of Oncology

STEPHEN B. BAYLIN
Virginia and Daniel K. Ludwig Professor of Cancer Research in the Department of Oncology, Professor of Medicine

ZAVER M. BHUWALLA
Professor of Radiology, Professor of Oncology

KARIN J. BLAKEMORE
Professor of Gynecology and Obstetrics in Genetic Medicine, Professor of Oncology

JEFF D. BOEKE
Professor of Molecular Biology and Genetics, Professor of Oncology

MICHAEL J. BOROWITZ
Professor of Pathology, Professor of Oncology

FREDERICK L. BRANCATI
Samsung Professor of Medicine, Professor of Oncology

HENRY BREM
Harvey Cushing Professor of Neurosurgery, Professor of Biomedical Engineering, Professor of Oncology, Joint Appointment in Ophthalmology

ROBERT A. BRODSKY
Edyth Harris Lucas and Clara Lucas Lynn Professor of Medicine, Professor of Oncology

PETER C. BURGER
Professor of Pathology, Professor of Neurological Surgery, Professor of Oncology

JOSEPH A. CALIFANO, III
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology

JOHN L. CAMERON
University Distinguished Service Professor, Alfred Bialock Professor of Surgery, Professor of Oncology

MICHAEL A. CARDUCCI
AEGON Professor of Prostate Cancer Research in the Department of Oncology, Professor of Urology

BENJAMIN S. CARSON
Benjamin S. Carson, Sr. M.D. and Dr. Evelyn Spiroan, RN Professor of Pediatric Neurosurgery, Professor of Oncology, Professor of Pediatrics, Professor of Plastic and Reconstructive Surgery

H. BALLENTINE CARTER
Professor of Urology, Professor of Oncology

JAMES F. CASELLA
Rainey Professor of Pediatric Hematology in the Department of Pediatrics, Professor of Oncology

ROBERT A. CASERO, JR., Professor

DANIEL W. CHAN
Professor of Pathology, Professor of Oncology, Professor of Radiology, Professor of Urology

ALEX YUANG-CHI CHANG, Professor

LIEPing CHEN
Professor of Oncology, Professor of Dermatology

MICHAEL A. CHOTI
Jacob C. Handelsman Professor of Abdominal Surgery, Professor of Oncology, Professor of Radiology

CURT I. CIVIN
Adjunct Professor of Oncology, Adjunct Professor of Pediatrics

DOUGLAS PAUL CLARK
Professor of Pathology, Professor of Oncology

DONALD S. COFFEY
Catherine Iola and J. Smith Michael Distinguished Professor of Urology, Professor of Oncology, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

PHILIP ARTHUR COLE
E.K. Marshall and Thomas H. Maren Professor of Pharmacology, Professor of Oncology

C. NORMAN COLEMAN
Visiting Professor of Radiation Oncology and Molecular Radiation Sciences, Visiting Professor of Oncology

PAUL M. COLOMBANI
Robert Garrett Professor of Pediatric Surgery, Professor of Oncology, Professor of Pediatrics

CHARLES W. CUMMINGS
Distinguished Service Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology

CHI VAN DANG
Johns Hopkins Family Professor for Oncology Research in the Department of Medicine, Professor of Cell Biology, Joint Appointment in Molecular Biology and Genetics, Professor of Oncology, Professor of Pathology

NANCY E. DAVIDSON, Adjunct Professor

ANGELO MICHAEL DEMARZO
Professor of Pathology, Professor of Oncology, Professor of Urology

SAMUEL RAY DENMEADE
Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Professor of Urology
WAYNE M. KOCH  
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology

FRANCIS PAUL KUHJA  
Professor of Pathology (to 11/10/2010), Joint Appointment in Biological Chemistry (to 11/10/2010), Professor of Oncology (to 11/10/2010)

ROBERT J. KURMAN  
Richard W. Telinde Distinguished Professor of Gynecologic Pathology in the Department of Gynecology and Obstetrics, Professor of Oncology, Professor of Pathology

PAUL W. LADENSON  
John Eager Howard Professor of Endocrinology and Metabolism in the Department of Medicine, University Distinguished Professor of Medicine, Professor of Oncology, Professor of Pathology, Professor of Radiology

MARIKKI K. LAIHO  
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Oncology

JOHN J. LATERRA  
Professor of Neurology, Professor of Neuroscience, Professor of Oncology

STEVEN D. LEACH  
Paul K. Neumann Professor of Pancreatic Cancer in the Department of Surgery, Professor of Cell Biology, Professor of Oncology

DANIEL J. LEAHY  
Professor of Biophysics and Biophysical Chemistry, Professor of Oncology

HYAM ISAAC LEVITSKY  
Professor of Oncology, Professor of Medicine, Professor of Urology

JONATHAN S. LEWIN  
Martin W. Donner Professor of Radiology, Professor of Biomedical Engineering, Professor of Neurological Surgery, Professor of Oncology

JUN LIU  
Professor of Pharmacology and Molecular Sciences, Professor of Oncology

ANIRBAN MAITRA  
Professor of Pathology (from 11/01/2010), Professor of Oncology (from 11/01/2010), Associate Professor of Pathology (to 10/31/2010), Associate Professor of Oncology (to 10/31/2010)

KIEREN ANNE MARR  
Professor of Medicine, Professor of Oncology

BARRY ROSS MEISENBERG, Visiting Professor

STEPHEN J. MELTZER  
Harry and Betty Meyerberg/Thomas R. Hendrix Professor of Gastroenterology in the Department of Medicine, Professor of Oncology

ELIZABETH ANNE MONTGOMERY  
Professor of Pathology, Professor of Oncology, Professor of Orthopaedic Surgery

SUSUMU MORI  
Professor of Radiology, Professor of Oncology

BARRY D. NELKIN, Professor

JOHN NICHOLAS  
Professor of Oncology (from 11/01/2010), Associate Professor of Oncology (to 10/31/2010)

ALESSANDRO OLIVI  
Professor of Neurosurgical Surgery, Professor of Oncology

ALBERT H. OWENS, JR.  
University Distinguished Service Professor Emeritus of Oncology, University Distinguished Service Professor Emeritus of Medicine

DUOJIA PAN  
Professor of Molecular Biology and Genetics, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

AKHILESH PANDEY  
Professor of Biological Chemistry in Genetic Medicine, Professor of Oncology, Professor of Pathology

DREW MARK PARDOLL  
Martin D. Abeloff Professor of Oncology, Professor of Medicine, Professor of Pathology

GIOVANNI PARMIGIANI  
Adjunct Professor of Oncology (from 09/01/2010), Professor of Oncology (on leave of absence to 08/31/2010), Joint Appointment in Health Sciences Informatics (on leave of absence to 08/31/2010)

ALAN WAYNE PARTIN  
David Hall McConnell Professor of Urology, Professor of Oncology, Professor of Pathology

HERBERT MICHAEL PINEDO, Visiting Professor

PAULA M. PITHA-ROWE  
Professor of Oncology, Joint Appointment in Molecular Biology and Genetics

MARTIN GILBERT POMPER  
Professor of Radiology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Joint Appointment in Psychiatry, Professor of Radiation Oncology and Molecular Radiation Sciences

ALEKSANDER S. POPEL  
Professor of Biomedical Engineering, Professor of Medicine, Professor of Oncology

DANIEL M. RABEN  
Professor of Biological Chemistry, Professor of Oncology, Professor of Physiology

DANIELE RIGAMONTI  
Salisbury Family Professor of Neurological Surgery, Professor of Oncology, Professor of Radiology, Joint Appointment in Physical Medicine and Rehabilitation, Professor of Radiation Oncology and Molecular Radiation Sciences

GREGORY J. RIGGINS  
Irving J. Sherman Research Professor of Neurosurgery, Professor of Oncology

RICHARD B. S. RODEN  
Professor of Pathology, Professor of Gynecology and Obstetrics, Professor of Oncology

GARY L. ROSNER, Professor

CHARLES MICHAEL RUDIN, Professor

JONATHAN SCHNECK  
Professor of Pathology, Associate Professor of Medicine, Professor of Oncology
FRED BUNZ
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

MARCIA IRENE FOO CANTO
Associate Professor of Medicine, Associate Professor of Oncology

ALLEN R. CHEN
Associate Professor of Oncology, Associate Professor of Pediatrics

LINZHAO CHENG
Associate Professor of Medicine, Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology

CHRISTINE H. CHUNG, Associate Professor

KENNETH J. COHEN
Associate Professor of Oncology, Associate Professor of Pediatrics

ANDREA LYNN COX
Associate Professor of Medicine, Associate Professor of Oncology

BARBARA J. CRAIN
Associate Professor of Pathology, Associate Professor of Neurology, Associate Professor of Oncology

PRASHANT DESAI, Associate Professor

CHARLES GEORGE DRAKE
Associate Professor of Oncology, Assistant Professor of Urology

MARK DOUGLAS DUNCAN
Associate Professor of Surgery, Associate Professor of Oncology

CHARLES GEORGE EBERHART
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Ophthalmology

LEISHA ANN EMENS, Associate Professor

LAURA MARIE FAYAD
Associate Professor of Radiology, Associate Professor of Oncology, Assistant Professor of Orthopaedic Surgery

JOHN HOWARD FETTING, III
Associate Professor of Oncology, Associate Professor of Medicine, Assistant Professor of Psychiatry

DEBORAH ANNE FRASSICA
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

EPHRAIM J. FUCHS, Associate Professor

NICHOLAS ROGER GAIANO
Associate Professor of Neurology, Associate Professor of Neuroscience, Associate Professor of Oncology

MAURA LIANNE GILLISON, Adjunct Associate Professor

DOUGLAS EDWARD GLADSTONE, Visiting Associate Professor

KRISTINE GLUNDE
Associate Professor of Radiology, Associate Professor of Oncology

CHRISTOPHER D. GOCKE
Associate Professor of Pathology, Associate Professor of Oncology

LOUISE BARNETT GROCHOW
Associate Professor of Oncology, Associate Professor of Medicine

MISOP HAN
Associate Professor of Urology, Associate Professor of Oncology

FREDERICK H. HAUSHEER, Adjunct Associate Professor

RICHARD FRANK HEITMILLER
Associate Professor of Surgery, Associate Professor of Oncology

MANUEL HIDALGO, Adjunct Associate Professor

PENG HUANG, Associate Professor

CAROL ANN HUFF
Associate Professor of Oncology (from 10/01/2010), Assistant Professor of Oncology (to 09/30/2010), Assistant Professor of Medicine

CHIEN-FU HUNG
Associate Professor of Pathology, Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology

DAVID L. HUSO
Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Oncology

CHRISTINE A. IACOBUZIO-DONAHUE
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Surgery

ROBERT S. JACOB
Associate Professor of Oncology

ALISON PATRICIA KLEIN
Associate Professor of Oncology, Assistant Professor of Pathology

LAWRENCE R. KLEINBERG
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

JEANNE KOWALSKI, Associate Professor

MICHAEL A. KRAUT
Associate Professor of Radiology, Associate Professor of Oncology

BRIAN NEAL LABARBERA
Associate Professor of Neurology, Associate Professor of Oncology

DANIEL ALEXANDER LAHERU
Associate Professor of Oncology, Occupying the Ian T. MacMillan Chair in Clinical Pancreatic Cancer Research

JULIE ROBIN LANGE
Associate Professor of Surgery, Assistant Professor of Dermatology, Associate Professor of Oncology
CHRISTOPH LENGAUER, Adjunct Associate Professor
MARK JAMES LEVIS
Associate Professor of Oncology, Associate Professor of Medicine
VICTOR LEVITSKY, Associate Professor
DAVID MARK LOEB
Associate Professor of Oncology, Associate Professor of Pediatrics
LEO LUZNIK, Associate Professor
WILLIAM HIKARU MATSUI, Associate Professor
RONNIE CHARLES MEASE
Associate Professor of Radiology, Associate Professor of Oncology
JOSHUA TODD MENDELL
Associate Professor of Pediatrics in Genetic Medicine, Joint Appointment in Molecular Biology and Genetics, Associate Professor of Oncology (from 09/01/2010)
SHANNATH L. MERBS
Associate Professor of Ophthalmology, Associate Professor of Oncology
CAROLE B. MILLER, Associate Professor
GEORGES JABBOURE NETTO
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology
MICHAEL F. OCHS
Associate Professor of Oncology, Joint Appointment in Health Sciences Informatics
NICKOLAS PAPADOPOULOS, Associate Professor
BEN HO PARK, Associate Professor
TIMOTHY MICHAEL PAWLIK
Associate Professor of Surgery, Associate Professor of Oncology
ROBERTO PILI, Adjunct Associate Professor
JONATHAN D. POWELL
Associate Professor of Oncology, Associate Professor of Pharmacology and Molecular Sciences
JIANG QIAN
Associate Professor of Ophthalmology, Associate Professor of Oncology
ALFREDO QUINONES-HINOJOSA
Associate Professor of Neurological Surgery, Associate Professor of Neuroscience, Associate Professor of Oncology
VENU RAMAN
Associate Professor of Radiology, Associate Professor of Oncology
STUART CAMPBELL RAY
Associate Professor of Medicine, Joint Appointment in Health Sciences Informatics, Associate Professor of Oncology
LINDA M.S. RESAR
Associate Professor of Medicine, Associate Professor of Oncology
RONALD RODRIGUEZ
Associate Professor of Urology, Associate Professor of Oncology, Associate Professor of Radiation Oncology and Molecular Radiation Sciences
GIUSEPPE SANGUINETI
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Associate Professor of Otolaryngology-Head and Neck Surgery
ALAN F. SCOTT
Associate Professor of Medicine in Genetic Medicine, Associate Professor of Oncology
ERIC J. SEIFTER
Associate Professor of Medicine, Associate Professor of Oncology
GARY R. SHAPIO, Visiting Associate Professor
WILLIAM H. SHARFMAN
Associate Professor of Oncology, Associate Professor of Dermatology
B. DOUGLAS SMITH, Associate Professor
DUANE THOMAS SMOOT, Associate Professor
LORI JEAN SOKOLL
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology
DANNY YEONG SONG
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Associate Professor of Urology
VERED STEARNS, Associate Professor
MICHAEL SCOTT TORBENSON
Associate Professor of Pathology, Associate Professor of Oncology
CORNELIA LIU TRIMBLE
Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology, Associate Professor of Pathology
EDWARD LLOYD TRIMBLE
Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology
BRUCE JEFFREY TROCK
Associate Professor of Urology, Associate Professor of Oncology
THEODORE N. TSANGARIS
Associate Professor of Surgery, Associate Professor of Oncology
ANTHONY P. TUFARO
Associate Professor of Plastic and Reconstructive Surgery, Associate Professor of Oncology
ELSKEN VAN DER WALL, Visiting Associate Professor
VICTOR E. VELCULESCU, Associate Professor
ROBERT W. VELTRI
Associate Professor of Urology, Associate Professor of Oncology
TIAN-LI WANG
Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology
ANTONIO CARLOS WOLFF, Associate Professor
JEAN-PAUL WOLINSKY
Associate Professor of Neurological Surgery, Associate Professor of Oncology
MICHAEL MINGZHAO XING
Associate Professor of Medicine, Associate Professor of Oncology
RICHARD CEDRIC ZELLARS
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

JIN ZHANG
Associate Professor of Pharmacology and Molecular Sciences, Associate Professor of Neuroscience, Associate Professor of Oncology

ZHEN ZHANG
Associate Professor of Pathology, Associate Professor of Oncology

SHIBIN ZHOU, Associate Professor

NISHANT AGRAWAL
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology

ROBERT ALBERT ANDERS
Associate Professor of Pathology, Assistant Professor of Oncology

EMMANUEL STYLIANOS ANTONARAKIS, Assistant Professor

MARY Y. ARMARIOS, Assistant Professor

NILOFER SABA HUSAIN AZAD, Assistant Professor

LAVINA D. BHARWANI, Assistant Professor

TRINITY JUDE BIVALACQUA
Assistant Professor of Urology, Assistant Professor of Oncology

JAISHRI O’NEILL BLAKELEY
Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Assistant Professor of Oncology

JAVIER BOLANOS-MEADE, Assistant Professor

G. STEVEN BOVA
Assistant Professor of Pathology, Joint Appointment in Health Sciences Informatics, Assistant Professor of Oncology, Assistant Professor of Urology

JULIE RENEE BRAHMER, Assistant Professor

PATRICK ANDREW BROWN
Assistant Professor of Oncology, Assistant Professor of Pediatrics

KATHLEEN HELEN BURNS
Assistant Professor of Pathology, Assistant Professor of Oncology

HETTY EILEEN CARRAWAY, Assistant Professor

PAUL CELANO
Assistant Professor of Oncology, Assistant Professor of Gynecology and Obstetrics

STEPHEN J. CHANOCK
Assistant Professor of Oncology, Lecturer in Pediatrics

STEVE YOON-HO CHO
Assistant Professor of Radiology, Assistant Professor of Oncology

AKHIL CHOPRA, Assistant Professor

GARY IRVIN COHEN, Assistant Professor

JOHN D. CONROY, JR., Assistant Professor

LESLIE COPE, Assistant Professor

DAVID PETER COSGROVE, Assistant Professor

ALAN P. B. DACKIW
Assistant Professor of Surgery, Assistant Professor of Oncology

LUIS A. DIAZ, JR., Assistant Professor

BARISH H. EDIL
Assistant Professor of Surgery, Assistant Professor of Oncology

ANDREW J. EWALD
Assistant Professor of Cell Biology, Assistant Professor of Oncology

ERIC C. FORD
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

SONIA FRANCO
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

WAYNE A. I. FREDERICK, Adjunct Assistant Professor

GARY LOUIS GALLIA
Assistant Professor of Neurological Surgery, Assistant Professor of Oncology

SUSAN LYN GEARHART
Assistant Professor of Surgery, Assistant Professor of Oncology

ROBERT L. GIUNTOLI, II
Assistant Professor of Gynecology and Obstetrics, Assistant Professor of Oncology

HANS JOERG HAMMERS, Assistant Professor

CHRISTINE LEE HANN, Assistant Professor

JOSEPH M. HERMAN
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology, Assistant Professor of Surgery

MATTHIAS HOLDHOFF, Assistant Professor (from 07/03/2010)

MOHAMMAD OBAIDUL HOQUE
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology, Assistant Professor of Urology

FRANCK HOUSSEAU, Assistant Professor

WEN-SON HSIEH, Assistant Professor

TAMARO HUDSON, Adjunct Assistant Professor

LISA K. JACOBS
Associate Professor of Surgery, Assistant Professor of Oncology

SANJAY RAJ JAIN, Adjunct Assistant Professor

YOON-YOUNG JANG, Assistant Professor

ROSALYN ANNE JUERGENS
Assistant Professor of Oncology, Assistant Professor of Medicine

SUSHANT KRISHNA KACHHAP, Assistant Professor

MIHOKO KAI
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

YVETTE L. KASAMON
Assistant Professor of Oncology, Assistant Professor of Medicine

YOSHINORI KATO
Assistant Professor of Radiology, Assistant Professor of Oncology

SAEED R. KHAN
Adjunct Assistant Professor of Oncology, Adjunct Assistant Professor of Radiology
YONGGANG ZHANG
Research Associate in Radiation Oncology
and Molecular Radiation Sciences, Research Associate in Oncology
MING ZHAO, Research Associate
GEFENG ZHU, Research Associate
JIANCHEO ZONG, Research Associate
CRAIG A. DIONNE, Visiting Scientist
DASHENG ZHENG, Visiting Scientist (to 11/09/2010)
QUN ZHOU, Visiting Scientist

FACULTY ASSOCIATED WITH THE ONCOLOGY CENTER HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
PAUL M. NESS
Professor of Pathology

The Bloomberg School of Public Health:
DAVID BRIAN ABRAMS
Professor of Health, Behavior, and Society
TERRI H. BEATY
Professor of Epidemiology
SHYAM S. BISWAL
Associate Professor of Environmental Health Sciences
THOMAS A. BURKE
Professor of Health Policy and Management
GYPYAMBER D'SOUZA
Assistant Professor of Epidemiology
SYDNEY MORSS DY
Assistant Professor of Health Policy and Management
JEAN G. FORD
Associate Professor of Epidemiology
KEVIN D. FRICK
Professor of Health Policy and Management
PATTI E. GRAVITT
Associate Professor of Epidemiology
JOHN D. GROOPOMAN
Professor of Environmental Health Sciences
J. MARIE HARDWICK
Professor of Molecular Microbiology and Immunology
DAVID ROBERT HOLTGRAVE
Professor and Chair of Health Behavior and Society
HEE-SOON JUON
Associate Professor of Health Behavior and Society
NORMA KANAREK
Associate Professor of Environmental Health Sciences
THOMAS W. KENSLEHR
Professor of Environmental Health Sciences
GREGORY D. KIRK
Associate Professor of Epidemiology
ANN CARROLL KLASSEN
Associate Professor of Health Policy and Management
THOMAS A. LAVEIST
Professor of Health Policy and Management
ELIZABETH A. PLATZ
Associate Professor of Epidemiology
SEKHAR POTHIREDDY
Associate Professor of Environmental Health Sciences
RAJIV N. RIMAL
Associate Professor of Health Behavior and Society
DEBRA L. ROTHER
Professor of Health Behavior and Society
KEERTI V. SHAH
Professor of Molecular Microbiology & Immunology
KATHERINE CLEGG SMITH
Associate Professor of Health Behavior and Society
FRANCES STILLMAN
Associate Professor of Epidemiology
PAUL T. STRICKLAND
Professor of Environmental Health Sciences
ELIZABETH SUGAR
Assistant Scientist in Epidemiology
MICHAEL A. TRUSH
Professor of Environmental Health Sciences
KALA VISVANATHAN
Associate Professor of Epidemiology
VIRGINIA MARIE WEAVER
Associate Professor of Environmental Health Sciences
JAMES D. YAGER, JR.
Professor of Environmental Health Sciences

The School of Nursing:
FANNIE GASTON-JOHANSSON
Professor of Nursing
SHARON JEAN OLSER
Assistant Professor of Nursing
JANE C. SHIVNAN
Instructor in Nursing
JENNIFER A. WENZEL
Assistant Professor of Nursing

The G.W.C. Whiting School of Engineering:
JEFFREY J. GRAY
Associate Professor of Chemical and Biomolecular Engineering
KONSTANTINOS KONSTANTOPOULOS
Professor of Chemical and Biomolecular Engineering
PETER C. SEARSON
Professor of Materials Science and Engineering
TZA-HUEI WANG
Professor of Mechanical and Biomedical Engineering
DENIS WIRTZ
Professor of Chemical and Biomolecular Engineering

The Oncology Center is concerned with research and education in cancer and related disorders and the application of new knowledge to improve the care of patients with these diseases. Multidisciplinary approaches are emphasized.
REQUIRED COURSEWORK FOR M.D. PROGRAM

First Year

250.612 Genes to Society/Hematology and Oncology, Dr. Michael Borowitz

ELECTIVE OPPORTUNITIES—Curricular Consultants: Drs. Ambinder, Baylin, Cohen, Donehower, Isaacs, Nelson, and Pardoll. Elective courses must be approved by the preceptor; any member of the Center faculty may act as preceptor.

E1. Seminar Course: Biology of Cancer. Drs. Hans-Joerg Hammers and Christine Han (course directors). Fourth quarter, two hours per week. Offered every other year; alternates with E2. Selected timely topics are considered in some detail. Emphasis is placed on the fundamental processes underlying oncogenesis in man, the pathophysiologic mechanisms responsible for clinical manifestations, and factors affecting the course of neoplastic diseases.


E3. Translational Research Conference. Drs. Drake, Matsui, and Zahnow (course directors.) Four quarters. Wed., 12:00-1:00 p.m. Lectures by the faculty and visiting oncologists focus on topics of current interest.

E4. Introduction to Cancer Research.

All year; minimum of four weeks; positions are based on limited availability and not guaranteed. Interested and properly qualified students are encouraged to collaborate in clinical and laboratory research projects with members of the staff. Students will participate in research seminars and related teaching sessions. Interested students should contact the following faculty coordinators whose areas of research interest are indicated. Interviews will be arranged with staff members to develop a mutually agreed-upon plan of study and research.

DR. AMBINDER
Molecular virology; lymphoma.

DR. ANTONARAKIS
Urologic oncology; prostate cancer; clinical trials; outcomes research.

DR. ARCECI
Molecular and developmental biology; cytokine signaling and chromatin structure; epigenetics, leukemia/histiocytosis.

DR. ARMANIOS
Biology of aging; telomere syndromes; pulmonary fibrosis; solid tumors.

DR. ARMSTRONG
Gynecologic cancer, breast cancer; high dose therapy.

DR. ARYEE
Cancer bioinformatics and computational biology

DR. AZAD
Phase I studies and drug development; GI cancers (colon & liver).

DR. BAYLIN
Epigenetic abnormalities in cancer.

DR. BOLANOS-MEADE
Graft-versus-host disease; bone marrow transplant.

DR. BORRELLO
Multiple myeloma immunotherapy; myeloid derived suppressor cells; marrow infiltrating lymphocytes.

DR. BRAHMER
Lung cancer; novel therapeutics; mesothelioma; lung cancer prevention.

DR. BREM
Neuro-oncology; neurosurgery and immunotherapy.

DR. BROWN
Molecular targeted therapies for childhood leukemias.

DR. BROWSER
Geriatric and general oncology.

DR. CARDUCCI
Urologic cancer; novel therapies.

DR. CARRAWAY
Epigenetic therapy of leukemias.

DR. CASERO
Polyamine metabolism; molecular pharmacology and drug development.

DR. CHAN
Diagnostic markers for lung cancer.

DR. CHEN
Bone marrow transplantation; immunotherapy.

DR. COHEN
Pediatric neuro-oncology.

DR. COPE
Methods for analysis of gene expression data.

DR. COSGROVE
GI cancer (hepato-biliary); drug development; Phase 1 studies

DR. DENMEADE
Novel therapies for prostate cancer; urologic oncology.

DR. DESAI
Molecular genetics of herpes simplex virus assembly and morphogenesis.

DR. DIAZ
GI cancers; novel therapies.

DR. DONEHOWER
Early clinical trials of cancer therapies; G-I.

DR. DRAKE
Vaccines; T cell tolerance; prostate cancer.

DR. EISENBERGER
Urologic oncology, prostate cancer.

DR. EMENS
Breast cancer; tumor immunotherapy; targeted therapy.

DR. ETTINGER
Investigational new drug studies; lung cancer; sarcoma.

DR. FARRAR
Molecular basis of inherited bone marrow failure syndromes; epigenetic abnormalities in cancer.
DR. FETTING
Breast cancer.

DR. FORASTIERE
Head and neck cancer; esophageal cancer.

DR. FORD
Risk factors for lung cancer; determinants of cancer disparities.

DR. FRIEDMAN
Hematopoiesis; leukemogenesis; inflammation and cancer.

DR. FUCHS
Tumor immunology, T-cell activation and tolerance; immunotherapy.

DR. N. GHOSH
Myeloma, lymphoma, and leukemia.

DR. GORE
Epigenetics in cancer therapies; drug development in hematologic malignancies; adult leukemia and myelodysplastic syndrome.

DR. GROOPMAN
Environmental carcinogenesis.

DR. GROSSMAN
Neuro-oncology.

DR. HAMMERS
GU cancer; novel therapeutics.

DR. HANN
Lung cancer; novel therapeutics.

DR. G. HAYWARD
Viral oncology; cytomegalovirus; Kaposi’s sarcoma.

DR. S. HAYWARD
Viral oncology; Kaposi’s sarcoma associated herpes virus; Epstein-Barr virus.

DR. HERMAN
Abnormal DNA methylation of tumor suppressor genes.

DR. HESS
Bone marrow transplantation, graft versus host disease; immunological reconstitution.

DR. HOUSSEAU
Dendritic cell and innate immunity.

DR. HUFF
Multiple myeloma.

DR. ISAACS
Experimental therapeutics for prostate cancer.

DR. JAFFEE
Develop vaccine approaches that bypass mechanisms of immune tolerance in mice and patients.

DR. JANG
Stem cells and microenvironment.

DR. JONES
Bone marrow transplantation; hematopoiesis.

DR. JEURGENS
Translational investigation in lung and esophageal cancer; novel therapeutics.

DR. KACHHAP
DNA repair; metastasis; prostate cancer.

DR. KARP
Experimental therapy of leukemias; modulation cell cycle kinetics; infection management in compromised hosts.

DR. KASAMON
Lymphoma and immunotherapy.

DR. KERN
Genetics of pancreatic cancer.

DR. J. KIM
Non prostate (with RCC focus).

DR. KINZLER
Molecular genetics of human cancer.

DR. KLEIN
Genetic epidemiology; pancreatic cancer; cancer epidemiology; statistical genetics

DR. LAHERU
G-I; drug development.

DR. LATERRA
Microvascular morphogenesis; neurooncology.

DR. LAURING
Breast cancer genetics; drug target identification; somatic cell knock outs

DR. LE
GI cancers; immunotherapy.

DR. LEE
Head and neck cancer; hyperthermia.

DR. LEVIS
Molecular biology of leukemia, molecularly targeted cancer therapy.

DR. H. LEVITSKY
Tumor immunity; cellular therapy

DR. V. LEVITSKY
Cancer and viral immunology.

DR. LOEB
Transcriptional regulation; translational research related to sarcoma therapy.

DR. LUZNIK
Adoptive immunotherapy of cancer; allogeneic bone marrow transplantation.

DR. MARCHIONNI
Cancer genomics and computational biology.

DR. MARUR
VAD oncology (head and neck).

DR. MATSUI
Hematologic malignancies and cancer stem cells.

DR. MCDEVITT
Genetics and epigenetics of myeloid malignancies and myeloproliferative disorders; hematology.

DR. NELKIN
Molecular biology of endocrine tumors.

DR. NELSON
Molecular mechanisms of drugs for urological cancer prevention and treatment.

DR. NICHOLAS
Signal transducing cytokines and receptors of human herpesvirus-8.

DR. PAN
T cell biology; cellular therapy.

DR. PAPADOPOULOS
Molecular genetics of human neoplasia.

DR. PARDOLL
Dendritic cell biology; T cell regulation.

DR. PARK
Breast cancer genetics drug target identification; somatic cell knockouts.

DR. PAZ-PRIEL
Transcription regulation in normal hematopoiesis and leukemia.

DR. PEACOCK
Lung development and cancer.

DR. POWELL
T-cell activation and tolerance; BMT immunotherapy.

DR. PRATZ
Leukemia.

DR. PURTELL
Lung cancer, particularly in the elderly.

DR. RAVI
Apoptosis; signal transduction.

DR. RUDEK
Drug development; clinical pharmacology.
Clinical clerkships on inpatient and consultation services are available to medical students who have completed their basic clinical courses. Postdoctoral fellowships are available to physicians who have completed two or more years of general house staff training and desire subspecialty education in oncology.

(a) MEDICAL ONCOLOGY. Dr. Donehower
A half-quarter elective is offered to acquaint students with the principles and practice of oncology. Each student will serve as an advanced clinical clerk on an inpatient unit. Students make rounds with the attending physician daily. Appropriate readings are recommended. Attendance is required at Oncology Center Grand Rounds and the Translational Research Conference.

(b) HEMATOLOGIC MALIGNANCIES. Dr. Ambinder.
A half-quarter elective is offered to acquaint students with the diagnosis and treatment of leukemia, lymphoma, and myeloma. Students will serve as advanced clinical clerks on an inpatient unit and make rounds with an attending physician daily. Appropriate readings are recommended.

(c) PEDIATRIC ONCOLOGY. Drs. Small and Cohen.
Special opportunities are available for the study of leukemia and the combined clinical management of a wide variety of solid neoplasms of childhood.

(d) SURGICAL ONCOLOGY.
A broad spectrum of neoplasms is seen in the general hospital setting. Special opportunities exist for the study of breast cancer and the changing role of surgery in the multidisciplinary management of neoplastic diseases.

E6. Oncology Center Grand Rounds. Dr. Herman (course director). Four quarter; Fri., 8:00 a.m. - 9:00 a.m.
Case presentations are emphasized that illustrate the principles of diagnosis and management of cancer-related problems. Monthly morbidity and mortality review of recent cases.

510.705 Viral Oncology. Dr. John Nicholas. January-April; Mondays 3:45-5:30 p.m.
Prerequisite: Basic knowledge of molecular and cellular biology.
The Viral Oncology course is offered by the Viral Oncology Program of the Department of Oncology. The course addresses in a systematic and comprehensive way the significance of viruses to malignant diseases and the molecular mechanisms underlying virus-induced cellular transformation. Subject matter will be covered in a series of lectures and research-type seminars given by investigators at Hopkins and from other institutions actively involved in research on the viruses and molecular mechanisms in question. These seminars and lectures will allow the presentation of the results of current research and provide the more general background information required to understand the context and significance of these findings. The focus will be on human viruses and disease, but key non-human viruses that have provided insights into the ways in which viruses subvert normal cellular control processes and that provide models for human viral malignancies will also be discussed. Course lectures will cover HTLV-I,
polyomaviruses, adenoviruses, papillomaviruses, hepatitis viruses and herpesviruses and the major mechanisms regulating cell growth and apoptosis that these viruses target. Research seminars will present recent findings from studies of a subset of human cancer viruses. The course will be of benefit to research and clinical students alike, covering a field that has had and is continuing to have a huge impact on cellular and molecular biology in addition to clinical science.

510.706 Fundamentals of Cancer Course: Cause to Cure. Dr. Leisha Emens. August-December; Mondays and Wednesdays, 8-9 a.m.

The Fundamentals of Cancer Course is offered by the Department of Oncology. This course is designed to be highly translational, covering fundamental cancer molecular biology to the processes of transformation and metastases, and how targeted therapies emerge from new scientific knowledge. The course is intended for clinically-oriented people (primarily fellows) and laboratory-oriented people (primarily graduate and post-doctoral students) to provide clinically-oriented people with a perspective on basic science, and laboratory-oriented people with a perspective on clinical issues as they pertain to research, bridging the gap between clinic and lab. The course will include projects where the students will be assigned a clinical/lab faculty team who will provide guidance in developing a new targeted therapy or prevention for a disease indication based on principles learned in the lectures.

There will be 4 modules: 1) Origins of Cancer (genes/carcinogenesis, etc), 2) Progression of Cancer (transformation, metastasis, stem cells, angiogenesis/tumor microenvironment, and how people become sick from cancer), 3) Treatment (traditional and new approaches to treatment including surgery, radiation, chemo, targeted therapy, immunotherapy, clinical trial design from bench to bedside, and managing patient symptoms), and 4) Prevention (primary and secondary prevention, high risk families and prevention, disparities). The case components will be part of the treatment and prevention modules.
Ophthalmology

PETER JOHN MCDONNELL, III
William Holland Wilmer Professor of Ophthalmology, Director of the Department of Ophthalmology

NEIL MICHAEL BRESSLER
James P. Gills Professor of Ophthalmology

SUSAN BETH BRESSLER
Julia G. Levy, Ph.D., Professor of Ophthalmology

PETER ANTHONY CAMPOCHIARO
George S. and Dolores D. Eccles Professor of Ophthalmology, Professor of Neuroscience

JENNIFER H. ELISSEEFF
Visiting Professor of Ophthalmology, Joint Appointment in Orthopaedic Surgery

DANIEL FINKELSTEIN, Professor

DAVID STEVEN FRIEDMAN
Alfred Sommer Professor of Ophthalmology

MORTON F. GOLDBERG
Joseph E. Green Professor of Macular Degeneration and Other Retinal Diseases in the Department of Ophthalmology

JOHN D. GOTTSCHE
Margaret C. Mosher Professor of Ophthalmology

WILLIAM R. GREEN
Professor Emeritus of Ophthalmology (to 07/08/2010), Professor Emeritus of Pathology (to 07/08/2010)

DAVID L. GUYTON
Zanvyl Krieger Professor of Pediatric Ophthalmology

JAMES TAHARA HANNA
Robert B. Welch M.D. Professor of Ophthalmology

JUSTIN SCOT HANES
Professor of Ophthalmology, Professor of Biomedical Engineering, Professor of Neurological Surgery, Professor of Oncology

BARBARA S. HAWKINS, Professor Emerita

NICHOLAS TAYLOR ILIFF
Charles E. Iliff, III M.D., Professor of Ophthalmology, Professor of Plastic and Reconstructive Surgery

HENRY D. JAMPEL
Odd Fellows Professor of Ophthalmology

JONATHAN C. JAVITT, Adjunct Professor

GERARD A. LUTTY
G. Edward and G. Britton Durrell Professor of Ophthalmology

ROBERT W. MASSOF, Professor

NEIL RICHARD MILLER
Frank B. Walsh Professor of Neuro-ophthalmology in the Department of Ophthalmology, Professor of Neurology, Professor of Neurological Surgery

JEREMY NATHANS
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Ophthalmology, Investigator of the Howard Hughes Medical Institute

IRVIN P. POLLACK, Professor Emeritus

ROBERT A. PRENDERGAST
Professor Emeritus of Ophthalmology, Professor Emeritus of Pathology

HARRY ALAN QUIGLEY
A. Edward Maumenee Professor of Ophthalmology

MICHAEL X. REPKA
Robert and Maureen Feduniak Professor of Ophthalmology, Professor of Pediatrics

DAVID A. ROBINSON
University Distinguished Service Professor Emeritus of Ophthalmology, University Distinguished Service Professor Emeritus of Biomedical Engineering, University Distinguished Service Professor Emeritus of Neuroscience

OLIVER DOUGLAS SCHEIN
Burton E. Grossman Professor of Ophthalmology

HENDRIK P.N. SCHOLL, Visiting Professor

RICHARD D. SEMBA
W. Richard Green Professor of Ophthalmology

ARTHUR M. SILVERSTEIN
Odd Fellows Professor Emeritus of Ophthalmic Immunology in the Department of Ophthalmology, Joint Appointment Emeritus in History of Medicine

ALFRED SOMMER
Professor of Ophthalmology

WALTER J. STARK, JR.
Walter J. Stark Professor of Ophthalmology

KHALID FUAD TABBARA, Adjunct Professor

MARK O. M. TSO
Professor of Ophthalmology, Professor of Pathology

DAVID L. VALLE
Professor of Pediatrics in Genetic Medicine, Joint Appointment in Molecular Biology and Genetics, Joint Appointment in Medicine, Professor of Ophthalmology, Investigator of the Howard Hughes Medical Institute

SHEILA WEST
El-Maghraby Professor of Preventive Ophthalmology

CHARLES PAT WILKINSON, Professor

KING-WAI YAU
Professor of Neuroscience, Professor of Ophthalmology

DONALD J. ZACK
Guerrieri Family Professor of Ophthalmology, Joint Appointment in Molecular Biology and Genetics, Professor of Neuroscience

DAVID S. ZEE
Professor of Neurology, Professor of Neuroscience, Professor of Ophthalmology, Professor of Otolaryngology-Head and Neck Surgery

RAN ZEIMER
Morton F. Goldberg Professor of Ophthalmology

ESEN KARAMURSEL AKPEK, Associate Professor

ASHLEY BEHRENS
KKESH/Wilmer Professor of International Ophthalmology
The elective courses offered below are given in part for the instruction of house officers and fellows in Ophthalmology. All courses are also open to students of the third and fourth years who wish more experience in clinical and medical ophthalmology, and for students who propose ultimately to become ophthalmologists. Elective E5 is open to students of the second, third, and fourth years.

**E 1. Staff Conference.** Dr. Peter McDonnell and staff. Th., 7:30-9.
Presentation and discussion of cases in Patz Lecture Room.


**E 3. Ophthalmic Pathology.** Dr. Eberhart. Time to be arranged.
Students will participate in the routine operations of the eye pathology laboratory. The basics of ocular anatomy and histology and clinico-pathologic correlation of ocular diseases and ocular manifestations of systemic diseases are stressed.

**E 4. Clinical Elective.** Dr. Albert Jun and staff. Available all year.
Reading assignments about patients examined each day, attendance at daily lectures, and reading to prepare for daily tutorial sessions. Supervised clinical experience in retinal vascular disease, macular disease, cataract, corneal disease, strabismus, glaucoma, neuromedical ophthalmology, contact lenses, ophthalmic plastic surgery, refractive surgery and general eye clinic. Attendance at private offices of part time Wilmer faculty. Library research and oral report on topic of choice. Tutorial sessions with faculty members.

**E 5. Advanced Work and Research.** By arrangement with the staff.
Research interests represented in the Department of Ophthalmology are as follows:

**DR. APKEK**
Allergic and immunologic eye diseases mostly associated with systemic problems.

**DR. BREM**
Angiogenesis research and controlled drug delivery research.

**DR. N. BRESSLER**
Clinical research of macular disease.

**DR. S. BRESSLER**
Clinical research in retinal vascular and macular diseases, fluorescein angiography, OCT, laser photo-coagulation, photodynamic therapy, and anti-VEGF treatment. Opportunity to become proficient in ophthalmoscopy and to carry out a clinical research project on some aspect of retinal disease.

**DR. CAMPOCHIARO**

**DR. DAGNELIE**
Retinal prostheses and vision test development.

**DR. EBERHART**
Ophthalmic pathology.

**DR. GEHLBACH**
Retinal diseases and surgery.

**DR. GOLDBERG**
Sickle cell eye disease.

**DR. GOLDSTEIN**
Visual impairment assessment and rehabilitation.

**DR. GOTTSCH**
Cornea and cataract.

**DR. GROVER**
Vision impairment and rehabilitation.

**DR. GUYTON**
Ophthalmic instrumentation, especially related to ophthalmic optics and strabismus.

**DR. JAMPAL**
Glaucoma and glaucoma surgery.

**DR. MASSOF**
Vision psychophysics and electrophysiology.

**DR. MILLER**
Clinical neuro-ophthalmology.

**DR. QUIGLEY**
Experimental optic nerve studies.

**DR. ROBIN**
Clinical aspects of glaucoma and glaucoma surgery; new drug development; ophthalmic epidemiology; adherence and utilization of ophthalmic health care.

**DR. SCHEIN**
Cataract and corneal surgery, ocular surface disease, ophthalmic epidemiology, and technology assessment.

**DR. SEMBA**
Eye diseases in developing countries. Vitamin A Deficiency.

**DR. STARK**
Cornea and cataract.

**DR. TIELSCH**
Ophthalmic epidemiology.

**DR. WEST**
Trachoma and ocular infections in developing countries, vision and aging, population studies of cataract and age-related macular degeneration.

**DR. ZEE**
Neuropsychology of ocular motility and neurology of eye-movement disorders.

**E 6. Wilmer Retinal Division Weekly Medical/Surgical Teaching Conference.** Dr. N. Bressler and staff. Monday; 7:30 a.m. to 8:30 a.m. in Mau-menee conference room #501. Available to students taking clinical research elective in Wilmer Retina Division.
Prerequisites: Preferably neurology (or neurosurgery) and ophthalmology general electives; special considerations will be made for some students who have only taken one of the above.
Patients with neuro-ophthalmological disorders are evaluated. Literature concerning specific syndromes encountered will be discussed.

Weekly research seminar and supervised research project. Special interests of faculty include: retinal implants; assessment of visual function and daily living activities in common vision disorders (macular degeneration, diabetic retinopathy, retinal vascular occlusion, retinitis pigmentosa, optic nerve lesions, stroke); vision impairment and rehabilitation; outcomes measurement; clinical decision making; prosthetic/therapeutic contact lenses; visual field enhancement; pediatric visual impairment.

E 9. Clinical Research in Medical Retinal Disease. Dr. S. Bressler. One student per 9 weeks.
Prerequisites: Clinical elective in Ophthalmology
This elective includes reviewing pertinent literature in a specific area of medical retinal disease, reviewing patient records and/or clinical examinations to evaluate specific questions in regard to that condition, acquisition of basic and advanced ophthalmologic examination skills, interpretation of fluorescein angiography, examining patients with preceptor in her clinical practice one full day per week, and manuscript preparation.

The one month elective in Oculoplastic surgery provides clinical and surgical experience for the medical student in this subspecialty. Three days a week will be spent in clinic and two days in the operating room. At all times the student will be directly supervised by one of the attending preceptors. In the clinic there will be the opportunity to observe the evaluation and management of patients presenting with all aspects of Oculoplastic disease including trauma, neoplasia, aging, and congenital defects involving the ocular adnexae seen. There will be opportunity to do portions of the workups and then present to the preceptor(s). In the operating room, there will be observation of surgical techniques and opportunity to scrub in and assist on cases. The student will be assigned a laboratory research project due at the end of the rotation as a PowerPoint presentation. The project will be on an Oculoplastic issue, disease, or surgery of interest to the student.

E 11. Ophthalmology Informatics (Computers in Ophthalmology). Dr. Boland. Available all year; any one term; contact boland@jhmi.edu, 410-502-4074.
Prerequisites: Technical background appropriate to the planned project, if necessary.
This elective affords the student the opportunity to work with faculty from ophthalmology in the field of medical informatics. The student will be allowed to develop either a research project or practical experience focused on the use of computers and information technology in ophthalmology. Examples of possible projects include: development of user interfaces for electronic patient records; computer-aided analysis and/or diagnosis of ophthalmic images; assessment of information needs in ophthalmology; assessment of the impact of information technology on ophthalmology; development and assessment of electronic patient education material; and development and assessment of clinician decision support. Students will be expected to generate a formal report describing their project and will be evaluated on their ability to plan and carry out that project.

E 12. Elective in Ophthalmology-Sinai Hospital, Krieger Eye Institute. Dr. Green. To be arranged; 4 weeks.
The student participates in all activities of the department and will work with attendings and residents. The student will also observe various surgical procedures performed by members of the department.

Research in angiogenesis immunology and controlled drug delivery.

E 14. Clinical Research in Ophthalmology Epidemiology. Dr. West. 2-3 months during summer.
Opportunity to assist in design and conduct of epidemiologic studies of visual impairment and trachoma in selected populations in the U.S. and abroad.

E 15. Advanced Work in Glaucoma. Dr. Jampel. To be arranged.
Prerequisites: Previous clinical research experience desirable.
Clinical research related to glaucoma and glaucoma surgery.

E 16. Clinical/Basic Research in External Eye Disease. Dr. Akpek. To be arranged; contact course director prior to applying.
Prerequisites: Electronics or engineering background or experience would be welcome.
The student will conduct a pertinent literature search in a particular area of cornea/external diseases. Reviewing patient records, clinical examinations, and/or interpretation of laboratory investigations (including anterior segment angiography) to evaluate specific questions and manuscript preparation will be performed with the preceptor. Exposure to basic laboratory techniques (including cell cultures, immunohistochemical/fluorescein staining) will be available for interested students.

E 17. Retina/Ophthalmology Clerkship (for Clinician Scientists). Dr. Gelbach. One student each semester; 4.5 weeks.
Prerequisites: Completion of basic sciences portion of an approved medical school program. An interest in ophthalmology, retina, or vision science as a career.
Exposure to medical and surgical retina practice and retina research. The rotation will include attendance in retina clinic and the retina operating
room. There will be assigned readings and a retina related project that will contribute to a publication level document. Visitation to the retina laboratory where in vitro and in vivo work related to retinal disease is on-going and will be incorporated into the experience.

E 18. Clinical Retina Elective. Dr. Do. Ongoing; 4.5 weeks.
This elective is designed for students interested in ophthalmology and retina. This rotation will expose students to medical and surgical retina through time in the retina clinic and operating rooms. In addition, interested students will have an opportunity to participate in clinical research and case reports.

E 19. Signal Acquisition and Processing in Ophthalmic Optics. Dr. Gramatikov. To be arranged.
This elective provides the student with an introduction to the physical principles, hardware design, and signal processing techniques used in ophthalmic optics and electronics. The course is designed for students who wish to pursue research in ophthalmic optics. Emphasis will be placed on optical sensors, amplifiers and filters, noise reduction, pattern recognition, and data analysis in time, and frequency domains. The project may include elements of computer programming, modeling, and optimization; possibly also decision making. Experimental data will be collected, analyzed, and statistically assessed. The end goal is to develop algorithms to be applied in functional and reliable diagnostic devices.

E 20. Elective in Oculoplastic Surgery at Bayview Medical Center Dr. Iliff. Ongoing. 4 weeks.
This one month elective in Oculoplastic Surgery provides clinical and surgical experience for the medical student in this subspecialty. Two days a week will be spent in clinic and two days in the operating room. At all times the student will be directly supervised by the attending preceptor. In the clinic there will be the opportunity to observe the evaluation and management of patients presenting with all aspects of oculoplastic disease including trauma, neoplasia, aging, and congenital defects involving the ocular adnexae. There will be opportunity to do portions of the workups and then present to the preceptor(s). In the operating room, there will be observation of surgical techniques and opportunity to scrub in and assist on cases.

E 21. Clinical Elective in Ophthalmology- Green Spring Station Dr. Bower. To be arranged; 3-4.5 weeks.
Prerequisites: Medical student in clinical years. Supervised clinical rotation with full time Wilmer faculty at Green Spring Station. This course will focus on diagnosis and treatment of many common eye diseases, with particular attention to conditions of the anterior segment, including cataract, cornea, and refractive surgery. Curriculum will include clinical experience, observation in the operating room and during laser refractive surgery, reading assignments, lectures and seminars, and one-on-one teaching.

This elective is designed for students interested in ophthalmology, especially retina and uveitis. This rotation will expose students to uveitis and medical and surgical retina through time in the retina clinic and operating rooms. In addition, interested students will have an opportunity to participate in clinical research and case reports.
Pathology

JAY BROOKS JACKSON
Baxley Professor of Pathology, Director of the Department of Pathology

SYED ZULFIQAR ALI
Professor of Pathology, Associate Professor of Radiology

RICHARD FREDERICK AMINDER
James B. Murphy Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

GRANT J. ANHALT
Professor of Dermatology, Professor of Pathology

PEDRAM ARGANI
Professor of Pathology, Professor of Oncology

MICHAEL J. BOROWITZ
Professor of Pathology, Professor of Oncology

PETER C. BURGER
Professor of Pathology, Professor of Neurological Surgery, Professor of Oncology

KAREN C. CARROLL
Professor of Pathology, Joint Appointment in Medicine

DARRYL CARTER, Adjunct Professor

DANIEL W. CHAN
Professor of Pathology, Professor of Oncology, Professor of Radiology, Professor of Urology

SAMUEL CHARACHE
Professor Emeritus of Medicine, Professor Emerita of Medicine

DOUGLAS PAUL CLARK
Professor of Pathology, Professor of Oncology

JANICE E. CLEMENTS
Mary Wallace Stanton Professor for Faculty Affairs, University Distinguished Service Professor of Molecular and Comparative Pathobiology, Joint Appointment in Molecular Biology and Genetics, Professor of Neurology, Professor of Pathology

DONALD S. COFFEY
Catherine Iola and J. Smith Michael Distinguished Professor of Urology, Professor of Oncology, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

CAROLYN CORLIES COMPTON, Adjunct Professor

SUSAN W. CRAIG
Professor of Biological Chemistry, Professor of Pathology

CHI VAN DANG
Johns Hopkins Family Professor for Oncology Research in the Department of Medicine, Professor of Cell Biology, Joint Appointment in Molecular Biology and Genetics, Professor of Oncology, Professor of Pathology

ANGELO MICHAEL DEMARZO
Professor of Pathology, Professor of Oncology, Professor of Urology

BARBARA DETTRICK, Professor

J. STEPHEN DUMLER, Professor

JONATHAN I. EPSTEIN
Rose-Lee and Keith Reinhard Professor of Urologic Pathology, Professor of Oncology, Professor of Urology

YENER S. EROZAN, Professor

JAMES R. ESHELEMAN
Professor of Pathology, Professor of Oncology

SUZAN H. SHAKIN ESHELEMAN, Professor

MARY GLENN FOWLER, Professor

EDWARD W. GABRIELSON
Professor of Pathology, Professor of Oncology

FRANCIS M. GIARDIELLO
John G. Rangos Sr. Professor of Adult Medicine in the Department of Medicine, Professor of Oncology, Professor of Pathology

MICHAEL G. GOGGINS
Professor of Pathology, Professor of Medicine, Professor of Oncology

WILLIAM R. GREEN
Professor Emeritus of Ophthalmology (to 07/08/2010), Professor Emeritus of Pathology (to 07/08/2010)

CONSTANCE A. GRIFFIN
Professor of Pathology, Associate Professor of Medicine, Professor of Oncology

JOHN W. GRIFFIN
University Distinguished Professor of Neuroscience, Professor of Pathology

ROBERT G. HAMILTON
Professor of Medicine, Professor of Pathology

ULRIKE M. HAMPER
Professor of Radiology, Professor of Pathology, Professor of Urology

GARY S. HAYWARD
Professor of Oncology, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

ROBERT H. HEPTINSTALL
University Distinguished Service Professor Emeritus of Pathology

ALLAN D. HESS
Professor of Oncology, Professor of Pathology

GARY S. HILL, Adjunct Professor

RALPH HARVEY HRUBAN
Professor of Pathology, Professor of Oncology

ELIZABETH M. JAFFEE
Dana and Albert "Cubby" Broccoli Professor of Oncology, Professor of Pathology

WALTER ERWIN KAUFMANN
Professor of Pathology, Professor of Neurology, Professor of Pediatrics, Professor of Psychiatry, Professor of Radiology

SCOTT E. KERN
Everett and Marjorie Kovler Professor of Pancreas Cancer Research in the Department of Oncology, Professor of Pathology
THOMAS S. KICKLER  
Professor of Pathology, Professor of Medicine,  
Professor of Oncology

HARVEY GORDON KLEIN  
Adjoint Professor of Pathology, Adjunct  
Professor of Medicine

VASSILIS E. KOLIATSOS  
Professor of Pathology, Professor of Neurology,  
Associate Professor of Psychiatry

FRANCIS PAUL KUHAJDA  
Professor of Pathology (to 11/10/2010),  
Joint Appointment in Biological Chemistry  
(to 11/10/2010), Professor of Oncology (to  
11/10/2010)

ROBERT J. KURMAN  
Richard W. Telinde Distinguished Professor  
of Gynecologic Pathology in the Department  
of Gynecology and Obstetrics, Professor of  
Oncology, Professor of Pathology

PAUL W. LADENSON  
John Eager Howard Professor of Endocrinology  
and Metabolism in the Department of Medicine  
University Distinguished Professor of Medicine,  
Professor of Oncology, Professor of Pathology,  
Professor of Radiology

SHENGHAN LAI  
Professor of Pathology, Joint Appointment in  
Medicine, Professor of Radiology

ANIRBAN MAITRA  
Professor of Pathology (from 11/01/2010),  
Professor of Oncology (from 11/01/2010),  
Associate Professor of Pathology (to  
10/31/2010), Associate Professor of Oncology  
(to 10/31/2010)

RISA BERMAN MANN, Professor Emerita

LEE J. MARTIN  
Professor of Pathology, Professor of  
Neuroscience

JUSTIN C. MCARThUR  
Professor of Neurology, Professor of Medicine,  
Professor of Pathology

EDWARD F. MCCARTHY, JR.  
Professor of Pathology, Professor of  
Orthopaedic Surgery

WILLIAM G. MERZ  
Professor of Pathology, Joint Appointment in  
Dermatology

ELIZABETH ANNE MONTGOMERY  
Professor of Pathology, Professor of Oncology,  
Professor of Orthopaedic Surgery

WILLIAM G. NELSON  
Marion I. Knott Professor of Oncology, Professor  
of Medicine, Professor of Pathology, Professor  
of Pharmacology and Molecular Sciences,  
Professor of Urology, Professor of Radiation  
Oncology and Molecular Radiation Sciences

PAUL M. NESS  
Professor of Pathology, Professor of Medicine,  
Joint Appointment in Oncology  
G. JOHAN OFFERHAUS, Adjunct Professor

AKHILESH PANDEY  
Professor of Biological Chemistry in Genetic  
Medicine, Professor of Oncology, Professor of  
Pathology

DREW MARK PARDOLL  
Martin D. Abeloff Professor of Oncology,  
Professor of Medicine, Professor of Pathology

ALAN WAYNE PARTIN  
David Hall McConnell Professor of Urology,  
Professor of Oncology, Professor of Pathology

ROBERT A. PRENDERGAST  
Professor Emeritus of Ophthalmology, Professor  
Emeritus of Pathology

DONALD L. PRICE  
Professor Emeritus of Pathology, Professor  
Emeritus of Neurology, Professor Emeritus of  
Neuroscience

LORRAINE C. RACUSEN, Professor

RICHARD B. S. RODEN  
Professor of Pathology, Professor of Gynecology  
and Obstetrics, Professor of Oncology

BRIGITTE MARIA RONNETT  
Professor of Pathology, Professor of Gynecology  
and Obstetrics

NOEL R. ROSE  
Professor of Pathology

ANTONY ROSEN  
Mary Betty Stevens Professor of Medicine,  
Professor of Pathology

DOROTHY L. ROSENTHAL  
Professor of Pathology, Professor of Gynecology  
and Obstetrics

ALFRED P. SANFILIPPO, Adjunct Professor

JONATHAN SCHNECK  
Professor of Pathology, Associate Professor of  
Medicine, Professor of Oncology

IE-MING SHIH  
Professor of Pathology, Professor of Gynecology  
and Obstetrics, Professor of Oncology

DAVID SIDRANSKY  
Professor of Otolaryngology-Head and Neck  
Surgery, Professor of Oncology, Professor of  
Pathology, Professor of Urology

MARK J. SOLOSKI  
Professor of Medicine, Joint Appointment in  
Molecular Biology and Genetics, Professor of  
Pathology

CHARLES STEENBERGEN, JR., Professor

SARASWATI SUKUMAR  
Barbara B. Rubenstein Professor of Oncology,  
Professor of Pathology

GEORGE H. THOMAS  
Professor of Pediatrics in Genetic Medicine,  
Joint Appointment in Medicine, Professor of  
Pathology

JUAN C. TRONCOSO  
Professor of Pathology, Associate Professor of  
Neurology

MARK O. M. TSO  
Professor of Ophthalmology, Professor of  
Pathology

BERT VOGELSTEIN  
Clayton Professor of Oncology, Joint  
Appointment in Molecular Biology and Genetics,  
Professor of Pathology, Investigator of the  
Howard Hughes Medical Institute

THOMAS JOHN WALSH, Adjunct Professor
2. Clinical-Pathological Conferences. Dr. Argani and staff. First and second quarter; Wed; 12-1. Offered to students in the second, third, and fourth years.

The clinical course and differential diagnosis of recent well-studied cases are correlated with underlying pathologic changes.

OTHER COURSES AND ELECTIVE OPPORTUNITIES—Curricular Consultants: Drs. Crain and Racusen. Elective programs must be approved by the preceptor; any member of the department may act as preceptor.

Pathology E

E 1. Advanced Work and Special Research. (300.701)
Opportunity is offered to pursue advanced work or research in pathological anatomy, experimental pathology, and laboratory medicine. Research interests represented in the Department of Pathology are as follows:

DR. ALI
Cytopathology; digital photoimaging; web-based teaching tools.

DR. ANDERS
Liver biology and gastrointestinal pathology.

DR. ARGANI
Breast cancer; gallbladder and bile duct carcinomas; pediatric renal tumors.

DR. ASKIN
Pulmonary disease, placental pathology, and pediatric neoplasia.

DR. BATISTA
Clinical cancer cytogenetics; post-natal cytogenetics and array comparative genomic hybridization; delineation of genetic syndromes.

DR. BEGUM
Research focusing on cancer genetics and epigenetics, particularly lung and head and neck cancer; viral infection related to human cancer.

DR. BERNMAN
Cancer stem cells; developmental biology of the prostate; urothelial injury repair; bladder cancer; genitourinary pathology.

DR. BHAGAVAN
Adult and pediatric gastrointestinal diseases.

DR. BOURN
Liver disease, morphology and informatics.
DR. BOROWITZ
Leukemia and lymphoma, especially pediatric leukemia; flow cytometry.

DR. BOVA
Metastatic prostate cancer molecular genetics; integrated clinical-genomic database technology; autopsy pathology.

DR. BUREK
Clinical immunology; autoimmunity; autoimmune disease.

DR. BURGER
Neuropathology; neuro-oncology.

DR. CARROLL
Diagnostic test development and evaluation for bacterial and mycobacterial pathogens with emphasis on healthcare associated infections.

DR. CATUREGELI
Autoimmune diseases; thyroiditis; hypophysitis; mouse models.

DR. D. CHAN
Tumor markers; proteomics; immunoassay.

DR. P. CHARACHE
Medical microbiology.

DR. CLARK
Molecular cytopathology.

DR. CLARKE
Therapeutic drug monitoring; clinical toxicology; pharmacogenomics; drug assay development.

DR. CRAIN
Neurodegenerative diseases; autopsy pathology.

DR. A. M. DANNENBERG JR.
Pathogenesis of allergic and infectious diseases; the inflammatory process; tuberculosis.

DR. DEMARZO
Molecular pathogenesis of prostate cancer.

DR. DESCIPIO
Delineation of cryptic chromosomal rearrangements and how they relate to human structural birth defects.

DR. DETRICK
Clinical immunology; immunoregulation in the retina and ocular diseases; cytokine biology in immune disease.

DR. DUMLER
Study of vector-borne infections including tick-borne diseases caused by Rickettsia, Ehrlichia/Anaplasma, Borrelia, and those caused by other vectors such as malaria and trypanosomiasis.

DR. EBERHART
Pathogenesis of brain and eye tumors.

DR. EPSTEIN
Genitourinary pathology.

DR. EROZAN
Pulmonary and gastrointestinal cytopathology.

DR. J. ESHLEMAN
Early detection of pancreatic cancer; genes causing familial pancreatic cancer; novel molecular therapeutic and diagnostic tools for cancer.

DR. S. ESHLEMAN
Role of HIV-1 genetic diversity in transmission; disease progression; drug resistance.

DR. FOWLER
Prevention and treatment of pediatric and HIV infection.

DR. GABRIELSON
Molecular pathology of breast cancer and lung cancer.

DR. GOCKE
Molecular diagnostics and hematopathology.

DR. GOGGENS
Pancreatic cancer, particularly early detection; screening; markers; susceptibility; cancer genetics; cancer epigenetics.

DR. GRIFFIN
Tumor cytogenetics, clinical cancer genetics.

DR. HAMAD
Regulation of organ specific autoimmunity and mucosal tolerance by the Fas pathway.

DR. G. HILL
Clinico-pathologic studies of renal disease.

DR. HRUBAN
Cancer of the pancreas.

DR. HUMPHREY
Diagnostic immunology; dysproteinemias.

DR. HUNG
Cancer vaccine; immunotherapy; DNA vaccine.

DR. IACOBUZIO-DONAHUE
Metastasis; cancer genetics; cancer genomics; gastrointestinal pathology.

DR. ILLEI
Pulmonary pathology including pathology of lung transplants; immunohistochemistry and in situ hybridization of solid tissue tumors.

DR. JACKSON
HIV, transfusion transmitted viruses.

DR. KAUFMANN
Neurobiology of genetic mental retardation and autism including molecular-neurobehavioral correlations and the use of relevant experimental models.

DR. KERN
Molecular biology of cancer; gastrointestinal diseases.

DR. KICKLER
Hemostasis/thrombotic disorders.

DR. KING
Apheresis, transfusion medicine, and immunohematology; alloimmunization and immune hemolysis.

DR. KOLIATSOS
Neural injury and repair; stem cell therapies for neural injury; brain-behavior correlations in chronic brain injury.

DR. KURMAN
Cervical, ovarian, endometrial, and trophoblastic neoplasia.

DR. LAI
Cytopathology and molecular biology of lung cancer.

DR. Q. (KAY) LI
Cytopathology and molecular biology of lung cancer.

DR. T. LI
Molecular biology of neurobiological diseases.

DR. LOTAN
Cellular migration in prostate development, prostate cancer and prostate cancer metastasis; genitourinary pathology.

DR. MAITRA
Pancreatic cancer; experimental therapeutics; mouse models; nanotechnology.

DR. MALEKI
Cytopathology; obstetrics and gynecologic pathology; digital microscopic photoimaging.

DR. MANKOWSKI
Comparative pathology and viral pathogenesis; neuroimmunology.
DR. L. J. MARTIN
Amyotrophic lateral sclerosis; Parkinson’s Disease; mitochondria, Alzheimer’s Disease, stroke; pediatric brain ischemia; cell death; apoptosis-necrosis continuum; motor neuron disease.

DR. MCCARTHY
Bone pathology.

DR. MEEKER
Molecular pathology and telomere biology of prostate and other cancers.

DR. MERZ
Medical mycology.

DR. MILLER
Computer applications in laboratory diagnosis; web-based teaching and clinical systems.

DR. MONTGOMERY
Surgical pathology, focusing on gastrointestinal and soft tissue pathology.

DR. NESS
Transfusion medicine; immune hemolysis; transfusion alternatives; clinical trials in transfusion recipients; blood donor epidemiology studies.

DR. NETTO
Surgical pathology; urologic pathology; molecular diagnostic pathology; prognostic and thanarostic biomarkers in urologic malignancies.

DR. OELKE
Human T cell immunology; aAPC; adoptive and active immunotherapy; artificial immune modulation; cancer research.

DR. PARRISH
Mycobacterial biochemistry; drug development.

DR. PRICE
Neuronal degeneration and regeneration; axonal transport; biology of synapses and their involvement in diseases; genetically engineered models of neurodegenerative diseases, particularly Alzheimer’s disease, Parkinson’s disease, motor neuron disease; pathogenic mechanism; validation of targets for treatment; experimental therapeutics.

DR. RACUSEN
Renal failure; native kidney pathology; transplant pathology of the kidney and pancreas.

DR. RATOVITSKI
Molecular biology of growth and differentiation; signal transduction cytokines, receptors, nitric oxide synthase in cancer, cardiovascular disease, inflammation; RNA transcription and RNA processing in developmental skin and craniofacial disorders.

DR. RELLER
Diagnostic test development in rickettsial diseases and parasitology; epidemiology and diagnosis of acute febrile illness, enteric diseases, and parasitology.

DR. RIEDEL
Epidemiology of emerging bacterial resistance; mechanisms and laboratory detection of antimicrobial resistance; correlation of antimicrobial consumption data and resistance blood culture technology and diagnosis of sepsis; the clinical impact of laboratory testing and the development and evaluation of novel diagnostic methods in clinical microbiology.

DR. RODEN
Cervical cancer; ovarian cancer; papillomavirus; vaccine development; virology.

DR. RONNETT
Gynecologic pathology.

DR. ROSE
Autoimmunity; autoimmune disease.

DR. ROSENTHAL
Cytopathology.

DR. SADEGH-NASSERI
Genetic regulation of Memory T cells longevity and survival; mechanisms of T cell tolerance; molecular mechanisms of antigen processing and presentation; mechanism of immunodominance.

DR. SAVONENKO
Cognitive deficits in animal models of Alzheimer’s, Parkinson’s, and schizophrenia: testing experimental treatments for these diseases: their mechanisms, safety, and side effects.

DR. SCHNECK
Basic mechanisms controlling T-cell mediated immune responses; cell engineering; adoptive immunotherapy; cellular microarray-based high-throughput analysis of immune responses.

DR. SHAN
Transfusion medicine, hemapheresis and HIV testing.

DR. SHIH
Molecular genetics and functional genomics of gynecologic cancers; cancer stem cell research; development of new targeted therapy in ovarian cancer; molecular etiology of cancer.

DR. SOKOLL
Clinical chemistry; tumor markers; immunoassays.

DR. STEENBERGEN
Cardiac pathology; myocardial ischemia/reperfusion injury and cardioprotection.

DR. TRONCOSO
Neuropathology of normal aging; Alzheimer’s, Parkinson’s and Huntington’s disease; stereological quantitation of neurons in hippocampus and substantia nigra; neuropathology of transgenic models of neurodegenerative disorders; immunotherapy of animal models of Alzheimer’s disease.

DR. VALSAMAKIS
Molecular diagnosis of infectious diseases; hepatitis B diagnostics; hepatitis C diagnostics; respiratory virus diagnostics.

DR. VUICA
Chromosome instability; yeast genetics; hematologic malignancies.

DR. WASOWSKA
Molecular mechanisms of antibody- and complement-mediated endothelial cell/vascular injury and allograft rejection in human and mouse models; interactions of leukocyte receptors for complement and Fc fragments of antibody with their ligands.

DR. WESTRA
Head and neck pathology; thyroid neoplasia; biomarkers in the early detection and surveillance of human tumors.

DR. WONG
Molecular mechanisms, experimental therapeutics, and mouse models of Alzheimer’s and motor neuron diseases.
DR. WU
Cancer immunotherapy for HPV associated malignancies and other gynecological cancers; molecular pathology and DNA vaccines.

DR. Z. ZHANG
Bioinformatics; biomarker discovery; computational methods for expression data analysis; biomarkers for ovarian cancer; in vitro diagnostic multivariate index assay.

DR. ZINK
HIV; SIV; pathogenesis; virology; pathology; neurology; animal models.

E 2. Autopsy Pathology (The Johns Hopkins Hospital). Dr. Crain. Throughout year except July; one quarter.
Prerequisite: Completion of Introduction to Pathology (300.600).
Students are trained to function as first year house officers on the autopsy service. They become responsible for work-up and final sign-out of their cases and in other respects participate fully in the life of the department. There are informal case conferences at the autopsy table and at multithered microscopes. Students present cases at departmental and interdepartmental conferences. Brief supplementary exposures to surgical pathology and forensic pathology are offered to interested students. The elective can be taken year round by third and fourth year students. Additionally, the elective is made available to second year students in the fourth and summer quarters as a special lottery elective option.

E 3. Surgical Pathology. (Johns Hopkins Bayview Medical Center) Dr. Askin and staff. All year; one quarter or half-quarter.
Prerequisite: Completion of Introduction to Pathology (300.600).
This course offers an opportunity to see and experience at first hand a wide spectrum of activities in anatomic pathology. Students will rotate in Surgical Pathology, functioning at the level of a first year resident in pathology. He or she will perform gross dissections, dictate clinical summaries, review microscopic sections and sign out the surgical pathologic material under senior staff supervision.

E 4. Surgical Pathology (The Johns Hopkins Hospital). Dr. Westra. Throughout year; one half quarter, or longer by arrangement.
Prerequisite: Completion of Introduction to Pathology (300.600).
Students are trained in the techniques of general surgical pathology and then become responsible for the gross description, gross dissection, and microscopic examination of their assigned cases. Students are supervised by faculty members and senior residents, and they participate in all conference activities in the division. The elective exposes the student to a variety of modern techniques employed in the pathologic diagnosis of medical and surgical diseases and increases their awareness and understanding of the role played by surgical pathology in patient management. There are opportunities for exposure to other diagnostic pathology services (e.g., cytopathology and neuropahtology)

E 5. Pathology Clerkship for M.D./Ph.D. Students. (300.712) Dr. Berman and staff. Full or half quarter, arrange with course director. (Not offered in fourth quarter)
Prerequisite: Limited to M.D./Ph.D. students.
M.D./Ph.D. students returning to clinical studies will have the opportunity to gain first-hand experience with clinical concepts through surgical, autopsy, and/or clinical pathology. Students will work closely with house staff and faculty in performing autopsies and/or in evaluating clinical specimens. Rotations will be tailored to the investigative and clinical interests of the student. As with the Autopsy Prosectorship (E3), the overall experience will provide a transition to clinical work which incorporates exposure to clinical problems, as well as an opportunity to understand how basic medical sciences are translated into patient care.

Students observe and participate in the gross and histologic assessment of gynecologic pathology specimens under the supervision of residents, fellows, and attending physicians.

E 7. Ophthalmic Pathology. Dr. Charles Eberhart. All year. (Same as Ophthalmology E5)
Clinicopathologic correlation of ocular diseases, degenerative changes of the eye, and ocular manifestations of systemic diseases are stressed.

E 8. Forensic Pathology. Dr. Fowler and staff. All year; four and one-half weeks or one quarter.
Prerequisite: Completion of Introduction to Pathology (300.600)
Students acquire first-hand knowledge of legal medicine and the investigation of sudden, unexpected, and violent deaths by actively participating in all regular functions of the Office of the Chief Medical Examiner (near the University of Maryland Medical Center). Emphasis is placed on medical-legal autopsy techniques and preparation of a medical-legal protocol. Students can participate in on-the-scene investigations and observe staff members giving testimony in court. Students attend rounds, lectures and seminars, and also have opportunities to participate in research projects conducted by staff members.

E 9. Animal Pathology Laboratory. (680.703) Dr. Zink and staff. All year.
Prerequisite: Principles of Animal Pathology 680.701, Pathology 300.600, or their equivalent and courses in human/animal histology.
A limited number of persons may serve as prosecutors on the animal pathology diagnostic service. This entails responsibility for gross and microscopic examination of diseased animals and tissues submitted for diagnosis by investigators within the Institutions, the Maryland Zoo in Baltimore, the National Aquarium, and by practicing veterinarians. Complete necropsy and histopathology laboratories are available and prosecutors work under close supervision. Rotational assignments may vary according to schedules.

E 10. Diagnostic Cytopathology. Dr. Clark and staff. All year, by prior approval. One quarter or
summer or as a 1-3 week elective. Second, third, and fourth year students.

**Prerequisite:** Completion of Introduction to Pathology (300.600)

An opportunity to become acquainted with the clinical significance in health and in disease of morphologic changes in cells and other elements of the cellular specimen. The materials utilized are specimens from The Johns Hopkins Hospital Diagnostic Cytopathology Service, including pap tests and biopsies from the Fine Needle Aspiration Service. There will be active correlation of the clinical, morphologic, and histologic findings with the ward, clinic, Radiology, Surgical Pathology, Autopsy Pathology, and follow-up information.

**E 11. Laboratory Medicine: Effective Use of the Clinical Laboratory.** Dr. Borowitz and staff. Tutorial (by arrangement).

This elective course is designed primarily for junior and senior medical students. The course emphasizes the appropriate use of the clinical laboratory in both diagnosis and management, using didactic presentations, case discussions, and demonstrations of laboratory technology.

**E 12. Medical Mycology.** (300.703) Dr. Merz.

Third quarter; Tu/Th., 8:30. Limited to 16 students. This course is available as an elective part of the curriculum of the School of Medicine. It is also open to students of public health and to other graduate students.

This course is given to provide an in-depth view of the mycotic infections of man. Each of the mycoses will be discussed and compared according to its specific microbiology, clinical presentations, immunology, epidemiology and therapy. The laboratory section of the course will provide the student with samples of each fungus, specimen, and tissue sections to enable them to identify the important fungal pathogens. Newer diagnostic procedures will be stressed.

**E 13. Medical Microbiology.** (300.713) Dr. K. Carroll. All year; four weeks. Limit of two students per quarter.

Laboratory diagnosis of infectious diseases and therapeutic monitoring of antimicrobial agents.

This course will emphasize all facets of diagnostic testing. The student will review specimen collection guidelines as they pertain to microbiology samples. Diagnostic methods and specific technologies for detection of a broad range of clinically significant pathogens will be learned. Susceptibility testing methods including special antibiotic studies will be covered. A major objective is to provide correlation of laboratory information with disease presentations in patients through a dynamic interface with healthcare providers and other divisions within the Department of Pathology. Learning objectives are fulfilled through bench rotations in the laboratory, daily work rounds, didactics and interdisciplinary conferences.

**E 14. Special Studies in Research on Tissue Injury, Inflammation, and Repair.** (PH 188.840) Dr. A.M. Dannenberg, Jr. (given jointly at the Bloomberg School of Public Health) A tutorial for one to twenty students, in the fourth quarter, Thursdays from 5:30-6:50 p.m. Next offered Spring 2012.

This tutorial covers the biochemical and pathophysiological mechanisms of acute and chronic inflammation, including immediate and delayed hypersensitivity and the response to physical, chemical, and microbial tissue damage. The course discusses cell membrane function, capillary permeability, histamine, kinins, plasmin, complement, isoasanos, blood clotting, chemotaxis, and other inflammatory mediators produced by various blood cells.

**E 15. Principles of Bacterial Infection.** (PH 260.622) (3 units) Dr. Dannenberg and faculty.

Fourth quarter. Enrollment minimum of 8 (credit). Jointly offered with the departments of Molecular Microbiology and Immunology, Environmental Health Sciences and Epidemiology. Next offered Spring 2013 from 3:30-5:00 p.m. on Tuesdays and Thursdays in the Bloomberg School of Public Health.

Introduces major bacterial and rickettsial infections of man, emphasizing their transmission, pathogenesis, and control. Considers bacterial virulence and host resistance; dysentry, typhoid fever, and cholera; syphilis and gonorrhea; Lyme disease; pneumococcal, staphylococcal, and streptococcal infections; typhus; Rocky Mountain spotted fever; plague, anthrax, mycobacteriosis, and tuberculosis; tuberculosis; leprosy; infections with anaerobic bacteria; mycoplasma infections; and Legionnaires’ disease.


Prerequisite: Completion of Introduction to Pathology 300.600 or approved equivalent.

Diagnostic gastrointestinal pathology and clinical conferences with gastroenterology, and gastrointestinal surgery. Opportunities for research projects on colorectal, esophageal, pancreatic, and hepatobiliary cancer and inflammatory diseases of the gastrointestinal tract.

**E 17. Clinical Chemistry.** Dr. Chan and staff. Offered all year with prior arrangement.

This course will provide an introduction to the clinical and research activities of the Clinical Chemistry Division. Clinical aspects will focus on the analytical methods, quality assurance and the clinical interpretation of biochemical, immunological, and proteomics tests. Laboratories include: automated chemistry, critical care, emergency department, immunoassay for hormones and tumor markers, toxicology, and therapeutic drug monitoring. Research aspects will focus on clinical proteomics through interaction with the biomarker discovery laboratory. Students will meet with individual faculty members, attend laboratory meetings, rotate in the laboratories and be involved in research projects.

**E 18. Graduate Immunology: The Immune Response.** (PH 260.717) (3 units) Dr. Rose and faculty.

Fourth term. Enrollment minimum of 6.

Prerequisite: 260.611-260.612, ME 600, ME 603, or consent of instructor.

Presents advanced topics in the immunological system; the cellular basis of the immune response; effector functions of antibody, lymphocytes, and macrophages; regulation of the immune response; and immunological diseases. Lectures and read-
ings develop a well-rounded view of the interrelated elements comprising the immune system. Student evaluation based on a paper.

**E 19. Research Opportunities in HIV.** Drs. Jackson, Eshleman, Shan and staff. Quarters 1-4; scheduled on an individual basis. Medical students and graduate students interested in virology of HIV may participate in one of the ongoing research projects in the HIV Specialty Laboratory or the HIV genotyping laboratory. The areas of research include HIV diagnostics, viral diversity, drug resistance, mother-to-child transmission, prevention and disease monitoring.

**300.801 Readings in Genetics and Molecular and Cellular Biology.** Drs. Scott Kern and Philip C. Y. Wong. 1 hour per week, first and second semester. This course is designed to acquaint students with seminal literature in the fields of genetics, molecular biology, and cellular biology. Students will be assigned readings and required to discuss the major findings. Through discussion, the student will gain insights into the basic principles of modern-day biological sciences.
GEORGE J. DOVER  
Given Foundation Professor of Pediatrics, Professor of Oncology, Joint Appointment in Medicine, Director of the Department of Pediatrics

HOOVER ADGER, Professor

MARILEE CHRISTINE ALLEN, Professor

ROBERT J. ARCECI  
King Fahd Professor of Pediatric Oncology, Professor of Pediatrics

MARK DOUGLAS BAKER, Visiting Professor  
(from 08/01/2010)

SAUL W. BRUSILOW, Professor Emeritus

ARLENE MANNS BUTZ, Professor

HUGH G. CALKINS  
Nicholas J. Fortuin, M.D. Professor of Cardiology in the Department of Medicine, Professor of Pediatrics

DUKE E. CAMERON  
James T. Dresher, Sr. Professor of Cardiac Surgery, Professor of Pediatrics

BENJAMIN S. CARSON  
Benjamin S. Carson, Sr. M.D. and Dr. Evelyn Spiron, RN Professor of Pediatric Neurosurgery, Professor of Oncology, Professor of Pediatrics, Professor of Plastic and Reconstructive Surgery

JAMES F. CASELLA  
Rainey Professor of Pediatric Hematology in the Department of Pediatrics, Professor of Oncology

MICHAEL F. CATALDO  
Professor of Behavioral Biology, Professor of Pediatrics

ARAVINDA CHAKRAVARTI  
Professor of Medicine, Joint Appointment in Molecular Biology and Genetics, Professor of Pediatrics

SUBROTO B. CHATTERJEE, Professor

TINA LEE CHENG, Professor

CURT I. CIVIN  
Adjunct Professor of Oncology, Adjunct Professor of Pediatrics

BERNARD A. COHEN  
Professor of Dermatology, Professor of Pediatrics

PAUL M. COLOMBANI  
Robert Garrett Professor of Pediatric Surgery, Professor of Oncology, Professor of Pediatrics

GARRY R. CUTTING  
Aetna U.S. Healthcare Professor of Medical Genetics in the Department of Pediatrics, Professor of Medicine

CATHERINE DEANGELIS, Professor

MARTHA BRIDGE DENCKLA  
Professor of Neurology, Professor of Pediatrics, Joint Appointment in Psychiatry

HARRY C. DIETZ  
Victor A. McKusick Professor of Medicine and Genetics in the Department of Pediatrics, Joint Appointment in Molecular Biology and Genetics, Associate Professor of Medicine, Assistant Professor of Neurological Surgery, Investigator of the Howard Hughes Medical Institute

ANNE L.K. DUGGAN, Professor

JONATHAN MARK ELLEN, Professor

BARBARA FIVUSH, Professor

JOHN M. FREEMAN  
Professor Emeritus of Neurology, Professor Emeritus of Pediatrics

ALAN D. FRIEDMAN  
Professor of Oncology, Professor of Pediatrics

SUSAN LYNN FURTH, Professor

ESTELLE B. GAUDA, Professor

JOHN P. GEARHART  
Robert D. Jeffs Professor of Pediatric Urology, Professor of Pediatrics

GAIL GELLER  
Professor of Medicine in Genetic Medicine, Professor of Pediatrics

STEVEN N. GOODMAN  
Professor of Oncology, Professor of Pediatrics

LEON GORDIS, Professor Emeritus

WILLIAM B. GUGGINO  
Professor of Physiology, Professor of Pediatrics

J. ALEX HALLER, JR.  
Professor Emeritus of Pediatric Surgery, Professor Emeritus of Emergency Medicine, Professor Emeritus of Pediatrics

ADA HAMOSH  
Dr. Frank V. Sutland Professor of Pediatric Genetics

JAMES C. HARRIS, JR.  
Professor of Psychiatry, Professor of Pediatrics

LEE J. HELMAN, Professor of Oncology, Professor of Pediatrics

NEIL A. HOLTZMAN, Professor Emeritus

ETHYLIN WANG JABS  
Adjunct Professor of Pediatrics, Adjunct Professor of Medicine, Adjunct Professor of Plastic and Reconstructive Surgery

GEORGE ISSA JALLO  
Professor of Neurological Surgery, Professor of Oncology, Professor of Pediatrics

MICHAEL V. JOHNSTON  
Professor of Neurology, Professor of Pediatrics, Professor of Physical Medicine and Rehabilitation

JEAN S. KAN  
Helen B. Taussig Professor Emerita of Pediatrics

WALTER ERWIN KAUFMANN  
Professor of Pathology, Professor of Neurology, Professor of Pediatrics, Professor of Psychiatry, Professor of Radiology

HAIG H. KAZAZIAN, JR.  
Professor of Pediatrics in Genetic Medicine, Professor of Molecular Biology and Genetics

RICHARD IAN KELLEY, Professor
WILLIAM H. ZINKHAM
Professor Emeritus of Pediatrics, Distinguished Service Professor Emeritus of Pediatrics and Oncology, Professor Emeritus of Oncology

HAROLYN M. E. BELCHER, Associate Professor

IVOR D. BERKOWITZ
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics

CARRI D. BOEHM, Associate Professor

JAMES B. BRAYTON, Associate Professor

JOEL I. BRENNER, Associate Professor

PRESTON WHITE CAMPBELL, III, Visiting Associate Professor

ALLEN R. CHEN
Associate Professor of Oncology, Associate Professor of Pediatrics

JAMES R. CHRISTENSEN
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Pediatrics

KENNETH J. COHEN
Associate Professor of Oncology, Associate Professor of Pediatrics

ANNE MARIE COMI
Associate Professor of Neurology, Associate Professor of Pediatrics

THOMAS O. CRAWDON
Associate Professor of Neurology, Associate Professor of Pediatrics

CARMEN CUFFARI, Associate Professor

CECILIA TERESA DAVOLI, Associate Professor

ALLEN DALE EVERETT, Associate Professor

EMILY GERMAIN-LEE, Associate Professor

JOAN PAGE GERRING
Associate Professor of Psychiatry, Associate Professor of Pediatrics

ARLENE C. GERSON, Associate Professor

ARCHIE S. GOLDEN, Associate Professor

DENNIS JOHN GRAB
Associate Professor of Pathology, Associate Professor of Pediatrics

LAURA A. QUAY
Adjunct Associate Professor of Pathology, Adjunct Associate Professor of Pediatrics

EUGENIE S. HEITMULLER
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics

ALEXANDER H. HOON, JR., Associate Professor

KATHY LYNN HUDSON, Associate Professor

MEHBOOB ALI HUSSAIN
Associate Professor of Pediatrics, Associate Professor of Biological Chemistry, Associate Professor of Medicine

NANCY HUTTON, Associate Professor

LAUREN M. JANSSEN, Associate Professor

ALAIN JOFFE, Associate Professor

GREGORY JAMES KATO, Associate Professor

RICHARD M. KATZ, Associate Professor

ERIC H.W. KOSSOFF
Associate Professor of Neurology, Associate Professor of Pediatrics

ALAN M. LAKE, Associate Professor

CARLTON K. K. LEE
Associate Professor of Pediatrics (from 10/01/2010), Assistant Professor of Pediatrics (to 09/30/2010)

MAUREEN A. LEFTON-GREIF
Associate Professor of Pediatrics, Associate Professor of Otolaryngology-Head and Neck Surgery

CHRISTOPH ULRICH LEHMANN
Associate Professor of Pediatrics, Joint Appointment in Health Sciences Informatics, Associate Professor of Dermatology

HAROLD P. LEHMANN
Associate Professor of Health Sciences Informatics, Associate Professor of Pediatrics

PAUL H. LIPKIN, Associate Professor

DAVID MARK LOEB
Associate Professor of Oncology, Associate Professor of Pediatrics

RANJIV IGNATIUS MATHEWS
Associate Professor of Urology, Associate Professor of Pediatrics

ELIZABETH C. MATSUI, Associate Professor

SHARON MCGRATH-MORROW, Associate Professor

SALLY E. MITCHELL
Professor of Radiology, Associate Professor of Pediatrics

PETER JOSEPH MOGAYZEL, JR., Associate Professor

ALICIA NEU, Associate Professor

FRANCES J. NORTTHINGTON, Associate Professor

MARIA MAGDALENA OLIVA-HEMKER
Associate Professor of Pediatrics, Occupying the Stermer Family Professorship in Pediatric Inflammatory Bowel Disease

LAWRENCE C. PAKULA, Associate Professor

DEBORAH PERSAUD, Associate Professor

FRANK S. PIDCOCK
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Pediatrics

RICHARD J. REDETT
Associate Professor of Plastic and Reconstructive Surgery, Associate Professor of Pediatrics

RICHARD E. RINGEL, Associate Professor
REQUIRED COURSE WORK FOR M.D. PROGRAM

Second, Third or Fourth Year —

Nine week course that may be taken at any time from the last quarter of the second year through the third quarter of the fourth year. This clerkship is designed to provide the student with basic principles and skills in pediatrics. It includes both inpatient and outpatient work.

ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Barone. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

These courses are open to students from the second, third and fourth years, unless otherwise noted.

Certain of these courses will be given in the alternate year only.

Pediatrics E


Inpatient Pediatrics: A subinternship experience on a ward service in the Children’s Center, with primary responsibility for patients admitted to that service. Supervised by the SAR on that service, with night shift responsibilities. This course will enhance the student’s knowledge of pediatrics and provide responsibility appropriate to the level of subintern. Evaluation will be performed by ward attending and senior residents.

Emergency Medicine: Evaluation and treatment of children presenting to the Pediatric Emergency Department. Duties to approximate the workload of a pediatric intern. Presentation of a 10-15 minute talk (student’s choice) is required.

Harriet Lane Clinic: The acute care Harriet Lane team sees pediatric patients aged birth to 21 years for acute complaints, newborn visits and immunizations. Each day begins with an hour long lecture on a topic relevant to primary care pediatrics. The subintern will perform histories and physical exams, present to the senior resident, fellow or faculty attending, participate in decisions regarding treatment plans, and communicate with the patient’s primary care provider and subspecialist consultants as necessary. The subintern will work closely with our social workers, nurses, child life specialists, legal advocate and mental health counselors in providing care to our patients. The student will also have the opportunity to join the lactation consultant during a breastfeeding clinic session. The subintern will also participate in the monthly case conference and journal club.

On completion of the required clerkship a limited number of students may serve as substitute interns for approximately 1/2 quarter on the pediatric wards of Johns Hopkins Hospital during the academic year.
E 2. Introduction to Pediatric Intensive Care. Dr. Shaffner and staff. Four and one half week rotation. Limited to two students.

Designed for students planning a career in either pediatrics or a pediatric surgery specialty. This course encourages students to become familiar with problems of critically sick infants and children. Both basic pathophysiology and pharmacology will be stressed. Students will be expected to have already completed their pediatric rotation and to be prepared to help contribute to the care of these patients.

E 3. Research Activities. Dr. Dover and staff. Four quarters.

Students are encouraged to carry out investigations in areas of interest to members of the department as follows:

DR. ADGER
Adolescent medicine (including sexually transmitted diseases, substance abuse, alcohol-drug prevention).

DR. ALLEN
Assessment and follow-up of high risk neonates and premature infants, focusing on neurodevelopmental disabilities.

DR. CHATTERJEE
Investigating the function of human plasma low density lipoprotein receptor; tumor necrosis factor x- sphingolipids and sphingolipid breakdown products in cellular regulation, drug induced nephrotoxicity in man and the nature of pathogenesis induced by bacterial toxins, programmed cell death (apoptosis), and neuronal development.

DR. COHEN
Clinical investigations in pediatric dermatology.

DR. COLOMBANI
Effect of cyclosporine on susceptible T-lymphocytes early in immune response.

DR. CUTTING
Molecular genetic approach to cystic fibrosis and retinal neurotransmission.

DR. DUGGAN
Health services evaluation; home visiting programs for at-risk families; school health programs.

DR. FIUVUS
Clinical trials in pediatric renal transplantation; humoral immunity/vaccine response in pediatric renal patients (including chronic renal insufficiency, dialysis, and transplant patients).

DR. GEARHART
Cellular function of bladder muscle on children with bladder extrophy.

DR. HUTTON
Pediatric and HIV infection (including vertical transmission, diagnosis and treatment and psychosocial and ethical issues).

DR. KWITTEROVICH
Genetic, nutritional, and biochemical studies of disorders of lipoprotein metabolism.

DR. LEDERMAN
Basic research in immunology; role of fever in host defense; lymphokine production and action; immunodeficiency diseases (primary and acquired).

DR. MCGARTH-MORROW
Growth factors in fetal lung development.

DR. B. MIGEON
Molecular basis for parental imprinting and X inactivation.

DR. C. MIGEON
Steroids: production, metabolism, and mode of action; abnormalities of sex differentiation.

DR. NEU
Clinical trials in pediatric renal transplantation; humoral immunity/vaccine response in pediatric renal patients (including chronic renal insufficiency, dialysis, and transplant patients).

DR. OGBORN
Injury treatment and prevention; trauma systems; minor injury outcomes; quality assurance and patient satisfaction in the emergency department.

DR. PLOTNICK
Hormonal control of growth in children; clinical diabetes management.

DR. RIDDLE
Pediatric psychopharmacology.

DR. ROSENSTEIN
Clinical trials and epidemiology of cystic fibrosis.

DR. ROWE
Clinical epidemiology and clinical trials of common pediatric disorders; chronic fatigue syndrome; hemolytic uremic syndrome.

DR. SERWINT
General pediatrics (including feeding issues; nursing caries, prenatal pediatric visits; health services research; lead toxicity; influenza disease; patient termination).

DR. SHAPIRO
In-depth interdisciplinary approaches to the evaluation, diagnosis, and management of children, adolescents, and young adults with attention deficit hyperactivity disorder.

DR. SINGER
Neurobiological studies of synaptic neurochemistry in development, animal models of human diseases, and in-vitro model of human tumors; clinical and neurobiological studies relating to Tourette syndrome.

DR. VALLE
Molecular biology of human genetic diseases especially inborn errors of metabolism, peroxisomal disorders and retinal degeneration.

DR. WALKER
Emergency medicine (especially substance abuse; organization of emergency services; child abuse; performance improvement).

DR. YOLKEN
Infectious diseases.

DR. ZEITLIN
Role of chloride channels in fetal lung development; fetal and neonatal gene therapy for cystic fibrosis.

E 4. Pediatric Hematology. Dr. Casella. All quarters, time to be arranged.

Clinical and laboratory experience in pediatric hematology, including assignments in clinic, ward rounds, training in morphologic hematology, and attending research and clinical seminars and conferences. Only one student accepted for a minimum of four weeks and a maximum of eight weeks’ experience.
E 5. Pediatric Endocrinology. Dr. Plotnick. All quarters; limited to 3 or 4 students for each 4 week period. This elective offers the student an intensive outpatient exposure to a wide variety of endocrine problems in childhood and adolescents. The student will gain an understanding of normal growth and sexual maturation and how these patterns are affected by endocrine disorders at different ages. Also, the outpatient management of complex chronic disease on a long-term basis is emphasized. Students have the same clinical responsibilities as residents and fellows. A research conference and clinical conference are held weekly throughout the academic year. Disorders seen include pituitary, thyroid, bone/mineral, adrenal, growth, puberty, gonad and sexual differentiation abnormalities, and diabetes.

E 6. Advanced Clerkship in Pediatric Oncology. Dr. Cohen and staff. Time to be arranged; all quarters.

Students will have the opportunity to become familiar with pediatric oncology patient care during this one month inpatient-based rotation. The elective includes exposure and education to a wide-range of oncologic conditions and complications. Students will have the opportunity to participate in the management of children with hematologic malignancies and solid tumors. In addition, students can participate in the management of pediatric bone marrow transplantation patients. Students primarily manage selected inpatients with resident, fellow, and attending supervision. Students may have the opportunity to see consults in concert with the inpatient team and to follow the progress of patients as they transition to the outpatient setting.

E 7. Child and Adolescent Psychiatry. Dr. Frosch and staff.

This course offers the opportunity to observe and participate in a variety of clinical-teaching settings, including inpatient child and adolescent units, day hospital, consultation liaison service, outpatient specialty clinics (affective disorders, anxiety disorders, developmental neuropsychiatric disorders, psychosomatic disorders) as well as community psychiatric programs including outpatient services, community liaison, and school-based programs. The student will learn about a variety of psychiatric presentations of children, adolescents, and their families and the range of psychotherapeutic interventions available. In addition, students have the opportunity to participate in a large number of ongoing research projects within the division. The elective is tailored to meet individual interests.

E 8. Pediatric Infectious Diseases. Dr. Kim and staff. All quarters; limited to one or two students.

Consultation service seeing a variety of ward, intensive care, oncologic, transplantation, neonatal and HIV-infected patients. The service also serves as primary attending on select inpatients such as meningitis. Students have primary responsibility for selected patients and will accompany the faculty on daily consultation rounds as well as participating in daily “plate rounds” in the microbiologic laboratories. Students will select a topic to study and present to the division faculty in an informal conference.

E 9. Pediatric Cardiology. Dr. Brenner and staff. All year.

Students actively participate on the service working primarily with the cardiologist on call for the month. Students attend a weekly schedule of divisional conferences and teaching seminars; videotape, taspile and computer interactive learning resources are available. Emphasis is placed on the following areas: acquisition of basic skills of cardiovascular assessment in infants and children; understanding the hemodynamic principles of pressure, flow and resistance, and relating them to the clinical picture and the findings at cardiac catheterization; overview of the natural history of common congenital and acquired heart disease in infancy, childhood and adolescence; introduction to electrocardiography and twodimensional color and Doppler echocardiography.


Participate in the interdisciplinary evaluation, diagnosis and management of developmental disabilities in school aged children in outpatient settings. The student will develop working competence in the neurodevelopmental assessment of school aged children and an understanding of cognitive and central processing disorders.

Clinical activities will be precepted and the clerk will participate in a didactic program that focuses on issues related to developmental disabilities. Opportunities will be provided for the clerk to observe evaluations in community settings as well as in the outpatient clinics.

E 11. Adolescent Medicine. Dr. Trent. Half quarter; not available June or July.

Prerequisite: Core Clerkship in Pediatrics and Ob/Gyn.

Students will gain increased experience working with adolescents (ages 10-21 years). Time is primarily spent in the Adolescent Clinic with additional clinical opportunities at the Baltimore City school-based clinics, and an adolescent substance abuse treatment program. Clinical interviewing skills are emphasized, and there is a weekly didactic seminar series. A case presentation or literature review is required during the month.

E 12. Pediatric Gastroenterology and Nutrition. Dr. Cuffari and staff. All quarters.

Prerequisite: Core clerkship in Pediatrics preferred.

Students will receive exposure to children with a wide variety of pediatric gastrointestinal, hepatic and/or pancreatic disorders as well as disorders of under and over nutrition. Students will round daily with ward team beginning at 8 a.m. from CMSC 9, M-F.

Additionally, students will be expected to participate in various divisional outpatient clinics, including General GI/Inflammatory Bowel Disease Clinic Tuesday 9 a.m.-12 p.m. and/or 1-4 p.m.; General GI Clinic on Thurs. 8-12 a.m and Liver clinic on Friday 9 a.m.-12 p.m. Clinic is in the David M. Rubenstein Children’s Health Building, Lower Level.

Students are also encouraged to participate in various divisional teaching sessions. On Wednesdays from 12 – 2 pm. Students will be asked to present
an interesting case on the last Wednesday of their rotation.

E 13. Clinical Clerkship in Pediatric Dermatology. Drs. Cohen and Puttgen. All quarters. This is an intensive clinical experience in Pediatric Dermatology. The student will participate in outpatient clinics, inpatient consults, dermatology rounds, and grand rounds. Students are also encouraged to design and complete clinical research projects and contribute to the online image resource dermatlas.org.

E 14. Developmental Pediatrics-Kennedy Krieger Institute. Dr. Shapiro and Kennedy Krieger staff. All quarters; one month. The goal of this elective is to provide the student with an overview to neurodevelopmental disabilities including cerebral palsy, autism, intellectual disability, attention deficit hyperactivity disorder and other disorders of communication and learning. Students will actively participate in the diagnostic and interdisciplinary evaluation and management of infants, children, and adolescents with neurodevelopmental disorders. Directed readings, lectures, and regular meetings with a faculty preceptor will be used to increase the student’s knowledge of principles of development, specific diagnostic entities, brain-behavior relationships, and current issues in care. This elective is recommended for those students who are considering careers in pediatrics, neurology, genetics, psychiatry, or psychology.

E 15. Clinical Clerkship in Pediatric Epilepsy. Dr. Hartman. All year. This elective will give the student experience in the “trenches” of managing pediatric epilepsy. Participation in clinic with the preceptors on Tuesday and Thursday afternoons 1-5 p.m., or in a more structured and intensive experience including ward duty. There also is experience reading EEGs both outpatient and in the epilepsy monitoring unit. The student can also spend time with ketogenic diet patients and in epilepsy surgery cases as available.

E 16. Clinical Clerkship in Full-Term Nursery. Dr. Golden. All year; four weeks. Clinical experience in the care of full-term and nearterm newborns, including both normal and “at-risk” infants. Student will be expected to follow newborns and families throughout the nursery stay. On completion of the clerkship, the student should be able to: perform a newborn physical exam, including assessment of gestational age; recognize normal patterns of transition at birth; recognize risk factors for and signs of abnormal transition; identify many normal variants and abnormal findings; understand the diagnosis and management of common neonatal problems (such as jaundice, suspected sepsis, feeding problems, congenital infections, drug withdrawal, skin rashes); understand important issues in counseling parents regarding care of the newborn. Students will have the opportunity to attend deliveries with the pediatric house staff and participate in resuscitation, if interested.

E 17. Research in Pediatric Allergy. Dr. Eggleston and Dr. R. Wood. All year; nine weeks. The student may participate in a variety of ongoing research on allergic disease in asthmatic children. Current projects include basic research on the immunoneurochemistry of animal allergens and assessment of hypersensitivity based on sera and basophils, environmental (indoor) allergens, as well as clinical research on the human response to measured concentrations of airborne allergens. A multidisciplinary center for the study of home environment in determining the severity of asthma in children offers many exciting research opportunities.

E 18. General Pediatrics and Adolescent Medicine Clinical Research. Dr. Ellen. Nine weeks minimum. Prerequisite: Basic Clerkship in Pediatrics

Opportunities are available for studies to participate in ongoing clinical research projects within the Division of General Pediatrics, which includes the Harriet Lane Primary Care Clinic, Adolescent Medicine, Intensive Primary Care Clinic (primary care services for children with HIV infection), and a health services research group. Students may be involved in developing critical literature reviews or pre-testing research instruments, in collecting data through interview or chart review, or in analyzing data, depending on the student’s interests and previous experience and the stage of the project. Students who choose this elective will increase their depth of knowledge in at least one pediatric content area.

E 19. Healthcare Issues in Homeless Children Dr. K. Schwarz. All year; three weeks. Available to Johns Hopkins School of Medicine students; two students per quarter. Prerequisite: Basic Clerkship in Pediatrics

There are currently ~2500 homeless children in Baltimore City. Recent studies of homeless East Baltimore families by the elective faculty demonstrate low hepatitis B vaccine coverage, high rates of obesity, and frequent exposure to domestic violence. These findings are consistent with existing literature which documents that homeless children have poorer overall health than their housed peers. The purpose of this service-based learning curriculum is for medical students to develop the knowledge, skills and attitudes necessary to address the complex healthcare needs of homeless families. The elective will be for three weeks and will be offered by pediatric and nursing school faculty with experience in urban health, children’s health consequences of domestic violence and homelessness, in collaboration with the Director of the Ark (a day care for homeless children), the Director of residential programs at House of Ruth Maryland (a domestic violence shelter), and the Director of neighborhood services of HEBCAC (Historic East Baltimore Community Action Coalition), Inc. The elective will begin with an orientation session with the faculty; the student will pick one subject around which to develop healthcare education which he/she will provide at the 3 sites (such as nutritional counseling, HBV prevention, etc). Students will spend mornings at The Ark and afternoons at the House of Ruth, learning firsthand about health issues of homeless children, and will work collaboratively with these organizations to implement a health education program. One afternoon/week at the House of Ruth will be spent doing pre-school physical examinations under the supervision of a pediatric faculty member. HEBCAC, our primary
community collaborator which is well known for its consistent, exemplary advocacy for the homeless, will teach the students about how to develop and execute this type of community-based health advocacy project. The student will present his/her work formally to the faculty group at the conclusion of the elective. It is our hope that this educational, hands-on experience will empower and motivate the students to continue to advocate for these vulnerable children throughout their careers.

E 20. Pediatric Intensive Care Elective
Dr. Shilkofski. Two to four weeks; one student per rotation.
Prerequisite: Basic Clerkship in Pediatrics. Clinical preceptorship in anesthesiology recommended, but not required.
The course is designed for students planning a career in anesthesiology, pediatrics, or a pediatric surgery specialty and encourages students to become familiar with problems of critically ill infants and children. Basic pathophysiology and pharmacology will be stressed. Students should be prepared to help contribute to the care of these patients on rounds and are expected to attend daily didactic sessions and in-depth case discussions for residents and students held by the PICU faculty and fellows. Night float call with the resident they are “paired” with is optional but encouraged. Students will be expected to give a case presentation on a critical care topic of their choice at the end of the rotation.

E 21. Clinical Research Elective in Pediatric Infectious Diseases
Dr. K. Kim. All year; nine weeks.
Clinical research opportunities are available on a range of topics related to the pathogenesis, epidemiology, diagnosis and management of infectious diseases, patient care (including HIV-infected children), outcome assessment, critical pathways, antibiotic utilization, and vaccine-related issues.

E 22. Laboratory Elective in Pediatric Infectious Diseases
Dr. K. Kim. All year; one quarter or longer.
Laboratory projects on the biology of the blood-brain barrier in central nervous system infections, inflammation, and on HIV. Laboratory skills include tissue culture, assays for microbial interaction with the blood-brain barrier, recombinant protein expression systems, microbial genetics, microarrays, proteomics, PAGE, 2D gels and Western blots, ELISA assays, signal transduction pathways including Ca and protein biochemistry.

E 23. Advanced Clerkship in Pediatric Oncology
Dr. K. Cohen. All year.
Prerequisite: Basic Clerkship in Pediatrics
Students will have the opportunity to become familiar with pediatric oncology patient care during this one month inpatient-based rotation. The elective includes exposure and education to a wide-range of oncologic conditions and complications. Students will have the opportunity to participate in the management of children with hematologic malignancies and solid tumors. In addition, students can participate in the management of pediatric bone marrow transplantation patients. Students primarily manage selected inpatients with resident, fellow, and attending supervision. Students may have the opportunity to see consults in concert with the inpatient team and to follow the progress of patients as they transition to the outpatient setting.
Pharmacology and Molecular Sciences

PHILIP ARTHUR COLE
E.K. Marshall and Thomas H. Maren Professor of Pharmacology, Professor of Oncology, Director of the Department of Pharmacology and Molecular Sciences

DARRELL R. ABERNETHY
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

RICHARD FREDERICK AMBINDER
James B. Murphy Professor of Oncology, Professor of Pharmacology and Molecular Sciences

J. THOMAS AUGUST
University Distinguished Service Professor of Pharmacology, Professor of Oncology

DONALD S. COFFEY
Catherine Iola and J. Smith Michael Distinguished Professor of Urology, Professor of Oncology, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

ROBERT J. COTTER
Professor of Pharmacology and Molecular Sciences, Professor of Biophysics and Biophysical Chemistry

SAMUEL RAY DENMEADE
Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Professor of Urology

CHARLES WILLIAMS FLEXNER
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

ROBERT HOWARD GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

D. WADE GIBSON
Professor of Pharmacology and Molecular Sciences, Professor of Oncology

GARY S. HAYWARD
Professor of Oncology, Professor of Pathology, Professor of Pharmacology and Molecular Sciences

S. DIANE HAYWARD
Professor of Oncology, Associate Professor of Neurology, Professor of Pharmacology and Molecular Sciences

CRAIG WALTER HENDRIX
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

JAMES EARL HILDRETH, Adjunct Professor

PAUL S. LIETMAN
Professor Emeritus of Medicine, Professor Emeritus of Pediatrics, Professor Emeritus of Pharmacology and Molecular Sciences

JUN LIU
Professor of Pharmacology and Molecular Sciences, Professor of Oncology

WILLIAM G. NELSON
Marion I. Knott Director and Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences, Professor of Urology, Professor of Radiation Oncology and Molecular Radiation Sciences

DUOJIA PAN
Professor of Molecular Biology and Genetics, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

MARTIN GILBERT POMPER
Professor of Radiology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Joint Appointment in Psychiatry, Professor of Radiation Oncology and Molecular Radiation Sciences

CECIL H. ROBINSON, Professor Emeritus

CHRISTOPHER A. ROSS
Professor of Psychiatry, Professor of Neurology, Professor of Neuroscience, Professor of Pharmacology and Molecular Sciences

RONALD L. SCHNAAR
Professor of Pharmacology and Molecular Sciences, Professor of Neuroscience

THERESA A. SHAPIRO
Wellcome Professor of Clinical Pharmacology in the Department of Medicine, Professor of Pharmacology and Molecular Sciences

SOLOMON H. SNYDER
University Distinguished Service Professor of Neuroscience, University Distinguished Service Professor of Pharmacology and Molecular Sciences, University Distinguished Service Professor of Psychiatry

JAMES T. STIVERS
Professor of Pharmacology and Molecular Sciences, Professor of Oncology

PAUL TALALAY
John Jacob Abel Distinguished Service Professor of Pharmacology and Experimental Therapeutics

SYLVAIN DORE
Associate Professor of Anesthesiology and Critical Care Medicine (to 08/31/2010), Associate Professor of Pharmacology and Molecular Sciences (to 08/31/2010)

WALTER C. HUBBARD
Associate Professor of Medicine, Associate Professor of Pharmacology and Molecular Sciences

BRENT G. PETTY
Associate Professor of Medicine, Associate Professor of Pharmacology and Molecular Sciences

JONATHAN D. POWELL
Associate Professor of Oncology, Associate Professor of Pharmacology and Molecular Sciences

DOUGLAS N. ROBINSON
Associate Professor of Cell Biology, Associate Professor of Pharmacology and Molecular Sciences

AMINA SARAH WOODS, Adjunct Associate Professor
PHARMACOLOGY AND MOLECULAR SCIENCES

JIN ZHANG
Associate Professor of Pharmacology and Molecular Sciences, Associate Professor of Neuroscience, Associate Professor of Oncology

HENG ZHU
Associate Professor of Pharmacology and Molecular Sciences (from 10/01/2010), Assistant Professor of Pharmacology and Molecular Sciences (to 09/30/2010), Assistant Professor of Oncology

NAMANDJE N. BUMPUS
Assistant Professor of Medicine, Assistant Professor of Pharmacology and Molecular Sciences

ALBENA TODOROVA DINKOVA-KOSTOVA
Assistant Professor of Pharmacology and Molecular Sciences, Assistant Professor of Medicine

KELLY ELISE DOOLEY
Assistant Professor of Medicine, Assistant Professor of Pharmacology and Molecular Sciences

TAKANARI INOUE
Assistant Professor of Cell Biology, Assistant Professor of Biological Chemistry, Assistant Professor of Pharmacology and Molecular Sciences

CAREN L. FREEL MEYERS
Assistant Professor of Pharmacology and Molecular Sciences, Assistant Professor of Oncology

SIMONA STAGER
Assistant Professor of Molecular and Comparative Pathobiology (from 09/01/2010), Assistant Professor of Pharmacology and Molecular Sciences

SEAN DIXON TAVERNA
Assistant Professor of Pharmacology and Molecular Sciences, Joint Appointment in Medicine, Assistant Professor of Oncology

YONGJUN DANG, Research Associate

JED W. FAHEY, Research Associate

YOU SANG HWANG, Research Associate

JUN SEOP JEONG, Research Associate

MOHAMAD ASIF KHAN
Research Associate (from 11/01/2010)

HUA LIU, Research Associate

PABLO HECTOR HORACIO LOPEZ, Research Associate

DEBORAH A. MCCLELLAN
Research Associate in Health Sciences Informatics, Research Associate in Pharmacology and Molecular Sciences

DAVID J. MEYERS, Research Associate

QIANG NI, Research Associate

PAUL THIAM JOO TAN, Research Associate

SHRIDHAR BHAT, Visiting Scientist

MAREK ANDRZEJ CEBRAT, Visiting Scientist

ALAN P. KOZIKOWSKI, Visiting Scientist

BARRY J. MARGULIES, Visiting Scientist

ERNESTO TORRES DE AVEDES MARQUES, JR., Visiting Scientist

KATHRYN ELIZABETH MURATORE, Visiting Scientist

LEONARDO NIMRICHTER, Visiting Scientist

KEYKAVOUS PARANG, Visiting Scientist

KERRY ANN PICKIN PAUMI, Visiting Scientist

KUI SHEN, Visiting Scientist

HIROYUKI SUGANUMA, Visiting Scientist

MINGHUA WANG, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF PHARMACOLOGY AND MOLECULAR SCIENCES HOLDING A PRIMARY APPOINTMENT IN:

The Bloomberg School of Public Health:

LUIGI MARIA DE LUCA
Senior Associate in International Health

J. MARIE HARDWICK
Professor of Molecular Microbiology and Immunology

THOMAS W. KENSLEK
Professor of Environmental Health Sciences

REQUIRED COURSE WORK FOR M.D. DEGREE

First Year

Scientific Foundations of Medicine/Pharmacology. Dr. Cole.
This eight day section introduces students to a history of pharmacology, and fundamental principles of pharmacokinetics, drug development, autonomic pharmacology, molecular imaging, and alternative and complementary medicine.

Second Year

Genes to Society/Pharmacology. Dr. Cole

Fourth Year

Rational Therapeutics. Dr. Petty, Division of Clinical Pharmacology and other selected clinical faculty. Required of all fourth year medical students. Second and fourth Thursdays; Sept.-March, 8:30-10:00 a.m. No prerequisite.
This course is designed to consolidate student skills in the selection and use of drugs commonly prescribed in medical practice. This course will build on the foundation of the second year pharmacology course and third year clinical clerkship experiences. The course focuses on therapeutically decision-making in the context of clinical problems based upon pharmacologic principles. Clinical topics in therapeutics to be covered will challenge the students frequently during their internship and will demonstrate the rational application of core pharmacologic principles with general applicability to clinical situations throughout a medical career. Widely respected clinicians from various departments within the School of Medicine will present the therapeutic decision-making process for a given clinical topic during the first hour of the sessions. In the final hour, the guest faculty will facilitate a practical case-oriented discussion with students to interactively solve a series of clinical problems using the therapeutic tools just presented.
**OTHER COURSES AND ELECTIVE OPPORTUNITIES**—Curricular Consultant: Dr. Cole. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

### Pharmacology

**330.709 Organic Mechanisms in Biology.** Dr. Stivers. Wed/Fri; Nov-Jan; 9:00-10:30 a.m. Required course for Pharmacology graduate students.

This fifteen-lecture course deals with the chemical mechanisms of enzymes. It is intended to illustrate how catalysis in biological systems can be understood using principles derived from organic reaction mechanisms.

**330.710 Mechanisms in Bioorganic Chemistry.** Dr. Meyers. April and May; 2:00-3:30 p.m. Required course for Pharmacology graduate students.

This nine-lecture course deals with the chemical mechanisms of enzymes, and builds on the basic principles of catalysis and organic reaction mechanisms that are presented in the course “Organic Mechanisms in Biology.” The course will emphasize the chemical and biophysical tools that are used in this research area, and will focus on recent research in which chemical methods have been used to activate, inhibit, or alter the specificity of enzymes.

**330.707 Graduate Pharmacology.** Drs. Schnaar and Zhang. Offered January through May; 10:30 a.m.-12:00 p.m. Required course for Pharmacology graduate students.

This spring semester course is designed for second year graduate students and will cover basic pharmacology concepts as well as specific drug classes related to diseases. The first half of the course includes lectures on receptors, enzymes, pharmacokinetics and drug metabolism, combinatorial chemistry, and drug design. The second half of the course includes lectures on therapeutic agents used in infectious diseases, cancer, cardiovascular diseases, endocrine disorders, inflammation, and psychiatric illness. There will be two exams. In addition, a series of tutorials on specialty topics will be given concurrently for small groups.

**330.711 Virology.** Dr. Hardwick. March & April; 9:00-10:30 a.m. Unlimited enrollment.

This virology course will focus on the molecular biology of virus infections, the unique strategies by which viruses alter cellular functions and the consequences of these cellular alterations on viral pathogenesis. Detailed analyses of well-studied human pathogens such as HIV, human papillomavirus, Epstein-Barr virus and influenza virus will be contrasted to newly emerging viruses such as West Nile, Ebola and SARS. Topics covered include viral pathogenesis, viral carcinogenesis, vaccination against viral infection, and the use of viruses as tools in molecular and cell biology. Interactions of viral and host cell processes will be emphasized. A weekly core session devoted to discussion of current virological literature will be included. Student evaluation based on participation in core discussions, a mid-term, and a final examination.

**330.801 Research.** By arrangement with the staff, qualified students at various stages of their scientific development may be admitted to collaborate in research projects with members of the staff. Required course for graduate students.

**330.802 Topics in Pharmacology.** Staff and visiting lecturers. One hour per week, Wednesdays at 4:00 p.m. Required course for graduate students.

**330.804 Role of Chromatography Mass Spectrometry in Biomedical Research.** Monday and Wednesday from 10:00 a.m. to 11:00 a.m. Drs. Cotter and Woods.

This course will cover instrumentation methods and applications of high performance liquid chromatography and mass spectrometry.

**330.805 Introduction to Clinical Pharmacology and Medicine.** Dr. Ambinder. April. Limited to five students at a time.

The course will last for eight consecutive days and will meet from 7:30 a.m. until 10:30 a.m. each day. Students will make rounds on a clinical service, discuss drug usage and related clinical issues, research one drug related issue in depth and write a brief paper on the subject. Course enrollment is limited to four. Course usually offered twice a year—late fall and spring or summer. Graduate school pharmacology or physiology is a prerequisite. Contact Dr. Ambinder must approve prospective students. Contact Dr. Ambinder at 5-8839 for meeting place.

**260.623 Virology.** (4 units) Dr. Griffin. First term.

Discusses cellular, molecular, genetic, and immunological principles that govern viral infection. A survey of main virus groups will be presented with detailed discussion of several representative human pathogens. Topics will include viral pathogenesis, viral carcinogenesis, vaccination against viral infection, and the use of viruses as tools in molecular and cell biology. Interactions of viral and host cell processes will be emphasized. A weekly core session devoted to discussion of current virological literature will be included. Student evaluation based on participation in core discussions, a mid-term, and a final examination.

**260.624 Advanced Virology.** (4 units) Dr. Kerr. Third term.

Includes lectures on a diverse collection of viruses with emphasis on molecular biology and pathogenesis. Approximately 50 percent of the course content will consist of student presentations and discussion of primary literature. Student evaluation is based on class participation and exams.

**390.631 Principles of Drug Development.** (2 units) First term. Dr. Flexner. Jointly offered with the School of Public Health.

**Prerequisite:** Consent of instructor.

Presents principles underlying the drug development process from discovery through pre-clinical to all clinical phases. Regulatory issues (FDA faculty) and industry perspectives (pharmaceutical industry faculty) are included. Throughout the course students develop, write and present detailed drug development plans and clinical protocols for new drugs. Evaluation is based on course project writing and presentations. The final exam is the presentation of a proposal to FDA reviewers.

The research interests in the Department of Pharmacology are as follows:
DR. AMBINDER
Virology and human cancer; antiviral therapy; antitumor therapy; lymphoma pathogenesis and treatment; immunological approaches to virus-associated malignancies.

DR. AMZEL
3-D structure of proteins: immunoglobulins and other binding proteins; ATP synthase; monooxygenases and dioxygenases quinone reductase.

DR. AUGUST
Genetic immunotherapy of infectious diseases and cancer by targeting DNA encoded antigen chimeras to MHCII; MHC II antigen presentation; development of DNA vaccines; immune tolerance.

DR. BARROW
Drug discovery for disorders of neurodevelopment.

DR. BUMPUS
Role of drug metabolism in non-nucleoside reverse transcriptase inhibitor-mediated toxicity.

DR. COLE
Chemical and biochemical approaches in the study of signal transduction, circadian rhythm, and gene regulation.

DR. COTTER
Development of new analytical techniques and instrumentation for mass spectrometry; applications of mass spectrometry to the structural analysis of peptides, glycopeptides, and glycolipids.

DR. DENMEADE
Targeted therapies for cancer; prodrugs; proteases; peptide libraries.

DR. DINKOVA-KOSTOVA
Protection against cancer- mechanisms and strategies; structure-activity relation of protective agents; inflammation and cancer; skin cancer prevention.

DR. DOOLEY
Clinical pharmacology of anti-infective agents; evaluation of new drug regimens for the treatment of tuberculosis and co-treatment of TB and HIV.

DR. FLEXNER
Basic and clinical pharmacology of antiretroviral drugs; HIV protease inhibitors and entry inhibitors.

DR. GETZENBERG
Cancer biomarkers; proteomic analysis of nuclear structure; nanotechnology.

DR. GIBSON
Herpes virus proteins: studies of their expression, structure, and function using genetic, biochemical, biophysical, and immunological approaches.

DR. GREENBERG
Chemical and biochemical approaches to the study of DNA damage and repair.

DR. GREIDER
Telomerase and telomere length regulation.

DR. HARDWICK
Molecular mechanisms of programmed cell death.

DR. D. HAYWARD
Epstein-Barr virus and Kaposi's sarcoma virus; viral latency and tumorigenesis; mechanisms of virus induced cell proliferation; viral mediated epigenetic modification of cell gene expression; notch and wnt pathways.

DR. G. HAYWARD
Pathways of herpesvirus gene regulation; cell cycle control and latency; interaction of viral immediate-early transcriptional transactivators with nuclear subdomains; chemokines and molecular piracy by KSHV; role of herpesviruses in vascular disease.

DR. HENDRIX
Anti-infective drugs; chemoprevention of infectious diseases.

DR. HUGANIR
Molecular mechanisms in the regulation of synaptic plasticity.

DR. INOUE
Synthetic cell biology; neutrophil chemotaxis; spatio-temporal signal compartmentalization; confocal fluorescence imaging; technology development.

DR. ISAACS
Understanding the molecular genetic events responsible for initiation and progression of prostate cancer, with particular interest in inherited susceptibility to prostate cancer.

DR. JAFFEE
Analysis of antitumor immune responses against human tumors; identification of the targets of tumor-specific cytotoxic T cells.

DR. KENSER
Molecular mechanisms of chemical carcinogenesis; Nrf2 signalling; cancer chemoprevention.

DR. KINZLER
Molecular genetics of cancer; translational cancer research.

DR. LEVIS
Targeting the FLT3 signaling pathway as a treatment for acute leukemia.

DR. LIU
Chemical biology and molecular biology; use of small molecules as probes to elucidate mechanisms of signal transduction; angiogenesis and cell proliferation.

DR. MEYERS
Organic and medicinal chemistry; chemical biology: drug delivery mechanisms in bacteria; development of antibiotic prodrug strategies; study of bacterial isoprenoid biosynthesis; combinatorial biosynthesis; development of potential therapeutic agents.

DR. NELSON
Molecular mechanisms of prostatic carcinogenesis; epigenetic alterations in cancer; new approaches to prostate cancer prevention and treatment.

DR. PAN
Growth control in normal development and cancer; signal transduction; animal models of cancer.

DR. PITHA-ROKE
Effects of viral infection on expression of cellular (cytokins and chemokines and their receptors) and viral (HIV-1, HHV-8) genes; targeted antiviral and anticellular therapy (gene transfer, ribozymes); breast cancer: role of c-erbB-2.
DR. POMPER
In vivo molecular and cellular imaging; radiopharmaceutical development; targeted cancer imaging and therapy; functional brain imaging.

DR. POSNER
Organic and medicinal chemistry aimed toward rational design and synthesis of new compounds for effective and safe chemotherapy of malaria and cancer.

DR. POWELL
Mechanisms of T cell activation and tolerance.

DR. ROBINSON
Understanding cytokinesis and cell shape control.

DR. ROSS
Neuropsychiatric disorders.

DR. RUDIN
Molecular mechanisms of apoptosis; roles of apoptosis in carcinogenesis and therapeutic resistance; novel therapeutic development in animal models of cancer.

DR. SCHNAAR
Cell interactions in the nervous system.

DR. SHAPIRO
Clinical pharmacology; molecular mechanisms of antiparasitic drug action; effects of topoisomerase inhibitors on DNA of trypanosomes; structure-activity of antimalarial artemisinins.

DR. SILICIANO
HIV latency, evolution, and persistence; HIV treatment and drug resistance; pharmacology of HIV drugs.

DR. SNYDER
Molecular basis of neural signal transduction.

DR. STAGER
Immuno-parasitology; CD8+ T-cells; Leishmania; vaccination.

DR. STIVERS
Molecular mechanisms of enzymatic DNA repair, DNA topoisomerase mechanism; NMR studies of enzymes and nucleic acids; enzyme inhibition and engineering.

DR. TALALAY
Molecular mechanisms in chemical and dietary protection against mutagens and carcinogens.

DR. TAVERNA
Histone and chromatin modifications; epigenetics and gene function; identification of histone binding modules; small RNA directed gene silencing.

DR. TOWNSEND
Organic and bioorganic chemistry: biosynthesis of natural productions and biomimetic synthesis; elucidation of protein function; molecular biology of secondary metabolism and engineering of biosynthetic systems to practical ends; study of the role and inhibition of fatty acid synthesis in human cancer, tuberculosis, and obesity.

DR. VOGELSTIEIN
Molecular genetics of human cancer.

DR. ZHANG
Cell signaling; kinases and phosphatases; chemotaxis; live-cell imaging; fluorescent proteins and reporters; chemical biology.

DIVISION OF CLINICAL PHARMACOLOGY
This Division is operated jointly by the Department of Pharmacology and Molecular Sciences and the Department of Medicine as a closely integrated unit. (See page 194 for description of activities.)

GRADUATE PROGRAM—Students are accepted for graduate work leading to the degree of Doctor of Philosophy. An integrated program leading to both the M.D. and Ph.D. degrees is also available to medical students who are interested in combined medical and scientific training (see Graduate Programs)
Physical Medicine and Rehabilitation

JEFFREY B. PALMER
Lawrence Cardinal Shehan Professor of Physical Medicine and Rehabilitation, Professor of Functional Anatomy and Evolution, Professor of Otolaryngology-Head and Neck Surgery, Director of the Department of Physical Medicine and Rehabilitation

BARBARA J. DELATEUR
Lawrence Cardinal Shehan Professor Emerita of Physical Medicine and Rehabilitation

REBECCA Z. GERMAN
Professor of Physical Medicine and Rehabilitation, Professor of Functional Anatomy and Evolution

ARYGE ELIZABETH HILLIS
Professor of Neurology, Professor of Physical Medicine and Rehabilitation

MICHAEL V. JOHNSTON
Professor of Neurology, Professor of Pediatrics, Professor of Physical Medicine and Rehabilitation

EICHI SAITO, Adjunct Professor

JAY R. SHAPIRO, Professor

AMY J. BASTIAN
Associate Professor of Neuroscience, Associate Professor of Neurology, Associate Professor of Physical Medicine and Rehabilitation

PABLO ARIEL CELNIK
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Neurology

JAMES R. CHRISTENSEN
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Pediatrics

JAMES A. FAUERBACH
Associate Professor of Medical Psychology, Associate Professor of Physical Medicine and Rehabilitation, Joint Appointment in Surgery

FELICIA HILL-BRIGGS
Associate Professor of Medicine, Associate Professor of Physical Medicine and Rehabilitation

JOHN WOOD MCDONALD, III
Associate Professor of Neurology, Associate Professor of Physical Medicine and Rehabilitation

DALE M. NEEDHAM
Associate Professor of Medicine, Associate Professor of Physical Medicine and Rehabilitation

FRANK S. PIDCOCK
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Pediatrics

KENNETH H. C. SILVER, Associate Professor

BETH S. SLOMINE
Associate Professor of Medical Psychology, Associate Professor of Physical Medicine and Rehabilitation

STEPHEN T. WEGENER, Associate Professor

RICHARD DAVID ZOROWITZ, Associate Professor

NKIRUKA U. ARENE, Assistant Professor

KATHLEEN D. BRADY, Assistant Professor

MARTIN B. BRODSKY, Assistant Professor

MARY JO FISHBURN, Assistant Professor

JUDITH E. GOLSTEIN
Assistant Professor of Ophthalmology, Assistant Professor of Physical Medicine and Rehabilitation

MARLIS GONZALEZ-FERNANDEZ, Assistant Professor

IANESSA ALICIA HUMBERT, Assistant Professor

AARON N. JUNI, Assistant Professor

MICHELLE KHO, Assistant Professor

KATHLEEN BECHTOLD KORTE, Assistant Professor

KOICHIRO MATSUO, Adjunct Assistant Professor

ROBERT SAMUEL MAYER, Assistant Professor

HANY R. NOSIR, Adjunct Assistant Professor

JOSEPH C. ORLANDO
Assistant Professor of Plastic and Reconstructive Surgery, Assistant Professor of Physical Medicine and Rehabilitation

SARA PALMER, Assistant Professor

CATHY A. PELLETIER, Assistant Professor

JOSEPH P. PILLION, Assistant Professor

ALBERT C. RECIO, Assistant Professor

CRISTINA L. SADOWSKY, Assistant Professor

CYNTHIA FRANCES SALORIO, Assistant Professor

JENNIFER E. STEVENSON
Assistant Professor (from 08/30/2010)

WILLIAM M. STIERS, Assistant Professor

STACY JENNIFER SUSKAUER, Assistant Professor

DONNA CLARK TIPPETT
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Physical Medicine and Rehabilitation

PEGAH TOURADJI, Assistant Professor

MELISSA KATRINA TROCATO, Assistant Professor

JANET E. TURNER, Assistant Professor

MARK ALLEN YOUNG, Assistant Professor

KATHLEEN MARIE ZACKOWSKI
Assistant Professor of Physical Medicine and Rehabilitation, Assistant Professor of Neurology

GLENDALIZ BOSQUES, Instructor

DORIANNE RACHEL FELDMAN, Instructor

SUSAN E. HOFKAMP, Instructor

MARK STEPHEN HOPKINS, Instructor

ERIK HANS HOYER, Instructor

LAURA BOYLE JAWEED, Instructor

EDWARD M. LAND, Instructor

R. SEUNG-BOK LEE, Instructor

SCOTT C. SCHULTZ
Instructor (from 08/01/2010)

LAUREN T. SHAPIRO, Instructor

KELLY SHOWALTER, Instructor

LANA WARREN, Instructor

JENNIFER M. ZANNI, Lecturer
ELECTIVE OPPORTUNITIES—Curricular Consultant: Dr. Mayer. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

E 1. Advanced Clerkship in Chronic Disease and Disability: Improving Quality of Life. Drs. Mayer, Finucane, Pidcock and staff. Offered all year for half quarter. Ten students per half quarter.

Prerequisite: Basic Clerkship in Medicine or Pediatrics

Over 100 million Americans suffer from one or more chronic diseases; over 35 million have severe disability as a result. These will be your patients in the future, irrespective of what specialty you ultimately choose. The goal of this rotation is that all students should possess the knowledge, skills, and attitudes to provide care for persons with chronic diseases and disabilities. The clerkship will focus on issues of chronic disease and disability in a variety of clinical settings, and will have concurrent didactic work, discussion groups, and simulation experiences on an inpatient rehabilitation unit, visits to a sub-acute or chronic care facility, outpatient clinics which emphasize care of disabled and chronically ill patients, and home visits. Inpatient acute care will be de-emphasized. Students will participate in interdisciplinary team meetings and patient/family conferences. Clinical sites will include Johns Hopkins Hospital (general adult rehabilitation), Johns Hopkins Bayview (geriatrics), and Kennedy Krieger (pediatric disabilities). There will be home visits, discussion groups, and simulation exercises. Grading will use participation passports, internet modules, and 360 degree evaluations. There are no overnight call duties. This clerkship will be required for class of 2012.

E 2. Advanced Clerkship in Rehabilitation Research. Dr. Mayer and staff.

Students are invited to participate with faculty in the conduct of research relevant to rehabilitation. Research interests included in the Department of Physical Medicine and Rehabilitation Program are as follows:

DR. CELNICK
Transcranial magnetic stimulation in stroke.

DRS. GERMAN, HUMBERT, and PALMER
Physiology of swallowing.

DR. GONZALEZ-FERNANDEZ
Stroke rehabilitation.

DR. MAYER
Quality improvement in physical medicine and rehabilitation.

DRS. MCDONALD and SADOWSKY
Exercise in long-term spinal cord injury.

DR. STIERS
Professional training outcomes.

DR. WEGENER
Pain management following musculoskeletal injury; improving psychosocial outcomes after traumatic injury.

E 3. Clinical Clerkship in Rehabilitation Medicine. Dr. Mayer and staff. Offered all year for half quarter or three weeks.

Prerequisite: At least a second-year student beginning the fourth quarter.

This elective is intended for students considering a career in physical medicine and rehabilitation. Students will care for inpatients on the Good Samaritan Hospital (stroke or spinal cord) or Johns Hopkins Hospital (complex medical) inpatient rehabilitation units. They will also care for outpatients in musculoskeletal medicine, electrodiagnosis, spasticity, prosthetics and pain clinics. There is flexibility in selecting subspecialty interests. Objectives of the course are to increase knowledge and proficiency in the following areas: Basic clinical skills, such as history taking, physical examination, and general knowledge pertaining to inpatient care; diagnosis, pathophysiology and treatment of certain conditions in which severe physical disability is a prominent feature; the contributions of non-physician health professions required for the comprehensive care of certain patients; the importance of patient and family education in reducing the cost of disability and preventing recurrent hospitalization for health crisis.

E 4. Pediatric Rehabilitation. Dr. Pidcock and staff. Two students per half quarter.

Prerequisite: Pediatrics.

Students will rotate at Kennedy Krieger Institute. They will focus on care of children with disabilities.
Physiology

WILLIAM B. GUGGINO
Professor of Physiology, Professor of Pediatrics, Director of the Department of Physiology
WILLIAM SCOTT AGNEW, Professor
VALINA L. DAWSON
Professor of Neurology, Professor of Neuroscience, Professor of Physiology
MARK DONOWITZ
George LeBoff Professor for Research in Digestive Diseases in the Department of Medicine, Professor of Physiology
ANN L. COX HUBBARD
Professor of Cell Biology, Joint Appointment in Medicine, Professor of Physiology
MIN LI
Professor of Neuroscience, Professor of Physiology
JOHN W. LITTLEFIELD
Professor Emeritus of Physiology, Professor Emeritus of Pediatrics
SVETLANA LUTSENKO, Visiting Professor
PETER C. MALONEY, Professor
DANIEL M. RABEN
Professor of Biological Chemistry, Professor of Oncology, Professor of Physiology
RAJINI RAO, Professor
ROGER H. REEVES, Professor
CHARLES M. WIENER
Professor of Medicine, Professor of Physiology
FREDERIC E. WONDISFORD
Professor of Pediatrics, Joint Appointment in Medicine, Professor of Physiology
THOMAS B. WOOLF
Professor of Physiology, Joint Appointment in Biophysics and Biophysical Chemistry, Assistant Professor of Biomedical Engineering
SANDRA E. GUGGINO
Associate Professor of Medicine, Associate Professor of Physiology
JENNIFER L. PLUZNICK, Assistant Professor
ANDREW WOLFE
Assistant Professor of Pediatrics, Assistant Professor of Physiology
GUANG WILLIAM WONG, Assistant Professor
JIE CHENG, Research Associate
LAURA MARIE KALLAY
Research Associate in Cell Biology (08/16/2010-08/20/2010), Research Associate in Physiology
ANN MARIE LAWLER, Research Associate
DONNA L. VOGEL, Research Associate
JERRY M. WRIGHT, Research Associate
WILLIAM FREDERICK HEINZ, Visiting Scientist
CHRISTIAN JAMES KETCHUM
Visiting Scientist in Physiology, Visiting Scientist in Cell Biology

FACULTY ASSOCIATED WITH THE DEPARTMENT OF PHYSIOLOGY HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
ARTIN A. SHOUKAS
Professor of Biomedical Engineering
PAMELA L. ZEITLIN
Professor of Pediatrics
The Bloomberg School of Public Health:
ROBERT S. FITZGERALD
Professor of Environmental Health Sciences

The department provides instruction in cellular, organ, and human physiology for graduate students in physiology, and elective opportunities for research in physiology. These courses are open to qualified students at the School of Medicine, house staff, fellows, and members of the staff.

REQUIRED COURSE WORK FOR Ph.D. PROGRAM

First Year

360.720 Organ Physiology. Dr. W. Guggino and associates. Fourth quarter; nine weeks
The Organ Physiology Course is an integrative course, bringing together diverse disciplines in an effort to understand the functioning of living organisms. The course utilizes a variety of innovative educational methods. These methods range from eLecture learning to traditional/taped lectures, labs, small group discussions, textbook readings, speakers, and other methods which all focus on heightening the students’ learning experience. The course aims to provide an initial basic understanding of the many different aspects of the internal structure and function of the body, which includes Respiratory, Renal, Gastrointestinal, Cardiovascular, Endocrinology, and Reproductive Physiology. The various organ systems of the body will be discussed in sequence in the lectures, but the interaction of these systems in the living animal must constantly be kept in mind. Students will be presented a comprehensive survey of many of the complex interrelationships that exist between the structure and function of cells and organs. Above all, the course seeks to identify the mechanisms by which an organism maintains the processes that we regard as characteristic of life. The investigations of these mechanisms range from the molecular level to studies of human subjects. In this course, we can consider only a selected sample from the broad range of physiological science, emphasizing topics that provide a basis for later independent study. Also, objective should be to not only talk about what is known, but also discuss what is not known.

360.728 Pathways and Regulation. Dr. William Wong and associates. Third quarter; nine weeks
This course will cover the principles of membrane transport, bioenergetics, metabolic pathways, cell cycle, and cell death with particular emphasis on regulatory mechanisms including receptor-mediated signaling, small GTPases, lipid molecules, kinases, and phosphatases.
Physiology E
360.800 Research.
Interested and qualified students may arrange to work with members of the staff in certain investigations or to begin independent work under supervision.

The research interests represented in the Department of Physiology are as follows:

**DR. CLAYPOOL**
- Mitochondrial biology; lipid metabolism; charactering Barth syndrome; cardiopin and protein structure/function.

**DR. DAWSON**
- Molecular mechanisms of neuronal death and survival.

**DR. DONOWITZ**
- Molecular biology and epithelial transport and signal transduction.

**DR. W. GUGGINO**
- Genetic disorders associated with defective fluid and electrolyte movement; ion channel and epithelial transport physiology.

**DR. HOH**
- Macromolecular and cellular biophysics; using synthetic microenvironments to probe cell structure and function.

**DR. HUBBARD**
- Cooper homeostatis and polarity of epithelial cells.

**DR. LI**
- Signal transduction in the mammalian nervous system; structure and function of cell surface proteins.

**DR. MALONEY**
- Structure and function of membrane transporters; secondary carriers of the MFS; ABC transporter ATPases; reconstitution of membrane transporter function; CFTR and cystic fibrosis.

**DR. RABEN**
- Biochemistry and chemistry of lipids and lipid metabolizing enzymes involved in signaling cascades.

**DR. RAO**
- Molecular and cellular functions of novel ion transporters from yeast to human.

**DR. REEVES**
- Molecular genetic basis of Down syndrome using genetic approaches in humans and animal model systems.

**DR. SHOUKAS**
- Systems analysis of the circulatory systems.

**DR. WOLFE**
- Reproductive neuroendocrinology; developmental biology; GnRH neuron; molecular regulation of gene expression; mouse models

**DR. WONDISFORD**
- Transcriptional regulation of the anterior pituitary, adipocyte, and pancreatic beta cell by nuclear hormone receptor, cAMP, and insulin signaling pathway; molecular mechanisms linking obesity and type II diabetes.

**DR. WONG**
- Identification and molecular characterization of novel secreted factors involved in obesity and diabetes.

**DR. WOOLF**
- Molecular dynamics simulation of membrane proteins; lipid interactions of structure; function relationships for membrane proteins and structure prediction and refinement for membrane proteins.

**DR. ZEITLIN**
- Role of the cystic fibrosis transmembrane conductance regulator in lung development; neonatal gene therapy of cystic fibrosis using adenov associated virus; pharmacological therapy for cystic fibrosis.

**183.683.01 Mechanisms of Cardiopulmonary Control.** Dr. Robert Fitzgerald.
Focus of this seminar will be on control of the respiratory and cardiovascular systems. The various receptors, central integration, and effector mechanisms of the two systems will be discussed, examining their roles under resting conditions (e.g., factors involved in respiratory rhythmicity at rest), awake, asleep, anesthetized. Attention will be paid to how the two sub-systems interact and influence each other. Didactic material will be blended with student-led discussion of pertinent journal articles and monographic literature.

**183.642.01 The Cardiopulmonary System Under Stress.** Dr. Robert Fitzgerald.
This seminar is a sequel to the Mechanisms of Cardiopulmonary Control; it will attend to physiological stresses such as acclimatization to altitude and exercise and to toxicological stresses such as TB, oxidative stress such as occurs in ventilator-induced lung injury and pulmonary inflammation; emotional stress will also be considered. Didactic material will be blended with student-led discussion of pertinent journal articles.

**GRADUATE PROGRAM—**Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs).
Psychiatry and Behavioral Sciences

J. RAYMOND DEPAULO
Henry Phipps Professor of Psychiatry, Director of the Department of Psychiatry and Behavioral Sciences

Marilyn S. Albert
Professor of Neurology, Professor of Neuroscience, Professor of Psychiatry

Nancy A. Ator, Professor

Jay M. Baraban
Professor of Neuroscience, Professor of Psychiatry

George E. Bigelow, Professor

Joseph V. Brady
Professor of Behavioral Biology, Professor of Neuroscience

Jason Brandt
Professor of Psychiatry, Professor of Neurology

Robert K. Brooner
Professor of Medical Psychology, Assistant Professor of Gynecology and Obstetrics

Maggie Bruck, Professor

Michael F. Cataldo
Professor of Behavioral Biology, Professor of Pediatrics

Richard A. Chase, Adjunct Professor

Edward Jackson Cone, Adjunct Professor

Paul T. Costa, Jr., Professor

Joel Elkes
University Distinguished Service Professor Emeritus of Psychiatry

Bernard T. Engel, Professor

Marshall F. Folstein, Professor

Susan E. Folstein, Professor

Roland R. Griffiths
Professor of Behavioral Biology, Professor of Neuroscience

James C. Harris, Jr.
Professor of Psychiatry, Professor of Pediatrics

Jennifer A. Haythornthwaite
Professor of Psychiatry, Professor of Medicine

Jack E. Henningfield, Adjunct Professor

Rudolf Hoehn-Saric, Professor Emeritus

Steven R. Hursh, Adjunct Professor

Kay Redfield Jarison
Dalo Family Professor of Mood Disorders in the Department of Psychiatry

Rolley E. Johnson, Adjunct Professor

Hendree Evelyn Jones
Adjunct Professor of Behavioral Biology (from 12/01/2010), Adjunct Professor of Gynecology and Obstetrics (from 12/01/2010), Professor of Behavioral Biology (on leave of absence to 11/30/2010), Professor of Gynecology and Obstetrics (on leave of absence to 11/30/2010)

Walter Erwin Kaufmann
Professor of Pathology, Professor of Neurology, Professor of Pediatrics, Professor of Psychiatry, Professor of Radiology

Zaven S. Khachaturian, Adjunct Professor

Constantine G. Lyketsos
Elizabeth Plank Althouse Professor of Alzheimer's Research in Psychiatry and Behavioral Sciences

Russell Louis Margolis
Professor of Psychiatry, Professor of Neurology

Micelle M. Mazzocco, Professor

Una Deirdre McCann
Professor of Psychiatry, Professor of Neurology

Mary E. McCaul
Professor of Behavioral Biology, Associate Professor of Medicine

Paul R. McHugh
University Distinguished Service Professor of Psychiatry

Allan F. Mirsky, Adjunct Professor

Timothy H. Moran
Paul R. McHugh Professor of Motivated Behaviors in the Department of Psychiatry

Gerald Nestadt, Professor

Godfrey D. Pearlson, Professor

David Pickar, Adjunct Professor

Ann E. Pulver
Professor of Psychiatry, Assistant Professor of Pediatrics

Peter V. Rabins
Richman Family Professor of Alzheimer's and Related Diseases, Joint Appointment in Medicine

Mark A. Riddle
Professor of Psychiatry, Professor of Pediatrics

Christopher A. Ross
Professor of Psychiatry, Professor of Neurology, Professor of Neuroscience, Professor of Pharmacology and Molecular Sciences

Akira Sawa
Professor of Psychiatry, Professor of Neuroscience

Chester W. Schmidt, Jr., Professor

Kenneth Silverman, Professor

Phillip R. Slavney
Eugene Meyer III Professor Emeritus of Psychiatry

Gwenn S. Smith, Professor

Solomon H. Snyder
University Distinguished Service Professor of Neuroscience, University Distinguished Service Professor of Pharmacology and Molecular Sciences, University Distinguished Service Professor of Psychiatry

Maxine L. Stitzer, Professor

Eric C. Strain, Professor

Glenn J. Treisman
Professor of Psychiatry, Professor of Medicine

Benedetto Vitiello, Adjunct Professor

John T. Walkup, Adjunct Professor
ANTONIS POLITIS, Instructor
MICHAEL D. POTASH, Instructor Emeritus
LISA C. REICHENBACH, Instructor
BEATRICE M. ROBBINS, Instructor
PATRICIA SARAH ROY, Instructor
ERIC ALAN SAMSTAD, Instructor
GEETA SARPHARE, Instructor
NICOLA C. SATER, Instructor
MARGARET SEIDE, Instructor
LAURA JEAN SEIDEL, Instructor
CYNTHIA A. SMITH, Instructor
MILENA HRUBY SMITH, Instructor
PAUL LEVI SOTO, Instructor
MATT W. SPECHT, Instructor
STANISLAV SPIVAK, Instructor
MEENAKSHI SUMAN, Instructor
BOGLARKA SZABO, Instructor
ARMAN TAGHIZADEH, Instructor
CAROL FLETCHER TANKARD, Instructor
S. MARC TESTA, Instructor
KATHRYN THOMAS, Instructor
TONYA DENISE TUGGLE, Instructor
ELIZABETH TURIN, Instructor
H. THOMAS UNGER, Instructor Emeritus
PUNIT VIJAY VAIDYA, Instructor
TRACY D. VANNORDALL, Instructor
ELIZABETH CAROLINE WINTER, Instructor
JOHN P. WITT, Instructor
ERICKA LISLE WODKA, Instructor
NANCY YOUNAN, Instructor
MOHAMMED YOUNUS, Instructor
ALBERT ANTHONY ZACHIK, Instructor
DENIS GODWIN ANTOINE, II, Assistant
NICCOLO DENO DELLA PENNA, Assistant
HELENE S. GOLDBERG, Assistant
JANICE E. HEDBLOM, Assistant
ALEXANDER MACKENZIE, Assistant
NORMAN ROBERTSON, Assistant
LINDA ROGERS, Assistant
S. MARC TESTA, Instructor
NICHOLAS P. SCHWEIZER, Assistant
DANIEL E. FORD, Assistant
ARNOLD E. ANDERSEN, Lecturer
LINDA HOVANEC, Lecturer
GERALD D. KLEE, Lecturer Emeritus
CARMEL ROQUES, Lecturer
STEVEN S. SHARFSTEIN, Lecturer
KOKO ISHIZUKA, Research Associate
JEFFREY C. MCCAGH, Research Associate
ANN S. MORRISON, Research Associate
TAMARA RATOVITSKI, Research Associate
BARBARA W. SCHWEIZER, Research Associate
KRISTIN MARIE WILCOX, Research Associate
GESINE MARQUARDT, Visiting Scientist
NATALIA OJEDA DEL POZO, Visiting Scientist (07/05/2010-08/31/2010)

FACULTY ASSOCIATED WITH THE DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
KAREN I. BOLLA
Associate Professor of Neurology

GAIL L. DAUMIT
Associate Professor of Medicine

MARTHA BRIDGE DENCKLA
Professor of Neurology

ANDREW P. FEINBERG
King Fahd Professor of Molecular Medicine in the Department of Medicine

JOHN A. FLYNN
D. William Schlott, M.D. Professor of Clinical Medicine

DANIEL E. FORD
David M. Levine Professor of Medicine

STEWART H. MOSTOFSKY
Associate Professor of Neurology

ESTHER S. OH
Assistant Professor of Medicine

MARTIN GILBERT POMPER
Professor of Radiology and Radiological Science

CYNTHIA S. RAND
Professor of Medicine

MARVIN M. SCHUSTER
Janssen/strauss-Halbrehc Professor Emeritus of Digestive and Motility Disorders in the Department of Medicine

DEAN F. WONG
Professor of Radiology and Radiological Science

ROBERT H. YOLKEN
The Theodore and Vada Stanley Distinguished Professor of Neurovirology in the Department of Pediatrics

The Bloomberg School of Public Health:
JOHN C.S. BREITNER
Professor of Mental Hygiene

ROSA M. CRUM
Professor of Epidemiology

MARY F. CWIK
Assistant Scientist in International Health

WILLIAM W. EATON
Professor of Mental Hygiene

MARGARET E. ENSMINGER
Professor of Health Behavior and Society

SHEPPARD G. KELLAM
Professor Emeritus of Mental Hygiene

PHILIP LEAF
Professor of Mental Hygiene

LAWRENCE S. MAYER
Adjunct Professor of Mental Hygiene

OLIVER LEE MCCABE, III
Adjunct Professor of Mental Health

RAMIN MOJTABAI
Associate Professor of Mental Health

276 PSYCHIATRY AND BEHAVIORAL SCIENCES
Substance Abuse Intersession. Drs. MacKinnon and Neufeld.

The misuse of mind-altering substances adversely alters the lives of many patients, and can be seen as an enormous dilemma for public health and compli-
cation in the care of patients. In this brief interses-
sion course students will expand on the concepts of addiction and behavior encountered in the first year Brain, Mind, Behavior course. Students will learn to
differentiate the varieties of addictive substances, patterns of their misuse, and factors that influence successful treatment of addiction. Special focus
will be placed on the abuse of prescription drugs, and on the course of recovery and relapse.

Second, Third, or Fourth Year —
Psychiatry Clerkship. Dr. Lehmann (course direc-
tor), and staff. Four quarters and summer.
The Psychiatry Clerkship is one part of a nine week quarter integrating Psychiatry (four weeks), Neurology (four weeks), and Intersession (one week). The clerkship consists of a four-week clinical experience and a series of lectures and case conferences. It
may be taken at any time from the fourth quarter of the preclinical through the first quarter of the fourth year, although students are strongly encouraged to
take it as early as possible.

Students serve as clerks in the Meyer building or at
the Johns Hopkins Bayview Medical Center Acute Psychiatric Unit or in general hospital psychiatry. Several patients are assigned to each student who
takes the initial history and follows the patients' course under supervision of both an attending and a resident. Students also see patients in specialty outpatient settings. They attend departmental rounds, a series of weekly lectures and case con-
fferences, and see acute mental illness while working
on-call in the psychiatric area of the emergency room. Principles of diagnosis, psychopathology, etiology, treatment, and prognosis are presented
in lectures, case conferences, mental status exam demonstrations, and ward work with attendings and residents. Course goals can be summarized as
"making psychiatry real" for students through clini-
cal exposure and practical, care-centered teach-
ing. Specific learning objectives are: 1) developing
the professionalism, responsibility, empathy, and
consistency essential to superior clinical practice;
2) acquiring a core body of knowledge regarding
major psychiatric disorders and treatments; 3) mas-
tering the mental status exam; 4) learning to for-
mulate cases with sophisticated, broad reasoning
about mental life. Teaching builds on the preclinical
course in behavioral medicine, neuroscience foun-
dations, and psychiatric methodology.

ELECTIVE OPPORTUNITIES—Curricular
Consultants: Drs. MacKinnon and Lehmann.
Elective courses must be approved by the
preceptor; any member of the department
may act as preceptor. Elective work may be done within the
Johns Hopkins Medical Institutions or under
the supervision of Hopkins’ faculty in affili-
ated institutions in the Baltimore area. In
addition, students may request sponsor-
ship of the department for an assignment to
another medical school in the United States
or abroad.

In addition to training programs in
research and clinical psychiatry, the depart-
ment offers elective seminars and indepen-
dent study projects.

It is the policy of the Department of Psychiatry and Behavioral Sciences to maintain flexibility in its elective programs, and to attempt, as much as possible, to design programs that meet the needs of the individual students.

Dr. MacKinnon is the coordinator of electives for first and second year students. Dr. Lehmann coordinates electives for third and fourth year students. Students are invited to discuss their interests and needs with them, or with any member of this department they may wish to consult.

Although there are numerous clinical and research electives available in the department, they should not be considered as prerequisites for residency training in psychiatry.

For those students who are confident that they will do a psychiatry residency, it is suggested they complete a four week subinternship in psychiatry, as well as devote a majority of their elective time to broaden and deepen their education in the other basic science and clinical areas. Elective time in psychiatry for these students will allow them to clarify their choice and to develop new areas of interest in that field.

The subinternship experience is good for students who wish to find out if they will like psychiatry as a career before making decisions about entering the field. It is also quite helpful for students who are not going into psychiatry, but realize a broadened clinical experience in this field would be useful in their chosen specialty. Students who may be interested in training in psychiatry should consult Dr. Susan Lehmann (410-955-5514) as early as possible to discuss their educational plans.

The elective programs described on the following pages are representative of opportunities for elective work that are available in this department, but many other opportunities can be developed through direct collaboration of individual students and individual faculty members.


Research experience in human laboratory or treatment clinic concerning human drug abuse and the subjective and behavioral effects of abused drugs, including opioids, cocaine, sedatives, ethanol, tobacco, caffeine, marijuana and hallucinogens, and of medications that modify their effects or use.


The course will consist of an experience at the Johns Hopkins Hospital and the Medical Service of the Circuit Court for Baltimore City. Experience in criminal forensic psychiatry will involve examination of both juvenile and adult offenders for competency, criminal responsibility and sentencing recommendations. The civil forensic psychiatry experience will include opportunities to attend civil commitment hearings, competency determinations and determinations of psychic injury. Visits to courtrooms and various correctional institutions are included along with reading and discussion. Optional supervised activity at Maryland’s maximum security forensic hospital is available.


The psychiatric disorders which the elderly experience are similar to those of younger people but unique in some ways. Students will have direct patient care responsibility for both inpatients and outpatients as well as have opportunities to do research.

E 4. Assessment and Treatment of Sexual Disorders. Dr. Berlin.

Students will attend a weekly assessment clinic, as well as a weekly teaching session, and can follow the progress of patients in treatment. Many of the patients have sexual disorders such as pedophilia and exhibitionism and some receive weekly injections of antiandrogenic medication.

E 5. Genetics and Epigenetics of Mood Disorders. Dr. Potash.

Our work focuses on identifying genes that confer risk for developing major depression and bipolar disorder. The work has several facets including assessment of people with these illnesses and their families, laboratory experiments using DNA from these volunteers, and analysis of the clinical and genetic information obtained. We currently have two projects involving new clinical assessments for bipolar disorder and one for major depression. In the lab we perform DNA sequencing experiments to find new variations within potential disease genes, association experiments to test the DNA sequence variations in large numbers of samples, and epigenetics studies to determine whether particular genes are abnormally regulated. Our data analysis projects have been particularly focused on examining clinical features of illness such as psychotic symptoms, for example, that might correlate with patterns seen in patients’ DNA, and thus distinguish genetically important disease subtypes. Student participation could be in any phase of these projects, including clinical ascertainment, lab experiments, or data analysis.


Subinternship on any of the Meyer Inpatient or Outpatient Psychiatry Units (affective disorders, eating disorders, motivated behavior disorders, neuropsychiatry disorders, short stay, geriatric, chronic pain, community psychiatry, or day hospital) may be arranged.


Clinical research on the reinforcing and cognitive effects of abused drugs, with a focus on nicotine and tobacco. We investigate autonomic and subjective responses to smoking cues, self-administration of cigarette puffs, genetics of nicotine reinforcement, and cognitive effects of nicotine and tobacco withdrawal. Students can participate in various aspects of protocol design, subject test-
PSYCHIATRY AND BEHAVIORAL SCIENCES

Opportunity to participate in ongoing human research characterizing behavioral, cognitive, subjective, and physiological effects of novel sedative compounds and hallucinogens. Compounds of interest include GHB, ketamine, dextromethorphan, psilocybin, and the classical benzodiazepines.

E 9. Symptom Patterns in Adolescent Depressed Patients Seeking Outpatient Consultation. Dr. Kastelic.
Systematic assessment of symptoms and recurrence patterns will be ascertained in a consecutive sample of patients seeking consultation in the Adolescent Affective Disorders Consultation Clinic. Previous studies of these patients suggest that seasonal and behavioral variations of depression and responses to it are related to particular subtypes of bipolar and unipolar disorders.

E 10. HIV Psychiatry Service. Dr. Treisman.
Outpatient clinic, inpatient consults and evaluation clinic for HIV-infected patients with psychiatric disorders. Clinical research with HIV-infected patients.

E 11. Research in Molecular Neurobiology of Brain Diseases. Dr. Ross.
The laboratory studies genes expressed in the brain as a means of better understanding brain function and neuropsychiatric disorders. We study the neurodegenerative diseases Huntington's disease and Parkinson's disease by focusing on the relevant gene products such as Huntington, Alpha-Synuclein, and LRRK2, and their interactions. We use biochemical methods, cell culture approaches, and generation of transgenic mouse models in order to better understand the diseases and to develop targets for experimental therapeutics. We are also studying the role of candidate genes in schizophrenia, including DISC1, neuroregulin, Ankyrin G, L-type calcium channels, and others. Clinical studies are done in collaboration with clinical investigators in the Department of Psychiatry. Students can learn the basics of molecular cloning techniques and cell culture and mouse model approaches while studying clinically relevant genes expressed in brain, and can participate in the development of experimental therapeutics.

E 12. Child and Adolescent Psychiatry. Dr. Frosch.
Elective experiences are individually designed to meet students’ needs and interests. Options include working in outpatient specialty clinics, inpatient services, participating in consultations to Pediatrics, joining a team in the Community Mental Health Center, and research opportunities in clinical treatment studies.

Students rotate on the clinical services of the geriatrics/neuropsychiatry section. They are exposed to patients with a broad range of cognitive, affective, and behavioral disturbances in the context of neurologic disease such as stroke, Huntington’s disease, dementia, Alzheimer’s.

The Baltimore Huntington’s Disease Center (BHDC) follows a large number of patients with HD on a longitudinal basis and conducts multi-disciplinary research into the clinical features, genetic aspects and neurobiology of HD. Students will have the opportunity to participate in clinical research projects, neuroimaging studies, neuropsychological studies, or correlation of the causative mutation (the expanding triplet repeat) with clinical features. We pioneered the study of individuals (“presymptomatic”) with the HD gene mutation who don’t yet have clinical features of the disease in order to determine when and where brain changes begin in order to design preventive interventions. In parallel basic science investigations, we are studying cell and mouse models of HD and other brain diseases. In collaborative studies, we also are studying brain imaging and clinical features of schizophrenia. Other topics of interest can be arranged individually. The goal is to develop novel therapeutic interventions for brain diseases.

E 15. Neuropsychiatry. Dr. Lyketsos.
The subinternship in neuropsychiatry rotates the senior or advanced medical student through the several inpatient, outpatient, and nursing home teaching components of the neuropsychiatry service. The focus is clinical intended to develop expertise in evaluation, differential diagnosis, workup and treatment. Patients with the most common neuropsychiatric disorders are seen, including dementia, Alzheimer’s, Parkinson’s, Huntington’s, stroke, MS, PSP, traumatic brain injury, AIDS, and others.

Students are exposed to the various ongoing neuropsychiatric research projects of the department. These include studies in neuroimaging, epidemiology, nursing home research, clinical trials, and outcome studies. Students choose and develop one project of their own to complete during the rotation.

E 17. Molecular Neurobiology and Neuropsychiatric Disorders. Dr. Margolis.
A variety of efforts are underway in the Laboratory of Genetic Neurobiology to find and study genetic causes of neurological disorders, particularly those involving abnormal movement and neurodegeneration. A major theme of the lab is the role of unstable DNA in human disease. Current projects focus on the role of RNA in neurotoxicity, the impact of bidirectional transcription at disease loci, and the discovery of new disease mutations. Students will have the opportunity to develop and analyze cell and animal models, to search for new disease mutations and for genetic factors modifying disease phenotype, and potentially to participate in field trips to characterize families with previously undescribed diseases.

E 18. Huntington’s Disease Clinic. Dr. Rosenblatt.
The Baltimore Huntington’s Disease Center follows a large number of cases on a longitudinal basis and conducts multidisciplinary research. A clinical clerkship could include evaluation of new cases and follow-up, weekly multidisciplinary clinic meeting, state hospital and nursing home visits, and a
tutorial with directed readings. A clerkship could be combined with a broader experience in neuropsychiatry in other clinics, or an experience in clinical research.

**E 19. Research in Eating Disorders.** Drs. Guarda and Redgrave. Minimum of 6 weeks or half day/ week for a whole semester.

Opportunity for clinical research on eating disorders, primarily anorexia nervosa and bulimia nervosa. Experience may involve interviewing or outcome studies, chart reviews and clinical work with patients.

**E 20. Subinternship on Mood Disorders Inpatient Service.** Dr. Swartz.

Senior students will evaluate and treat depressed patients and bipolar patients under the supervision of the mood disorder attending psychiatrist (i.e., a group of six psychiatrists whose clinical and research focuses on mood disorders).


Schizophrenia is a devastating disorder of the brain characterized by hallucinations, delusions, and disordered thought, affecting 0.5-1% of the world population. Recent developments in epidemiology, phenotypic analysis, neuroimaging, molecular genetics, and neuropathology have, for the first time, provided the tools for understanding the pathobiology of schizophrenia and developing rational therapeutics. Students will have the opportunity to work with investigators of the Johns Hopkins Schizophrenia Program to gain experience with one or more of these approaches as applied to schizophrenia. Elective activities will focus on participation in the design and implementation of research projects and direct contact with patients and control populations. Students will also engage in a critical review of the relevant literature, and attend schizophrenia teaching rounds.

**E 22. Molecular Genetics of Schizophrenia.** Dr. Margolis.

Schizophrenia is a devastating disorder of the brain characterized by hallucinations, delusions, and disordered thought, affecting 0.5-1% of the world population. Recent advances in understanding the schizophrenia phenotype and in molecular genetics provide considerable optimism that we now have the tools for finding and characterizing the genetic risk factors for schizophrenia. Students will have the opportunity to work at the bench in the Laboratory of Genetic Neurobiology to gain experience with contemporary strategies for finding and characterizing genetic risk factors. Current projects emphasize copy number variation in the human genome as a rich source of genetic variation that may contribute to the risk of schizophrenia and other complex disorders. Other efforts take advantage of families with multiple affected members to find rare mutations in promising candidate genes. Students will also engage in a critical review of the relevant literature, and will have the opportunity to attend schizophrenia clinical and teaching rounds.

**E 23. Subinternship in Schizophrenia.** Dr. Margolis.

**Prerequisite:** Basic clerkships in Psychiatry and Internal Medicine. Students will have the opportunity to function in the capacity of a resident, taking primary responsibilities for the care of patients in the schizophrenia inpatient and day hospital programs. Subinterns will work directly with patients, meet with family members, and coordinate care with consultants and other care providers. In addition, subinterns will play an active role in weekly teaching rounds, perform literature reviews of topics relevant to their patients, and work extensively with the non-physician members of the treatment team.

**E 24. Psychosomatic Medicine/Chronic Pain.** Dr. Clark.

Clinical research projects with particular patient populations emphasizing psychiatric methodology, phenomenology, and epidemiology. These include patients with chronic symptoms such as pain or dizziness. Other projects focus on aspects of course, prognosis, and treatment of medical conditions with comorbid psychiatric disorders.

**E 25. Clinical Research.** Dr. Nestadt.

Clinical genetic and epidemiology research experience in obsessive compulsive disorder. Students will participate in projects, research meetings, and evaluation.


Evidence linking neuronal immediate early genes to enduring forms of neuronal plasticity has heightened interest in their role in mediating behavioral alterations induced by drugs of abuse and other forms of brain stimulation. As these genes are rapidly induced by neuronal stimulation, they represent a mechanism by which drug administration could elicit long-term adaptations in neuronal function that underlie their reinforcing properties. We have focused on one of these immediate early genes, Narp, which clusters AMPA receptors and is expressed selectively in limbic brain regions regulating behavior. A series of studies we are conducting suggest Narp signaling pathways may represent a potential therapeutic target for drug addiction and possibly other motivated behaviors. For example, we have found that Narp knockout mice are deficient in extinction of drug craving. To learn more about molecular mechanisms and circuitry underlying this finding, we are utilizing viral vectors to locally regulate Narp expression in vivo and filed recordings to determine how Narp deletion affects learning in brain reward pathways. The student will have an opportunity to learn about anatomical, biochemical, and behavioral techniques. Ideally, students should have some experience working with rodents.

**E 27. ECT and Novel Brain Stimulating Therapies.** Dr. Irving Reti.

Electroconvulsive therapy is the most effective available therapy for treating depression however little is known about its mechanism of action. Mice genetically engineered to lack key genes which are inducible by electroconvulsive stimulation and which regulate synaptic plasticity may yield clues to how it works. Although ECT is highly effective, it is not without side-effects and so there has been keen interest in developing alternate forms of therapeutic brain stimulation for depression, such as repetitive transcranial magnetic stimulation (tTMS) and deep.
brain stimulation, that are more focal and do not involve anesthesia. We are now offering rTMS as a clinical service to treat depression and are also setting up clinical trials using the technique. The student will have the opportunity to focus on bench work that may yield clues to ECT's mechanism of action and/or to focus on clinical work related to ECT and novel brain stimulation techniques. Ideally, students should have some experience working with rodents.

Clinical research on the epidemiology, diagnosis and treatment of human prion diseases (e.g. Creutzfeldt-Jakob Disease).

An opportunity to work with clinicians who are treating patients with chronic mental illness. The main area of focus will be the ACT team, which works with patients both in the hospital and home setting. Must be comfortable traveling with staff in the East Baltimore area.

RESEARCH ELECTIVES
As a general guide for students, the research interests of members of the Department of Psychiatry and Behavioral Sciences are listed below:

DR. DePAULO
Depression and Bipolar Disorder: their impact on society, their causes, outcomes, and research prospects; a guided reading series.

DR. GRIFFITHS
Human behavioral pharmacology of abused drugs.

DR. GUARDA
Eating disorders: anorexia nervosa and bulimia nervosa.

DR. JANOFSKY
Psychiatry and law; prediction and treatment of violent behavior in psychiatric populations; demographic description of forensic psychiatric populations; competency evaluation and informed consent in general hospital populations.

DR. KAMINSKY
Somatization disorder, hypochondriasis personality disorder; disaster mental health; financing psychiatric treatment.

DR. NESTADT
Obsessive-compulsive disorder; psychiatric epidemiology; personality disorders/schizophrenia.

DR. RABINS
Psychiatric problems of the elderly and the neurologically ill.

DR. TREISMAN
Psychopharmacology, HIV, affective disorders, motivated behavior.
Public Health

REQUIRED WORK FOR M.D. DEGREE

First Year

Foundations in Public Health and Ethics. Dr. Eric Bass.
The course occurs one afternoon per week beginning with the end of the Introduction to Human Anatomy and runs until the winter break. The goals of the course are to present organizational and ethical challenges that students will encounter as physicians in the U.S. health care system and stimulate interest in students being effective advocates for patients. Seven sessions are required lecture and discussion; the remainder sessions allow students to select a topic of interest for reading and small group discussion, from a range of topics including Addiction Medicine, Health and Human Rights, and Health Disparities in Youth.

Instruction in public health is available for medical students at the Johns Hopkins Bloomberg School of Public Health. A combined M.P.H.-M.D. Program is offered. See page 62 of School of Medicine Catalog for program description. See the School of Public Health Catalog for detailed listings of courses and faculty.

Medical students may wish to consider enrolling in courses offered by the Bloomberg School of Public Health. Details concerning these courses may be obtained from the Office of Records and Registration at the School of Public Health or at http://commprojects.jhsph.edu/courses/.
Radiation Oncology and Molecular Radiation Sciences

THEODORE L. DEWEESE
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Oncology, Professor of Urology, Director of the Department of Radiation Oncology and Molecular Radiation Sciences

C. NORMAN COLEMAN
Visiting Professor of Radiation Oncology and Molecular Radiation Sciences, Visiting Professor of Oncology

JOHN F. DICELLO, Professor Emeritus

DAVID S. ETTINGER
Alex Grass Professor of Oncology, Professor of Gynecology and Obstetrics, Professor of Medicine, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences

ARLENE A. FORASTIERE
Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences

MARIKKI K. LAIHO
Willard and Lillian Hackerman Professor of Radiation Oncology, Professor of Oncology

WILLIAM G. NELSON
Marion I. Knott Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences, Professor of Urology, Professor of Radiation Oncology and Molecular Radiation Sciences

MARTIN GILBERT POMPER
Professor of Radiology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Joint Appointment in Psychiatry, Professor of Radiation Oncology and Molecular Radiation Sciences

DANIELE RIGAMONTI
Salisbury Family Professor of Neurological Surgery, Professor of Oncology, Professor of Radiology, Joint Appointment in Physical Medicine and Rehabilitation, Professor of Radiation Oncology and Molecular Radiation Sciences

GREGG L. SEMENZA
C. Michael Armstrong Professor of Pediatrics, Professor of Biological Chemistry, Professor of Medicine, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences

GEORGE SGOUROS
Professor of Radiology, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences

MOODY D. WHARAM, JR.
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Neurological Surgery, Professor of Oncology, Professor of Pediatrics, Professor of Radiology

JOHN WAI-CHIU WONG
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Oncology

FRED BUNZ
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

DEBORAH ANNE FRASSICA
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

LAWRENCE R. KLEINBERG
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Neurological Surgery, Associate Professor of Oncology

RONALD RODRIGUEZ
Associate Professor of Urology, Associate Professor of Oncology, Associate Professor of Radiation Oncology and Molecular Radiation Sciences

GIUSEPPE SANGUINETI
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Associate Professor of Otolaryngology-Head and Neck Surgery

DANNY YEONG SONG
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Associate Professor of Urology

RICHARD CEDRIC ZELLARS
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology

COURTNEY LEWIS BUI, Assistant Professor

SALLY BRIDGMAN CHESTON, Assistant Professor

ERIC C. FORD
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

SONIA FRANCO
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

JOSEPH M. HERMAN
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology, Assistant Professor of Surgery

ROBERT IVKOV, Visiting Assistant Professor

MIHOKO KAI
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

SHAWN EDWARD LUPOLD
Assistant Professor of Urology, Assistant Professor of Oncology, Assistant Professor of Radiation Oncology and Molecular Radiation Sciences

TODD R. MCNUTT
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology
STEPHANIE ALICIA TEREZAKIS  
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences (from 09/01/2010), Instructor in Radiation Oncology and Molecular Radiation Sciences (to 08/31/2010), Assistant Professor of Oncology (from 09/01/2010)

PHUOC T. TRAN  
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

ERIK JOHN TRYGGESTAD  
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

EVA S. ZINREICH, Assistant Professor

RUSSELL KENNETH HALES, Instructor

KRISTIN ANN REDMOND  
Instructor in Radiation Oncology and Molecular Radiation Sciences (from 10/04/2010), Instructor in Oncology (from 10/04/2010)

YONGGANG ZHANG  
Research Associate in Radiation Oncology and Molecular Radiation Sciences, Research Associate in Oncology

Research interests represented in the Department of Radiation Oncology and Molecular Radiation Sciences are as follows:

DR. BUNZ  
Responses of cancer cells to DNA damage; human cell genetics.

DR. DEWESEE  
Genitourinary system tumors; gene therapy.

DR. FORD  
Radiation physics.

DR. FRANCO  
Genetic response to DNA damage.

DR. FRASSICA  
Clinical radiation therapy; sarcomas, bone cancers.

DR. HALES  
Lung cancer and thoracic oncology.

DR. HERMAN  
Clinical radiation therapy; GI cancers; lymphomas.

DR. IVKOV  
Nanomaterials in targeting cancers.

DR. KAI  
DNA damage response.

DR. KLEINBERG  
Central nervous system cancer; lung cancer.

DR. LAIHO  
Genetic response to DNA damage; cell cycle; p53 response

DR. MCNUTT  
Radiation Physics

DR. REDMOND  
Central nervous system cancers.

DR. SONG  
Genitourinary system tumors; prostate brachytherapy; lung.

DR. TEREZAKIS  
Pediatric malignancies; lymphomas.

DR. TRAN  
Genitourinary tumors; oligometastatic disease; molecular biology in cancer.

DR. TRYGGESTAD  
Radiation physics.

DR. WHARAM  
Pediatric malignancies; CNS tumors.

DR. WONG  
Medical physics.

DR. ZELLARS  
Breast and gynecologic neoplasms.

DR. ZHANG  
Radiobiology.

E1. Radiation Oncology: Consult Service. Drs. Frassica, Asrari, DeWeese, Hales, Herman, Kleinberg, Redmond, Song, Terezakis, Wharam, and Zellars. All year; 3 or 4 1/2 weeks.

Prerequisites: Basic clerkship in medicine or surgery. This course focuses on the evaluation and management of patients with malignant diseases at various sites who are being considered for radiation therapy. Students will have the opportunity to assist faculty with new patient consultations, follow-up evaluations, simulation, treatment planning, and on-treatment patient management. Students will work with a variety of faculty members to assure a broad experience in such areas as head & neck, pediatrics, CNS, GI, GU, breast, hematologic, and musculoskeletal radiation oncology. This elective opportunity will be particularly valuable to students considering a career in oncology.

E2. Advanced Clerkship in Radiation Oncology. Dr. Terezakis. All year; 4 weeks.

Prerequisites: Radiation Oncology Consult Service. This course focuses on the examination and multidisciplinary management of patients with malignant diseases at various sites, supervised by a member of the faculty. Emphasis is on the natural history and biological behavior of malignant diseases and the use of ionizing radiation in patient management. Students will be assigned to work with one to three faculty members only in order to gain in-depth knowledge of particular areas of radiation oncology. The student will be expected to attend multidisciplinary conferences with the faculty member as well as the radiation oncology academic sessions. The course is particularly valuable to those considering a career in radiation oncology.

E3. Introduction to Cancer Research. Dr. Song. Prostate, brachytherapy, lung tumors.

510.702 Basic Radiologic Physics. Dr. Wong and staff. First quarter; Tues., 4:30-6 p.m.; Thurs., 4:30-6 p.m.

Prerequisites: General physics and mathematics and consent of instructor. Essential radiation physics concepts for individuals pursuing careers in radiology, radiotherapy or medical physics. Lecture and laboratory topics include radioactive decay, x-ray production, interaction of ionizing radiation with matter and the measurement of radiation.

510.703 Radiation Oncology Physics. Dr. Wong and staff. Second quarter; Tues., 4:30-6 p.m.; Thurs, 4:30-6 p.m.

Prerequisites: Basic radiologic physics or equivalent and consent of instructor. Application of radiation physics in radiation oncology. Topics include isodose distributions, dose calculation, computerized dosimetric calculation,
brachytherapy, radiation protection and quality assurance.

510.704  Special Topics in Radiation Oncology Physics. Dr. Wong and staff. Year long; Friday, 12 noon-1:30 p.m.

Prerequisites: Consent of instructor.

An advanced course dedicated to the discussion of developing technology and special techniques, including radiolabeled antibody dosimetry, stereotactic radiosurgery, total body irradiation, three dimensional treatment planning, hyperthermia and digital portal imaging.

E4. Clinical Clerkship and Research Project in Radiotherapy. Dr. DeWeese and staff.

Emphasis is on the natural history and biological behavior of malignant diseases. The radiation biology, physical parameters of treatment, simulator technology, computerized treatment planning, examination of patients with malignancy, literature review, and direct patient contact in several multidisciplinary clinics is the basis of daily teaching and instructions. Treatment under faculty supervision utilizing two simulators, five accelerators and computers is reviewed with students.

E5. Treatment Planning Tutorial for External Beam Radiation Therapy. Dr. McNutt and staff. Second quarter; Friday 3:30-4:30 p.m.

Hands on tutorials teach basic 3D treatment planning skills to the participants.
The Russell H. Morgan Department of Radiology and Radiological Science

JONATHAN S. LEWIN
Martin W. Donner Professor of Radiology, Professor of Biomedical Engineering, Professor of Oncology, Professor of Neurological Surgery, Director of the Department of Radiology and Radiological Sciences

JEFF W.M. BULTE
Professor of Radiology, Professor of Biomedical Engineering

DANIEL W. CHAN
Professor of Pathology, Professor of Oncology, Professor of Radiology, Professor of Urology

MICHAEL A. CHOTI
Jacob C. Handelsman Professor of Abdominal Surgery, Professor of Oncology, Professor of Radiology

HARRIS L. COHEN, Visiting Professor

WILLIAM A. EDELSTEIN, Visiting Professor

ALBERT GJEDDE, Adjunct Professor

PAUL W. LADENSON
John Eager Howard Professor of Endocrinology and Metabolism in the Department of Medicine University Distinguished Professor of Medicine, Professor of Oncology, Professor of Pathology, Professor of Radiology

SHENGHAN LAI
Professor of Pathology, Joint Appointment in Medicine, Professor of Radiology

GEORGE SGOUROS
Professor of Radiology, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences

STANLEY S. SIEGELMAN, Professor

MATTIAS STUBER
Professor of Radiology (on leave of absence to 08/02/2010), Professor of Medicine (on leave of absence to 08/02/2010)

MOODY D. WHARAM, JR.
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Neurological Surgery, Professor of Oncology, Professor of Pediatrics, Professor of Radiology

ELIAS A. ZERHOUNI
Professor of Radiology, Professor of Biomedical Engineering

HARVEY A. ZIESSMAN, Professor

SYED ZULFIQAR ALI
Professor of Pathology, Associate Professor of Radiology

LAURA MARIE FAYAD
Associate Professor of Radiology, Associate Professor of Oncology, Assistant Professor of Orthopaedic Surgery

CHRISTOS S. GEORGIADES, Associate Professor

JOSEPH N. GITLIN, Associate Professor

IHAB R. KAMEL
Associate Professor of Radiology, Associate Professor of Oncology

SATOMI KAWAMOTO, Associate Professor

CHRISTINE H. LORENZ, Visiting Associate Professor

KATARZYNA J. MACURA
Associate Professor of Radiology, Assistant Professor of Urology

RONNIE CHARLES MEASE
Associate Professor of Radiology, Associate Professor of Oncology

VENU RAMAN
Associate Professor of Radiology, Associate Professor of Oncology

DAVID J. SCHRETLEN
Associate Professor of Medical Psychology, Associate Professor of Radiology

KHAN M. SIDDIQUI, Visiting Associate Professor

ROBERT DAVID STEVENS
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Associate Professor of Radiology

JAY L. ZWEIER
Visiting Professor of Medicine, Visiting Associate Professor of Radiology

NAFI AYGUN, Assistant Professor

ALEXANDER LEWIS COON
Assistant Professor of Neurological Surgery, Assistant Professor of Neurology, Assistant Professor of Radiology

BRUCE EUGENE COPELAND, Assistant Professor

ADITYA R. DAFTARY, Adjunct Assistant Professor

ERLINDA F. DELEON-GASTON, Assistant Professor Emerita

MANUS J. DONAHUE, III, Assistant Professor (to 09/30/2010)

BRADLEY ROGER FOERSTER, Assistant Professor

XAVIER GOLAY, Assistant Professor

SACHIN K. GUJAR, Assistant Professor

LAWRENCE VINCENT HOFMANN, Assistant Professor

IZLEM IZBUDAK, Assistant Professor

HEATHER A. JACENE, Assistant Professor

SANJAY KUMAR JAIN
Assistant Professor of Pediatrics, Assistant Professor of Radiology

PAMELA Tecce Johnson, Assistant Professor

YOSHINORI KATO
Assistant Professor of Radiology, Assistant Professor of Oncology
MICHAEL ANTHONY JACOBS
Associate Professor of Radiology, Associate Professor of Oncology

DARA L. KRAITCHMAN
Associate Professor of Radiology, Associate Professor of Molecular and Comparative Pathobiology

NAEL FAKHRY OSMAN
Associate Professor of Radiology, Joint Appointment in Medicine

JAMES J. PEKAR, Associate Professor

JINYUAN ZHOU, Associate Professor

VADAPPURAM P. CHACKO, Assistant Professor

MILIND Y. DESAI, Visiting Assistant Professor

ASSAF A. GILAD, Assistant Professor

MAREN R. LAUGHLIN, Adjunct Assistant Professor

MICHAEL T. MCMAHON, Assistant Professor

KENICHI OISHI, Assistant Professor

ARVIND P. PATHAK
Assistant Professor of Radiology, Assistant Professor of Oncology

PIOTR WALCZAK, Assistant Professor

JIANGYANG ZHANG, Assistant Professor

ABDEL-MONEM MOHAMED A. EL-SHARKAWY, Instructor

MICHAEL ANDREW FATT, Instructor

GUANSHU LIU, Instructor

MARIE-FRANCE PENET, Instructor

FARHAD VESUNA, Instructor

YOHANNES AFWORK, Research Associate

ANDREIA V. FARIA, Research Associate

JOSEPH S. GILLEN, Research Associate

HAO HUANG, Research Associate

HANGYI JIANG, Research Associate

PARAG PERRY KARMARKAR, Research Associate

BALAJI KRISHNAMACHARY, Research Associate

CHIA-YING LIU, Research Associate

MARY A. MCALLISTER, Research Associate

NORIKO MORI, Research Associate

DI QIAN, Research Associate

QIN QIN, Research Associate

TARIQ SHAH, Research Associate

MEIYAPPAN SOLAIYAPPAN, Research Associate

PAUL THOMAS WINNARD, JR., Research Associate

WENLIAN ZHU, Research Associate

ERIC CHARLES FREY
Professor of Radiology, Professor of Oncology

EMAD M. BOCTOR MIKHAIL, Assistant Professor

KATSUYUKI TAGUCHI, Assistant Professor

YONG DU, Instructor

XIN HE, Instructor

JINGYAN XU, Instructor

SUSANNE BONEKAMP, Research Associate

JOCHEN CAMMIN, Research Associate

YOHANNES AFEWORK, Research Associate

ANDREIA V. FARIA, Research Associate

JOSEPH S. GILLEN, Research Associate

HAO HUANG, Research Associate

HANGYI JIANG, Research Associate

PARAG PERRY KARMARKAR, Research Associate

BALAJI KRISHNAMACHARY, Research Associate

CHIA-YING LIU, Research Associate

MARY A. MCALLISTER, Research Associate

NORIKO MORI, Research Associate

DI QIAN, Research Associate

QIN QIN, Research Associate

TARIQ SHAH, Research Associate

MEIYAPPAN SOLAIYAPPAN, Research Associate

PAUL THOMAS WINNARD, JR., Research Associate

WENLIAN ZHU, Research Associate

ERIC CHARLES FREY
Professor of Radiology, Professor of Oncology

EMAD M. BOCTOR MIKHAIL, Assistant Professor

KATSUYUKI TAGUCHI, Assistant Professor

YONG DU, Instructor

XIN HE, Instructor

JINGYAN XU, Instructor

SUSANNE BONEKAMP, Research Associate

JOCHEN CAMMIN, Research Associate (from 10/01/2010)

MARTIN J. STUMPF, Research Associate

Division of Neuroradiology

DAVID MARK YOUSEM
Professor of Radiology, Director of the Division of Neuroradiology

PETER B. BARKER
Professor of Radiology, Professor of Oncology

MARTIN GILBERT POMPER
Professor of Radiology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Joint Appointment in Psychiatry, Professor of Radiation Oncology and Molecular Radiation Sciences

S. JAMES ZINREICH
Professor of Radiology, Professor of Otolaryngology-Head and Neck Surgery

HYO S. AHN, Associate Professor

CHRISTOS DAVATZIKOS, Associate Professor

PHILIPPE EDMOND GAILLOUD
Associate Professor of Radiology, Associate Professor of Neurology, Assistant Professor of Neurological Surgery

MICHAEL A. KRAUT
Associate Professor of Radiology, Associate Professor of Neurological Surgery, Associate Professor of Oncology

JAY J. PILLAI, Visiting Associate Professor

BRUCE ALAN WASSERMAN, Associate Professor

RICHARD A.E. EDDEN, Assistant Professor

CHRISTOPHER JOHN ENDRES, Assistant Professor

DHEERAJ GANDHI
Associate Professor of Radiology (from 10/01/2010), Associate Professor of Neurological Surgery (from 10/01/2010), Associate Professor of Neurology (from 10/01/2010), Assistant Professor of Radiology (to 09/30/2010), Assistant Professor of Neurological Surgery (to 09/30/2010), Assistant Professor of Neurology (to 09/30/2010)

FOUAD E. GELLAD, Assistant Professor

ALENA HORSKA, Assistant Professor
MONA ADEL MOHAMED  
Assistant Professor of Radiology (from 07/15/2010), Research Associate in Radiology (to 07/14/2010)  

SRIDHAR NIMMAGADDA  
Assistant Professor of Radiology, Joint Appointment in Medicine, Assistant Professor of Oncology  

MYRIA PETROU, Assistant Professor  

HECTOR A. ROBLES, Assistant Professor  
PIERRE-LOUIS BAZIN, Instructor  

MONICA SMITH PEARL, Instructor  

CARLTON C. SEXTON, Instructor  

YIMAO ZHANG, Instructor  

LYDIA JUNE GREGG, Research Associate  

HE ZHU, Research Associate (from 07/15/2010)  

Division of Nuclear Medicine  

RICHARD L. WAHL  
Henry N. Wagner Jr., M.D. Professor of Nuclear Medicine in the Department of Radiology, Professor of Oncology, Director of the Division of Nuclear Medicine  

ROBERT F. DANNALS, Professor  

JOHN J. FROST, Adjunct Professor  

ZSOLT SZABO, Professor  

FRANK K. WACKER, Visiting Professor  

DEAN F. WONG  
Professor of Radiology, Professor of Neuroscience, Joint Appointment in Psychiatry  

STEPHEN RANDOLPH ZUKIN  
Visiting Professor of Psychiatry, Visiting Professor of Radiology  

FRANK MICHAEL BENGEL  
Associate Professor of Radiology, Joint Appointment in Medicine  

ANDREW G. HORTI, Associate Professor  

SAMUEL SOSTRE, Associate Professor  

JAMES ROBERT BRASIC, Assistant Professor  

STEVE YOON-HO CHO  
Assistant Professor of Radiology, Assistant Professor of Oncology  

HENRY H. HOLCOMB  
Assistant Professor of Psychiatry, Assistant Professor of Radiology  

HIROTO KUWABARA, Assistant Professor  

MARTIN ANTHONY LODGE, Assistant Professor  

IGAL MADAR, Assistant Professor  

JOSEPH R. MARTIRE, Adjunct Assistant Professor  

ARMAN RAHMIM, Assistant Professor  
K. GEORGE SACHARIAH, Assistant Professor  

GABRIEL SOUDRY, Assistant Professor  

ETHAN J. SPIEGLER  
Assistant Professor of Radiology, Instructor in Medicine  

ELIAS K. SHAYA  
Instructor in Radiology, Instructor in Medicine  

ROBERT A. WISE  
Professor of Medicine, Instructor in Radiology  

ANDREW H. CRABB, Research Associate  

TAKAHIRO HIGUCHI  
Research Associate in Radiology (on leave of absence from 07/13/2010-08/10/2010)  

JOHN HILTON, Research Associate  

ANIL KUMAR, Research Associate  

JEFFREY PETTIT LEAL, Research Associate  

WILLIAM BURKE MATHEWS, Research Associate  

HAYDEN T. RAVERT, Research Associate  

OLIVIER GASTON ROUSSET, Research Associate  

JITKA SOJKOVA, Research Associate  

HONG SONG, Research Associate  

KATALINA SZABO, Research Associate  

JINSONG XIA, Research Associate  

Division of Pediatric Imaging  

THIERRY A.G.M. HUISMAN  
Visiting Professor of Radiology, Director of the Division of Pediatric Imaging  

ULRICH V. WILLI, Visiting Associate Professor  

JANE ELLEN BENSON  
Assistant Professor of Radiology, Joint Appointment in Pediatrics  

MELISSA RIEDY SPEVAK, Assistant Professor  

AYLIN TEKES, Assistant Professor  

FACULTY ASSOCIATED WITH THE DEPARTMENT OF RADIOLOGY HOLDING A PRIMARY APPOINTMENT IN:  

The School of Medicine:  

LEWIS C. BECKER  
Robert L. Levy Professor of Cardiology in the Department of Medicine  

JEFFREY A. BRINKER  
Professor of Medicine  

ROBERT H. BROWN  
Professor of Anesthesiology and Critical Care Medicine  

GARY GERSTENBLITH  
Professor of Medicine  

LAWRENCE S. GRIFFITH  
Professor of Medicine  

BETH L. LAUBE  
Professor of Pediatrics  

ROBERT G. WEISS  
Clarence Doodeman Professor of Cardiology in the Department of Medicine  

The Bloomberg School of Public Health:  

JOHN R. LEVER  
Associate Professor of Environmental Health Sciences  

JONATHAN M. LINKS  
Professor of Environmental Health Sciences  

The G.W.C. Whiting School of Engineering:  

GABOR FICHTINGER  
Associate Research Professor in Computer Science  

JERRY L. PRINCE  
Professor of Electrical and Computer Engineering
REQUIRED WORK

Radiology—First Year

Radiology-Gross Anatomy Correlation. Dr. Magid and staff.
Introduction to basic imaging principles and to future clinical relevancy of gross anatomy.

Radiology—Second Year

Radiology: Transition to Wards. Dr. Magid.
Further discussion of dose, risk, and selection of imaging studies on the wards; how to consult with Radiology; introduction to basic image interpretation (chest studies).

ELECTIVE OPPORTUNITIES—Curricular Consultants: Radiology faculty. Elective courses must be approved by the preceptor. Any member of the department may act as preceptor.

Radiology E

E 1. Diagnostic Radiology. Dr. Magid and staff.
Full-time, structured introduction to diagnostic radiology, including most forms of diagnostic imaging. Given each half quarter during the regular academic year (no summer session, but see E 17). Seminars, lectures, learning file, web resources (www.teamrad.com) and tutorials. Oral presentation and written final. Additional emphasis on conference skills, Medical English, and descriptive precision. Each student will prepare and make one or two clinical presentations and collect at least five teaching cases.

E 2. Special Diagnostic Radiology. Section Heads for specific subspecialty areas. All year. Four and one-half weeks, or entire quarter. A clinical experience in a specific area of interest available. In larger divisions, subspecialty areas are available.
DR. BOHLMAN
General Diagnostic Radiology, Bayview.
DR. KAMAL
Magnetic Resonance Imaging.
DRS. KAMAL & MACURA
Computed Tomography.
DRS. GESCHWIND, GEORGIADES, & WEISS
Cardiovascular/Interventional Radiology.
DR. GAILLOUD
Neurointerventional Radiology.
DR. WAHL
Nuclear Medicine.
DRS. YOUSEM, BLITZ, & KRAUT
Neuroradiology.

E 3. Investigative Radiology. Dr. Dean Wong in collaboration with clinical faculty members. Entire quarter.
Opportunities to pursue special investigative topics in diagnostic radiology, nuclear medicine, radiopharmacy, radiobiology, radiological engineering, radiological physics, and physiological optics. Facilities of Radiologic Animal Research Lab will be available for utilization in selected projects.
Clinical Collaborators

DR. KAMAL
Magnetic resonance imaging and research.
DR. DANNALS
Radiochemistry.
DR. HAMPER
Ultrasound.
DRS. GESCHWIND & WEISS
Interventional radiology including laser and balloon angioplasty; pharmacological angioplasty and radiology research.
DR. JONES
Gastrointestinal radiology.

E 4. Physiological Research in Radiology. Dr. Wong and staff.
Current laboratory animal research is largely physiologically oriented, clinically applicable, and directed toward therapeutic applications in vascular radiology. Areas of work include experimental transcatether vascular occlusion and intraarterial drug infusion therapy, and experimental vascular reconstruction. Projects related to other areas of diagnostic radiology are also pursued.

E 5. Clinical Clerkship and Research Project in Radiotherapy. Dr. DeWeese and staff.
Emphasis is on the natural history and biological behavior of malignant diseases. The radiation biology, physical parameters of treatment, simulator technology, computerized treatment planning, examination of patients with malignancy, literature review, and direct patient contact in several multidisciplinary clinics is the basis of daily teaching and instruction. Treatment under faculty supervision utilizing two simulators, five accelerators and computers is reviewed with students.

E 7. Clinical Nuclear Medicine. Dr. Wahl. All Quarters, 8 a.m.-5 p.m.; 2-6 weeks, as desired.
The clinical applications of nuclear medicine in the medical division can be appreciated by firsthand experience in the nuclear medicine clinic. Under the supervision of the staff of the Division of Nuclear Medicine, students will participate in the evaluation of patient's clinical problems, select the appropriate tracer procedure to solve these problems, observe the performance of these tracer examinations and interpret the data.

Introduction to planning and clinical application of investigational studies, i.e., those projects still under auspices of FDA. Preparation of IND, and explanation of Phase I, II, III of clinical investigation.

Under direction of faculty, individual research projects will be undertaken.

Presents the physical foundations of radiation use in medicine and industry and the public health problems associated with it. Optional laboratory experience in an area of student's interest available. Designed for students without strong backgrounds in the physical sciences. Student evaluation based on an exam.
E 15. Introduction to Nuclear Medical Sciences. (PH 186.680) Dr. Wong and faculty. Summer; 5 days/week, 8 a.m.-4 p.m.; eight weeks, July-August. **Prerequisite:** PH 186.601 or comparable training in radiation physics.

Covers the fundamental physical and chemical principles of the use of radionuclides in clinical medicine and research. Material taken selectively from PH 186.601, PH 186.620, PH 186.630, and PH 186.651 is covered in breadth through lectures, laboratory exercises, and demonstrations. Affords practice in using radioactive isotopes safely and effectively in thyroid, liver, renal, and cardiopulmonary function testing; preparation, testing, and administration of radiopharmaceuticals; radioimmunoassays; isotope dilution; absorption and retention studies; and scanning and imaging procedures. Designed primarily for physicians entering nuclear medicine and radiology. Student evaluation based on exams.

E 17. Preceptorship in Diagnostic Radiology. Dr. Bohlman and staff. Johns Hopkins Bayview Medical Center.

A Preceptorship in Diagnostic Radiology will be offered to medical students in their clinical years similar to the E 1 Diagnostic Radiology course offered at Johns Hopkins Hospital. Through observing film interpretation, attending daily departmental teaching conference, and observing the performance of x-ray procedures in the clinical setting, the student will be taught the basic fundamentals of how to read conventional x-ray films on their patients. Throughout the elective, the role of imaging in the proper management of patient care will be stressed. Special procedures, ultrasound, CT will also be shown to the student.


This elective would familiarize the student with the techniques of interventional radiology including angiography (selective and sub-selective), angioplasty, atherectomy, vascular embolization, intravascular ultrasound, thrombolysis, IVC filters, percutaneous abscess drainage, biliary endoscopy, biliary and urinary tract, interventions, tunneled catheter placement and dialysis fistula interventions. Fifteen to 25 procedures are performed daily in the cath lab. In addition, selected patients are admitted to the interventional radiology service for some of these procedures and the student will participate in their workup and evaluation including clinic follow up. In addition, the latest technique of digital subtraction angiography using computer reconstruction will be available for the student to gain experience.

E 19. Radiochemistry. (PH 186.620) Drs. S. Lever and J. Lever. Second quarter/one quarter; 3 days per week. **Prerequisite:** E 11 or E 15 or the equivalent or consent of instructor.

Provides a background in the chemical and physical aspects of radioactive tracer techniques as applied to work in physical, organic, and biological chemistry. Topics include preparation and counting of samples and standards; microchemical techniques, techniques for the separation and identification of radionuclides and tagged compounds, radioisotope tagging, tracer techniques, radiometric analysis and neutron activation analysis. Student evaluation based on written exams and laboratory reports.

E 22. Pediatric Radiology. Drs. Huisman and Benson. All year; four and one-half weeks. **Prerequisite:** Elective in Diagnostic Radiology.

Students will attend conferences in pediatric radiology and observe fluoroscopy, ultrasound, CT, and other examinations, observe and participate in film interpretations. They are expected to add new cases to the teaching file under staff supervision.
Section of Surgical Sciences

Department of General Surgery

JULIE ANN FREISCHLAG
William Steward Halsted Professor of Surgery, Director of the Department of Surgery
DANA KIMBALL ANDERSEN, Professor
R. ROBINSON BAKER
Warfield M. Firor Professor Emeritus of Surgery
CHARLES M. BALCH
Professor of Surgery, Professor of Dermatology, Professor of Oncology
ADRIAN BARBUL
Professor of Surgery (to 11/30/2010), Professor of Plastic and Reconstructive Surgery (to 11/30/2010)
GREGORY B. BULKLEY, Professor Emeritus
JAMES F. BURDICK, Professor
JOHN L. CAMERON
University Distinguished Service Professor Alfred Blalock Professor of Surgery, Professor of Oncology
MICHAEL A. CHOTI
Jacob C. Handelsman Professor of Abdominal Surgery, Professor of Oncology, Professor of Radiology
FREDERIC E. ECKHAUSER
Professor of Surgery
GERSHON EFRON, Professor
DARIUSH ELAHI
Professor of Surgery (to 09/30/2010), Joint Appointment in Medicine (to 09/30/2010)
ELLIOIT K. FISHMAN
Professor of Radiology, Professor of Oncology, Professor of Surgery
STEVEN D. LEACH
Paul K. Neumann Professor of Pancreatic Cancer in the Department of Surgery, Professor of Cell Biology, Professor of Oncology
PAMELA A. LIPSETT
Professor of Surgery, Assistant Professor of Anesthesiology and Critical Care Medicine
ROBERT A. MONTGOMERY
John L. Cameron Professor of Kidney Transplant Surgery
BRUCE A. PERLER
Julius H. Jacobson II Professor of Vascular Surgery
HAMID RABB
Professor of Medicine, Professor of Surgery
RICHARD DAVID SCHULICK
John L. Cameron Professor of Alimentary Tract Diseases in the Department of Surgery, Associate Professor of Biomedical Engineering, Associate Professor of Gynecology and Obstetrics, Professor of Oncology
MARK ADAMS TALAMINI, Adjunct Professor
SUZANNE LOUISE TOPALIAN
Professor of Surgery, Professor of Oncology

GEORGE MELVILLE WILLIAMS
Dr. Bertram M. Bernheim Research Professor of Surgery
STEPHEN C. YANG
Arthur B. and Patricia B. Modell Professor of Thoracic Surgery, Professor of Oncology
MARTHA ALLEN ZEIGER
Professor of Surgery, Professor of Oncology
NITA AHUJA
Associate Professor of Surgery, Professor Emeritus
MALCOLM VERNON BROCK
Associate Professor of Surgery, Associate Professor of Oncology
KURTIS ALAN CAMPBELL, Associate Professor
RICHARD A. CURRIE, Associate Professor Emeritus
MUKUND S. DIDOLKAR, Associate Professor
JONATHAN E. EFRON
Associate Professor of Surgery, Occupying the Bertram M. Bernheim Research Chair in Surgery
MARK DOUGLAS DUNCAN
Associate Professor of Surgery, Associate Professor of Oncology
DAVID THOMAS EFRON
Associate Professor of Surgery, Associate Professor of Anesthesiology and Critical Care Medicine
JONATHAN E. EFRON
Associate Professor of Surgery, Occupying the Mark M. Ravitch Chair in Surgery
RHONDA S. FISHEL, Associate Professor Emeritus
JAMES C. FUCHS, Associate Professor Emeritus
ALEJANDRO GANDSAS, Associate Professor
PATRICIA J. GEARHART
Adjunct Professor of Medicine, Adjunct Associate Professor of Pathology, Adjunct Associate Professor of Surgery
TOBY A. GORDON, Associate Professor
JACOB C. HANDELSMAN, Associate Professor Emeritus
NANCY L. HARTHUN, Associate Professor
ELLIOTT RICHARD HAUT
Associate Professor of Surgery, Associate Professor of Anesthesiology and Critical Care Medicine
RICHARD FRANK HEITMILLER
Associate Professor of Surgery, Associate Professor of Oncology
CHRISTINE A. IACOBUZIO-DONAHUE
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Surgery

293
The G.W.C. Whiting School of Engineering:
RUSSELL H. TAYLOR
Professor of Computer Science

Division of Cardiac Surgery
DUKE E. CAMERON
James T. Dresher, Sr. Professor of Cardiac Surgery, Professor of Pediatrics, Director of the Division of Cardiac Surgery
WILLIAM A. BAUMGARTNER
Vincent L. Gott, M.D. Professor of Cardiac Surgery
JOHN VICTOR CONTE, JR., Professor
VINCENT L. GOTT
Richard Bennett Darnall Professor Emeritus of Cardiac Surgery
LEVAT WATKINS, JR., Professor
ROBERT K. BRAWLEY, Associate Professor Emeritus
PETER SCHUYLER GREENE
Associate Professor of Cardiac Surgery, Joint Appointment in Health Sciences Informatics
KEITH A. HORVATH, Adjunct Associate Professor
LUCA A. VRICELLA
Associate Professor of Cardiac Surgery, Assistant Professor of Pediatrics
GLENN J.R. WHITMAN, Associate Professor
DAVID DAIHO YUH, Associate Professor
ASHISH S. SHAH, Assistant Professor
RASHNA GINWALLA, Assistant

Division of Pediatric Surgery
PAUL M. COLOMBANI
Robert Garrett Professor of Pediatric Surgery, Professor of Oncology, Professor of Pediatrics, Director of the Division of Pediatric Surgery
J. ALEX HALLER, JR.
Professor Emeritus of Pediatric Surgery, Professor Emeritus of Emergency Medicine, Professor Emeritus of Pediatrics
FIZAN ABDULLAH, Associate Professor
J. LAURANCE HILL, Associate Professor
HENRY TIEN LAU, Associate Professor
JEFFREY RYAN LUKISH, Visiting Associate Professor
SAMUEL M. ALAISH, Assistant Professor
FRAY DYLAN STEWART, Assistant Professor
ERIC DAVID STRAUCH, Assistant Professor

Department of Neurological Surgery
HENRY BREM
Harvey Cushing Professor of Neurosurgery, Professor of Oncology, Joint Appointment in Ophthalmology, Director of the Department of Neurological Surgery
PETER C. BURGER
Professor of Pathology, Professor of Neurological Surgery, Professor of Oncology
JAMES N. CAMPBELL, Professor

BENJAMIN S. CARSON
Benjamin S. Carson, Sr. M.D. and Dr. Evelyn Spiro, RN Professor of Pediatric Neurosurgery, Professor of Oncology, Professor of Pediatrics, Professor of Plastic and Reconstructive Surgery
DAVID R. CORNBBLATH
Professor of Neurology, Professor of Neurological Surgery
A. LEE DELLO
Professor of Plastic and Reconstructive Surgery, Professor of Neurological Surgery
THOMAS B. DUCKER, Professor Emeritus
ZIYA L. GOKASLAN
Donlin M. Long Professor of Neurosurgery, Professor of Oncology, Professor of Orthopaedic Surgery
STUART A. GROSSMAN
Professor of Oncology, Professor of Medicine, Professor of Neurological Surgery
JUSTIN SCOT HANES
Professor of Ophthalmology, Professor of Biomedical Engineering, Professor of Neurological Surgery, Professor of Oncology
DANIEL F. HANLEY
Jeffrey and Harriet Legum Professor of Acute Neurological Medicine in the Department of Neurology, Professor of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery
GEORGE ISSA JALLO
Professor of Neurological Surgery, Professor of Oncology, Professor of Pediatrics
FREDERICK A. LENZ
A. Earl Walker Professor of Functional Neurosurgery, Professor of Neuroscience
RONALD P. LESSEER
Professor of Neurology, Professor of Neurological Surgery
JONATHAN S. LEWIN
Martin W. Donner Professor of Radiology, Professor of Biomedical Engineering, Professor of Neurological Surgery, Professor of Oncology
DONLIN MARTIN LONG
University Distinguished Service Professor Emeritus of Neurological Surgery
RICHARD A. MEYER, Professor Emeritus
NEIL RICHARD MILLER
Frank B. Walsh Professor of Neuroophthalmology in the Department of Ophthalmology, Professor of Neurology, Professor of Neurosurgical Emeritus
MAREK A. Z. MIRSKI
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurology, Professor of Neurosurgical Emeritus
ERNST F.L. NIEDERMEYER
Professor Emeritus of Neurosurgical Emeritus of Neurology
ALESSANDRO OLIVI
Professor of Neurological Surgery, Professor of Oncology
IRA MARTIN GARONZIK, Assistant Professor
SUDHIR KATHURIA
   Assistant Professor of Radiology, Assistant Professor of Neurological Surgery
MICHAEL KWON LIM
   Assistant Professor of Neurological Surgery, Assistant Professor of Oncology
SHERIF M. MELEKA, Assistant Professor
NATHAN MOSKOWITZ, Assistant Professor
NEAL JAMISON NAFF, Assistant Professor
PAUL ALAN NYQUIST
   Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery
SHINJI OHARA, Adjunct Assistant Professor
JOHN D. RYBOCK, Assistant Professor
DANIEL M. SCIUBBA
   Assistant Professor of Neurological Surgery, Assistant Professor of Oncology, Assistant Professor of Orthopaedic Surgery
NAVIN SINGH
   Assistant Professor of Plastic and Reconstructive Surgery, Assistant Professor of Neurological Surgery
CLIFFORD T. SOLOMON, Assistant Professor
ROBERT DAVID STEVENS
   Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Associate Professor of Radiology
BETTY TYLER, Assistant Professor
BRADFORD D. WINTERS
   Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurology, Assistant Professor of Neurological Surgery, Assistant Professor of Surgery
TIMOTHY FRANCIS WITHAM, Assistant Professor
Qi Zhao, Adjunct Assistant Professor (from 09/13/2010)
YONG-DI ZHOU, Adjunct Assistant Professor
WENDY CATHARINA ZIAI
   Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery
COLETTE M.J. AP RHYS, Instructor
KATHLEEN BRELSFORD FRENCH, Instructor
ILYA LAUFER, Instructor
MARCELLA MADERA, Instructor
JOHN B. POSEY, Instructor
I-MEI SIU, Instructor
BYRON C. PEVEHOUSE, Visiting Lecturer
MICHAEL D. WALKER, Visiting Lecturer
RENYUAN BAI, Research Associate
GILSON BAIA, Research Associate
JOEL DANIEL GREENSPAN, Research Associate
MICHAEL GUARNIERI, Research Associate Emeritus
FACULTY ASSOCIATED WITH THE DEPARTMENT OF NEUROLOGICAL SURGERY HOLDING A PRIMARY APPOINTMENT IN:
The School of Medicine:
THOMAS J. K. TUNG
   Professor of Anesthesiology and Critical Care Medicine
Orthopaedic Surgery
FRANK JOHN FRASSICA
   Robert A. Robinson Professor of Orthopedic Surgery, Professor of Oncology, Director of the Department of Orthopedic Surgery
THOMAS M. BRUSHART
   Thomas M. Brushart Professor of Hand Surgery in the Department of Orthopedic Surgery, Professor of Neurology, Professor of Plastic and Reconstructive Surgery
ANDREW R. BURGESSION, Professor
XU CAO, Professor
EDMUND Y. S. CHAO, Professor Emeritus
THOMAS LANDES CLEMENS
   Lewis Cass Spencer Professor of Orthopaedic Surgery
ANDREW JOHN COSGAREA, Professor
ZIYA L. GOKASLAN
   Donlin M. Long Professor of Neurosurgery, Professor of Oncology, Professor of Orthopaedic Surgery
DAVID S. HUNGERFORD
   David Hungerford Professor of Orthopaedic Surgery
EDWARD F. MCCARTHY, JR.
   Professor of Pathology, Professor of Orthopaedic Surgery
EDWARD G. McFARLAND
   Wayne H. Lewis Professor of Orthopaedics and Shoulder Surgery
ELIZABETH ANNE MONTGOMERY
   Professor of Pathology, Professor of Oncology, Professor of Orthopaedic Surgery
CHRISTOPHER B. RUFF
   Professor of Functional Anatomy and Evolution, Professor of Orthopaedic Surgery
GERHARD SCHMEISSER, Professor Emeritus
PAUL D. SPONSELLER
   Professor of Orthopaedic Surgery, Professor of Urology
KRISTIN LYNN WEBER
   Virginia M. and William Percy Professor of Orthopaedic Surgery, Professor of Oncology
MICHAEL C. AIN
   Associate Professor of Orthopaedic Surgery, Associate Professor of Neurological Surgery
STEPHEN M. BELKOFF, Associate Professor
RONALD P. BYANK, Associate Professor
RANDY FRANK DAVIS
   Associate Professor of Orthopaedic Surgery, Associate Professor of Neurological Surgery
E. GENE DEUNE
   Associate Professor of Orthopaedic Surgery, Associate Professor of Plastic and Reconstructive Surgery
CHARLES TIMOTHY FLOYD, Instructor (to 11/30/2010)
DAVID GANNON, Instructor
NORTON I. GETTES, Instructor Emeritus
JAMES M. HITZROT, II, Instructor Emeritus
BRUCE S. LEBOWITZ, Instructor
JAMES MARK LEIPZIG, Instructor
ENZO J. LEONE, Instructor
RICHARD J. MASON, Instructor
JOHN J. MURPHY, Instructor
AVIGDOR I. NIV, Instructor
JOHN B. O’DONNELL, Instructor
CARMEN PAZ PICHARD-ENCINA, Instructor (from 09/01/2010)
TAO QIU, Instructor
JEROME P. REICHMISTER, Instructor
MICHAEL B. SHAPIRO, Instructor
RONALD L. SHERMAN, Instructor
MYRON J. SZCZUKOWSKI, Jr., Instructor
THOMAS B. VOLATILE, Instructor
BARRY JAY WALDMAN, Instructor
RAYMOND A. WITTSTADT, Instructor
BRUCE S. WOLOCK, Instructor
NEAL B. ZIMMERMAN, Instructor
JESSE AFFONSO, Assistant (from 08/01/2010)
FIRAS M. CHAMAS, Assistant (from 08/01/2010)
JOHN A. JOHANSEN, Assistant (to 07/31/2010)
MEREDITH A. LAZAR-ANTMAN, Assistant (from 08/01/2010)
DAVID JAMES LEU, Assistant (to 07/31/2010)
JOHN P. MALLOY, IV, Assistant (from 08/01/2010)
MICHAEL D. MAURO, Assistant (to 07/31/2010)
GREGORY STUART MCLOUGHLIN, Assistant (to 07/31/2010)
WEI-ZHONG CHANG, Research Associate (from 10/01/2010)
ALKA ARVINDKUMAR VYAS, Research Associate
XIANGWEI WU, Research Associate
LINGLING XIAN, Research Associate
BING YU
Research Associate in Orthopaedic Surgery (from 10/01/2010), Visiting Scientist in Orthopaedic Surgery (to 09/30/2010)
GEHUA ZHEN, Research Associate (from 09/01/2010)
WEIQI LEI, Visiting Scientist
LIJUAN PANG, Visiting Scientist
WENDAFAREW WENDEMU DEA, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF ORTHOPAEDIC SURGERY HOLDING A PRIMARY APPOINTMENT IN:
The School of Medicine:
JENNIFER H. ELISSEEFF Visiting Professor of Ophthalmology
DONNA MAGID Associate Professor of Radiology and Radiological Science

WILLIAM W. SCOTT, JR.
Associate Professor of Radiology and Radiological Science

The Applied Physics Laboratory:
MEHRAN ARMAND
Senior Scientist

Department of Otolaryngology-Head and Neck Surgery
JOHN K. NIPARKO
George T. Nager Professor of Otolaryngology/Head and Neck Surgery, Interim Director of the Department of Otolaryngology - Head and Neck Surgery
DANA BOATMAN
Professor of Neurology, Professor of Otolaryngology-Head and Neck Surgery
JOSEPH A. CALIFANO, III
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology
JOHN PATRICK CAREY, Professor
CHARLES W. CUMMINGS
Distinguished Service Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology
ANA BELEN ELGOYHEN, Adjunct Professor
DAVID S. ETTINGER
Alex Grass Professor of Oncology, Professor of Gynecology and Obstetrics, Professor of Medicine, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences
ARLENE A. FORASTIERE
Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences
PAUL ALBERT FUCHS
John E. Bordley Professor of Otolaryngology-Head and Neck Surgery, Professor of Biomedical Engineering, Professor of Neuroscience
JEROME C. GOLDSTEIN, Visiting Professor
HASKINS K. KASHIMA
Professor Emeritus of Otolaryngology-Head and Neck Surgery (to 11/11/2010)
WAYNE M. KOCH
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology
BERNARD R. MARSH, Professor Emeritus
BRADFORD J. MAY, Professor
LLOYD B. MINOR
University Distiguished Professor of Otolaryngology-Head and Neck Surgery, Professor of Biomedical Engineering, Professor of Neuroscience
GEORGE T. NAGER
Andelot Professor Emeritus of Laryngology and Otology and University Distinguished Service Professor Emeritus
MARSHALL A. LEVINE
Instructor in Oncology, Instructor in Otolaryngology-Head and Neck Surgery

SCOTT D. LONDON, Instructor
ROY RAJAN, Instructor
KRISTA RODRIGUEZ-BRUNO, Instructor
DEBORAH G. BERVINCHAK, Assistant
STEPHEN BOWDITCH, Assistant
COURTNEY L. CARVER, Assistant
KRISTIN MARIE CEH, Assistant
JILL E. CHINNICI, Assistant
RONI E. DINKES, Assistant
CAROLE FAKHRY, Assistant
KRISTA J. FOLLMER, Assistant
HILLARY GANEK, Assistant
JALEH SUE GARMAN, Assistant
ANGELA TERESA LATAILLE, Assistant
ANDREA MARLOWE, Assistant
DAWN L. MARSIGLIA, Assistant (from 08/01/2010)
MARIAH P. MENICHINO, Assistant
LYNN REENI RIDER, Assistant
COLLEEN E. RYAN-BANE, Assistant
ALICIA D. WHITE, Assistant
JENNIFER DOBSON YEAGLE, Assistant
HAKIM HIEL, Research Associate
ZUBAIR KHAN, Research Associate
MOHAMED LEHAR, Research Associate
GYU CHEOL HAN, Visiting Scientist
YANFEI ZHOU, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF OTOLARYNGOLOGY-HEAD AND NECK SURGERY HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

MICHAEL ROBERT CLARK
Associate Professor of Psychiatry

Division of Dental and Oral Medicine

WILLIAM M. HENDERSON
Assistant Professor, Director of the Division of Dental and Oral Medicine
JOHN PETRONE, Assistant Professor
DANIEL T. RICHARDSON, Assistant Professor
MICHAEL K. SCHWARTZ, Assistant Professor
SYLVAN M.E. SHANE, Assistant Professor Emeritus
DAVID C. BASTACKY, Instructor

Department of Plastic and Reconstructive Surgery

WEI-PING ANDREW LEE
Professor of Plastic and Reconstructive Surgery (from 10/01/2010), Director of the Department of Plastic Surgery (from 10/01/2010)

ADRIAN BARBUL
Professor of Surgery (to 11/30/2010), Professor of Plastic and Reconstructive Surgery (to 11/30/2010)

THOMAS M. BRUSHART
Thomas M. Brushart Professor of Hand Surgery in the Department of Orthopedic Surgery, Professor of Neurology, Professor of Plastic and Reconstructive Surgery

BENJAMIN S. CARSON
Benjamin S. Carson, Sr. M.D. and Dr. Evelyn Spiron, RN Professor of Pediatric Neurosurgery, Professor of Oncology, Professor of Pediatrics, Professor of Plastic and Reconstructive Surgery

A. LEE DELLON
Professor of Plastic and Reconstructive Surgery, Professor of Neurological Surgery

NELSON H. GOLDBERG, Adjunct Professor

JOHN E. HOOPES, Professor Emeritus

NICHOLAS TAYLOR ILIFF
Charles E. Iliff, III M.D. Professor of Ophthalmology, Professor of Plastic and Reconstructive Surgery

ETHYLIN WANG JABS
Adjunct Professor of Pediatrics, Adjunct Professor of Medicine, Adjunct Professor of Plastic and Reconstructive Surgery

PAUL N. MANSON, Professor

STEPHEN M. MILNER
Professor of Plastic and Reconstructive Surgery, Professor of Dermatology, Professor of Pediatrics

CRAIG ALAN VANDER KOLK
Professor of Plastic and Reconstructive Surgery, Professor of Pediatrics

WILLIAM ALLEN CRAWLEY, Associate Professor

RICHARD W. DABB, Associate Professor

E. GENE DEUNE
Associate Professor of Orthopaedic Surgery, Associate Professor of Plastic and Reconstructive Surgery

CRAIG R. DUFRESNE, Associate Professor

THOMAS J. GRAHAM, Associate Professor

FREDERIK C. HANSEN, Associate Professor Emeritus

MICHAEL J. C. IM, Associate Professor Emeritus

DARRELL A. JAQUES
Associate Professor Emeritus of Surgery, Associate Professor Emeritus of Plastic and Reconstructive Surgery

STANLEY KLATSKY, Associate Professor

MICHAEL A. MCCLINTON, Associate Professor

MAURICE Y. NAHABEDIAN, Associate Professor Emeritus

RICHARD J. REDDIT
Associate Professor of Plastic and Reconstructive Surgery, Associate Professor of Pediatrics

EDUARDO DEJESUS RODRIGUEZ, Associate Professor

MICHELE ARLENE SHERMAK, Associate Professor

RONALD PAUL SILVERMAN, Adjunct Associate Professor

CHI-TSUNG SU, Associate Professor
ANTHONY P. TUFARO
Associate Professor of Plastic and
Reconstructive Surgery, Associate Professor of
Oncology
JAMES E. VOGEL, Associate Professor
E.F. SHAW WILGIS
Associate Professor Emeritus of Orthopaedic
Surgery, Associate Professor Emeritus of Plastic
and Reconstructive Surgery
ELLIOTT M. BERG, Assistant Professor
LAWRENCE D. CHANG, Assistant Professor
MICHAEL R. CHRISTY, Assistant Professor
RAMON ALBERTO DE JESUS, Assistant
Professor
AMIR H. DORAFSHAR, Assistant Professor
W. ANDREW EGLSEDER, JR., Assistant
Professor
BRIAN R. GASTMAN, Assistant Professor
ALEXANDER M. GUBA, Assistant Professor
JAMES PATRICK HIGGINS, Assistant Professor
RANDOLPH MICHAEL HOWES, Adjunct Assistant
Professor
MARWAN RIAD KHALIFEH, Assistant Professor
SCOTT DAVID LIFCHEZ, Assistant Professor
JOSEPH C. ORLANDO
Assistant Professor of Plastic and
Reconstructive Surgery, Assistant Professor of
Physical Medicine and Rehabilitation
DIANE JULIE ORLINSKY
Assistant Professor of Dermatology, Assistant
Professor of Medicine, Assistant Professor of
Plastic and Reconstructive Surgery (from
10/01/2010)
OSCAR M. RAMIREZ, Assistant Professor
ANNE B. REDFERN, Assistant Professor Emerita
MAURA REINBLATT, Assistant Professor
GEDGE DAVID ROSSON
Assistant Professor of Plastic and
Reconstructive Surgery, Assistant Professor of
Oncology
JOHN R. SAUNDERS
Associate Professor of Otolaryngology-Head
and Neck Surgery, Associate Professor of
Surgery, Assistant Professor of Plastic and
Reconstructive Surgery
OLIVER P. SIMMONS, Assistant Professor (to
09/30/2010)
DEVINDER SINGH, Assistant Professor
NAVIN SINGH
Assistant Professor of Plastic and
Reconstructive Surgery, Assistant Professor of
Neurological Surgery
SHERI SLEZAK, Assistant Professor
ALYSON WELLS
Assistant Professor of Plastic and
Reconstructive Surgery, Assistant Professor of
Otolaryngology-Head and Neck Surgery
HANS R. WILHELMSEN, Assistant Professor
ERIC HOWARD WILLIAMS, Assistant Professor
RAVI KUMAR ALOO, Instructor
NIA DANIELLE BANKS, Instructor
SYLVAN DANIELLE BANKS, Instructor
SARAH A. MESS, Instructor
JAMES P. PASKERT, Instructor
JEROME S. PLASSE, Instructor
DAVID BRYAN POWERS, Instructor
PAUL R. RINGELMAN, Instructor
RICARDO L. RODRIGUEZ, Instructor
LAWRENCE IRA ROSENBERG, Instructor
JEFFREY EVAN SCHREIBER, Instructor
SAMIR F. SHUREIH, Instructor
ARMANDO SOTO, Instructor
FACULTY ASSOCIATED WITH THE
DEPARTMENT OF PLASTIC AND
RECONSTRUCTIVE SURGERY HOLDING A
PRIMARY APPOINTMENT IN:
The School of Medicine:
EDWARD SANGHOON AHN
Assistant Professor of Neurological Surgery
Department of Urology
ALAN W. PARTIN
David Hall McConnell Professor of Urology,
Professor of Oncology, Professor of Pathology,
Director of the Department of Urology
ARTHUR LOUIS BURNETT, II
Patrick C. Walsh Professor of Urology
MICHAEL A. CARDUCCI
AEGON Professor of Prostate Cancer Research
in the Department of Oncology, Professor of
Urology
H. BALLENTINE CARTER
Professor of Urology, Professor of Oncology
DANIEL W. COFFEY
Professor of Pathology, Professor of Oncology,
Professor of Radiology, Professor of Urology
DONALD S. COFFEY
Catherine Iola and J. Smith Michael
Distinguished Professor of Urology, Professor of
Oncology, Professor of Pathology, Professor of
Pharmacology and Molecular Sciences
ANGELO MICHAEL DEMARZO
Professor of Pathology, Professor of Oncology,
Professor of Urology
SAMUEL RAY DENMEADE
Professor of Oncology, Professor of
Pharmacology and Molecular Sciences,
Professor of Urology
THEODORE L. DEWEES
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Oncology, Professor of Urology

MARIO A. EISENBERGER
R. Dale Hughes Professor of Oncology, Professor of Urology

JONATHAN I. EPSTEIN
Rose-Lea and Keith Reinhard Professor of Urologic Pathology, Professor of Oncology, Professor of Urology

JOHN P. GEARHART
Robert D. Jeffs Professor of Pediatric Urology, Professor of Pediatrics

ROBERT HOWARD GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

ULRIKE M. HAMPER
Professor of Radiology, Professor of Pathology, Professor of Urology

H. LOGAN HOLTGREWE, Professor

JOHN T. ISAACS
Professor of Oncology, Professor of Urology

WILLIAM B. ISAACS
William Thomas Gerrard, Mario Anthony Duhon and Jennifer and John Chalsty Professor of Urology, Professor of Oncology

HYAM ISAAC LEVITSKY
Professor of Oncology, Professor of Medicine, Professor of Urology

JACEK L. MOSTWIN, Professor

WILLIAM G. NELSON
Marion I. Knott Director and Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences, Professor of Urology, Professor of Radiation Oncology and Molecular Radiation Sciences

MARK P. SCHOPENBERG
Professor of Urology, Bernard L. Schwartz Distinguished Professor of Urologic Oncology, Professor of Oncology

DAVID SIDRANSKY
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology, Professor of Pathology, Professor of Urology

PAUL D. SPONSELLER
Lee Riley Professor of Orthopaedic Surgery, Professor of Urology

DAN STOIANOVICI
Professor of Urology, Professor of Neurological Surgery

PATRICK C. WALSH
University Distinguished Service Professor of Urology

SIMEON ANTONOV BOYADJIEV, Adjunct Associate Professor

RICHARD DUANE CESPedes
Associate Professor of Urology (to 12/12/2010)

RAINER M.E. ENGEL, Associate Professor Emeritus

OLGA M.B. GATEWOOD
Associate Professor of Radiology, Associate Professor of Urology

MISOP HAN
Associate Professor of Urology, Associate Professor of Oncology

RANJIV IGNATIUS MATHEWS
Associate Professor of Urology, Associate Professor of Pediatrics

BRIAN RICHARD MATLAGA, Associate Professor

GEORGES JABBORU NETTO
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology

CHRISTIAN PAUL PAVLOVICH, Associate Professor

JAY D. PEARSON, Adjunct Associate Professor

WILLIAM G. REINER
Associate Professor of Psychiatry, Associate Professor of Urology

RONALD RODRIGUEZ
Associate Professor of Urology, Associate Professor of Oncology, Associate Professor of Radiation Oncology and Molecular Radiation Sciences

HORST K.A. SCHIRMER, Associate Professor

LORI JEAN SOKOLL
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology

DANNY YEONG SONG
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Associate Professor of Urology

RAY E. STUTZMAN, Associate Professor Emeritus

BRUCE JEFFREY TROCK
Associate Professor of Urology, Associate Professor of Oncology

ROBERT W. VELTRI
Associate Professor of Urology, Associate Professor of Oncology

EDWARD JAMES WRIGHT, Associate Professor

HAROLD JOSEPH ALFERT, Assistant Professor Emeritus

MOHAMAD EZZEDDINE ALLAF
Assistant Professor of Urology, Assistant Professor of Biomedical Engineering

ALESSANDRO G. BASSO, Assistant Professor

DAVID MONTY BERMAN
Associate Professor of Urology, Associate Professor of Oncology, Assistant Professor of Urology

TRINITY JUDE BIVALACQUA
Assistant Professor of Urology, Assistant Professor of Oncology

G. STEVEN BOVA
Assistant Professor of Pathology, Joint Appointment in Health Sciences Informatics, Assistant Professor of Oncology, Assistant Professor of Urology

JENNIFER LOCKWOOD DODSON, Assistant Professor

CHARLES GEORGE DRAKE
Associate Professor of Oncology, Assistant Professor of Urology
REQUIRED WORK FOR M.D. DEGREE

General Surgery and Surgical Specialties

The Basic Surgical Clerkship is a prerequisite for advanced elective courses in clinical surgery. Research electives may be scheduled with faculty members by arrangement, with the assistance of the faculty advisors.

Second, Third or Fourth year

An eight week basic clinical clerkship will be offered each quarter and can be taken at any time from the last quarter of the second year through the first quarter of the fourth year. One half of the quarter will consist of a clerkship experience in General Surgery. These consist of Cameron (hepatopancreatobiliary), Halsted (trauma, general), Handelsman (surgical oncology/endocrinology), and Ravitch (GI, minimally invasive) services. The other half of the quarter will be divided between two of the following Surgical Specialties: Orthopaedic Surgery, Otolaryngology, Pediatric Surgery, Plastic Surgery, Urological Surgery, Thoracic Surgery, Cardiac Surgery, Transplant Surgery, Thoracic Surgery, Cardiac Surgery, Transplant Surgery, Thoracic Surgery, Cardiac Surgery, Transplant Surgery, Thoracic Surgery, Cardiac Surgery, Transplant Surgery.

Outpatient and ward work.

(a) GENERAL SURGERY BASIC CLERKSHIP. Drs. Freischlag, Yang, and staff.

Each student will be assigned to a major teaching service for 4 1/2 weeks. These will include the general surgical services of The Johns Hopkins Hospital or the Bayview Medical Center.

(b) ORTHOPAEDIC SURGERY. Dr. Frassica and staff.

One or two students will be assigned to this department for approximately 16 consecutive days either at the Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center.

(c) OTOLARYNGOLOGY. Dr. Minor and staff.

One or two students will be assigned to this department for approximately 16 consecutive days either at the Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center.

(d) UROLOGY. Dr. Partin and staff.

One or two students will be assigned to this department for approximately 16 consecutive days either at the Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center.

(e) PEDIATRIC SURGERY. Dr. Colombani and staff.

One or two students will be assigned to this department for approximately 16 consecutive days at the Johns Hopkins Hospital.

(f) PLASTIC SURGERY. Dr. Lee and staff.

One or two students will be assigned to this department for approximately 16 consecutive days at the
Johns Hopkins Hospital or the Johns Hopkins Bayview Medical Center.

(g) CARDIAC SURGERY. Dr. D. Cameron and staff. One or two students will be assigned to this department for approximately 16 consecutive days at the Johns Hopkins Hospital.

(h) THORACIC SURGERY. Dr. Yang and staff. One or two students will be assigned to this department for approximately 16 consecutive days at the Johns Hopkins Hospital.

(i) TRANSPLANT SURGERY. Dr. Montgomery and staff. One or two students will be assigned to this department for approximately 16 consecutive days at the Johns Hopkins Hospital.

(j) NEUROSURGERY. Dr. Brem and staff. One or two students will be assigned to this department for approximately 16 consecutive days at the Johns Hopkins Hospital.

(k) VASCULAR SURGERY. Dr. Perler and staff. One or two students will be assigned to this department for approximately 16 consecutive days at the Johns Hopkins Hospital.

Topics in General Surgery. Staff in General Surgery. All students assigned to surgery quarter. Lectures covering core material basic to general surgery and trauma. Monday through Friday mornings.

Topics in General Surgery at the Johns Hopkins Bayview Medical Center. Staff in General Surgery. All students assigned to surgery quarter at the Johns Hopkins Bayview Medical Center. Lectures covering core material basic to general surgery and trauma. Monday through Friday mornings.

Surgical Specialty Conference. Drs. D. Cameron, Frassica, Colombani, Lee, Minor, Partin, Yang and staff in the surgical specialties. All students assigned to surgery quarter. All lectures covering core material basic to the surgical specialties.

Surgery Grand Rounds. Dr. Freischlag and staff. Surgical Quarter. Thursday, 7:30-8:30.

ELECTIVE OPPORTUNITIES—General Surgery and Surgical Specialties. Elective courses must be approved by the preceptor; any member of the department may act as preceptor.

A subinternship in surgery is designed to give the advanced student supervised participation in clinical care of patients. This elective must be applied for at least two months before the starting date to insure appropriate credentialing by the Department of Surgery and the hospital.

An advanced clerkship is designed to expose the student to patients with surgical problems. The student is given very limited clinical responsibilities and is not involved in any direct patient care. Approval of the curriculum consultant for surgery is needed to qualify for this elective.

Section of Surgical Sciences. Curricular Consultant: Dr. Yang.

MAJOR CLINICAL COURSES—The prerequisite of all major clinical electives is the Surgery Basic Clerkship.

Department of General Surgery

E 1. Sub-Internship. Drs. Freischlag, Yang, and staff. The students will be given more clinical responsibilities and will participate in the management and care of surgical patients. The activities of the student will be supervised by the attending and house staff. Services available: GI surgery, vascular surgery, Halsted-trauma, oncology-endocrine. Four and 1/2 week experience.

This course is designed to provide extensive, in-depth experience in the management of the surgical patient. The student will be an integral part of the surgical team and will be assigned specific patients. Registration must be 8 weeks before this elective since credentialing is required by the Medical Board.

E 2. Advanced Clinical Clerkship in Cardiac Surgery. Dr. D. Cameron and staff. Includes participation in ward and operative work and research (either clinical or in animal laboratory). Full time; 4 1/2 to 9 weeks, two students for clinical portion, one student for research laboratory. Preference given to senior students.

E 3. Advanced Clerkship in Surgical Oncology (Handelsman Service). Dr. Choti and staff. This elective is designed to provide students with an academic multidisciplinary approach to solid tumors. Both clinical and research experiences are available. The clinical exposure is provided by rotating through the Surgical Oncology/Endocrinology service, and the research interests are centered around immunologic manipulations of the host in solid tumor rejection. Elective is offered full time, 4 1/2 to 9 weeks.

E 4. Advanced Clinical Clerkship in General Pediatric Surgery. Dr. Colombani. 4 1/2 or 9 weeks. Same as Pediatrics E30. On completion of the core clerkship in either Pediatrics or Surgery, a limited number of students may serve as substitute interns on the General Pediatric Surgery service in the Johns Hopkins Children’s Center. This externship in Pediatric Surgery includes ward and operating room experience as well as Pediatric Surgery out-patient clinic and teaching rounds.

E 6. Advanced Clerkship in Transplantation Surgery. Dr. Montgomery and staff. Includes participation in management of patients undergoing renal dialysis and renal transplantation at the Johns Hopkins Hospital and the Johns Hopkins Bayview Medical Center. Experience will include immunology as it applies to transplantation, and may be coordinated with laboratory investigation in progress. Full time; 4 1/2 to 9 weeks; limited to two students.
E 9. Advanced Clerkship in General Surgery at Johns Hopkins Bayview Medical Center. Dr. Duncan and staff.
Experience similar to E1. Available in June, July, August only.

E 10. Advanced Clerkship in Vascular Surgery. Dr. Perler and staff.
This elective provides exposure to vascular surgery patients. Students will participate in all aspects of patient care: preop evaluation, operative procedures, postop care. Four and 1/2 weeks.

E 11. Advanced Clinical Clerkship in Surgical Intensive Care. Dr. Lipsett and staff.
This elective provides an opportunity for students to work in one of the Surgical Intensive Care Units and obtain experience in the management of critically ill surgical patients. Students will participate in all aspects of care and resuscitation, including patient monitoring, respiratory care and fluid management. Practical experience will be combined with teaching conferences and rounds on the unit. Three students at a time. 4 1/2 weeks (month).

This is an elective designed to provide clinical experience in the management of patients with thoracic surgical problems, primarily malignant tumors of the lung, esophagus and mediastinum. The elective is offered in units of four and one half or nine weeks.

This elective provides comprehensive exposure to GI surgery patients. Students will participate in all aspects of care: preop evaluation, operative procedures, and postop care. Four and 1/2 weeks.

Research Interests
DR. BAUMGARTNER  
Cardiac transplantation.

DR. CHOTI  
Portal hypertension.

DR. COLOMBANI  
Immunopharmacology and transplantation.

DR. DELLON  
Mechanism in peripheral sensibility.

DR. FREISCHLAG  
Carotid plaque analysis and abdominal aortic aneurysm surgery.

DR. LEACH  
Pancreatic cancer.

DR. LIPSETT  
Surgical critical care.

DR. MANSON  
Tissue ischemia; bone repair; facial fractures.

DR. MONTGOMERY  
Transplant immunology.

DR. PERLER  
Vascular physiology.

DR. SCHULICK  
Hepatic metastases.

DR. SPENCE  
Burn reconstruction.

DR. YANG  
Lung and esophageal cancer.

DR. ZEIGER  
Thyroid physiology.

Department of Neurological Surgery

E 1. Advanced Clinical Clerkship in Neurosurgery. Dr. Huang and staff.
The neurosurgical service will provide in-depth experience in the management of the neurosurgical patient. The student will be integrated into the house staff and will be expected to assume responsibilities similar to the resident staff. Two students, 4 weeks. Available either at The Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center.

E 2. Subinternship in Neurosurgery. Dr. Huang and staff.
Students are given significant responsibilities in patient care and a broad exposure in neurosurgical operating room techniques. Time is divided between the neurosurgical oncology, spine, cerebrovascular, and pediatric services. Students will participate in daily rounds, inpatient care, departmental conferences, operating rooms, and outpatient clinic. Subinterns will participate in overnight call with a supervising resident. Rotations will be at the Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center campuses.

Research Interests
DR. AHN  
Pediatric neurosurgery

DR. BELZBERG  
Neurophysiological mechanisms of pain sensation; schwannomas; peripheral nerve.

DR. BREM  
Brain tumor angiogenesis and drug delivery systems; immunotherapy; clinical studies of brain tumor therapies and pituitary tumor treatment and clinical outcomes.

DR. BYDON  
Spine surgery and spine biomechanics.

DR. CARSON  
Pediatric neurosurgery; treatment of trigeminal neuralgia and medical ethics.

DR. COON  
Endovascular neurosurgery; cerebrovascular disease.

DR. GALLIA  
Endoscopy in neurosurgery; molecular genetics of brain tumors.

DR. GOKASLAN  
Outcomes of novel therapies for spine disease.

DR. HUANG  
Neuroprotection; cerebrovascular disease; intracerebral hemorrhage.

DR. JALLO  
Pediatric neurosurgery; models of spinal cord tumors.

DR. LENZ  
Study of motor/sensory systems in human thalamus; brain stimulation and seizure surgery

Dr. LIM  
Brain tumor therapy; radiosurgery and immunotherapy.

DR. OLIVI  
Studies in brain tumor immunology; novel brain tumor therapies and clinical outcomes.

DR. QUINONES-HINOJOSA  
Brain tumor outcomes; stem cell research.
Department of Orthopaedic Surgery


This elective provides in-depth clinical experience in orthopaedic spine surgery at the Johns Hopkins Hospital. The participant is integrated into the orthopaedic residency program. Practical experience is supplemented by formal and informal teaching conferences and patient rounds. One or two positions offered at a time. Preference is given to second semester third year students and to fourth year students. Duration four weeks.


This is a clinical course in Pediatric Orthopaedics at the Johns Hopkins Hospital. The participant is exposed to different aspects of this discipline by attending the General Pediatric, Birth Defect, Cerebral Palsy, Comprehensive Child Care, and Scoliosis Clinics and Conferences and by participating in operative procedures on children. There is extensive experience in pediatric sports medicine. Students are given responsibility according to their experience. There are three teaching conferences per week. One position offered at a time. Duration is four weeks.

E 3. Advanced Clinical Clerkship in Adult Limb Reconstruction. Dr. Carl Johnson.

This elective at the Johns Hopkins Bayview Medical Center provides an in-depth clinical experience in arthroscopic and reconstructive surgery of the knee and foot/ankle. Students are actively involved in all aspects of clinical patient care as well as resident educational activities. One position offered at a time. Preference given to second semester third year students and to fourth year students. Duration is four weeks.

E 4. Advanced Clinical Clerkship in Adult Orthopaedics at the Johns Hopkins Bayview Medical Center. Dr. Byank.

The Hopkins Bayview experience encompasses the full scope of orthopaedics with specialists available in each subspecialty. The rotation is very busy, hands-on and fun.

E 5. Advanced Clinical Clerkship in Adult Orthopaedics at the Union Memorial Hospital.

Experience similar to E4.


This elective is offered at The Johns Hopkins Hospital and Johns Hopkins Greenspring for students interested in sports related injuries. Students will learn the basics of musculoskeletal examination of a variety of joints. This is a great elective for students interested in Sports Medicine or primary care subspecialties. Students participate in admission work-ups, pre and post-op care and rehabilitation, and assist in the operating room. One position offered at a time. Preference given to second semester third year students and to fourth year students. Duration is four weeks.


This elective provides a one-month exposure to hand and upper extremity surgery on the Johns Hopkins Hand Service. Students will receive individual instruction in the examination of the upper extremity and in the recognition and treatment of common upper extremity problems. Special emphasis is placed on the treatment of injuries and diseases of the peripheral nervous system, including reconstruction with tendon transfers. There is also an extensive exposure to congenital deformities of the upper extremity.


This is a clinical elective where the student attends clinics at Green Spring Station and scrubs for surgery performed on the East Baltimore campus. This is a fun elective where the student attends all clinics and surgical procedures and learns how to assess orthopaedic patients with predominantly shoulder, but also some elbow problems. We see athletic and non-athletic patients. The student will learn the basics of joint arthroscopy and has the opportunity to become involved in case reports as first author if they wish.

Research Interests

DR. AIN
Skeletal dysplasia.

DR. BELKOFF
Biomechanics.

DR. BRUSHART
Nerve regeneration.

DR. COHEN
Clinical outcomes in spinal surgery; spinal deformity in adults; spinal disorders.

DR. COSGAREA
Sports medicine; knee injuries; ACL injuries.

DR. D. HUNGERFORD
Ischemic necrosis of bone; biomechanics of lower extremity.

DR. C. JOHNSON
Arthroscopy; reconstruction of the knee.

DR. KOMINSKY
Oncology.

DR. KULIK
Foot and ankle.

DR. LEET
Pediatrics; cerebral palsy.

DR. LEMMA
Spine.
Dr. McFarland
Sports medicine; shoulder injuries.

Dr. Riley III
Clinical outcomes in spinal surgery; cervical spine; mechanism of disc degeneration.

Dr. Sprouse
Spinal deformities; pediatric trauma; myelodysplasia.

Dr. Tis
Pediatric sports medicine and hip arthroscopy.

Dr. Weber
Oncology.

Dr. Wilckens
Sports medicine.

Department of Otolaryngology-Head and Neck Surgery

E 1. Advanced Clinical Clerkship in Otolaryngology. Dr. Sara Pai and staff.

Clerks in general clinical otolaryngology are offered in addition to more specialized clerkships in otology, neuro-otology, clinical audiology and speech pathology, endoscopy and the management of head and neck tumors. These clerkships provide experience in the various diagnostic procedures related to the specialty as well as experience in the medical and surgical management of patients. Preference is given to senior students, 4 1/2 or 9 weeks. Available either at the Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center.

Research Interests

Dr. Agrawal
Head and neck cancer genetics and diagnostics.

Dr. Akst
Voice, swallowing, and airway disorders.

Dr. Bhati
Management of challenging airway problems; innovative tracheostomy techniques and use of alternative modes of therapy in chronic sinus disease.

Dr. Boahene
Tissue engineering; outcomes of reconstructive surgery.

Dr. Boss
Racial, ethnic, and socioeconomic disparities in pediatric otolaryngology; service excellence; patient satisfaction and clinical outcome correlation.

Dr. Byrne
Facial nerve rehabilitation; digital imaging for facial plastic and reconstructive surgery.

Dr. Califano
Molecular biology of head and neck cancer, including early detection of head and neck cancer; use of molecular techniques for detection of disease in saliva and blood; network based analysis of novel therapeutic targets; epigenetic regulation in head and neck cancers.

Dr. Carey
Define the physiologic and histologic changes in the vestibular organs of the inner ear after treatment with gentamicin; treatment of vertigo due to Meniere’s disease.

Dr. Deans
The molecular biology of auditory and vestibular system development.

Dr. Della Santina
Development of a “bionic ear” (neuroelectronic vestibular prosthesis) to restore inner ear balance function; development of new methods for testing vestibular function in humans and in transgenic mice; epidemiology of vestibular disorders; molecular genetics of Meniere’s disease; normal and patho-physiology of the 3D vestibulo-ocular reflex.

Dr. Francis
Biologic mechanisms in the cochlea that lead to hearing loss as a result of aging, noise and other factors; neural plasticity in the auditory pathway; language and educational outcomes in deaf children with cochlear implants.

Dr. Fuchs
The molecular mechanisms involved in excitability and synaptic function of mechanosensory hair cells of the inner ear.

Dr. Głowatzki
Investigating mechanisms underlying peripheral hearing and synaptic transmission in the inner ear and electrophysiological approaches.

Dr. Gourin
Head and neck cancer; outcomes research; cost effectiveness analysis and quality of life.

Dr. Ha
The molecular biology and epigenetic changes associated with salivary gland neoplasms.

Dr. Holliday
Clinical research in diseases of temporal bone and skull base.

Dr. Hoque
Study of cancer biology and identification of biomarkers for early detection; therapeutic response prediction; prognosis and monitoring of cancer.

Dr. L. Ishii
Objective analysis of facial deformities using gaze-tracking and investigating the role of nasal obstruction in the pathophysiology and treatment of obstructive sleep apnea.

Dr. M. Ishii
Gas transport in the nasal cavity and paranasal sinuses.

Dr. Isman
Surgical outcomes after sleep surgery and persistent OSA in patients with Down syndrome and craniofacial anomalies.

Dr. Kashima
Sleep apnea outcomes research.

Dr. J. Kim
Clinical and basic science research in sinusitis.

Dr. Y. Kim
Mechanisms of immune tolerance against human malignancy; development of immunomodulatory adjuvant therapy for head and neck cancer.

Dr. Koch
Clinical application of molecular biology of head and neck cancer.

Dr. Lane
Clinical and basic science research of chronic sinusitis, olfaction, and transnasal endoscopic surgery.

Dr. Limb
Neural mechanisms of musical perception and production; music perception in cochlear implant users.
DR. F. LIN
Epidemiologic and clinical research into the causes, impact, and treatment of age-related hearing loss.

DR. S. LIN
Outcomes in pediatric and adult sinusitis; outcomes in the treatment of allergies.

DR. MAY
Information processing mechanisms in behaving subjects.

DR. NIPARKO
Prosthetic rehabilitation of deafness and effects of auditory deprivation; QOL and utility assessment of interventions for hearing loss.

DR. PAI
Development of novel vaccine strategies targeting HPV-associated head and neck cancers as well as studying genetic changes associated with thyroid malignancies in order to identify diagnostic molecular markers for early detection and development of novel treatment strategies.

DR. RAMANATHAN
Role of environmental pollutants and allergens in propagating chronic sinonasal inflammation from a molecular and immunologic perspective.

DR. REH
Outcomes in sinus surgery; biomolecular and genetic causes of sinusitis.

DR. RICHMON
Clinical outcomes of head and neck surgery and free tissue reconstruction; robotic surgery of the head and neck.

DR. SCHUBERT
Describe mechanisms responsible for improving gaze stability during rapid head impulses and to develop new gaze stability strategies for rehabilitation.

DR. SHELHAMER
Vestibular and oculomotor function; sensorimotor adaptation; mathematical modeling; nonlinear systems; human adaptation to spaceflight including assessment and rehabilitation.

DR. SIDRANSKY
The molecular genetic changes that drive the progression of various types of cancer.

DR. ALLAF
Minimally invasive surgery; robotics; kidney cancer; prostate cancer.

DR. BIVALACQUA
Neurobiology of cavernous nerve injury repair mechanisms after pelvic surgery for prostate and bladder cancer; gene therapy for erectile dysfunction; biomarkers for detection and staging of bladder cancer.

DR. BURNETT
Pelvic neurophysiology; pelvic anatomy; erectile dysfunction; urinary continence; pelvic reconstructive surgery; prostate cancer.

DR. CARTER
Longitudinal studies of prostate disease, etiology, detection, and management.

DR. CESPEDES
Male and female incontinence; obstructive voiding dysfunction; vaginal prolapsed reconstruction; geriatric incontinence; neurourology.

DR. COFFEY
Prostate tumor biology; regulation of normal and abnormal growth of the prostate; role of nuclear matrix in DNA replication; telomerase; stem cell biology.

DR. DODSON
Epidemiology and patient reported outcomes in pediatric urology; health related quality of life; incontinence.

DR. GEORGE
Endocrine manifestations of ambiguous genitalia; bladder muscle nerve and collagen function in bladder extrophy; long term outcomes in ambiguous genitalia.

DR. GETZENBERG
Biomarkers-prostate cancer, BPH, bladder cancer; nanoparticle based thermal therapy; evolutionary aspects of cancer biology and treatment.

DR. HAN
Oncology; outcomes research in prostate cancer; robotics in prostate cancer diagnostics and treatment.
DR. J. ISAACS
Development of new therapies for prostatic cancer and molecular mechanisms for control of metastasis.

DR. W. ISAACS
Molecular genetics of prostate cancer and benign prostatic hyperplasia.

DR. JAROW
Erectile dysfunction, male infertility.

DR. KULKARNI
Understanding molecular mechanisms underlying prostate diseases; aberrant expression of Cancer/Testis Antigens; intrinsically disordered proteins and network Theory.

DR. LUO
High-throughput oriented approaches to study molecular carcinogenesis of human prostate cancer and translational research on novel prostate markers identified using these approaches.

DR. LUPOLD
Prostate cancer; experimental therapeutics and diagnostics; aptamers and microRNA.

DR. MATHEWS
Minimally invasive pediatric urology; hypospadias; vesico-ureteral reflux; undescended testis.

DR. MATLAGA
Kidney stone disease and surgical treatment.

DR. MOSTWIN
Continence; bladder function; pelvic anatomy; medical ethics.

DR. PARTIN
Prostate cancer; benign prostatic hyperplasia; prostate cancer biomarkers research.

DR. PAVLOVICH
Minimally-invasive urologic oncologic surgery; urinary biomarkers for prostate cancer and prostatic diseases.

DR. RODRIGUEZ
Advanced prostate cancer; bladder cancer; kidney cancer; gene therapy; experimental therapeutics and diagnostics; molecular imaging.

DR. SCHAEFFER
The molecular biology of low and high grade prostate cancer; the biology of urogenital development and injury/repair and the relationship between these processes and cancers of the bladder, prostate, and kidneys.

DR. SCHATZ
Bladder cancer; benign prostatic hyperplasia; salvage therapy for recurrent prostate cancer.

DR. SCHOENBERG
Molecular biology and early detection of bladder cancer; novel therapeutic strategies for invasive bladder cancer; focal therapy for treatment of urologic malignancies and regenerative medicine approaches to urinary tract reconstruction.

DR. STOIANOVICI
Urology robotics; image guided interventions; new technologies.

DR. TROCK
Epidemiology, prevention, and clinical outcomes of prostate and breast cancer; biomarkers for early detection and progression.

DR. VELTRI
Biomarkers for diagnosis and prognosis of urological cancers; the quantitation of tissue architecture and cell nuclear structure and molecular biomarkers using digital computer-assisted image analysis in cancer; applied proteomics for biomarker discovery, identification, and characterization; and algorithms that combine pathology and biomarkers to predict urological cancer outcomes.

DR. WALSH
Benign prostatic hyperplasia; prostatic cancer.

DR. WRIGHT
Male and female voiding dysfunction; neurourology; pelvic reconstructive surgery; urogynecology.

DR. WANG
General pediatric urology; urinary tract infections; vesico-ureteral reflux; penile and bladder development; hypospadias; undescended testicles; disorder of sexual differentiation; hydronephrosis; neurogenic bladder.
Multi-Department Courses
REQUIRED WORK FOR M.D. DEGREE

First and Second Year

Intersessions
Intersessions are designed to present the behavioral and social science content pertinent to the practice of medicine in the 21st century and provide additional clinical skill development in the preclinical years. They are taught by interdisciplinary faculty and placed at times in the calendar when students have no other competing coursework. The Intersession “week” begins with a Monday exam for the preceding basic science section. This is followed by the Restorative Medicine course, in which students choose one of six restorative practices, such as meditation, yoga, writing, life drawing, to participate. The following three mornings are devoted to the Intersession theme, and the afternoons to Scholarly Concentrations. The final day is a combination of assessment for the Intersession and advising activities sponsored by the Colleges. In AY 2010-11, the following intersessions are presented:

• Health Care Disparities and Service Learning. This intersession launches Year 1 and is used to introduce students to the city of Baltimore and the concepts of health disparities that occur at both the local and regional level, as well as the concepts of cultural competence. Students participate in seminars led by clinical faculty, faculty from the school of public health, community leaders, and patients. They have an opportunity to participate in a service learning activity with mentors from the second year class. (There is no Scholarly Concentration time during this intersession).

• Health Promotion and Disease Prevention. This intersession is presented prior to the winter break, and focuses on Obesity as a model for health promotion and disease prevention. In addition to learning basic nutritional information and knowledge of the burden of disease related to obesity, students explore behavioral change and are introduced to motivational counseling. They are asked to assess their own nutritional behaviors and participate in a personal behavior change during the week. Students will choose the area of concentration and meet for the first time in their Scholarly Concentrations course this week.

• Global Health Intersession. This intersession is directed by the Center for Global Health education. Students have the opportunity to participate in teleconferences with medical students and faculty from Uganda, Pakistan, India and Ethiopia, and develop an understanding of global burden of disease, social determinants of health, knowledge of other health delivery systems, and awareness of their own biases about global health.

• Pain Care Intersession. This intersession is delivered during a break in the GTS Nervous System section, and presents students with an introduction to the complex care of pain, including initial assessment of pain, cross-cultural issues, medicolegal issues, pharmacology of analgesia, chronic pain and disability and alternative and complementary medicine.

• Disaster Medicine Intersession. In this final week of the school year, students will participate in a disaster drill and pandemic simulation, explore the ethics of triage and review the impact of disaster response with participants in the Haiti and Chile disasters of 2009-10.

• Substance Abuse Intersession. The misuse of mind-altering substances adversely alters the lives of many patients, and can be seen as an enormous dilemma for public health and complication in the care of patients. In this brief intersession course students will expand on the concepts of addiction and behavior encountered in the first year Brain, Mind, Behavior course. Students will learn to differentiate the varieties of addictive substances, patterns of their misuse, and factors that influence successful treatment of addiction. Special focus will be placed on the abuse of prescription drugs, and on the course of recovery and relapse.

• Palliative Care/End of Life Care Intersession. This intersession focuses on an overview of palliative care and core principles dealing with issues focused on palliation and end of life care. The specific content areas include defining palliative care, hospice, communication skills including breaking bad news/goal setting, spiritual and cultural issues around life threatening illnesses, grief and bereavement, self care, ethical and legal issues, didactics and small group sessions on family meetings, and symptom management. Students go to a hospice for one half day and are given an opportunity to practice giving/breaking bad news to a simulated patient.

• Patient Safety Intersession. The objectives of the Patient Safety Intersession are 1) Students will acquire basic knowledge of pain neurobiology and pain interventions; 2) Students will gain awareness of the prevalence and multi-dimensional impact of pain; 3) Students will appreciate key challenges of providing pain care, e.g. assessment, impairment, abuse and addiction; and 4) Students will develop increased understanding of the emotional and psychological consequences of physical pain.

Scholarly Concentrations
Scholarly concentrations was designed to provide students an opportunity as early as possible in the curriculum to develop additional expertise in a particular area of interest, and guide students in applying a scholarly approach to an independent mentor project. Students begin by meeting in seminars in their particular area of interest during the intersessions, and subsequently identify a mentor and project timeline. The goal is completion of the project by the end of Year 2. The five areas of concentration from which students may choose are Basic Research, Clinical Research, History of Medicine, Medical...
Humanities, Bioethics and the Healing Arts, or Public Health and Community Service.

**Second Year**

**Transitions to the Wards** In the third quarter, Year 2 students spend two afternoons per week in Transitions to the Wards, a course designed to prepare students for learning in the clinical clerkships that follow. The course uses a combination of small group discussion and team-based learning to explore clinical problem solving, direct observation of advanced physical diagnosis and presentation skills with college faculty, and procedural and simulation exercise. Every student recertifies in Basic Life Support.
### Schedules

**FIRST YEAR 2010-11 – 8/18/10-6/17/11**

<table>
<thead>
<tr>
<th>August</th>
<th>January</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Genes to Society</td>
</tr>
<tr>
<td>2</td>
<td>Immunology 1 (10 days)</td>
</tr>
<tr>
<td>3</td>
<td>Micro/ID (20 days)</td>
</tr>
<tr>
<td>4</td>
<td>Immunology 2 (7 days)</td>
</tr>
<tr>
<td>5</td>
<td>IS Prevention</td>
</tr>
<tr>
<td>6</td>
<td>Break</td>
</tr>
<tr>
<td>7</td>
<td>Longitudinal Clerkship</td>
</tr>
<tr>
<td>8</td>
<td>Scholarly Concentration</td>
</tr>
<tr>
<td>9</td>
<td>IS Health Disp</td>
</tr>
<tr>
<td>10</td>
<td>Scientific Foundations of Medicine</td>
</tr>
<tr>
<td>11</td>
<td>Clinical Foundations of Medicine</td>
</tr>
<tr>
<td>12</td>
<td>Foundations of Public Health</td>
</tr>
<tr>
<td>13</td>
<td>IS Prevention</td>
</tr>
<tr>
<td>14</td>
<td>Break</td>
</tr>
<tr>
<td>15</td>
<td>Longitudinal Clerkship</td>
</tr>
<tr>
<td>16</td>
<td>Scholarly Concentration</td>
</tr>
<tr>
<td>17</td>
<td>IS Disaster</td>
</tr>
<tr>
<td>18</td>
<td>Summer Break</td>
</tr>
<tr>
<td>19</td>
<td>NSS (21 days)</td>
</tr>
<tr>
<td>20</td>
<td>IS Disaster</td>
</tr>
<tr>
<td>21</td>
<td>Summer Break</td>
</tr>
<tr>
<td>22</td>
<td>IS Disaster</td>
</tr>
<tr>
<td>23</td>
<td>Summer Break</td>
</tr>
<tr>
<td>24</td>
<td>IS Disaster</td>
</tr>
<tr>
<td>25</td>
<td>Summer Break</td>
</tr>
<tr>
<td>26</td>
<td>IS Disaster</td>
</tr>
</tbody>
</table>

---

### Additional Responsibilities:

- CPR Training – one four hour session and a one hour simulated session

---

### SECOND YEAR 2010-11 – 8/23/10-5/27/11

<table>
<thead>
<tr>
<th>September</th>
<th>January</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Genes to Society</td>
</tr>
<tr>
<td>2</td>
<td>Pulm (12)</td>
</tr>
<tr>
<td>3</td>
<td>Renal (18)</td>
</tr>
<tr>
<td>4</td>
<td>IS Sub Abuse</td>
</tr>
<tr>
<td>5</td>
<td>Longitudinal Clerkship</td>
</tr>
<tr>
<td>6</td>
<td>SC</td>
</tr>
<tr>
<td>7</td>
<td>IS Sub Abuse</td>
</tr>
<tr>
<td>8</td>
<td>Genes to Society</td>
</tr>
<tr>
<td>9</td>
<td>Cardiac (19 days)</td>
</tr>
<tr>
<td>10</td>
<td>GI/Liver (19 days)</td>
</tr>
<tr>
<td>11</td>
<td>Endocrine (13 days)</td>
</tr>
<tr>
<td>12</td>
<td>IS Sub Abuse</td>
</tr>
<tr>
<td>13</td>
<td>Longitudinal Clerkship</td>
</tr>
<tr>
<td>14</td>
<td>SC</td>
</tr>
<tr>
<td>15</td>
<td>IS End of Life</td>
</tr>
<tr>
<td>16</td>
<td>* Med, Peds, GYN-OB</td>
</tr>
<tr>
<td>17</td>
<td>Neuro/Psych</td>
</tr>
<tr>
<td>18</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>19</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>20</td>
<td>IS End of Life</td>
</tr>
<tr>
<td>21</td>
<td>* Med, Peds, GYN-OB</td>
</tr>
<tr>
<td>22</td>
<td>Neuro/Psych</td>
</tr>
<tr>
<td>23</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>24</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>25</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>26</td>
<td>Elective, E-Med</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>March</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Transition to Wards</td>
</tr>
<tr>
<td>28</td>
<td>Break</td>
</tr>
<tr>
<td>29</td>
<td>SC</td>
</tr>
<tr>
<td>30</td>
<td>Break</td>
</tr>
<tr>
<td>31</td>
<td>IS End of Life</td>
</tr>
<tr>
<td>32</td>
<td>* Med, Surg, Peds, GYN-OB</td>
</tr>
<tr>
<td>33</td>
<td>Neuro/Psych</td>
</tr>
<tr>
<td>34</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>35</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>36</td>
<td>Break</td>
</tr>
<tr>
<td>37</td>
<td>IS End of Life</td>
</tr>
<tr>
<td>38</td>
<td>* Med, Peds, GYN-OB</td>
</tr>
<tr>
<td>39</td>
<td>Neuro/Psych</td>
</tr>
<tr>
<td>40</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>41</td>
<td>IS End of Life</td>
</tr>
<tr>
<td>42</td>
<td>Break</td>
</tr>
<tr>
<td>43</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>44</td>
<td>Break</td>
</tr>
<tr>
<td>45</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>46</td>
<td>Break</td>
</tr>
<tr>
<td>47</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>48</td>
<td>Break</td>
</tr>
<tr>
<td>49</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>50</td>
<td>Break</td>
</tr>
<tr>
<td>51</td>
<td>Elective, E-Med</td>
</tr>
<tr>
<td>52</td>
<td>Break</td>
</tr>
</tbody>
</table>

---

- * = PRECEDE
- GTS = Genes to Society
- Preclerkship Education Exercises
- LC = Longitudinal Clerkship
- SC = Scholarly Concentration
- IS = Intersession
- BMB = Brain, Mind & Behavior
- NSS = Nervous System & Special Senses
REQUIRED CLERKSHIPS*

Medicine Clerkship (eight weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>Medicine</td>
<td>Medicine</td>
<td>Medicine</td>
<td>Medicine</td>
</tr>
</tbody>
</table>

Surgery Clerkship (eight weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
<td>Surgery</td>
</tr>
</tbody>
</table>

Obstetrics/Gynecology Clerkship (eight weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB/Gyn</td>
<td>OB/Gyn</td>
<td>OB/Gyn</td>
<td>OB/Gyn</td>
<td>OB/Gyn</td>
</tr>
</tbody>
</table>

Pediatrics/Neonatology Clerkship (eight weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peds/Neo</td>
<td>Peds/Neo</td>
<td>Peds/Neo</td>
<td>Peds/Neo</td>
<td>Peds/Neo</td>
</tr>
</tbody>
</table>

Ambulatory Medicine Clerkship (four and one-half weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulatory Medicine</td>
<td>Ambulatory Medicine</td>
<td>Ambulatory Medicine</td>
<td>Ambulatory Medicine</td>
<td>Ambulatory Medicine</td>
</tr>
</tbody>
</table>

Psychiatry/Neurology Clerkship (eight weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatry</td>
<td>Psychiatry</td>
<td>Psychiatry</td>
<td>Psychiatry</td>
<td>Psychiatry</td>
</tr>
</tbody>
</table>

Psychiatry Portion (4 weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatry</td>
<td>Psychiatry</td>
<td>Psychiatry</td>
<td>Psychiatry</td>
<td>Psychiatry</td>
</tr>
</tbody>
</table>

Neurology Portion (4 weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurology</td>
<td>Neurology</td>
<td>Neurology</td>
<td>Neurology</td>
<td>Neurology</td>
</tr>
</tbody>
</table>

Emergency Medicine Clerkship (four and one-half weeks)

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
</table>

*Scheduled hours for core clerkships vary and are determined by course directors

THIRD YEAR
- First quarter: 8/23/10-10/15/10
- Intersession: 10/18/10-10/22/10
- Second quarter: 10/25/10-12/22/10
- Intersession: 1/3/11-1/7/11
- Third quarter: 1/10/11-3/4/11
- Intersession: 3/7/11-3/11/11
- Fourth quarter: 3/28/11-5/20/11
- Intersession: 5/23/11-5/27/11

FOURTH YEAR
- First quarter: 8/23/10-10/15/10
- Intersession: 10/18/10-10/22/10
- Second quarter: 10/25/10-12/22/10
- Intersession: 1/3/11-1/7/11
- Third quarter: 1/10/11-3/4/11
- Intersession: 3/7/11-3/11/11
- Fourth quarter: 3/28/11-5/20/11
Administration, Faculty, Fellows, and Students

Administration

TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY

Pamela P. Flaherty, Chair
C. Michael Armstrong, ex officio
Richard S. Frary
Mark E. Rubenstein
Vice-Chairs
Robert J. Abernethy*
Leonard Abramson*
Christopher C. Angell
Peter G. Angelos*
Jeffrey H. Aronson
Norman R. Augustine*
Janie E. Bailey
Lenox D. Baker, Jr.
H. Furlong Baldwin*
Jeremiah A. Barondess*
Ernest A. Bates*
Alfred R. Berkeley III
David H. Bernstein*
Abhiram R. Bhashyam
Paula E. Boggs
Aurelia G. Bolton*
Randolph W. Bromery*
Michelle A. Brown
George L. Bunting, Jr.
Francis B. Burch, Jr.
Constance R. Caplan*
William P. Carey*
A. James Clark*
Charles I. Clarvit
N. Anthony Coles
Ronald J. Daniels, ex officio
Victor J. Dankis*
Sarah R. David
Anthony W. Deering
Ina R. Drew
Edward K. Dunn, Jr.*
Manuel Dupkin II*
Harvey Eisen
Maria T. Fazio
Marjorie M. Fisher
James A. Flick, Jr.*
Louis J. Forster
Sanford D. Greenberg
Benjamin H. Griswold IV
Taylor Hanex
Robert D. H. Harvey*
Lee Meyerhoff Hendler
Rafael Hernandez-Colon*
David C. Hodgson
R. Christopher Hoehn-Saric
Frank L. Hurley
Stuart S. Janney III
Jeong H. Kim
David H. Koch
Donald A. Kurz
Christopher H. Lee
Joanne Leedom-Ackerman
Alexander H. Levi
Kwok-Leung Li
F. Pierce Linaweaver*
Roger C. Lipitz
Diana C. Liu
Christopher E. Louie
Howard C. Mandel
Raymond A. Mason*
Christina L. Mattin
Terri McBride, ex officio
Gail J. McGovern
Harvey M. Meyerhoff*
Charles D. Miller*
Milton H. Miller*
Westley W.O. Moore
Naneen Hunter Neubohn
David P. Nolan
Ronald M. Nordmann
Ralph S. O’Connor*
Morris W. Offit*
Walter D. Pinkard, Jr.
George G. Radcliffe*
Joseph R. Reynolds, Jr.
Brian C. Rogers
David M. Rubenstein
John F. Ruffle*
Marshal L. Salant
Arthur Samoff*
Frank Savage*
Wayne N. Schelle*
Herschel L. Seder*
Robert A. Seder
Huntington Sheldon*
Donald J. Shepard
R. Champlin Sheridan, Jr.*
Rajendra Singh
Wendell A. Smith*
Raymond W. Snow, ex officio
Helmut Sonnenfeldt*
Shale D. Stiller*
Morris Tanenbaum*
Adena W. Testa
Selwyn M. Vickers
William F. Ward, Jr
James L. Winter
Shirley S. L. Yang
Calman J. Zamoiski, Jr.*

*Trustee Emeritus
PRINCIPAL ADMINISTRATIVE OFFICERS AND DEANS OF THE JOHNS HOPKINS UNIVERSITY*

Ronald J. Daniels  
President

Lloyd B. Minor  
Provost and Senior Vice President for Academic Affairs

Daniel G. Ennis  
Senior Vice President for Finance and Administration

Edward D. Miller  
Vice President and CEO of Johns Hopkins Medicine  
Dean of the Medical Faculty

Stephen S. Dunham  
Vice President and General Counsel

Michael C. Eicher  
Vice President for Development and Alumni Relations

Thomas S. Lewis  
Vice President for Government, Community and Public Affairs

Charlene Moore Hayes  
Vice President for Human Resources

Michael Strine  
Vice President for Finance and Treasurer

Michela Gallagher  
Vice Provost for Academic Affairs

Edgar E. Rouhiac  
Vice Provost for Academic Services

Scott Zeger  
Vice Provost for Research

Stephanie Reel  
Chief Information Officer and Vice Provost for Information Technology

Pamela Cranston  
Vice Provost for International Programs

Caroline Laguerre-Brown  
Vice Provost for Institutional Equity

Jonathan Bagger  
Vice Provost for Graduate and Postdoctoral Programs and Special Projects

Gregory S. Oler  
Controller

Kathryn J. Crecelius  
Chief Investment Officer

Sarah Steinberg  
Interim Vice Provost for Student Affairs

Jerome D. Schnydeman  
Executive Assistant to the President and Secretary of the Board of Trustees

Yash P. Gupta  
Dean of the Carey Business School

Jessica P. Einhorn  
Dean of The Paul H. Nitze School of Advanced International Studies

Katherine S. Newman  
Dean of the Krieger School of Arts and Sciences

David W. Andrews  
Dean of the School of Education

Nicholas P. Jones  
Dean of the Whiting School of Engineering

Michael J. Klag  
Dean of the Bloomberg School of Public Health

Martha Hill  
Dean of the School of Nursing

Jeffrey Sharkey  
Director of the Peabody Institute

Ralph Semmel  
Director of the Applied Physics Laboratory

Winston Tabb  
Dean of University Libraries and Museums, Vice Provost for the Arts

DEANS, PRINCIPAL ACADEMIC ADMINISTRATORS AND COMMITTEES OF THE MEDICAL FACULTY

Officers of Administration

Edward D. Miller  
Dean of the Medical Faculty  
CEO, Johns Hopkins Medicine

William A. Baumgartner  
Vice Dean for Clinical Affairs

Janice E. Clements  
Vice Dean for Faculty

Chi V. Dang  
Vice Dean for Research

Richard A. Grossi  
Vice President and Chief Financial Officer, Johns Hopkins Medicine  
Sr. Associate Dean for Finance and Administration

Daniel E. Ford  
Vice Dean for Clinical Investigation

David G. Nichols  
Vice Dean for Education

David B. Hellmann  
Vice Dean for the Bayview Campus

Stephen J. Thompson  
Sr. Vice President for Johns Hopkins Medicine; Vice President for Ambulatory Services Coordination

Michael B. Amey  
Associate Dean for Research Administration

Todd Dorman  
Associate Dean for Continuing Medical Education

Mary E. Foy  
Associate Dean/Registrar

Brian Gibbs  
Associate Dean for Diversity and Cultural Competence

318  ADMINISTRATION
Julie Gottlieb  
*Associate Dean for Policy Coordination*

Peter S. Greene  
*Associate Dean for Emerging Technologies*

Thomas W. Koenig  
*Associate Dean for Student Affairs*

Peter Maloney  
*Associate Dean for Graduate Student Affairs*

Julia A. McMillan  
*Associate Dean for Graduate Medical Education*

Patricia Thomas  
*Associate Dean for Curriculum*

Levi Watkins, Jr.  
*Associate Dean for Postdoctoral Programs*

James L. Weiss  
*Associate Dean for Admissions*

Kenneth Wilczek  
*Associate Dean and Executive Director, Clinical Practice Association*

Michael Barone  
*Assistant Dean for Student Affairs*

Sarah Clever  
*Assistant Dean for Student Affairs*

Melissa Helicke  
*Assistant Dean, Bayview*

Harry Goldberg  
*Assistant Dean/Director of the Office of Academic Computing*

Lisa Heiser  
*Assistant Dean for Faculty Development and Equity*

Hermione Hicks  
*Assistant Dean for Admissions*

Maura McGuire  
*Assistant Dean for Part-Time Faculty*

John Rybock  
*Assistant Dean and Compliance Officer for Graduate Medical Education*

Barbara Starklauf  
*Assistant Dean for Human Subjects Research Compliance*

Danny Teraguchi  
*Assistant Dean for Student Affairs*

Christine H. White  
*Assistant Dean for Medicine*

**ADMINISTRATIVE STAFF**

Wesley Blakeslee  
*Executive Director, Technology Transfer*

Gloria Bryan  
*Sr. Director, Human Resources*

James R. Erickson  
*Executive Director, Finance*

Jack Grinnalds  
*Sr. Director, Facilities Management*

Terra Jones-Sims  
*Director, Financial Aid*

Steven A. Rum  
*Sr. Associate Vice President for Development & Alumni Relations*

**Advisory Board of the Medical Faculty**

Ronald J. Daniels  
*President*

Edward D. Miller  
*Dean of the Medical Faculty*

L. Mario Amzel  

William Baumgartner  

Henry Brem  

Philip A. Cole  

J. Raymond DePaulo  

Stephen Desiderio  

Peter Devreotes  

Theodore DeWeese  

George J. Dover  

Harold E. Fox  

Frank J. Frassica  

Julie A. Freischlag  

Gary W. Goldstein  

Carol Greider  

William B. Guggino  

Gerald W. Hart  

Martha N. Hill  

Richard L. Huganir  

Lisa Ishii  

J. Brooks Jackson  

Sewon Kang  

Gabor D. Kelen  

Michael J. Klag  

Gary Lees  

Jonathan S. Lewin  

Justin McArthur  

Peter J. McDonnell  

Julia McMillan  

Elliot McVeigh  

Lloyd B. Minor, *ex officio*  

William Nelson  

John K. Niparko  

Randall M. Packard  

Jeffrey B. Palmer  

Alan W. Partin  

Ronald R. Peterson, *ex officio*  

Nancy Roderer  

Andrew Satin  

Gordon F. Tomaselli  

John A. Ulatowski  

David Valle  

Myron L. Weisfeldt  

M. Christine Zink  

Christine H. White  

*Secretary*

The Board was constituted by resolution of the Trustees (April 3, 1893), “to report to the trustees from time to time their suggestions and to prepare and to carry forward the proper arrangements for the instruction and graduation of medical students.”

ADMINISTRATION 319
The Council was established in 1971 by the President "in order to provide a mechanism for the Faculty, Fellows, and Students of the Johns Hopkins University School of Medicine to participate more effectively in the deliberations and governance of the Institution."

Councils and Standing Committees of the Faculty

ADVISORY BOARD AGENDA COMMITTEE
Lloyd B. Minor, Chair
L. Mario Amzel
Carol Greider
Lisa Ishii
Sewon Kang
Justin McArthur
Edward D. Miller
William Nelson
Randall M. Packard
Myron L. Weisfeldt
William A. Baumgartner, staff
Janice E. Clements, staff
Chi V. Dang, staff
Daniel E. Ford, staff
David G. Nichols, staff
Christine H. White, Secretary

COMMITTEE ON EDUCATIONAL POLICY AND CURRICULUM
David G. Nichols, Chair
Elizabeth Goodspeed, Secretary
Michael Barone
Eric Bass
Mary Catherine Beach
Michael Borowitz
Danelle Cayea
Sarah Clever
Joseph Cofrancesco
Ronald Cohn
Jorie Colbert
Philip Cole
George Dover
Robert Dudas
Henry Fessler
Derek Fine

April Fitzgerald
Mary E. Foy
Charlene Gamaldo
Gail Geller
Khaliq Khan
Harry R. Goldberg
Mitchell Goldstein
Victoria Goode
Isabel Green
Richa Gupta
Nancy Huerpchen
Betsy Hunt
Julianna Jung
Thomas W. Koenig
Ann Lawler
Bruce Leff
Susan Lehmann
Pamel Lipsett
Jon Lorsch
Maura McGuire
Ross McMillan
Eliot McVeigh
Jacek Mostwin
David Newman-Toker
John Nichols
Janaki Paskaradevan
Peter L. Pedersen
Gregory Prokopowitz
Anastasia Rowland-Seymour
Christopher B. Ruff
Jonathan Schneck
Robert Shochet
Nathan Skelly
Mark Teaford
Daniel Teraguchi
Patricia A. Thomas
James Weiss
Stephen Yang

COMMITTEE ON ADMISSION
James L. Weiss, Chair ex officio
Marilee Allen
Bimal Ashar
R. Robinson Baker
Arthur Burnett
Patrick Byrne
David Chan
Paul Christo
Andrea M. Corse
Todd Cox
William Crawley
Diana Do
Howard Francis
Deborah Frassica
Charlene Gamaldo
Judi Gieske
Ziya Gokaslan
Amy Gordon
Tammy Hadley
Misop Han
Peter Hill
Nancy Hueppchen
David Jackson
Jean Kim
Van King
Nanette Liegeois-Kwon
Jackie L. Martin, Jr.
Mack C. Mitchell, Jr.
Anne Murphy
Karim Neufeld
Quan Nguyen
J. Courtland Robinson
Wen Shen
Michael Trice
Shelia West
Stephen Yang
Sara Ying
Richard Zellars

COMMITTEE ON ADMISSION SCREENING
James L. Weiss, Chair
Hoover Adger
Frederic Askin
Hermione Hicks
Jean Kan
Lynette Mark
Jacek Mostwin
Srinivasa Raja
Janet Siliciano
Peter B. Terry
Edward Wallach

COMMITTEE ON STUDENT AWARDS
Thomas Koenig, Chair
Yukari Manabe
Robert Siliciano

COMMITTEE ON THE M.A. AND PH.D. PROGRAMS
Eric Young, Chair
Mary E. Foy, Secretary
Michael Caterina
Pierre A. Coulombe
Peter Espenshade
David Ginty

Marta Hanson
Jan Hoh
Steven Hsiao
Krishna Juluri
Gary P. Lees
Harold Lehmann
Jun Liu
Carolyn Machamer
Peter C. Maloney
David Nichols
Kenneth Rose
Noel Rose
Reza Shadmehr
Mark Soloski
David L. Valle
Tom Wolff
Eric Young
David Yue
Rebekah Zinn

COMMITTEE ON THE M.D.-PH.D. PROGRAM
Robert F. Siliciano, Chair
Sharon Welling, Secretary
Peter Agre
Jay M. Baraban
Frederick Brancati
Michael Caterina
Patricia Charache
Janice Clements
Brendan Cormack
Andrea Cox
Stephen V. Desiderio
Harry C. Dietz, III
Renee Z. Dintzis
Andrew Feinberg
Wade Gibson
Carol Greider
Frank Herlong
Hermione Hicks
Thomas Koenig
Alex Kolodkin
Se-Jin Lee
David Levine
Jun Liu
David Nichols
Ben Ho Park
Gary Pasternack
Daniel M. Raben
Antony Rosen
Jonathan Schneck
Lawrence P. Schramm
David Shortle
Donald Small
Shanthini Sockanathan
Charlotte Sumner
Danny Teraguchi
Glenn Treisman
James Weiss
David T. Yue
Scott Zeger

INSTITUTIONAL RESEARCH GRANT
PROJECT COMMITTEE
Gregory Germino, Chair
Joanne Frantz, Secretary
S. Diane Hayward
Nicholas Katsanis
Alex Kolodkin
Peter O. Kwiterovich, Jr.
COMMITTEE ON OUTSIDE INTERESTS

Voting Members
Neil Bressler, Chair
O. Joseph Bienvenu
Neil Bressler
Douglas Clark
Garry Cutting
Samuel Denmeade
Robert Greenberg
Henry Halperin
Argye Hills
Landon S. King
Steven D. Leach
Hyam Levitsky
Alexander Popel
Sally Radovick
Mark Riddle
Jeffrey D. Rothstein
Frederick Savage
David Sidransky
Mark Sulkowski
Cornelia Trimble
Brad Undem
Kristin Weber

Non-Voting Members
Mike Amey
Chi Dang
Christina Doty, Staff
Julie Gottlieb, Secretary
Nicole Leonard
Philip Rocca
Barbara Starklauf

STANDING COMMITTEE ON DISCIPLINE
Gerald Hart, Chair
Sheila Garrity, Staff

Mario Amzel
Joan Bathon
Philip Cole
Nancy L. Craig
Chi V. Dang, ex officio
George Dover
Arlene Forastiere
Harold Fox
Gerald Hart
Richard T. Johnson
Ola Selnes
Myron Weisfeldt

PROFESSORIAL PROMOTIONS COMMITTEE
Jay Brooks Jackson, Chair

Eric Bass
Gregory Bergey
Zaver M. Bhujwalla
Arthur L. Burnett, II
Peter N. Devreotes
Jennifer Haythornthwaite
Richard Huganir
Elizabeth M. Jaffee
Pamela A. Lipsett
Donald W. MacGlashan, Jr.
Peter J. McDonnell, III
Lloyd B. Minor
Timothy Moran
Alessandro Olivi
Srinivasa Raja
Eric Young

M. Christine Zink

ASSOCIATE PROFESSOR PROMOTIONS COMMITTEE
Estelle Gauda, Chair
Mark Duncan, Vice Chair
Patrice Becker
Harolyn Belcher
Jessica Bienstock
Karin Blakemore
Malcolm Brock
Charles Della Santina
Susan Dorman
Mark Douglas Duncan
Paul Flint
John D. Gearhart
Robert E. Jensen
Alex Kolodkin
Peter Rabins
Theresa A. Shapiro
Rafael J. Tamargo
Charles Wiener
Myron Yaster

ASSOCIATE PROFESSOR REAPPOINTMENT REVIEW COMMITTEE
Neil R. Miller, Chair
Joel Gallant
S. Diane Hayward
Peter Kaplan
Wayne Koch
Patricia Thomas
James L. Weiss

INSTRUCTOR AND ASSISTANT PROFESSOR REAPPOINTMENT REVIEW COMMITTEE
Leslie Plotnick, Chair
Francis Giardiello
Daniel Hanley
Eugenie Heitmiller
Jon Lorsch
Daniel Raben
Joy Yang
Martha A. Zeiger

PROFESSORS’ TEACHING AWARD COMMITTEE
Edward D. Miller, Chair
David Nichols, Vice Chair
Charles W. Cummings
David Greiotti
William Guggino
Thomas J. Kelly, Jr.
Thomas Koenig
Jon Lorsch
Andrew Watkins

INTERNAL CLINICIAN SCIENTIST AWARDS SELECTION COMMITTEE
George J. Dover, Chair
Michelle P. Linehan, Secretary
Stephen Baylin
Susan W. Craig
Elia Duh
Susan Lynn Furth
John W. Griffin
Elizabeth Jaffee
Steven D. Leach
Michael Caterina
Elizabeth Chen
Nancy Craig
Denise Montell
Carlos Pardo-Vilamizar
Ben Ho Park
Joel Pomerantz
Rajini Rao
Mark Soloski
Saraswati Sukumar
David Yue

YOUNG INVESTIGATORS’ DAY
PLANNING COMMITTEE
Alex Kolodkin, Chair
Shan Sockanathan, Co-Chair
Aimee Real, Secretary
Mary E. Foy

SELECTION COMMITTEE FOR THE
BRIN VISITING PROFESSOR
John H. Fetting, III, Chair
Joseph Brin
Ruth Faden
John H. Fetting, III
John M. Freeman
Peter B. Terry
Constance Ziegfeld

COMMITTEE ON THE GILMAN LECTURESHP
Edward D. Miller, Chair
Gert H. Brieger

COMMITTEE ON THE GOULD LECTURESHP
Elliott K. Fishman
Stanley S. Siegelman
Moody D. Wharam, Jr.

COMMITTEE ON THE HERTER LECTURESHP
Gerald Hart, Chair
J. Brooks Jackson
Myron Weisfeldt

COMMITTEE ON THE HENRY G. KUNKEL
LECTURESHP
Stephen V. Desiderio, Chair
Patricia J. Gearhart, Co-Chair
Michael A. Edidin
M. Diane E. Griffin
Hyam Levitsky
Drew M. Pardoll
Noel R. Rose
Robert E. Siliciano
Mark J. Soloski

COMMITTEE ON THE ALBERT LESTER
LEHNINGER MEMORIAL LECTURESHP
Peter L. Pedersen, Chair
Ernesto Carafoli
Gerald Hart
Eugene Kennedy
M. Daniel Lane
Sriram Subramaniam
Paul Talalay

COMMITTEE ON THE NOVEY LECTURESHP
Chester W. Schmidt, Jr., Co-Chair
Phillip R. Slavney, Co-Chair
J. Raymond DePaulo, Jr.
Paul R. McHugh
Chester W. Schmidt, Jr.
Phillip R. Slavney
Myron Weisfeldt

COMMITTEE ON THE THAYER LECTURESHP
Myron Weisfeldt, Chair
George J. Dover
J. Brooks Jackson
Myron Weisfeldt

COMMITTEE ON THE HELEN & HAROLD
HARRISON PRIZE FOR EXCELLENCE IN
PEDIATRICS
Julia A. McMillan, Chair
Michael Barone
Helen Harrison
Peter Rowe
Janet Serwint

COMMITTEE ON THE ALAN COOPERSMITH
VISITING PROFESSORSHIP
James F. Casella, Chair
Robert Arceci
James Casella
Jason Custer
J. Raymond DePaulo, Jr.
George J. Dover
Donald Small
Rachel Rau
William Zinkham

WALTER E. DANDY VISITING
PROFESSORSHIP COMMITTEE
Henry Brem
Walter E. Dandy
J. Brooks Jackson
Donald Price
Solomon H. Snyder

COMMITTEE ON THE WILLIAM M. SHELLEY
VISITING PROFESSORSHIP
Frederic B. Askin, Chair
John L. Cameron
Jonathan I. Epstein
J. Brooks Jackson
William H. Westra

WOMEN’S LEADERSHIP COUNCIL
Janice Clements, Chair
Rhoda Alani
Marilyn Albert
Jean Anderson
Nancy Ator
Joan Bathon
Diane Becker
Patrice Becker
Michele Bellantoni
Jessica Bienstock
Karin Blakemore
Dana Boatman
Corrine Boehm
Karen Bolla
Susan B. Bressler
Maggie Bruck
Carol Burek
Arlene Butz
Karen Carroll
Livia Casciola-Rosen
Nisha Chandra-Strobos
Patricia Charache
Elizabeth Chen
Tina Cheng
Lisa Cooper
Mary Corretti
Nancy L. Craig
Susan W. Craig
Nancy Davidson
Valina Dawson
Barbara J. de Lateur
Martha Bridge Denckla
Renee Dintzis
Adrian Dobs
Beth Dochinger
Anne Duggan
Leisha Emens
Mary Fissell
Barbara Fivush
Arline A. Forastiere
Mary Fowler
Mary E. Foy
Julie Freischlag
Linda P. Fried
Carmelita G. Frondoza
Olga Gatewood
Estelle Gauda
Gail Geller
Rebecca German
Maureen Gilmore
Toby Gordon
Carol W. Greider
Constance Griffin
M. Diane E. Griffin
Sandra E. Guggino
Julia A. Haller
Ada Hamosh
Ulrike Maria Hamper
Mary L. Harris
Jennifer Haythornthwaite
S. Diane Hayward
Lisa Heiser
Euginie S. Heitmiller
Argye Hillis
Karen Horton
Ann L. Hubbard
Kathy Lynn Hudson
Nancy Hutton
Ethlyn Wang Jabs
Elizabeth Jaffee
Geetha Jayaram
Bronwyn Jones
Lynne C. Jones
Mary Jeffell
Karen Lindeman
Pamela Lipsett
Suan Louden
Susan MacDonald
Carolyn Machamer
Donna Magid
Lynette Mark
Laura Marsh
Irene Maumenee
Michele Mazucco
Nancy McCall
Una McCann
Jane McGowan
Susan Michaelis
Barbara Migeon
Sally Mitchell
Denise Montell
Elizabeth Montgomery
Anne Murphy
Maria Oliva-Hemker
Pamela Ouyang
Trish Perl
Paula M. Pitha-Rowe
Alison Plowman
Lorraine Racusen
Sally Radovick
Ranjini Rao
Nancy Roderer
Gabriele V. Ronnett
Dorothy L. Rosenthal
Cynthia Sears
Janet Serwint
Geraldine Seydoux
Theresa A. Shapiro
Michele Shermak
Shelia Sheth
Barbara T. Sollner-Webb
Gail Stetten
Maxine L. Stitzer
Saraswati Sukumar
Kaci Chea Thomas
Margaret Thomas
Patricia A. Thomas
Maria Trent
Kathleen Turano
Eileen Vining
Elizabeth M. Wagner
Kristi Weber
Elise Weerts
Ursula Wessellmann
Shelia West
Katherine Wilson
Cynthia Wolberger
Martha Zeiger
Pamela Zeitlin
Carol Ziminski
M. Christine Zink

REGIONAL REPRESENTATIVES OF THE COMMITTEE ON ADMISSION

CALIFORNIA
San Francisco
Keith E. Loring (1991)
Ethan J. Weiss (1996, House Staff 1996-98)
Los Angeles
Cara Familian Natterson (1997)
Torrance
J. Michael Crilley (Fac. 1962-67)

ILLINOIS
Chicago
Steven Haddad

GREAT BRITAIN
London
John Rees
UNIVERSITY-WIDE ADVISORY COUNCILS AND COMMITTEES

COMMITTEE ON HUMAN GENETICS
David Valle, Chair
Aravinda Chakravarti
Garry Cutting
Harry Dietz
Susan Michaelis
Barbara R. Migeon
Roger Reeves
Kirby D. Smith
Bert Vogelstein

JOINT COMMITTEES FUNCTIONING FOR THE
JOHNS HOPKINS MEDICAL INSTITUTIONS

COMMITTEE ON GRADUATE MEDICAL
EDUCATION
Julia McMillian, Chair
Jessica Bienstock, Vice-Chair
Brenda Stettes, Secretary
Charles Albrecht
Susan Aucott
Gabriel Brat
Colleen Christmas
Ronald Cohn
Paul Colombani
Joseph Cofrancesco
Sanjay Desai
Ross Donehower
James Dunn
Daniel Durand
David Felgin
Leonard Feldman
Henry Fessler
Charles Flexner
Mary E. Foy
Howard Francis
Emily Frosh
Theresa Hartsell
Argye Hillis
Karen Horton
Julie Huang
George Jallo
Sewon Kang
Dawn LaPorte
Pamela Lipsett
John Lipsey
R. Samuel Mayer
Edward McCarthy
Edward Miller, ex officio
Redonda Miller
Nathan Neufeld
David Nichols
Frank Pidcock
Joanne Pollak
Richard Redett
Linda Regan
Ron Rodriguez
John Rybock
Deborah Schwengel
Pam Shafer
Bruce Shapiro
Rosalyn Stewart
Ik-Lin Tan
Stephanie Terezakis
Diane Voss
Stephen Yang
Harvey Zissman

THE COMMITTEE ON
RADIATION CONTROL
Harvey Ziessman, Chair
Stanley B. Wadsworth, Secretary
Edward Bernacki
Robert Dannals
Christos Georgiades
Jonathan Links
Mahadevappa Mahesh
Ronald Wardrobe
Paul Worley
Richard Zellars

INSTITUTIONAL REVIEW BOARD I
Howard Lederman, Chair
Beryl Rosenstein, Co-Chair
Deborah Armstrong
Jeffrey Brinker
Julie Lange
Sharon Mitchell
Dan O’Connor
Gary Shapiro
Vered Stearns
Kathleen Truelove

INSTITUTIONAL REVIEW BOARD II
David R. Cornblath, Chair
B. Douglas Smith, Co-Chair
Linda Costa
Emily Germain-Lee
Charles Goods
Craig Hendrix
Margaret Moon
Wayne Silverman

INSTITUTIONAL REVIEW BOARD III
Richard Moore, Chair
Kenneth Cohen, Co-Chair
Peter Barker
Mary Catherine Beach
Precious Davis
Frances Murphy Draper
Linda Gerson
Hayley Mark
Richard Skolasky, Jr
Sharon Solomon
Glenn Treisman

INSTITUTIONAL REVIEW BOARD V
Joseph Carrese, Chair
George Bigelow, Co-Chair
N. Franklin Adkinson
Nisha Chandra
Calvin Keene
Jim Monolakis
Tammy Scott
Philip Zieve

INSTITUTIONAL REVIEW BOARD X
Susan Bassett, Chair
Gail Daumit, Co-Chair
Frederic Askin
Dimitrios Avramopoulos
Edith Gurewitsch
Sewall Smith
Sarah L. Szanton
Peter B. Terry

LABORATORY ADVISORY COMMITTEE
Michael Borowitz, Chair
Robert E. Miller, Co-Chair
Kathy Barnes-Sanchez, Secretary
Nita Ahuja
Kathleen Burns
Patricia Charache
William Clarke
Jim Creech
Adam Gower
Peter Hill
Jeffrey Iding
Richard Jones
Thomas Kickler
Maura McGuire
Julia McMillan
Todd Nesbit
Barbara Parsons
Kurten Payton
Brent Petty
Stephanie Poe
John Ticehurst

INSTITUTIONAL PRIVACY BOARD
Randall Packard, Chair
William R. Breakey
John M. Freeman
Nancy McCall
Robert E. Miller
Lisa Ohrin
Robert A. Wells

CLINICAL RADIATION RESEARCH COMMITTEE
Harvey Ziessman, Chair
Thomas Beck
Robert Dannals
Mahadevappa Mahesh
Sally Mitchell
Stanley B. Wadsworth

RADIOACTIVE DRUG RESEARCH COMMITTEE
Harvey Ziessman, Chair
Thomas Beck
Robert Dannals
Mahadevappa Mahesh
Sally Mitchell
Stanley B. Wadsworth

WELCH LIBRARY ADVISORY COMMITTEE – SERVICE GROUP
David Nichols, Chair

Jeri Allen
Maria Cvach
Stephen V. Desiderio
Janet DiPietro
Linda Gorman
Peter Greene
Bettea Hoofnagle
Nancy K. Roderer
Deborah Slingluff
Tom Johnson (MS1)
Richa Gupta (MS2)
John Nichols (MS 3)
Kim Thornton, Staff

WELCH LIBRARY ADVISORY COMMITTEE – FINANCIAL GROUP
David Nichols, Chair
Will Bryant
Paul Gleichauf
Helene Grady
Bettea Hoofnagle
Katharine Nardone
Nancy Roderer
Jane Schlegel
Winston Tabb
Steven Thompson
Kim Thornton, Staff

JOINT COMMITTEE FOR HEALTH SAFETY AND ENVIRONMENT
Edward Bernacki, Chair
Stanley Wadsworth, Secretary
David Baron
Shelly Baronowski
Clyde Bernett
James Bukowski
Perry Cooper
Stephen Dahl
Patricia Day
George Economos
Daniel Ennis
Jack Grinnalds
Gary Hayward
John Highsmith
Frances Humphrey-Carothers
Paula Kent
Daniel Kuespert
Jonathan Links
Robert Marshall
Carole Martens
Jeff Natterman
Polly Ristaino
Lois Scarborough
John Schaefer
Brian Schott
Anita Stone
Peter Tollini
Natalie Wallace
Scott Zeger
Becky Vaeth, Recording Secretary

INSTITUTIONAL BIOSAFETY COMMITTEE
Gary S. Hayward, Chair
Robert J. Adams
Barbara Biedrzycki
Stephen C. Dahl
Elizabeth A. Laffan
Claudia MacAuley
THE JOHNS HOPKINS HEALTH SYSTEM CORPORATION

Board of Trustees

C. Michael Armstrong
Chairman
A.B. Krongard
Vice Chairman
Janie Elizabeth Bailey
Lenox D. Baker, Jr.

George L. Bunting, Jr.
Edward L. Cahill
Jonathan S. Fish
Francis X. Knott, ex officio
Edward D. Miller, ex officio
Ronald R. Peterson, ex officio
Theo C. Rodgers
Melanie R. Sabelhaus

Officers

Edward D. Miller
Vice Chairman
Ronald R. Peterson
President
Brian Gragnolati
Senior Vice President
John M. Colmers
Vice President, Health Care Transformation and Strategic Planning
Richard O. Davis
Vice President, Innovation and Patient Safety
Kenneth Grant
Vice President, Supply Chain
Dalal J. Haldeman
Vice President, Marketing and Communications
Harry Koffenberger
Vice President and Chief, Corporate Security
Sally W. MacConnell
Vice President, Facilities

Pamela D. Paulk
Vice President, Human Resources
Joanne E. Pollak
Vice President and General Counsel
Stephanie L. Reel
Vice President, Management Systems and Information Systems
Judy A. Reitz
Vice President, Operations Integration
G. Daniel Shealer, Jr.
Vice President, Corporate Compliance and Secretary
Ronald Werthman
Vice President, Finance and Treasurer
Samuel H. Clark, Jr.
Assistant Secretary
Stuart Erdman
Assistant Treasurer

THE JOHNS HOPKINS HOSPITAL

Board of Trustees

C. Michael Armstrong
Chairman
Francis X. Knott
Vice Chairman
Lenox D. Baker, Jr.
Deidre A. Bosley, ex officio
George L. Bunting, Jr.
Ronald J. Daniels

George J. Dover, ex officio
James T. Dresher, Jr.
Ira T. Fine
Christopher W. Kersey
Traci S. Lerner
Edward D. Miller, ex officio
Milton H. Miller, Jr.
Ronald R. Peterson, ex officio
Charles H. Salisbury, Jr.

Officers

Edward D. Miller
Vice Chairman
Ronald R. Peterson
President
Judy A. Reitz
Executive Vice President/COO
Richard O. Davis
Vice President, Innovation and Patient Safety
Kenneth Grant
Vice President, General Services
Dalal Haldeman
Vice President, Marketing and Communications

Karen B. Haller
Vice President, Nursing & Patient Care Services
Harry Koffenberger
Vice President and Chief, Corporate Security
Sally W. MacConnell
Vice President, Facilities
Pamela D. Paulk
Vice President, Human Resources
Joanne E. Pollak
Vice President and General Counsel

Joseph Margolick
Douglas Norris
Weiying Pan
Alan F. Scott

THE JOHNS HOPKINS HEALTH SYSTEM CORPORATION

Board of Trustees

C. Michael Armstrong
Chairman
A.B. Krongard
Vice Chairman
Janie Elizabeth Bailey
Lenox D. Baker, Jr.

George L. Bunting, Jr.
Edward L. Cahill
Jonathan S. Fish
Francis X. Knott, ex officio
Edward D. Miller, ex officio
Ronald R. Peterson, ex officio
Theo C. Rodgers
Melanie R. Sabelhaus

Officers

Edward D. Miller
Vice Chairman
Ronald R. Peterson
President
Brian Gragnolati
Senior Vice President
John M. Colmers
Vice President, Health Care Transformation and Strategic Planning
Richard O. Davis
Vice President, Innovation and Patient Safety
Kenneth Grant
Vice President, Supply Chain
Dalal J. Haldeman
Vice President, Marketing and Communications
Harry Koffenberger
Vice President and Chief, Corporate Security
Sally W. MacConnell
Vice President, Facilities

Pamela D. Paulk
Vice President, Human Resources
Joanne E. Pollak
Vice President and General Counsel
Stephanie L. Reel
Vice President, Management Systems and Information Systems
Judy A. Reitz
Vice President, Operations Integration
G. Daniel Shealer, Jr.
Vice President, Corporate Compliance and Secretary
Ronald Werthman
Vice President, Finance and Treasurer
Samuel H. Clark, Jr.
Assistant Secretary
Stuart Erdman
Assistant Treasurer

THE JOHNS HOPKINS HOSPITAL

Board of Trustees

C. Michael Armstrong
Chairman
Francis X. Knott
Vice Chairman
Lenox D. Baker, Jr.
Deidre A. Bosley, ex officio
George L. Bunting, Jr.
Ronald J. Daniels

George J. Dover, ex officio
James T. Dresher, Jr.
Ira T. Fine
Christopher W. Kersey
Traci S. Lerner
Edward D. Miller, ex officio
Milton H. Miller, Jr.
Ronald R. Peterson, ex officio
Charles H. Salisbury, Jr.

Officers

Edward D. Miller
Vice Chairman
Ronald R. Peterson
President
Judy A. Reitz
Executive Vice President/COO
Richard O. Davis
Vice President, Innovation and Patient Safety
Kenneth Grant
Vice President, General Services
Dalal Haldeman
Vice President, Marketing and Communications

Karen B. Haller
Vice President, Nursing & Patient Care Services
Harry Koffenberger
Vice President and Chief, Corporate Security
Sally W. MacConnell
Vice President, Facilities
Pamela D. Paulk
Vice President, Human Resources
Joanne E. Pollak
Vice President and General Counsel

Joseph Margolick
Douglas Norris
Weiying Pan
Alan F. Scott
Administrators, Clinical Departments

Kelly S. Cavallio  
*Ambulatory Services*

Christina Lundquist  
*Anesthesiology and Critical Care Medicine*

Caroline LeGarde  
*Dermatology*

James Scheulen  
*Emergency Medicine*

Diann Snyder  
*Gynecology and Obstetrics*

Charles Barbara  
*Medicine*

Jane Hill  
*Neurosciences*

Terry Langbaum, Sharon Krumm  
*Oncology Center*

Richard Thomas  
*Ophthalmology*

Jo Jennings  
*Orthopedic Surgery*

Kathryn Ries  
*Otolaryngology-Head and Neck Surgery*

Allen Valentine  
*Pathology*

Edward B. Chambers  
*Pediatrics*

John Bezhad  
*Physical and Rehabilitation Medicine*

Abu Mullick  
*Plastic Surgery*

Elizabeth Ambinder  
*Psychiatry and Behavioral Sciences*

David Miller  
*Radiation Oncology*

Marty Bledsoe  
*Radiology and Radiological Science*

John Hundt  
*Surgery*

Maryrose Kober Gans  
*Urology*

Medical Board of the Johns Hopkins Hospital

Harold E. Fox, *Chairman*
Theodore DeWeese, *Vice-Chairman*
Pamela B. Shafer, *Secretary*
William A. Baumgartner
Henry Brem
Duke Cameron
Paul M. Colombani
J. Raymond DePaulo, Jr.
George J. Dover
Julie A. Freischlag
Karen B. Haller
J. Brooks Jackson
Sewon Kang
Richard Katz
Gabor Kelen
Andrew Lee
Jonathan S. Lewin
Paul N. Manson
Justin McArthur

Peter J. McDonnell
Edward D. Miller
Redonda Miller
William Nelson
Nathan Neufeld
John Niparko
Jeffrey B. Palmer
Alan W. Partin
Ronald R. Peterson
Judy A. Reitz
John D. Rybock
Prem Subramanian
John A. Ulatowski
Myron L. Weisfeldt

Under the rules and regulations of the Johns Hopkins Hospital it is “the duty of the Medical Board to advise the Trustees in all matters relating to the welfare of the Hospital.”

THE GOOD SAMARITAN HOSPITAL OF MARYLAND, INC.

Board of Directors

Anthony Read, *Chairman*
Allan Noonan, *Vice-Chair*
Wilmot C. Ball, Jr.
Charles L. Bauermann
Kay G. Bee
Daniel Cahill
Jeffrey Donnelly

Howard Freeland
Sheldon M. Glusman
Davis Hahn
Christopher T. Helmuth
Reverend Lawrence M. Johnson
Moira P. Larsen
Most Reverend Denis J. Madden
Jeffrey A. Matton
Jayne H. McGeehan
Allan Noonan
T. Edgie Russell
Kenneth A. Samet
Carl Schindelar
Reverend P.M. Smith
John Smyth
Jeremy P. Weiner
Kathleen Whiting

Officers of the Corporation

Anthony Read
Chairman of the Board
Jeffrey A. Matton
President

Jayne H. McGeehan
Vice Chairman

Administrative Staff

Jeffrey A. Matton
President
Shirley Roth
Vice President for Patient Care Services
Martin Binstock
Vice President, Medical Affairs
Thomas J. Senker
Vice President, Operations

Deana Stout
Vice President, Finance
Jennifer Wilkerson
Vice President, Planning and Marketing
Laura O’Donnell
Vice President, Human Resources

KENNEDY KRIEGER INSTITUTE, INC.

Board of Directors

Atwood Collins, III
Chairman
Howard B. Miller
Vice Chairman
Sanford M. Baklor
Robert A. Baruch
Michael J. Batza, Jr.
Harolyn M.E. Belcher, ex officio
Paul Z. Bodnar
Robert L. Bogomolny
Thomas V. Brooks
Richard W. Cass
Ulysses Currie
Judith G. Fader
Joseph E. Foss
Gary W. Goldstein
Henry G. Hagan
Dorothy Hamill
Robin B. Harris
Richard J. Himelfarb
Harriet C. Legum
Janet B. Livingston
Annette Merz
Fred F. Mirmirian
Patricia B. Modell
Jay B. Newman
John J. Oliver, Jr.
Blake M. Paterson
Frank S. Pidcock, ex officio
William R. Roberts
Anthony T. Rodgers
Victoria M. Rosellini
Henry A. Rosenberg, Jr.
Edyth H. Schoenrich
Victoria Z. Sulerzyski
Sally P. Thanhouser
William J. Toomey, III
Robert L. Wallace
The Faculty

July 1, 2010 to June 30, 2011

Ronald J. Daniels
President of the University [2009]

PROFESSORS

Darrell R. Abernethy, M.D., Ph.D.
Professor of Medicine [1999], Professor of Pharmacology and Molecular Sciences [2002]

Stephen C. Achuff, M.D.
Professor of Medicine [1990; 1975]

Hoover Adger, M.D., M.P.H.
Professor of Pediatrics [2005; 1998]

N. Franklin Adkinson, Jr., M.D.
Professor of Medicine [1987; 1973]

William Scott Agnew, Ph.D.
Professor of Physiology [1992], Director of the Department of Physiology [2004; 1992]

Marilyn S. Albert, Ph.D.
Professor of Neurology [2003], Professor of Neuroscience [2007], Professor of Psychiatry [2003]

Syed Zulfiqar Ali, M.B.B.S.
Professor of Pathology [2010; 1997], Associate Professor of Radiology [2003; 2002]

Marilee Christine Allen, M.D.
Professor of Pediatrics [2002; 1981]

Blanche Pearl Alter, M.D.
Visiting Professor of Pediatrics [1999]

Richard Frederick Ambinder, M.D., Ph.D.
James B. Murphy Professor of Oncology [1998; 1981], Professor of Medicine [2005], Professor of Pathology [1998; 1991], Professor of Pharmacology and Molecular Sciences [1998; 1991]

L. Mario Amzel, Ph.D.
Professor of Biophysics and Biophysical Chemistry [1984; 1970], Director of the Department of Biophysics and Biophysical Chemistry [2006]

Dana Kimball Andersen, M.D.
Professor of Surgery [2005]

Jean R. Anderson, M.D.
Professor of Gynecology and Obstetrics [2004; 2000], Joint Appointment in Medicine [1994]

Reubin Andres, M.D.
Professor of Medicine [1976; 1950]

Deborah Jean Andrew, Ph.D.
Professor of Cell Biology [2004; 1993]

Grant J. Anhalt, M.D.
Professor of Dermatology [1993; 1982], Professor of Pathology [1994]

Lawrence J. Appel, M.D., M.P.H.
Professor of Medicine [2002; 1989]

Robert J. Arceci, M.D., Ph.D.
King Fahd Professor of Pediatric Oncology [2000], Professor of Pediatrics [2000]

J. Fernando Arevalo, M.D.
Adjunct Professor of Ophthalmology [2011] (from 02/01/2011)

Pedram Argani, M.D.
Professor of Pathology [2008; 1997], Professor of Oncology [2008; 2004]

Frederic B. Askin, M.D.
Professor of Pathology [1991]

Ergin Atalar, Ph.D.
Adjunct Professor of Radiology [2006; 1993]

Nancy A. Ator, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [1997; 1982]

J. Thomas August, M.D.
University Distinguished Service Professor of Pharmacology [1975], Professor of Oncology [1995], Director of the Department of Pharmacology and Molecular Sciences [1999; 1975]

Kamal F. Badr, M.D.
Adjunct Professor of Medicine [2006]

Mark Douglas Baker, M.D.
Visiting Professor of Pediatrics [2010] (from 08/01/2010)

Charles M. Balch, M.D.
Professor of Surgery [2000], Professor of Dermatology [2006], Professor of Oncology [2000]

William M. Baldwin, III, M.D., Ph.D.
Adjunct Professor of Pathology [2008; 1993]

Jay M. Baraban, M.D., Ph.D.
Professor of Neuroscience [2000; 1986], Professor of Psychiatry [2000; 1986]

Adrian Barbul, M.D.

Lee Randol Barker, M.D.
Professor of Medicine [1995; 1973]

Peter B. Barker, D.Phill.
Professor of Radiology [2002; 1997], Professor of Oncology [2005]

Kathleen Carole Barnes, Ph.D.
Professor of Medicine [2009; 1995]

John G. Bartlett, M.D.
Professor of Medicine [1980]

Eric B. Bass, M.D., M.P.H.
Professor of Medicine [2005; 1989]

Joan M. Bathon, M.D.
Adjunct Professor of Medicine [2010; 1986]

William A. Baumgartner, M.D.
Vincent L. Gott, M.D. Professor of Cardiac Surgery [1991; 1982], Vice Dean for Clinical Affairs [1999], Theodore M. Bayless, M.D.
Sherlock Hibbs Professor of Inflammatory Bowel Disease in the Department of Medicine [1981; 1964]

Stephen B. Baylin, M.D.
Virginia and Daniel K. Ludwig Professor of Cancer Research in the Department of Oncology [1986; 1974], Professor of Medicine [1990; 1974]
Diane M. Becker, Sc.D., M.P.H.
Professor of Medicine [1999; 1984]

Lewis C. Becker, M.D.
Robert L. Levy Professor of Cardiology in the Department of Medicine [1984; 1974], Joint Appointment in Radiology [1984]

Richard Gordon Bennett, M.D.
Professor of Medicine [1999; 1984]

Ronald D. Berger, M.D., Ph.D.
Professor of Medicine [2005; 1993], Professor of Biomedical Engineering [2005; 2002]

Gregory Kent Bergey, M.D.
Professor of Neurology [1999]

Dan E. Berkowitz, M.B.B.Ch.
Professor of Anesthesiology and Critical Care Medicine [2009; 1994], Professor of Biomedical Engineering [2009; 2000]

Rafael Beyar, D.Sc., M.D.
Visiting Professor of Medicine [2005]

Zaver M. Bhujwalla, Ph.D.
Professor of Radiology [2002; 1991], Professor of Oncology [2002; 2000]

George E. Bigelow, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [1990; 1971]

William Ramses Bishai, M.D., Ph.D.
Professor of Medicine [2004; 1994], Joint Appointment in Pathology [1998]

Marc R. Blackman, M.D.
Professor of Medicine [1997; 1977]

Karim J. Blakemore, M.D.
Professor of Gynecology and Obstetrics in Genetic Medicine [2006; 1987], Professor of Oncology [2006; 1996]

David A. Bluemke, M.D., Ph.D.
Professor of Radiology [2006; 1993], Professor of Medicine [2006; 2004]

Roger S. Blumenthal, M.D.
Professor of Medicine [2007; 1992]

Dana Boatman, Ph.D.
Professor of Neurology [2006; 1990], Professor of Otolaryngology-Head and Neck Surgery [2006; 1996]

Bruce S. Bochner, M.D.
Professor of Medicine [1999; 1988]

Jef D. Boeke, Ph.D., Sc.D.
Professor of Molecular Biology and Genetics [1995; 1985], Professor of Oncology [2000]

John K. Boitnott, M.D.
Professor of Pathology [1982; 1963]

Roberto Bolli, M.D.
Adjunct Professor of Medicine [2009]

Robert C. Bollinger, Jr., M.D., M.P.H.
Professor of Medicine [2004]

Michael J. Borowitz, M.D., Ph.D.
Professor of Pathology [1993], Professor of Oncology [1993]

Paul A. Bottomley, Ph.D.
Russell H. Morgan Professor of Radiology [1994], Professor of Biomedical Engineering [1994], Professor of Medicine [1994]

Joseph V. Brady, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [1967], Professor of Neuroscience [1983]

Frederick L. Brancati, M.D.
Professor of Medicine [2009; 1997], Joint Appointment in Oncology [2010]

Jason Brandt, Ph.D.
Professor of Psychiatry [1995; 1985], Professor of Neurology [2006]

Henry Brem, M.D.
Harvey Cushing Professor of Neurosurgery [1993; 1984], Professor of Biomedical Engineering [2010], Professor of Oncology [1993; 1985], Joint Appointment in Ophthalmology [1984], Director of the Department of Neurological Surgery [2000]

Neil Michael Bressler, M.D.
James P. Gills Professor of Ophthalmology [1997; 1988]

Susan Beth Bressler, M.D.
Julia G. Levy, Ph.D., Professor of Ophthalmology [2000; 1988]

Jeffrey A. Brinker, M.D.
Professor of Medicine [1994; 1978], Joint Appointment in Radiology [1980]

Robert A. Brodsky, M.D.
Edyth Harris Lucas and Clara Lucas Lynn Professor of Medicine [2009; 1997], Professor of Oncology [2009; 1997]

Robert K. Brooner, Ph.D.
Professor of Medical Psychology in the Department of Psychiatry [1999; 1984], Assistant Professor of Gynecology and Obstetrics [1990]

Roy Glenn Brower, M.D.
Professor of Medicine [2002; 1984]

Robert H. Brown, M.D., M.P.H.
Professor of Anesthesiology and Critical Care Medicine [2003; 1989], Joint Appointment in Medicine [2000], Joint Appointment in Radiology [1992]

Maggie Bruck, Ph.D.
Professor of Psychiatry [2001; 1999]

Thomas M. Brushton, M.D.
Thomas M. Brushton Professor of Hand Surgery in the Department of Orthopedic Surgery [1997; 1983], Professor of Neurology [1999; 1990], Professor of Plastic and Reconstructive Surgery [1998; 1994]

Jeff W.M. Bulte, Ph.D.
Professor of Radiology [2006; 2001], Professor of Biomedical Engineering [2007]

James F. Burdick, M.D.
Professor of Surgery [1991; 1978]

Peter C. Burger, M.D.
Professor of Pathology [1993], Professor of Neurological Surgery [1993], Professor of Oncology [1993]
Andrew R. Burgess, M.D.
Professor of Orthopaedic Surgery [1997; 1983]

Arthur Louis Burnett, II, M.D.
Patrick C. Walsh Professor of Urology [2003; 1994]

John R. Burton, M.D.
Professor of Medicine [1992; 1970]

Arlene Manns Butz, Sc.D.
Professor of Pediatrics [2007; 1996]

Peter Arthur Calabresi, M.D.
Professor of Neurology [2008; 2003]

Joseph A. Califano, III, M.D.
Professor of Medicine [1992; 1970]

Arlene Manns Butz, Sc.D.
Professor of Pediatrics [2007; 1996]

Peter Anthony Campochiaro, M.D.
George S. and Dolores D. Eccles Professor of Ophthalmology [1991], Professor of Neuroscience [1991]

Xu Cao, Ph.D.
Professor of Orthopaedic Surgery [2009]

Michael A. Choti, M.D.
Michael A. Choti, M.D. AEGON Professor of Prostate Cancer Research in the Department of Oncology [2008; 1995], Professor of Urology [2008; 1995]

John Patrick Carey, M.D.
Professor of Otolaryngology-Head and Neck Surgery [2010; 2000]

Karen C. Carroll, M.D.
Professor of Pathology [2006; 2002], Joint Appointment in Medicine [2002]

Benjamin S. Carson, M.D.
Benjamin S. Carson, Sr. Professor of Cardiac Surgery [2001; 1987], Professor of Pediatrics [2001; 1994]

John L. Cameron, M.D.
University Distinguished Service Professor Alfred Blalock Professor of Surgery [1978; 1971], Professor of Oncology [1995], Director of the Department of Surgery [2003; 1984]

James N. Campbell, M.D.
Professor of Neurological Surgery [1988; 1979]

Peter Anthony Campochiaro, M.D.
George S. and Dolores D. Eccles Professor of Ophthalmology [1991], Professor of Neuroscience [1991]

Joselyn W. Cas labels:富力江, Ph.D.
Professor of Plastic and Reconstructive Surgery [1999; 1991]

Darryl Carter, M.D.
Adjunct Professor of Pathology [2005]

H. Ballentine Carter, M.D.
Professor of Urology [1998; 1987], Professor of Oncology [1998; 1995]

James F. Casella, M.D.
Professor of Pediatric Hematology in the Department of Pediatrics [1998; 1980], Professor of Oncology [1998; 1997]

Robert A. Casero, Jr., Ph.D.
Professor of Oncology [1999; 1986]

Michael F. Cataldo, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [1990; 1975], Professor of Pediatrics [2001; 1975]

Michael Jerry Caterina, M.D., Ph.D.
Professor of Biological Chemistry [2010; 1999], Professor of Neuroscience [2010; 1999]

Richard E. Chaisson, M.D.
Professor of Medicine [1998; 1988]

Aravinda Chakravarti, Ph.D.
Professor of Medicine in Genetic Medicine [2000], Joint Appointment in Molecular Biology and Genetics [2000], Professor of Pediatrics [2000], Director of the Institute of Genetic Medicine [2007; 2000]

Daniel W. Chan, Ph.D.
Professor of Pathology [1999; 1977], Professor of Oncology [1999; 1991], Professor of Radiology [1999; 1997], Professor of Urology [1999; 1997]

Michael Jerry Caterina, M.D., Ph.D.
Professor of Biological Chemistry [2010; 1999], Professor of Neuroscience [2010; 1999]

Richard E. Chaisson, M.D.
Professor of Medicine [1998; 1988]

Aravinda Chakravarti, Ph.D.
Professor of Medicine in Genetic Medicine [2000], Joint Appointment in Molecular Biology and Genetics [2000], Professor of Pediatrics [2000], Director of the Institute of Genetic Medicine [2007; 2000]

Daniel W. Chan, Ph.D.
Professor of Pathology [1999; 1977], Professor of Oncology [1999; 1991], Professor of Radiology [1999; 1997], Professor of Urology [1999; 1997]

Nisha Chandra-Strobos, M.B.B.S.
Professor of Medicine [1996; 1980]

Alex Yang-Chi Chang, M.D.
Professor of Oncology [1999]

Richard A. Chase, M.D.
Adjunct Professor of Psychiatry [1996; 1963]

Subroto B. Chatterjee, Ph.D.
Professor of Pediatrics [1996; 1975]

Vinay Chaudhry, M.B.B.S.
Professor of Neurology [2004; 1989]

Arthur B. Chausmer, M.D., Ph.D.
Adjunct Professor of Medicine [2007]

Lieping Chen, M.D., Ph.D.
Adjunct Professor of Oncology [2011; 2004], Adjunct Professor of Dermatology [2011; 2004]

Tina Lee Cheng, M.D., M.P.H.
Professor of Pediatrics [2008; 2002]

Bart Chernow, M.D.
Adjunct Professor of Medicine [1999; 1990]

Michael A. Choti, M.D.
Michael A. Choti, M.D. AEGON Professor of Prostate Cancer Research in the Department of Oncology [2008; 1995], Professor of Urology [2008; 1995]

John Patrick Carey, M.D.
Professor of Otolaryngology-Head and Neck Surgery [2010; 2000]

Karen C. Carroll, M.D.
Professor of Pathology [2006; 2002], Joint Appointment in Medicine [2002]

Benjamin S. Carson, M.D.
Benjamin S. Carson, Sr. Professor of Cardiac Surgery [2001; 1987], Professor of Pediatrics [2001; 1994]

John L. Cameron, M.D.
University Distinguished Service Professor Alfred Blalock Professor of Surgery [1978; 1971], Professor of Oncology [1995], Director of the Department of Surgery [2003; 1984]

James N. Campbell, M.D.
Professor of Neurological Surgery [1988; 1979]

Peter Anthony Campochiaro, M.D.
George S. and Dolores D. Eccles Professor of Ophthalmology [1991], Professor of Neuroscience [1991]

Joselyn W. Cas labels:富力江, Ph.D.
Professor of Plastic and Reconstructive Surgery [1999; 1991]

Darryl Carter, M.D.
Adjunct Professor of Pathology [2005]

H. Ballentine Carter, M.D.
Professor of Urology [1998; 1987], Professor of Oncology [1998; 1995]

James F. Casella, M.D.
Professor of Pediatric Hematology in the Department of Pediatrics [1998; 1980], Professor of Oncology [1998; 1997]
Janice E. Clements, Ph.D.  
Mary Wallace Stanton Professor for Faculty Affairs [2004]; University Distinguished Service Professor of Molecular and Comparative Pathobiology [1990; 1988], Professor of Neurology [1991; 1978], Professor of Pathology [1998], Joint Appointment in Molecular Biology and Genetics [1984], Vice Dean for Faculty [2000], Director of the Department of Molecular and Comparative Pathobiology [2006; 2002]  
Donald S. Coffey, Ph.D.  
Catherine Iola and J. Smith Michael Distinguished Professor of Urology [1975], Professor of Oncology [1974; 1973], Professor of Pathology [1998], Professor of Pharmacology and Molecular Sciences [1974; 1965]  
Bernard A. Cohen, M.D.  
Professor of Dermatology [2005; 1993], Professor of Pediatrics [2005; 1991]  
Harris L. Cohen, M.D.  
Visiting Professor of Radiology [2000]  
Philip Arthur Cole, M.D., Ph.D.  
E.K. Marshall and Thomas H. Maren Professor of Pharmacology [1999], Professor of Oncology [2000], Director of the Department of Pharmacology and Molecular Sciences [1999]  
C. Norman Coleman, M.D.  
Visiting Professor of Radiation Oncology and Molecular Radiation Sciences [2000; 2003], Visiting Professor of Oncology [2000]  
Nancy Abbey Collop, M.D.  
Professor of Medicine [2009; 2002] (to 08/31/2010), Professor of Neurology [2009; 2008] (to 08/31/2010)  
Paul M. Colombani, M.D.  
Robert Garrett Professor of Pediatric Surgery [1994; 1983], Professor of Oncology [1994; 1986], Professor of Pediatrics [1995; 1984]  
Carolyn Corlies Compton, M.D., Ph.D.  
Adjunct Professor of Pathology [2005]  
Edward Jackson Cone, Ph.D.  
Adjunct Professor of Psychiatry [2005; 1998]  
Charles Edward Connor, Jr., Ph.D.  
Professor of Neuroscience [2009; 1996]  
John Victor Conte, Jr., M.D.  
Professor of Cardiac Surgery [2008; 1998]  
David S. Cooper, M.D.  
Professor of Medicine [1996; 1985]  
Lisa A. Cooper, M.D., M.P.H.  
Professor of Medicine [2007; 1994]  
Jeffry L. Corden, Ph.D.  
Professor of Molecular Biology and Genetics [1998; 1982]  
Brendan P. Cormack, Ph.D.  
Professor of Molecular Biology and Genetics [2011; 1998] (from 01/01/2011), Associate Professor of Molecular Biology and Genetics [2004; 1998] (to 12/31/2010)  
David R. Cornblath, M.D.  
Professor of Neurology [1995; 1982], Professor of Neurological Surgery [2007]  
Andrew John Cosgarea, M.D.  
Professor of Orthopaedic Surgery [2008; 1998]  
Paul T. Costa, Jr., Ph.D.  
Professor of Behavioral Biology in the Department of Psychiatry [1999; 1979]  
Robert J. Cotter, Ph.D.  
Professor of Pharmacology and Molecular Sciences [1992; 1978], Professor of Biophysics and Biophysical Chemistry [1994]  
Nancy L. Craig, Ph.D.  
Professor of Molecular Biology and Genetics [1993; 1991], Investigator of the Howard Hughes Medical Institute  
Susan W. Craig, Ph.D.  
Professor of Biological Chemistry [1989; 1975], Professor of Pathology [1994]  
Charles W. Cummings, M.D.  
Distinguished Service Professor of Otolaryngology-Head and Neck Surgery [1990], Professor of Oncology [1993], Director of the Department of Otolaryngology-Head and Neck Surgery [2003; 1990]  
Garry R. Cutting, M.D.  
Aetna U.S. Healthcare Professor of Medical Genetics in the Department of Pediatrics [1998; 1989], Professor of Medicine [1998; 1990]  
Chi Van Dang, M.D., Ph.D.  
Johns Hopkins Family Professor for Oncology Research in the Department of Medicine [1997; 1987], Professor of Cell Biology [2000], Professor of Oncology [1997], Professor of Pathology [1997; 1995], Joint Appointment in Molecular Biology and Genetics [1995], Vice Dean for Research [2000]  
Robert F. Dannals, Ph.D.  
Professor of Radiology [1996; 1982]  
Nancy E. Davidson, M.D.  
Adjunct Professor of Oncology [2009; 1986]  
Ted M. Dawson, M.D., Ph.D.  
Leonard and Madlyn Abramson Professor of Neurodegenerative Diseases in the Department of Neurology [2000; 1992], Professor of Neuroscience [2000; 1992]  
Valina L. Dawson, Ph.D.  
Professor of Neurology [2001; 1994], Professor of Neuroscience [2001; 1994], Professor of Physiology [2001; 1994]  
Catherine DeAngelis, M.D., M.P.H.  
Professor of Pediatrics [1986; 1978] (on leave of absence)  
A. Lee Dellon, M.D.  
Professor of Plastic and Reconstructive Surgery [1994; 1978], Professor of Neurological Surgery [1994; 1984]  
Angelo Michael DeMarzo, M.D., Ph.D.  
Professor of Pathology [2008; 1998], Professor of Oncology [2008; 2000], Professor of Urology [2008; 1999]  
Martha Bridge Denckla, M.D.  
Professor of Neurology [1986; 1982], Professor of Pediatrics [1986], Joint Appointment in Psychiatry [1994]
Samuel Ray Denmeade, M.D.
Professor of Oncology [2010; 1998], Professor of Pharmacology and Molecular Sciences [2010; 2005], Professor of Urology [2010; 2008]

J. Raymond Depaulo, Jr., M.D.
Henry Phipps Professor of Psychiatry [1993; 1977], Director of the Department of Psychiatry and Behavioral Sciences [2002]

Stephen Vincent Desiderio, M.D., Ph.D.
Professor of Molecular Biology and Genetics [1995; 1984], Director of the Institute for Basic Biomedical Sciences [2003]

Barbara Detrick, Ph.D.
Professor of Pathology [2010; 1999]

Peter N. Devreotes, Ph.D.
Isaac Morris Hay and Lucille Elizabeth Hay Professor of Embryology in the Department of Cell Biology [2000], Professor of Biological Chemistry [1987; 1979], Director of the Department of Cell Biology [2000]

Theodore L. DeWeese, M.D.
Professor of Radiation Oncology and Molecular Radiation Sciences [2003], Professor of Oncology [2003; 1995], Professor of Urology [2003; 1995], Director of the Department of Radiation Oncology and Molecular Radiation Sciences [2003]

Harry C. Dietz, M.D.
Victor A. McKusick Professor of Medicine and Genetics in the Department of Pediatrics [1999; 1992], Associate Professor of Medicine [1994; 1992], Assistant Professor of Neurological Surgery [1994], Joint Appointment in Molecular Biology and Genetics [1994], Investigator of the Howard Hughes Medical Institute

Adrian S. Dobs, M.D.
Professor of Medicine [2000; 1984], Professor of Oncology [2002]

Ross C. Donehower, M.D.
Virginia and Daniel K. Ludwig Professor of Clinical Investigation of Cancer in the Department of Oncology [1997; 1980], Professor of Medicine [1997; 1980]

Mark Donowitz, M.D.
George LeBoff Professor for Research in Digestive Diseases in the Department of Medicine [1987], Professor of Physiology [2004; 1988]

Todd Dorman, M.D.
Professor of Anesthesiology and Critical Care Medicine [2007; 1991], Joint Appointment in Medicine [1998], Associate Professor of Surgery [2000; 1994], Associate Dean for Continuing Medical Education [2004]

George J. Dover, M.D.
Given Foundation Professor of Pediatrics [1988; 1977], Joint Appointment in Medicine [1980; 1977], Professor of Oncology [1991], Director of the Department of Pediatrics [1996]

Daniel B. Drachman, M.D.
W.W. Smith Charitable Trust Professor of Immunology in the Department of Neurology [1974; 1969], Professor of Neuroscience [1983]

Anne L.K. Duggan, Sc.D.
Professor of Pediatrics [2005; 1986]
David S. Feigin, M.D.
Visiting Professor of Radiology [2005]

Andrew Paul Feinberg, M.D., M.P.H.
King Fahd Professor of Molecular Medicine in the Department of Medicine [1994], Joint Appointment in Molecular Biology and Genetics [1994], Professor of Oncology [1994], Joint Appointment in Psychiatry [2009]

Luigi Ferrucci, M.D., Ph.D.
Adjunct Professor of Medicine [2007]

Daniel Finkelstein, M.D.
Professor of Ophthalmology [1993; 1974]

Thomas E. Finucane, M.D.
Professor of Medicine [2001; 1987]

Elliot K. Fishman, M.D.
Professor of Radiology [1991; 1980], Professor of Oncology [1993], Professor of Surgery [2010]

Mary E. Fissell, Ph.D.
Professor of History of Medicine [2005; 1992]

Barbara Fivush, M.D.
Professor of Pediatrics [2001]

Nicholas A. Flavahan, M.D.
Edward D. Miller, M.D. Professor of Anesthesiology Research [2006]

Lee Alan Fleisher, M.D.
Adjunct Professor of Health Sciences Informatics [2004; 1996]

Charles Williams Flexner, M.D.
Professor of Medicine [2005; 1989], Professor of Pharmacology and Molecular Sciences [2005; 1989]

Leon Flicker, M.B.B.S., Ph.D.
Visiting Professor of Medicine [2010]

John A. Flynn, M.D.
D. William Schlott, M.D. Professor of Clinical Medicine [2008; 1990], Joint Appointment in Psychiatry [1997]

Marshall F. Folstein, M.D.
Professor of Psychiatry [2004]

Susan E. Folstein, M.D.
Professor of Psychiatry [2004]

Arnold A. Forastiere, M.D.
Professor of Oncology [2009; 1988], Professor of Otolaryngology-Head and Neck Surgery [2009; 1988], Professor of Radiation Oncology and Molecular Radiation Sciences [2009; 2003]

Daniel E. Ford, M.D., M.P.H.
David M. Levine Professor of Medicine [2002; 1988], Joint Appointment in Psychiatry [2002], Vice Dean for Clinical Investigation [2005]

Mary Glenn Fowler, M.D., M.P.H.
Professor of Pathology [2005]

Harold Edward Fox, M.D.
Doctor Dorothy Edwards Professor of Gynecology and Obstetrics [1996], Director of the Department of Gynecology and Obstetrics [1996]

Frank John Frassica, M.D.
Robert A. Robinson Professor of Orthopedic Surgery [1999; 1992], Professor of Oncology [1999; 1992], Director of the Department of Orthopedic Surgery [2000]

Julie Ann Freischlag, M.D.
William Stewart Halsted Professor of Surgery [2003], Director of the Department of Surgery [2003]

Eric Charles Frey, Ph.D.
Professor of Radiology [2007; 2002], Professor of Oncology [2009]

Linda P. Fried, M.D., M.P.H.
Professor of Medicine [2010; 1985] (on leave of absence)

Alan D. Friedman, M.D.
Professor of Oncology [2008; 1989], Professor of Pediatrics [2008; 1990]

David Steven Friedman, M.D., Ph.D., M.P.H.
Alfred Sommer Professor of Otolaryngology [2008; 1996]

John J. Frost, M.D., Ph.D.
Adjunct Professor of Radiology [1993; 1982]

Paul Albert Fuchs, Ph.D.
John E. Bordley Professor of Otolaryngology-Head and Neck Surgery [1995], Professor of Biomedical Engineering [1995], Professor of Neuroscience [1999]

Susan Lynn Furth, M.D.
Professor of Pediatrics [2009; 1996]

Edward W. Gabrielson, M.D.
Professor of Pathology [2004; 1988], Professor of Oncology [2004; 1995]

Joel E. Gallant, M.D., M.P.H.
Professor of Medicine [2006; 1989]

Steven Ross Gambert, M.D.
Professor of Medicine [1998]

Estelle B. Gauda, M.D.
Professor of Pediatrics [2008; 1988]

Charlotte A. Gaydos, Dr.P.H., M.P.H.
Professor of Medicine [2008; 1993], Joint Appointment in Emergency Medicine [2007]

John D. Gearhart, Ph.D.
Adjunct Professor of Gynecology and Obstetrics in Genetic Medicine [2008; 1981]

John P. Gearhart, M.D.
Robert D. Jeffs Professor of Pediatric Urology [1995; 1984], Professor of Pediatrics [1995; 1986]

Patricia J. Gearhart, Ph.D.
Adjunct Professor of Medicine [2009; 1995], Adjunct Associate Professor of Pathology [2009; 2008], Adjunct Associate Professor of Surgery [2009; 1997]

Gail Geller, Sc.D.
Professor of Medicine in Genetic Medicine [2008; 2005], Professor of Pediatrics [2008; 1992]

Rebecca Z. Germain, Ph.D.
Professor of Physical Medicine and Rehabilitation [2005], Professor of Functional Anatomy and Evolution [2005]
Gregory G. Germino, M.D.
Adjunct Professor of Medicine [2009; 1993], Joint Appointment in Molecular Biology and Genetics [2001]

Winald R. Gerritsen, M.D., Ph.D.
Adjunct Professor of Oncology [2009]

Gary Gerstenblith, J.D., M.D.
Professor of Medicine [1992; 1985], Joint Appointment in Radiology [1992]

Jean-Francois H. Geschwind, M.D.
Professor of Radiology [2007; 1996], Professor of Oncology [2007; 2001]

Robert Howard Getzenberg, Ph.D.
Donald S. Coffey Professor of Urology [2005], Professor of Oncology [2005], Professor of Pharmacology and Molecular Sciences [2005]

Francis M. Giardiello, M.D.
John G. Rangos Sr. Professor of Adult Medicine in the Department of Medicine [2001; 1986], Professor of Oncology [2001; 1986], Professor of Pathology [2001]

D. Wade Gibson, Ph.D.
Professor of Pharmacology and Molecular Sciences [1989; 1976], Professor of Oncology [2000]

David D. Ginty, Ph.D.
Professor of Neuroscience [2004; 1995], Investigator of the Howard Hughes Medical Institute

Albert Gjedde, D.Sc., M.D.
Adjunct Professor of Radiology [2006]

Michael G. Goggins, M.B.B.Ch.
Professor of Pathology [2008; 1999], Professor of Medicine [2008; 2000], Professor of Oncology [2008; 1998]

Ziya L. Gokaslan, M.D.
Donlin M. Long Professor of Neurosurgery [2002], Professor of Oncology [2002], Professor of Orthopaedic Surgery [2002]

Morton F. Goldberg, M.D.
Joseph E. Green Professor of Macular Degeneration and Other Retinal Diseases in the Department of Ophthalmology [1989], Director of the Department of Ophthalmology [2003; 1989]

Nelson H. Goldberg, M.D.
Adjunct Professor of Plastic and Reconstructive Surgery [2004; 1982]

David Stanley Goldstein, M.D., Ph.D.
Visiting Professor of Medicine [1999]

Gary W. Goldstein, M.D.
Professor of Neurology [1988], Professor of Pediatrics [1988], Director of the Kennedy Krieger Institute [1988]

Jerome C. Goldstein, M.D.
Visiting Professor of Otolaryngology-Head and Neck Surgery [1985]

Steven N. Goodman, M.D., Ph.D.
Professor of Oncology [2008; 1988], Professor of Pediatrics [2008; 1997]

Barry Gordon, M.D., Ph.D.
The Therapeutic Cognitive Neuroscience Professor of Neurology [1996; 1977]

Steven D. Gore, M.D.
Professor of Oncology [2008; 1990]

John D. Gottsch, M.D.
Margaret C. Mosher Professor of Ophthalmology [1999; 1985]

Stephen J. Gould, Ph.D.
Professor of Biological Chemistry [2002; 1994]

Rachel Green, Ph.D.
Professor of Molecular Biology and Genetics [2007; 1998], Investigator of the Howard Hughes Medical Institute

William B. Greenough, III, M.D.
Professor of Medicine [1984; 1967]

Carol Widney Greider, Ph.D.
Daniel Nathans Professor and Director of the Department of Molecular Biology and Genetics [1999; 1997], Professor of Oncology [2000], Director of the Department of Molecular Biology and Genetics [2003]

Constance A. Griffin, M.D.
Professor of Pathology [2008; 1994], Associate Professor of Medicine [1992; 1980], Professor of Oncology [2008; 1981]

John W. Griffin, M.D.
University Distinguished Professor of Neurology [1986; 1975], Professor of Neuroscience [1986; 1983], Professor of Pathology [1998], Director of the Department of Neurology [2006; 1998]

Lawrence S. Griffith, M.D.
Professor of Medicine [1988; 1971], Joint Appointment in Radiology [1980; 1974]

Roland R. Griffiths, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [1987; 1972], Professor of Neuroscience [1987; 1983]

Jacques H. E. Grosset, M.D.
Visiting Professor of Medicine [2002]

Stuart A. Grossman, M.D.
Professor of Oncology [1998; 1981], Professor of Medicine [1998; 1981], Professor of Neurological Surgery [1998; 1985]

William B. Guggino, Ph.D.
Professor of Physiology [1993; 1982], Professor of Pediatrics [1993; 1988], Director of the Department of Physiology [2006]

David L. Guyton, M.D.
Zanvyl Krieger Professor of Pediatric Ophthalmology [1989; 1977]

Henry R. Halperin, M.D.
David J. Carver Professor of Medicine [2001; 1984], Professor of Biomedical Engineering [1990; 2001], Professor of Radiology [2001]

Robert G. Hamilton, Ph.D.
Professor of Medicine [2000; 1989], Professor of Pathology [2001; 1998]

Ada Hamosh, M.D., M.P.H.
Dr. Frank V. Sutland Professor of Pediatric Genetics [2006; 1992]
Ulrike M. Hamper, M.D.
Professor of Radiology [2001; 1982], Professor of Pathology [2005], Professor of Urology [2001; 1997]

James Tahara Handa, M.D.
Robert B. Welch M.D. Professor of Ophthalmology [2008; 2001]

Victoria L. Handa, M.D.
Professor of Gynecology and Obstetrics [2010; 2001]

Justin Scot Hanes, Ph.D.
Professor of Ophthalmology [2009], Professor of Biomedical Engineering [2009; 1998], Professor of Neurological Surgery [2009], Professor of Oncology [1998; 2005]

Daniel F. Hanley, M.D.
Legum Professor of Acute Neurological Medicine in the Department of Neurology [1996; 1983], Professor of Anesthesiology and Critical Care Medicine [1996; 1983], Professor of Neurological Surgery [1996; 1984]

Joshua Michael Hare, M.D.
Adjunct Professor of Medicine [2007; 1995], Adjunct Professor of Biomedical Engineering [2007; 2003]

Merel H. Harmel, M.D.
Visiting Professor of Anesthesiology and Critical Care Medicine [1987; 1985]

John W. Harmon, M.D.
Professor of Surgery [1996]

James C. Harris, Jr., M.D.
Professor of Psychiatry [1997; 1976] (on leave of absence), Professor of Pediatrics [1997; 1976] (on leave of absence)

Gerald Warren Hart, Ph.D.
DeLamar Professor of Biological Chemistry [1997], Director of the Department of Biological Chemistry [1997]

Paul M. Hassoun, M.D.
Professor of Medicine [2007; 2002]

Jennifer A. Haythornthwaite, Ph.D.
Professor of Psychiatry [2005; 1995], Professor of Medicine [2010]

Gary S. Hayward, Ph.D.
Professor of Oncology [1991], Professor of Pathology [1997], Professor of Pharmacology and Molecular Sciences [1988; 1976]

S. Diane Hayward, Ph.D.
Professor of Oncology [1995; 1991], Associate Professor of Neurology [1989; 1988], Professor of Pharmacology and Molecular Sciences [1995; 1976]

David Bruce Hellmann, M.D.
Aliki Perroti Professor of Medicine [1996; 1970], Vice Dean for the Bayview Campus [2005]

Lee J. Helman, M.D.
Professor of Oncology [1999], Professor of Pediatrics [1999]

Craig Walter Hendrix, M.D.
Professor of Medicine [2009; 1994], Professor of Pharmacology and Molecular Sciences [2009; 1999]

Stewart H.C. Hendry, Ph.D.
Professor of Neuroscience [1999; 1978]

Jack E. Henningfield, Ph.D.
Adjunct Professor of Behavioral Biology in the Department of Psychiatry [2002; 1992]

James Gordon Herman, M.D.
Professor of Oncology [2009; 1996]

Allan D. Hess, Ph.D.
Professor of Oncology [1993; 1978], Professor of Pathology [1993]

James Earl Hildreth, M.D., Ph.D.
Adjunct Professor of Pharmacology and Molecular Sciences [2005; 1996]

Gary S. Hill, M.D.
Adjunct Professor of Pathology [2004; 1978]

Argye Elizabeth Hillis, M.D.
Professor of Neurology [2006; 1999], Professor of Physical Medicine and Rehabilitation [2006; 2004]

Charles W. Hogue, Jr., M.D.
Professor of Anesthesiology and Critical Care Medicine [2010; 2005]

Ahmet Hoke, M.D., Ph.D.
Professor of Neurology [2009; 1999], Professor of Neuroscience [2009; 2002]

H. Logan Holtgrewe, M.D.
Professor of Urology [2001; 1988]

Karen Margaret Horton, M.D.
Professor of Radiology [2008; 1997]

Ralph Harvey Hruban, M.D.
Professor of Pathology [1999; 1990], Professor of Oncology [1999; 1995]

Steven Shih-ting Hsiao, Ph.D.
Professor of Neuroscience [2008; 1992], Professor of Biomedical Engineering [2008; 1999]

Shau-Ku Huang, Ph.D.
Professor of Medicine [1999; 1990]

Ann L. Cox Hubbard, Ph.D.
Professor of Cell Biology [1986; 1980], Joint Appointment in Medicine [1987], Professor of Physiology [1993]

Richard L. Huganir, Ph.D.
Professor of Neuroscience [1993; 1988], Joint Appointment in Biological Chemistry [1989], Director of the Department of Neuroscience [2006], Investigator of the Howard Hughes Medical Institute

Thierry A.G.M. Huisman, M.D.
Professor of Radiology [2007]

David S. Hungerford, M.D.
David Hungerford Professor of Orthopaedic Surgery [1986; 1972]

Steven R. Hursh, Ph.D.
Adjunct Professor of Behavioral Biology in the Department of Psychiatry [1997]

Nicholas Taylor Iliff, M.D.
Charles E. Iliff, III M.D. Professor of Ophthalmology [2003; 1978], Professor of Plastic and Reconstructive Surgery [2003; 1984]
John T. Isaacs, Ph.D.
Professor of Oncology [1993; 1980], Professor of Urology [1993; 1980]
William B. Isaacs, Ph.D.
William Thomas Gerrard, Mario Anthony Duhon and Jennifer and John Chalsty Professor of Urology [1998; 1988], Professor of Oncology [1998; 1992]
Ethylin Wang Jabs, M.D.
Adjunct Professor of Pediatrics [2007; 1984],
Adjunct Professor of Medicine [2007; 1990],
Adjunct Professor of Plastic and Reconstructive Surgery [2007; 1984]
David L. Jackson, M.D., Ph.D.
Adjunct Professor of Medicine [1994]
Jay Brooks Jackson, M.D.
Baxley Professor of Pathology [1996], Director of the Department of Pathology [2001]
Elizabeth M. Jaffee, M.D.
Adjunct Professor of Pediatrics [2007; 1984],
Adjunct Professor of Medicine [2007; 1990],
Adjunct Professor of Plastic and Reconstructive Surgery [2007; 1984]
Kay Redfield Jamison, Ph.D.
Dallo Family Professor of Mood Disorders in the Department of Psychiatry [1993; 1987]
Henry D. Jampel, M.D.
Odd Fellows Professor of Ophthalmology [2003; 1988]
Donald R. Jasinski, M.D.
Professor of Medicine [1992; 1985] (to 11/19/2010)
Jonathan C. Javitt, M.D., M.P.H.
Adjunct Professor of Ophthalmology [1999; 1988]
Robert E. Jensen, Ph.D.
Professor of Cell Biology [2004; 1988], Professor of Biological Chemistry [2010]
Roger Anthony Johns, M.D.
Professor of Anesthesiology and Critical Care Medicine [1999], Professor of Medicine [2006],
Director of the Department of Anesthesiology and Critical Care Medicine [2003; 1999]
Richard T. Johnson, M.D.
University Distinguished Service Professor of Neurology [1969], Professor of Neuroscience [1983],
Director of the Department of Neurology [1997; 1986]
Rolley E. Johnson, D.Pharm.
Adjunct Professor of Psychiatry [1992; 1990]
Michael V. Johnston, M.D.
Professor of Neurology [1988], Professor of Pediatrics [1988],
Professor of Physical Medicine and Rehabilitation [2005]
Bronwyn Jones, M.D.
Professor of Radiology [1991; 1981]
Thomas S. Kickler, M.D.
Professor of Pathology [1997; 1980], Professor of Medicine [1997; 1980], Professor of Oncology [1997; 1995]

Kwang Sik Kim, M.D.
Professor of Pediatrics [2000]

Landon Stuart King, M.D.
David Marine Professor of Medicine [2011; 1997] (from 01/01/2011), Professor of Biological Chemistry [2011; 1997] (from 01/01/2011), Associate Professor of Biological Chemistry [2003; 1997] (to 12/31/2010), Associate Professor of Medicine [2003; 1997] (to 12/31/2010)

Kenneth W. Kinzler, Ph.D.
Professor of Oncology [1999; 1990]

Michael J. Klug, M.D., M.P.H.
Professor of Medicine [1998; 1987], Dean of the Bloomberg School of Public Health [2005]

Harvey Gordon Klein, M.D.
Adjunct Professor of Pathology [2005; 1999], Adjunct Professor of Medicine [2005; 1975]

Wayne M. Koch, M.D.
Professor of Otolaryngology-Head and Neck Surgery [2000; 1987], Professor of Oncology [2001; 1993]

Raymond C. Koehler, Ph.D.
Professor of Anesthesiology and Critical Care Medicine [1996; 1980]

Vassilis E. Koliatsos, M.D.
Professor of Pathology [2009; 1989], Professor of Neurology [2009; 1987], Associate Professor of Psychiatry [1997]

Alex Leo Kolodkin, Ph.D.
Professor of Neuroscience [2004; 1994], Joint Appointment in Molecular Biology and Genetics [1996], Investigator of the Howard Hughes Medical Institute

Mayuresh V. Kothare, Ph.D.
Visiting Professor of Biomedical Engineering [2008]

Gregory Lewis Krauss, M.D.
Professor of Neurology [2009; 1991]

Francis Paul Kuhajda, M.D.

Abraham Kupfer, Ph.D.
Professor of Cell Biology [2004]

Robert J. Kurman, M.D.
Richard W. Telinde Distinguished Professor of Gynecologic Pathology in the Department of Gynecology and Obstetrics [1989], Professor of Oncology [1999], Professor of Pathology [1989]

Hideo Kusuoka, M.D., Ph.D.
Visiting Professor of Medicine [1999; 1985]

Peter O. Kwiterovich, Jr., M.D.
Professor of Pediatrics [1984; 1972], Professor of Medicine [1984; 1975]

Paul W. Ladenson, M.D.
John Eager Howard Professor of Endocrinology and Metabolism and University Distinguished Professor of Medicine [1996; 1983], Professor of Oncology [1996], Professor of Pathology [1996; 1994], Professor of Radiology [2003]

Shenghan Lai, M.D., M.P.H.
Professor of Pathology [2005; 2004], Joint Appointment in Medicine [2003], Professor of Radiology [2005]

Marikki K. Laiho, M.D., Ph.D.
Willard and Lillian Hackerman Professor of Radiation Oncology [2007], Professor of Oncology [2007]

Edward G. Lakatta, M.D.
Professor of Medicine [1987; 1973]

Erich K. Lang, M.D.
Visiting Professor of Radiology [2006]

Richard A. Lange, M.D.
Professor of Medicine [2004; 2003]

John J. LaTerra, M.D., Ph.D.
Professor of Neurology [2002; 1988], Professor of Neuroscience [2002; 1992], Professor of Oncology [2002; 1992]

Beth L. Laube, Ph.D.
Professor of Pediatrics [2008; 1997], Joint Appointment in Medicine [1990; 1986], Joint Appointment in Radiology [1990; 1986]

Edward Earle Lawson, M.D.
Professor of Pediatrics [1999]

Gerald S. Lazarus, M.D.
Professor of Dermatology [2002], Professor of Medicine [2008]

Steven D. Leach, M.D.
Paul K. Neumann Professor of Pancreatic Cancer in the Department of Surgery [2003; 2000], Professor of Cell Biology [2005], Professor of Oncology [2003; 2000]

Daniel J. Leahy, Ph.D.
Professor of Biophysics and Biophysical Chemistry [2004; 1993], Professor of Oncology [2005]

Howard M. Lederman, M.D., Ph.D.
Professor of Pediatrics [2001; 1983], Joint Appointment in Medicine [2000]

Se-Jin Lee, M.D., Ph.D.
Professor of Molecular Biology and Genetics [2001; 1991]

Wei-Ping Andrew Lee, M.D.
Professor of Plastic and Reconstructive Surgery [2010] (from 10/01/2010), Director of the Department of Plastic and Reconstructive Surgery [2010]

Bruce Allen Leff, M.D.
Professor of Medicine [2010; 1994]

Mary Sue Leffell, Ph.D.
Professor of Medicine [2001; 1989]

Marianne J. Legato, M.D.
Adjunct Professor of Medicine [2006]
Frederick A. Lenz, M.D.
A. Earl Walker Professor of Functional Neurosurgery [1998; 1988], Professor of Neuroscience [2010; 2007]

Ronald P. Lesser, M.D.
Professor of Neurology [1993; 1986], Professor of Neurological Surgery [1994; 1987]

David M. Levine, M.D.
Samsung Professor of Medicine [1991; 1976]

Michael A. Levine, M.D.
Visiting Professor of Pediatrics [2003; 1998]

Hyam Isaac Levitsky, M.D.
Professor of Oncology [2002; 1991], Professor of Medicine [2002; 2000], Professor of Urology [2002; 2001]

Jonathan S. Lewin, M.D.
Martin W. Donner Professor of Radiology [2004], Professor of Biomedical Engineering [2006], Professor of Neurological Surgery [2005], Professor of Oncology [2004], Director of the Department of Radiology and Radiological Science [2004]

Min Li, Ph.D.
Professor of Neuroscience [2004; 1994], Professor of Physiology [2004; 1994]

Tsanyang Jake Liang, M.D.
Adjunct Professor of Pediatrics [2004]

Joao A.C. Lima, M.D.
Professor of Medicine [2007; 1992], Associate Professor of Radiology [1998; 1996]

David J. Linden, Ph.D.
Professor of Neuroscience [2001; 1992]

Pamela A. Lipsett, M.D.
Professor of Surgery [2003; 1989], Assistant Professor of Anesthesiology and Critical Care Medicine [1995]

Jun Liu, Ph.D.
Professor of Pharmacology and Molecular Sciences [2001], Professor of Oncology [2005]

Jon R. Lorsch, Ph.D.
Professor of Biophysics and Biophysical Chemistry [2009; 1999]

Gerald M. Loughlin, M.D.
Visiting Professor of Pediatrics [2002; 1984]

Charles J. Lowenstein, M.D.
Adjunct Professor of Medicine [2009; 1973]

Svetlana Lutsenko, Ph.D.
Visiting Professor of Physiology [2009]

Gerard A. Lutty, Ph.D.

Constantine G. Lyketsos, M.D.
Visiting Professor of Alzheimer’s Research in Psychiatry and Behavioral Sciences [2000; 1993]

Susan M. MacDonald, M.D.
Professor of Medicine [2004; 1984]

Donald Welton MacGlashan, Jr., M.D., Ph.D.
Professor of Medicine [1996; 1983]

Carolyn E. Machamer, Ph.D.
Professor of Cell Biology [2004; 1988]

Richard Macksey, Ph.D.
Professor of History of Medicine [2010; 1991]

Anirban Maitra, M.B.B.S.
Professor of Pathology [2010; 2001] (from 11/01/2010), Professor of Oncology [2010; 2003] (from 11/01/2010), Associate Professor of Pathology [2006; 2001] (to 10/31/2010), Associate Professor of Oncology [2006; 2003] (to 10/31/2010)

Peter C. Maloney, Ph.D.
Professor of Physiology [1988; 1976], Associate Dean for Graduate Student Affairs [2001]

Paul N. Manson, M.D.
Professor of Plastic and Reconstructive Surgery [1987; 1978]

Eduardo Marban, M.D., Ph.D.
Professor of Medicine [2007; 1985]

Russell Louis Margolis, M.D.
Professor of Psychiatry [2005; 1992], Professor of Neurology [2005; 2003]

Kieren Anne Marr, M.D.
Professor of Medicine [2008], Professor of Oncology [2009]

Jackie L. Martin, M.D.
Professor of Anesthesiology and Critical Care Medicine [2005; 1988]

Lee J. Martin, Ph.D.
Professor of Pathology [2007; 1989], Professor of Neuroscience [2007; 1993]

Robert W. Massof, Ph.D.
Professor of Ophthalmology [1991; 1976]

Mark P. Mattson, Ph.D.
Adjunct Professor of Neuroscience [2010; 2000]

W. Lowell Maughan, M.D.
Professor of Medicine [1985; 1978], Professor of Biomedical Engineering [1997; 1989]

Bradford J. May, Ph.D.
Professor of Otolaryngology-Head and Neck Surgery [2003; 1990]

Michele M. Mazzocco, Ph.D.
Professor of Psychiatry [2008; 1993]

Justin C. McArthur, M.B.B.S., M.P.H.
Professor of Neurology [1996; 1985], Professor of Medicine [2009], Professor of Pathology [2005], Director of the Department of Neurology [2008]

Una Deirdre McCann, M.D.
Professor of Psychiatry [2008; 1999], Professor of Neurology [2010]

Edward F. McCarthy, Jr., M.D.
Professor of Pathology [2000; 1977], Professor of Orthopaedic Surgery [2000; 1989]

Mary E. McCaul, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [2001; 1983], Associate Professor of Medicine [1995]
Peter John McDonnell, III, M.D.
William Holland Wilmer Professor of Ophthalmology [2003], Director of the Department of Ophthalmology [2003]

Edward G. McFarland, M.D.
Wayne H. Lewis Professor of Orthopaedics and Shoulder Surgery [2005; 1992]

Paul R. McHugh, M.D.
University Distinguished Service Professor of Psychiatry [1975], Director of the Department of Psychiatry and Behavioral Sciences [2001; 1975]

Guy Mead McKhann, M.D.
Professor of Neurology [1969], Professor of Neuroscience [1988], Director of the Department of Neurology [1988; 1969]

Julia A. McMillan, M.D.
Professor of Pediatrics [2001; 1991], Associate Dean for Graduate Medical Education [2004]

Elliot R. McVeigh, Ph.D.
Bessie Darling Massey Professor of Biomedical Engineering [2007; 1989], Professor of Radiology [2007; 1988], Director of the Department of Biomedical Engineering [2007]

Barry Ross Meisenberg, M.D.
Visiting Professor of Oncology [2008]

Stephen J. Meltzer, M.D.
Harry and Betty Meyerberg/Thomas R. Hendrix Professor of Gastroenterology in the Department of Medicine [2006], Professor of Oncology [2006]

William G. Merz, Ph.D.
Professor of Pathology [1998; 1974], Joint Appointment in Dermatology [1980; 1973]

Esteban Mezey, M.D.
Professor of Medicine [1982; 1968]

Susan Michaels, Ph.D.
Professor of Cell Biology [2002; 1987]

Barbara R. Migeon, M.D.
Professor of Pediatrics in Genetic Medicine [1979; 1962]

Claude J. Migeon, M.D.
Professor of Pediatrics [1971; 1954]

Edward D. Miller, M.D.
Professor of Anesthesiology and Critical Care Medicine [1994], Dr. Frances Watt Baker and Dr. Lennox D. Baker, Jr. Dean of the Medical Faculty and CEO, Johns Hopkins Medicine [1997], Director of the Department of Anesthesiology and Critical Care Medicine [1999; 1994]

Marlene R. Miller, M.D.
Professor of Pediatrics [2010; 1999] (from 11/01/2010), Associate Professor of Pediatrics [2004; 1999] (to 10/31/2010)

Myron Miller, M.D.
Professor of Medicine [1997]

Neil Richard Miller, M.D.
Frank B. Walsh Professor of Neuro-ophthalmology in the Department of Ophthalmology [1987; 1975], Professor of Neurological Surgery [1987; 1979], Professor of Neurology [1987; 1976]

Stephen M. Milner, M.B.B.S.
Professor of Plastic and Reconstructive Surgery [2005], Professor of Dermatology [2009], Professor of Pediatrics [2007]

Lloyd B. Minor, M.D.
Provost and Senior Vice President for Academic Affairs for Johns Hopkins University [2009], University Distinguished Professor of Otolaryngology-Head and Neck Surgery [2001; 1993], Professor of Biomedical Engineering [2001; 1994], Professor of Neuroscience [2001; 1993], Director of the Department of Otolaryngology-Head and Neck Surgery [2009; 2003]

Marek A. Z. Mirski, M.D., Ph.D.
Professor of Anesthesiology and Critical Care Medicine [2009; 1999], Professor of Neurological Surgery [2009; 2008], Professor of Neurology [2009; 1999]

Allan F. Mirsky, Ph.D.
Adjunct Professor of Psychiatry [2006; 1993]

Sally E. Mitchell, M.D.
Professor of Radiology [2007; 1982], Associate Professor of Pediatrics [2003]

David R. Moller, M.D.
Professor of Medicine [2010; 1989]

Craig Montell, Ph.D.
Professor of Biological Chemistry [1998; 1988], Professor of Neuroscience [1998; 1988]

Denise J. Montell, Ph.D.
Professor of Biological Chemistry [2002; 1992]

Elizabeth Anne Montgomery, M.D.
Professor of Pathology [2008; 1999], Professor of Oncology [2008; 2002], Professor of Orthopaedic Surgery [2009]

Robert A. Montgomery, M.D., Ph.D.
Margery K. and Thomas Pozefsky Professor of Kidney Transplant Surgery [2009; 1995]

Richard D. Moore, M.D.
Professor of Medicine [1999; 1983]

Timothy H. Moran, Ph.D.
Paul R. McHugh Professor of Motivated Behaviors in the Department of Psychiatry [1992; 1984]

Susumu Mori, Ph.D.
Professor of Radiology [2006; 1997], Professor of Oncology [2006; 2005]

Warwick L. Morison, M.D.
Professor of Dermatology [1995; 1981]

Hamilton Moses, III, M.D.
Adjunct Professor of Neurology [2009]

Jacek L. Mostwin, D.Phil., M.D.
Professor of Urology [1996; 1983]

Anne Margaret Murphy, M.D.

Douglas B. Murphy, Ph.D.
Adjunct Professor of Cell Biology [2006; 1978]

Gary Jan Nabel, M.D., Ph.D.
Visiting Professor of Medicine [1999]
Sakkubai Naidu, M.B.B.S.
Professor of Neurology [2001; 1984], Professor of Pediatrics [2001; 1985]
Avindra Nath, M.D.
Professor of Neurology [2002], Professor of Neuroscience [2002] (to 01/29/2011)
Jeremy Nathans, M.D., Ph.D.
Professor of Molecular Biology and Genetics [1996; 1988], Professor of Neuroscience [1996; 1988], Professor of Ophthalmology [1996; 1993], Investigator of the Howard Hughes Medical Institute
Barry D. Nelkin, Ph.D.
Professor of Oncology [2004; 1982]
William G. Nelson, M.D., Ph.D.
Marion I. Knott Director and Professor of Oncology [2008], Professor of Medicine [2003; 1995], Professor of Pathology [2003; 2000], Professor of Pharmacology and Molecular Sciences [2003; 1995], Professor of Radiation Oncology and Molecular Radiation Sciences [2003], Professor of Urology [2003; 1992]
Paul M. Ness, M.D.
Professor of Pathology [1995; 1979], Professor of Medicine [1995; 1979], Joint Appointment in Oncology [1983]
Gerald Nestadt, M.B.B.Ch., M.P.H.
Professor of Psychiatry [2002; 1981]
John Nicholas, Ph.D.
Professor of Oncology [2010; 1992] (from 11/01/2010), Associate Professor of Oncology [1999; 1992] (to 10/31/2010)
David G. Nichols, M.D.
Mary Wallace Stanton Professor of Education [2004], Professor of Anesthesiology and Critical Care Medicine [1998; 1984], Professor of Pediatrics [1998; 1984], Vice Dean for Education [2000]
John K. Niparko, M.D.
George T. Nager Professor of Otolaryngology - Head and Neck Surgery [1998; 1991], Interim Director of the Department of Otolaryngology - Head and Neck Surgery [2009]
Lawrence Mark Nogee, M.D.
Professor of Pediatrics [2008; 1992]
Philip S. Norman, M.D.
Professor of Medicine [1999; 1956]
Daniel Nyhan, M.B.B.Ch.
Professor of Anesthesiology and Critical Care Medicine [2002; 1985], Associate Professor of Surgery [2001]
G. Johan Offerhaus, M.D., Ph.D., M.P.H.
Adjunct Professor of Pathology [2009; 1997]
Alessandro Olivi, M.D.
Professor of Neurological Surgery [2002; 1991], Professor of Oncology [2002; 1994]
Jonathan Brett Orens, M.D.
Professor of Medicine [2007; 1998]
Brian O’Rourke, Ph.D.
Professor of Medicine [2004; 1993]
Pamela Ouyang, M.B.B.Ch.
Professor of Medicine [2005; 1980]
Randall M. Packard, Ph.D.
William H. Welch Professor of the History of Medicine [2002], Director of the Department of the History of Medicine [2002]
Jeffrey B. Palmer, M.D.
Lawrence Cardinal Shehan Professor of Physical Medicine and Rehabilitation [2002; 1983], Professor of Functional Anatomy and Evolution [2005], Professor of Otolaryngology-Head and Neck Surgery [2002; 1989], Director of the Department of Physical Medicine and Rehabilitation [2004]
Duoja Pan, Ph.D.
Professor of Molecular Biology and Genetics [2009; 2004], Professor of Oncology [2009; 2004], Professor of Pharmacology and Molecular Sciences [2010]
Akhilesh Pandey, M.D., Ph.D.
Professor of Biological Chemistry in Genetic Medicine [2010; 2002], Professor of Oncology [2010; 2004], Professor of Pathology [2010; 2006]
Drew Mark Pardoll, M.D., Ph.D.
Martin D. Abeloff Professor of Oncology [1998; 1990], Professor of Medicine [1998; 1988], Professor of Pathology [1998; 1996]
Giovanni Parmigiani, Ph.D.
Adjunct Professor of Oncology [2010; 1999] (from 09/01/2010), Professor of Oncology [2005; 1999] (on leave of absence to 08/31/2010), Joint Appointment in Health Sciences Informatics [2006] (on leave of absence to 08/31/2010)
Alan Wayne Partin, M.D., Ph.D.
David Hall McConnell Professor of Urology [1999; 1995], Professor of Oncology [2000], Professor of Pathology [2001], Director of the Department of Urology [2004]
Jean-Francois Payen de la Garanderie, M.D., Ph.D.
Visiting Professor of Radiology [2000]
Godfrey D. Pearlson, M.B.B.S.
Professor of Psychiatry [1993; 1979]
Peter L. Pedersen, Ph.D.
Professor of Biological Chemistry [1975; 1967]
Trish M. Perl, M.D.
Professor of Medicine [2001; 1996], Associate Professor of Pathology [2002; 1998]
Bruce A. Perler, M.D.
Julius H. Jacobson II Professor of Vascular Surgery [1997; 1982]
Michelle Petri, M.D., M.P.H.
Professor of Medicine [2001; 1986]
David Pickar, M.D.
Adjunct Professor of Psychiatry [2003]
Herbert Michael Pinedo, M.D., Ph.D.
Visiting Professor of Oncology [1966]
Paula M. Pitha-Rowe, Ph.D.
Professor of Oncology [1985; 1973], Joint Appointment in Molecular Biology and Genetics [1984; 1972]
Leslie P. Plotnick, M.D.
Professor of Clinical Care and Research of Pediatric Endocrinology in the Department of Pediatrics [2001; 1974]

Paul Hunter Plotz, M.D.
Adjunct Professor of Medicine [2004]

Gianna Pomata, Laurea
Professor of History of Medicine [2007]

Martin Gilbert Pomper, M.D., Ph.D.
Professor of Radiology [2007; 1995], Professor of Oncology [2010; 2002], Professor of Pharmacology and Molecular Sciences [2007; 2003], Joint Appointment in Psychiatry [2009], Professor of Radiation Oncology and Molecular Radiation Sciences [2008]

Aleskander S. Popel, Ph.D.
Professor of Biomedical Engineering [1988; 1984], Professor of Medicine [2007], Professor of Oncology [2009]

Neil R. Powe, M.D., M.P.H.
Distinguished Service Professor of Medicine [2009; 1986]

Peter John Pronovost, M.D., Ph.D.
Professor of Anesthesiology and Critical Care Medicine [2005; 1997], Joint Appointment in Health Sciences Informatics [2007], Associate Professor of Surgery [2001; 1997]

Thomas T. Provost, M.D.
University Distinguished Service Professor of Dermatology [1983; 1978], Director of the Department of Dermatology [1996; 1981]

Ann E. Pulver, Sc.D.
Professor of Psychiatry [2002; 1989], Assistant Professor of Pediatrics [1990; 1981]

Naresh M. Punjabi, M.D., Ph.D.
Professor of Medicine [2011; 1999] (from 01/01/2011), Associate Professor of Medicine [2005; 1999] (to 12/31/2010)

Harry Alan Quigley, M.D.
A. Edward Maumenee Professor of Ophthalmology [1985; 1977]

Thomas C. Quinn, M.D.
Professor of Medicine [1991; 1981]

Hamid Rabb, M.D.
Professor of Medicine [2007; 2001], Professor of Surgery [2008]

Daniel M. Raben, Ph.D.
Professor of Biological Chemistry [2007; 2002], Professor of Oncology [2007; 1996], Professor of Physiology [2007; 1986]

Peter V. Rabins, M.D., M.P.H.
Richman Family Professor of Alzheimer’s and Related Diseases in the Department of Psychiatry [1993; 1978], Joint Appointment in Medicine [1993]

Lorraine C. Racusen, M.D.
Professor of Pathology [2001; 1983]

Sally Radovich, M.D.
Lawson Wilkins Professor of Pediatric Endocrinology in the Department of Pediatrics [2005]

Srinivas Naga Raja, M.B.B.S.
Professor of Anesthesiology and Critical Care Medicine [1997; 1981], Professor of Neurology [2006]

Cynthia S. Rand, Ph.D.
Professor of Medicine [2003; 1987], Joint Appointment in Behavioral Biology in the Department of Psychiatry [1988; 1985]

Rajini Rao, Ph.D.
Professor of Physiology [2004; 1993]

Gerald V. Raymond, M.D.
Professor of Neurology [2010; 1993]

Randall R. Reed, Ph.D.
Professor of Molecular Biology and Genetics [1992; 1984], Professor of Neuroscience [1992; 1986], Professor of Otolaryngology-Head and Neck Surgery [2005]

Roger H. Reeves, Ph.D.
Professor of Physiology in Genetic Medicine [1999; 1985]

Michael X. Repka, M.D.
Robert and Maureen Feduniak Professor of Ophthalmology [1997; 1985], Professor of Pediatrics [2001; 1990]

George A. Ricaurte, M.D., Ph.D.
Professor of Neurology [2006; 1987]

Joan T. Richtsmeier, Ph.D.
Visiting Professor of Functional Anatomy and Evolution [2000; 1986]

Mark A. Riddle, M.D.
Professor of Psychiatry [2002], Professor of Pediatrics [2002; 1993]

Daniele Rigamonti, M.D.
Salisbury Family Professor of Neurological Surgery [1997; 1993], Professor of Oncology [2003], Joint Appointment in Physical Medicine and Rehabilitation [1999], Professor of Radiation Oncology and Molecular Radiation Sciences [2003], Professor of Radiology [1999; 1993]

Gregory J. Riggins, M.D., Ph.D.
Irving J. Sherman Research Professor of Neurosurgery [2008; 2003], Professor of Oncology [2008; 2003]

Richard B. S. Roden, Ph.D.
Professor of Pathology [2009; 1998], Professor of Gynecology and Obstetrics [2009; 2002], Professor of Oncology [2009; 2004]

Nancy K. Roderer, M.L.S.
Professor of Health Sciences Informatics [2009; 2000], Associate Professor of Medicine [2008], Director of the Welch Medical Library [2000], Director of the Division of Health Sciences Informatics [2000]

Mark Charles Rogers, M.D.
Adjunct Professor of Anesthesiology and Critical Care Medicine [1996]

Anne M. Rompalo, M.D.
Professor of Medicine [2003; 1987], Associate Professor of Gynecology and Obstetrics [1995; 1993]
Brigitte Maria Ronnett, M.D.
Professor of Pathology [2007; 1995], Professor of Gynecology and Obstetrics [2007; 1997]

Gabriele Valeria Ronnett, M.D., Ph.D.
Professor of Neuroscience [2000; 1989], Professor of Biological Chemistry [2010], Professor of Neurology [2000; 1987]

Kenneth D. Rose, Ph.D.
Professor of Functional Anatomy and Evolution [1990; 1980]

Antony Rosen, M.B.Ch.B.
Mary Betty Stevens Professor of Medicine [2002; 1993], Professor of Pathology [2002; 1997]

Beryl J. Rosenstein, M.D.
Professor of Pediatrics [1989; 1966]

Dorothy L. Rosenthal, M.D.
Professor of Pathology [1995], Professor of Gynecology and Obstetrics [1999]

Gary L. Rosner, Sc.D.
Eli Kennerly Marshall Professor of Oncology [2010]

Jeffrey D. Rothstein, M.D., Ph.D.
Professor of Neurology [2000; 1989], Professor of Neuroscience [2000; 1997]

Peter C. Rowe, M.D.
Sunshine Natural Wellbeing Foundation Professor of Chronic Fatigue Syndrome and Related Disorders in the Department of Pediatrics [1999; 1991]

Haya R. Rubin, M.D., Ph.D.
Adjunct Professor of Medicine [2003; 1990]

Richard R. Rubin, Ph.D.
Professor of Medicine [2007; 1994], Professor of Pediatrics [2007; 1991]

Charles Michael Rudin, M.D., Ph.D.
Professor of Oncology [2010; 2004]

Christopher B. Ruff, Ph.D.
Professor of Functional Anatomy and Evolution [1994; 1983], Professor of Orthopaedic Surgery [1994; 1983], Director of the Center for Functional Anatomy and Evolution [2001]

David K. Ryugo, Ph.D.
Professor of Otolaryngology-Head and Neck Surgery [1992; 1987], Professor of Neuroscience [1993; 1987]

Murray B. Sachs, Ph.D.
University Distinguished Service Professor of Biomedical Engineering [1980; 1970], Professor of Neuroscience [1981], Professor of Otolaryngology-Head and Neck Surgery [1984], Director of the Department of Biomedical Engineering [2007; 1991]

Ned Charlton Sacktor, M.D.
Professor of Neurology [2009; 1994]

Eiichi Saitoh, M.D.
Adjunct Professor of Physical Medicine and Rehabilitation [2007]

Jay H. Sanders, M.D.
Adjunct Professor of Medicine [1997]

Alfred P. Sanfilippo, M.D., Ph.D.
Adjunct Professor of Pathology [2000; 1993], Director of the Department of Pathology [2001; 1993]

Andrew J. Satin, M.D.
Professor of Gynecology and Obstetrics [2007]

Christopher D. Saudek, M.D.
Hugh P. McCormick Family Professor of Endocrinology and Metabolism in the Department of Medicine [1992; 1979] (to 10/06/2010)

Akira Sawa, M.D., Ph.D.
Professor of Psychiatry [2009; 1998], Professor of Neuroscience [2009; 1998]

Oliver Douglas Schein, M.D., M.P.H.
Burton E. Grossman Professor of Ophthalmology [1998; 1990]

Chester W. Schmidt, Jr., M.D.
Professor of Psychiatry [1994; 1967]

Ronald L. Schnaar, Ph.D.
Professor of Pharmacology and Molecular Sciences [1990; 1979], Professor of Neuroscience [1990; 1983]

Jonathan Schneck, M.D., Ph.D.
Professor of Pathology [2001; 1995], Associate Professor of Medicine [1995; 1989], Professor of Oncology [2002]

Mark P. Schoenberg, M.D.
Bernard L. Schwartz Distinguished Professor of Urologic Oncology [1996], Professor of Urology [2002; 1994], Professor of Oncology [1998; 1995]

Hendrik P.N. Scholl, M.D.
Visiting Professor of Ophthalmology [2010]

Lawrence P. Schramm, Ph.D.
Professor of Biomedical Engineering [1988; 1970], Professor of Neuroscience [1988; 1981]

Richard David Schulick, M.D.
John L. Cameron Professor of Alimentary Tract Diseases in the Department of Surgery [2009; 1999], Associate Professor of Biomedical Engineering [2007], Associate Professor of Gynecology and Obstetrics [2004], Professor of Oncology [2009; 1999]

Steven Paul Schulman, M.D.
Professor of Medicine [2004; 1985]

Alan Richard Schwartz, M.D.
Professor of Medicine [2001; 1987]

Richard David Schwartz, M.D.
Professor of Pediatrics [2000; 1987]

Cynthia Louise Sears, M.D.
Professor of Medicine [2001; 1988], Professor of Oncology [2006]

Ola A. Selnes, Ph.D.
Professor of Neurology [2004; 1983]

Richard D. Semba, M.D., M.P.H.
W. Richard Green Professor of Ophthalmology [2006; 1987]
Gregg L. Semenza, M.D., Ph.D.
C. Michael Armstrong Professor of Pediatrics in Genetic Medicine [1999; 1990], Professor of Biological Chemistry [2009], Professor of Medicine [2008; 1990], Professor of Oncology [2003], Professor of Radiation Oncology and Molecular Radiation Sciences [2003]

Ranjan Sen, Ph.D.
Adjunct Professor of Medicine [2003]

Janet R. Serwint, M.D.
Rear Admiral Ray R. and Laura H. Connor Professor of Pediatrics [2005; 1990], Professor of Biological Chemistry [2009], Professor of Medicine [2008; 1990], Professor of Oncology [2003], Professor of Radiation Oncology and Molecular Radiation Sciences [2003]

George Sgouros, Ph.D.
Professor of Radiology [2007; 2003], Professor of Oncology [2009], Professor of Radiation Oncology and Molecular Radiation Sciences [2008]

Reza Shadmehr, Ph.D.
Professor of Biomedical Engineering [2004; 1994], Professor of Neuroscience [2004; 1999]

Bruce K. Shapiro, M.D.
Professor of Pediatrics [2007; 1977]

Edward Paul Shapiro, M.D.
Professor of Medicine [1997; 1981]

Jay R. Shapiro, M.D.
Professor of Physical Medicine and Rehabilitation [2004]

Theresa A. Shapiro, M.D., Ph.D.
Wellcome Professor of Clinical Pharmacology in the Department of Medicine [2000; 1981], Professor of Pharmacology and Molecular Sciences [2000; 1991]

Saul J. Sharkis, Ph.D.
Professor of Oncology [1993; 1978]

Ie-Ming Shih, M.D., Ph.D.
Professor of Pathology [2008; 2000], Professor of Gynecology and Obstetrics [2008; 2002], Professor of Oncology [2008; 2003]

Hyun S. Shin, M.D.
Professor of Molecular Biology and Genetics [1981; 1965] (on leave of absence), Joint Appointment in Medicine [1988] (on leave of absence)

David Robert Shortle, M.D., Ph.D.
Professor of Biological Chemistry [1993; 1984], Professor of Biophysics and Biophysical Chemistry [1993; 1991]

Artin A. Shoukas, Ph.D.
Professor of Biomedical Engineering [1990; 1973], Professor of Anesthesiology and Critical Care Medicine [2006], Joint Appointment in Physiology [1994]

David Sidransky, M.D.
Professor of Otolaryngology-Head and Neck Surgery [1998; 1992], Professor of Oncology [1998; 1992], Professor of Pathology [1998], Professor of Urology [1999]

Stanley S. Siegelman, M.D.
Professor of Radiology [1973]

Robert Francis Siliciano, M.D., Ph.D.
Professor of Medicine [1998; 1988], Joint Appointment in Molecular Biology and Genetics [1989], Investigator of the Howard Hughes Medical Institute

Kenneth Silverman, Ph.D.
Professor of Psychiatry [2004; 1991]

Andrew Simpson, Ph.D.
Adjunct Professor of Neurological Surgery [2010]

Harvey S. Singer, M.D.
Haller Professor of Pediatric Neurologic Diseases in the Department of Neurology [1988; 1975], Professor of Pediatrics [1989; 1976]

Donald Small, M.D., Ph.D.
Kyle Haydock Professor of Oncology [2004; 1990], Professor of Pediatrics [2004; 1991]

Gwenn S. Smith, Ph.D.
Professor of Clinical Chemistry [2000; 1980]

Solomon H. Snyder, M.D., D.Phil. (Hon.), D.Sc. (Hon.)
University Distinguished Service Professor of Neuroscience [1980], University Distinguished Service Professor of Pharmacology and Molecular Sciences [1970; 1966], University Distinguished Service Professor of Psychiatry [1970; 1968], Director of the Department of Neuroscience [2006; 1980]

Barbara T. Sollner-Webb, Ph.D.
Professor of Biological Chemistry [1988; 1980]

Mark J. Soloski, Ph.D.
Professor of Medicine [2002; 1983], Joint Appointment in Molecular Biology and Genetics [1988; 1983], Professor of Pathology [2004]

Alfred Sommer, M.D.
Professor of Ophthalmology [1985; 1976], Dean Emeritus of the Johns Hopkins Bloomberg School of Public Health [2005]

Hongjun Song, Ph.D.
Professor of Neurology [2010; 2002], Professor of Neuroscience [2010; 2002]

Jerry L. Spivak, M.D.
Professor of Medicine [1988; 1971]

Paul D. Sponseller, M.D.
Professor of Orthopaedic Surgery [2000; 1986], Professor of Urology [2006]

Allan C. Spradling, Ph.D.
Adjunct Professor of Molecular Biology and Genetics [1988]

Robert A. Squire, D.V.M., Ph.D.
Professor of Molecular and Comparative Pathobiology [1984; 1964]

Walter J. Stark, Jr., M.D.
Boone Pickens Professor and Walter J. Stark Professor of Ophthalmology [1982; 1973]

Charles Steenbergen, Jr., M.D., Ph.D.
Professor of Pathology [2006]
Earl P. Steinberg, M.D.
Adjunct Professor of Medicine [1997; 1982],
Adjunct Associate Professor of Radiology [1997; 1988]
Kerry J. Stewart, Ed.D.
Professor of Medicine [2004; 1981]
Maxine L. Stitzer, Ph.D.
Professor of Behavioral Biology in the Department
of Psychiatry [1992; 1974]
James T. Stivers, Ph.D.
Professor of Pharmacology and Molecular
Sciences [2007; 2001], Professor of Oncology
[2007; 2004]
Dan Stoianovici, Ph.D.
Professor of Urology [2009; 1998], Professor of
Neurological Surgery [2010]
Eric C. Strain, M.D.
Professor of Psychiatry [2000; 1990]
Robert L. Strausberg, Ph.D.
Adjunct Professor of Neurological Surgery [2010]
Matthias Stuber, Ph.D.
Professor of Radiology [2010; 2002] (on leave of
absence to 08/02/2010), Professor of Medicine
[2010; 2003] (on leave of absence to 08/02/2010)
Jeremy Sugarman, M.D.
Harvey M Meyerhoff Professor of Bioethics and
Medicine [2004]
Saraswati Sukumar, Ph.D.
Barbara B. Rubenstein Professor of Oncology
[2002; 1994], Professor of Pathology [2002; 1996]
Lode J. Swinnen, M.D.
Visiting Professor of Oncology [2002]
Jimmie T. Sylvester, M.D.
Professor of Medicine [1989; 1977], Joint
Appointment in Anesthesiology and Critical Care
Medicine [1992; 1977]
Zsolt Szabo, M.D., Ph.D.
Professor of Radiology [2005; 1988]
Khalid Fuad Tabbara, M.D.
Adjunct Professor of Ophthalmology [2004]
Paul Talalay, M.D., D.Sc. (Hon.)
John Jacob Abel Distinguished Service
Professor of Pharmacology and Experimental
 Therapeutics [1963], Director of the Department
of Pharmacology and Experimental Therapeutics
[1975; 1963]
Mark Adams Talamini, M.D.
Adjunct Professor of Surgery [2005; 1987]
Rafael J. Tamargo, M.D.
Walter E. Dandy Professor of Neurosurgery [2004; 1991],
Professor of Otolaryngology-Head and
Neck Surgery [2004; 2002]
Qi-qun Tang, M.D., Ph.D.
Adjunct Professor of Biological Chemistry [2010]
Mark F. Teaford, Ph.D.
Professor of Functional Anatomy and Evolution
[1998; 1983]
Peter B. Terry, M.D.
Professor of Medicine [1993; 1975], Associate
Professor of Anesthesiology and Critical Care
Medicine [1982]
Nitish V. Thakor, Ph.D.
Professor of Biomedical Engineering [1994; 1983],
Professor of Neurology [2008]
David Lee Thomas, M.D., M.P.H.
Stanhope Bayne-Jones Professor of Medicine
[2003; 2002]
George H. Thomas, Ph.D.
Professor of Pediatrics in Genetic Medicine [1992; 1965],
Joint Appointment in Medicine [1980; 1972],
Professor of Pathology [1994]
Daniel P. Todes, Ph.D.
Professor of History of Medicine [2002; 1984]
Gordon F. Tomaseilli, M.D.
Michel Mirowski, M.D. Professor of Cardiology in
the Department of Medicine [2001; 1989]
Suzanne Louise Topalian, M.D.
Professor of Surgery [2006], Professor of
Oncology [2006]
Thomas J.K. Toung, M.D.
Professor of Anesthesiology and Critical Care
Medicine [2001; 1969], Joint Appointment in
Neurological Surgery [1980; 1979]
Thomas A. Traili, B.M.-B.Ch.
Professor of Medicine [1998; 1980]
Glenn J. Treisman, M.D., Ph.D.
Professor of Psychiatry [2008; 1991], Professor of
Medicine [2008; 1993]
Jeffrey M. Trent, Ph.D.
Adjunct Professor of Oncology [1994]
Juan C. Troncoso, M.D.
Professor of Pathology [2007; 1983], Associate
Professor of Neurology [1991; 1979]
Shan Pou Tsai, Ph.D.
Adjunct Professor of Medicine [2001]
Mark O. M. Tso, M.B.B.S.
Professor of Ophthalmology [1999], Professor of
Pathology [1999]
Benjamin M.W. Tsui, Ph.D.
Professor of Radiology [2003; 2002], Professor of
Biomedical Engineering [2005]
Leslie Tung, Ph.D.
Professor of Biomedical Engineering [2006; 1986]
George R. Uhl, M.D., Ph.D.
Adjunct Professor of Neurology [2009; 1988],
Adjunct Professor of Neuroscience [2009; 1988]
John A. Ulatowski, M.D., Ph.D.
Mark C. Rogers Professor of Anesthesiology and
Critical Care Medicine [2003; 1990], Professor
of Neurological Surgery [2003; 1993], Professor
of Neurology [2003; 1983], Director of the
Department of Anesthesiology and Critical Care
Medicine [2004]
Bradley J. Undem, Ph.D.
Professor of Medicine [1998; 1986]
Martin D. Valentine, M.D.
Professor of Medicine [1986; 1970]
David L. Valle, M.D.
Henry J. Knott Director of the McKusick/Nathans Center for Medical Genetics [2007], Professor of Pediatrics in Genetic Medicine [1987; 1975], Joint Appointment in Molecular Biology and Genetics [1986], Professor of Ophthalmology [1992], Investigator of the Howard Hughes Medical Institute
Paulus Joannes van Diest, M.D., Ph.D.
Adjunct Professor of Oncology [2009]
Jennifer Eileen Van Eyk, Ph.D.
Professor of Medicine [2007; 2001], Professor of Biophysical Chemistry [1997; 1993], Professor of Oncology [2005]
Craig Alan Vander Kolk, M.D.
Professor of Plastic and Reconstructive Surgery [2003; 1987], Professor of Pediatrics [2003; 1991]
Hendrik M.W. Verheul, M.D., Ph.D.
Adjunct Professor of Oncology [2009]
Eileen P.G. Vining, M.D.
Lederer Professor of Pediatric Epilepsy in the Department of Neurology [2002; 1978], Professor of Pediatrics [2002; 1976]
Raphael P. Viscidi, M.D.
Professor of Pediatrics [2003; 1987], Professor of Oncology [2009]
Benedetto Vitiello, M.D.
Adjunct Professor of Psychiatry [2007; 2005]
Georgia Boyce Vogelsang, M.D.
Professor of Oncology [1998; 1986]
Bert Vogelstein, M.D.
Clayton Professor of Oncology [1989; 1978], Joint Appointment in Molecular Biology and Genetics [1992], Professor of Pathology [1998], Investigator of the Howard Hughes Medical Institute
Rudiger VonDerheydt, Ph.D.
Professor of Neuroscience [1995; 1993]
Frank K. Wacker, M.D.
Visiting Professor of Radiology [1988]
Elizabeth Wagner, Ph.D.
Professor of Medicine [2001; 1986]
Richard L. Wahl, M.D.
Henry N. Wagner Jr., M.D. Professor of Nuclear Medicine in the Department of Radiology [2000], Professor of Oncology [2001]
John T. Walkup, M.D.
Adjunct Professor of Psychiatry [2009; 1988]
Edward E. Wallach, M.D.
J. Donald Woodruff Professor of Gynecology and Obstetrics [1984], Director of the Department of Gynecology and Obstetrics [1994; 1984]
Patrick C. Walsh, M.D.
University Distinguished Service Professor of Urology [1974], Director of the Department of Urology [2004; 1974]
Barbara White, M.D.
Visiting Professor of Medicine [1999]

Charles M. Wiener, M.D.
Professor of Medicine [2005; 1991], Professor of Physiology [2005; 1998]

Fredrick M. Wigley, M.D.
Professor of Medicine [1996; 1979]

Charles Pat Wilkinson, M.D.
Professor of Ophthalmology [1996; 1993]

Katherine Lee Wilson, Ph.D.
Professor of Cell Biology [2004; 1988]

Modena E. Wilson, M.D.
Adjunct Professor of Pediatrics [1994; 1979]

Raimond L. Winslow, Ph.D.
Raj and Neera Singh Professor of Biomedical Engineering [2000; 1991], Joint Appointment in Health Sciences Informatics [2001], Professor of Medicine [2003]

Robert A. Wise, M.D.
Professor of Medicine [1998; 1980], Instructor in Radiology [1981]

Thomas N. Wise, M.D.
Professor of Psychiatry [1998; 1973]

Frank R. Witter, M.D.
Professor of Gynecology and Obstetrics [2006; 1980]

Cynthia Wolberger, Ph.D.
Professor of Biophysics and Biophysical Chemistry [2000; 1991], Investigator of the Howard Hughes Medical Institute

Frederic E. Wondisford, M.D.
Professor of Pediatrics [2005], Joint Appointment in Medicine [2005], Professor of Physiology [2006]

Dean F. Wong, M.D., Ph.D.
Professor of Radiology [1993; 1983], Professor of Neuroscience [2007], Joint Appointment in Psychiatry [1999]

John Wai-Chiu Wong, Ph.D.
Professor of Radiation Oncology and Molecular Radiation Sciences [2004], Professor of Oncology [2004]

Philip Cy Wong, Ph.D.
Professor of Pathology [2005; 1993], Professor of Neuroscience [2009; 2002]

Robert A. Wood, M.D.
Professor of Pediatrics [2004; 1988]

Thomas B. Woolf, Ph.D.
Professor of Physiology [2006; 1994], Assistant Professor of Biomedical Engineering [1995], Joint Appointment in Biophysics and Biophysical Chemistry [1994]

Paul F. Worley, M.D.
Professor of Neuroscience [2000; 1987], Professor of Neurology [2000; 1984]

Scott Mitchell Wright, M.D.
Professor of Medicine [2008; 1997]

Christopher L. Wu, M.D.
Professor of Anesthesiology and Critical Care Medicine [2009; 1999]

Tzyy-Chou Wu, M.D., Ph.D., M.P.H.
Professor of Pathology [2003; 1995], Professor of Gynecology and Obstetrics [2003; 1997], Professor of Oncology [2003; 1996]

Stephen C. Yang, M.D.
Arthur B. and Patricia B. Modell Professor of Thoracic Surgery [2008; 1994], Professor of Oncology [2008; 1996]

Wei Yang, Ph.D.
Adjunct Professor of Biophysics and Biophysical Chemistry [2004]

William A. Yasnoff, M.D., Ph.D.
Adjunct Professor of Health Sciences Informatics [2003]

Myron Yaster, M.D.
Richard J. Traytsman Professor of Anesthesiology and Critical Care Medicine [2000; 1982], Professor of Pediatrics [2000; 1982]

King-Wai Yau, Ph.D.
Professor of Neuroscience [1986], Professor of Ophthalmology [1994]

Robert H. Yolken, M.D.
Theodore and Vada Stanley Distinguished Professor of Neurovirology in the Department of Pediatrics [1987; 1979], Joint Appointment in Psychiatry [2004]

Eric D. Young, Ph.D.
Professor of Biomedical Engineering [1987; 1975], Professor of Neuroscience [1987; 1981], Professor of Otolaryngology-Head and Neck Surgery [1987; 1985]

David Mark Yousum, M.D.
Professor of Radiology [1998]

David Tuckchow Yue, M.D., Ph.D.
Professor of Biomedical Engineering [1999; 1988], Professor of Neuroscience [1999; 1997]

Andrea A. Zachary, Ph.D.
Professor of Medicine [2004; 1992]

Donald J. Zack, M.D., Ph.D.
Guerrieri Family Professor of Ophthalmology [1997; 1988], Joint Appointment in Molecular Biology and Genetics [1991; 1988], Professor of Neuroscience [2001; 1991]

Howard A. Zaczur, M.D., Ph.D.
Theodore and Ingrid Baramki Professor of Reproductive Endocrinology in the Department of Gynecology and Obstetrics [1995; 1980]

David S. Zee, M.D.
Professor of Neurology [1985; 1975], Professor of Neuroscience [1985; 1983], Professor of Ophthalmology [1986; 1975], Professor of Otolaryngology-Head and Neck Surgery [1987]

Martha Allen Zeiger, M.D.
Professor of Surgery [2009; 1993], Professor of Oncology [2009; 1996]

Pamela L. Zeitlin, M.D., Ph.D.
Professor of Pediatrics [2001; 1988], Joint Appointment in Physiology [1988]

Jonathan M. Zenilman, M.D.
Professor of Medicine [2001; 1989], Professor of Dermatology [2010], Professor of Gynecology and Obstetrics [2001; 1993]
Michael E. Zenilman, M.D.
Visiting Professor of Surgery [2011] (from 01/01/2011)

Elia A. Zerhouni, M.D.
Professor of Radiology [2009], Professor of Biomedical Engineering [2009], Director of the Department of Radiology and Radiological Science [2002; 1996]

Yixian Zheng, Ph.D.
Adjunct Professor of Molecular Biology and Genetics [2009]

Roy C. Ziegelstein, M.D.
Professor of Medicine [2006; 1993]

Harvey A. Zieussman, M.D.
Professor of Radiology [2005; 2003]

M. Christine Zink, D.V.M., Ph.D.
Professor of Molecular and Comparative Pathobiology [2000; 1988], Professor of Pathology [2000; 1988], Director of the Department of Molecular and Comparative Pathobiology [2008]

S. James Zinreich, M.D.
Professor of Radiology [2001; 1980], Professor of Otolaryngology-Head and Neck Surgery [2001; 1985]

Stephen Randolph Zukin, M.D.
Visiting Professor of Psychiatry [2000], Visiting Professor of Radiology [2001]

Jay L. Zweier, M.D.
Visiting Professor of Medicine [2002; 1987], Visiting Associate Professor of Radiology [1996]

PROFESSORS EMERITI

R. Robinson Baker, M.D.
Warfield M. Firor Professor Emeritus of Surgery [1997; 1965]

William R. Bell, M.D.
Edythe Harris Lucas and Clara Lucas Lynn Professor Emeritus of Hematology in the Department of Medicine [1980; 1970]

Wilma B. Bias, Ph.D.
Professor Emerita of Medicine [1996; 1964]

William R. Breakey, M.B.B.Ch.
Professor Emeritus of Psychiatry [1993; 1976]

Gert H. Brieger, M.D., Ph.D., M.P.H.
Distinguished Service Professor Emeritus in the Department of History of Medicine, Science and Technology [2004; 1984], Director of the Department of the History of Science, Medicine, and Technology [2001; 1984]

Saul W. Brusilow, M.D.
Professor Emeritus of Pediatrics [1998; 1956]

Gregory B. Bulkey, M.D.
Professor Emeritus of Surgery [1988; 1977]

Emmund Y. S. Chao, Ph.D.
Professor Emeritus of Orthopaedic Surgery [1992]

Patricia Charache, M.D.
Professor Emerita of Pathology [1992; 1973], Professor Emerita of Medicine [1992; 1964]

Samuel Charache, M.D.
Professor Emeritus of Medicine [1995; 1966], Professor Emeritus of Pathology [1981]

Barbara J. DeLateur, M.D.
Lawrence Cardinal Shehan Professor Emerita of Physical Medicine and Rehabilitation [2006; 1993], Director of the Department of Physical Medicine and Rehabilitation [2004; 1993]

John F. Dicello, Ph.D.
Professor Emeritus of Radiation Oncology and Molecular Radiation Sciences [1995; 2003]

Howard M. Dintzis, Ph.D., D.Sc. (Hon.)
Professor Emeritus of Biophysics and Biophysical Chemistry [1995; 1961], Director of the Department of Biophysics [1990; 1961]

Thomas B. Ducker, M.D.
Professor Emeritus of Neurological Surgery [1993; 1984]

Joel Elkes, M.D.
University Distinguished Service Professor Emeritus of Psychiatry [1981; 1963], Director of the Department of Psychiatry and Behavioral Sciences [1974; 1963]

Paul T. Englund, Ph.D.
Professor Emeritus of Biological Chemistry [1980; 1968]

John M. Freeman, M.D.

Clara Fronticelli, Ph.D.
Professor Emerita of Anesthesiology and Critical Care Medicine [2001; 1999]

Leon Gordis, D.P.H., M.D.
Professor Emeritus of Pediatrics [1992; 1966]

Vincent L. Gott, M.D.
Richard Bennett Darnall Professor Emeritus of Cardiac Surgery [2008; 1965]

William R. Green, M.D.

J. Alex Haller, Jr., M.D.

Barbara S. Hawkins, Ph.D.
Professor Emerita of Ophthalmology [1995; 1982]

Thomas R. Hendrix, M.D.
Moses and Helen Golden Paulson Professor Emeritus of Gastroenterology in the Department of Medicine and University Distinguished Service Professor [1968; 1993]

Robert H. Heptinstall, M.D.
University Distinguished Service Professor Emeritus of Pathology [1967; 1992], Baxley Professor of Pathology and Director of the Department of Pathology [1988; 1969]

Rudolf Hoehn-Saric, M.D.
Professor Emeritus of Psychiatry [2000; 1999]

Neil A. Holtzman, M.D.
Professor Emeritus of Pediatrics [2000; 1999]

John E. Hoopes, M.D.
Professor Emeritus of Plastic and Reconstructive Surgery [1990; 1970]
George R. Huggins, M.D.
Professor Emeritus of Gynecology and Obstetrics [2009; 1986]

Kimishige Ishizaka, M.D.
Thomas P. O'Neill Professor Emeritus of Immunology in the Department of Medicine [1989; 1970]

Teruko Ishizaka, M.D.
Professor Emerita of Medicine [1989; 1972]

Richard J. Johns, M.D.
University Distinguished Service Professor Emeritus of Biomedical Engineering [2006; 1971], Professor Emeritus of Medicine [2006; 1951], Director of the Department of Biomedical Engineering [1991; 1971]

Howard W. Jones, Jr., M.D.
Professor Emeritus of Gynecology and Obstetrics [1976; 1942]

Jean S. Kan, M.D.
Helen B. Taussig Professor Emerita of Pediatrics [1993; 1977]

Haskins K. Kashima, M.D.

M. Daniel Lane, Ph.D.
University Distinguished Service Professor Emeritus of Biological Chemistry [1969], Director of the Department of Biological Chemistry [1997; 1978]

Raymond E. Lenhard, Jr., M.D.
Professor Emeritus of Oncology [1997; 1973], Professor Emeritus of Medicine [1997; 1966]

Lawrence M. Lichtenstein, M.D.
Professor Emeritus of Medicine [1975; 1966]

Paul S. Lietman, M.D., Ph.D.

John W. Littlefield, M.D.
Professor Emeritus of Physiology [1992; 1985], Professor Emeritus of Pediatrics [1992; 1974], Director of the Department of Physiology [1992; 1985], Given Professor of Pediatrics and Director of the Department of Pediatrics [1985; 1974]

Donlin Martin Long, M.D., Ph.D.
University Distinguished Service Professor Emeritus of Neurological Surgery [1973], Director of the Department of Neurological Surgery [2000; 1973]

Risa Berman Mann, M.D.
Professor Emerita of Pathology [1995; 1977]

Simeon Margolis, M.D., Ph.D.
Professor Emeritus of Medicine [1977; 1965], Professor Emeritus of Biological Chemistry [1981; 1965]

Bernard R. Marsh, M.D.
Professor Emeritus of Otolaryngology-Head and Neck Surgery [1998; 1965]

Nina W. Matheson, M.L.
Professor Emerita of Medical Information in the Division of Health Sciences Informatics [1995; 1984]

Richard A. Meyer, M.S.
Professor Emeritus of Neurological Surgery [2009; 1980]

Albert S. Mildvan, M.D.
Professor Emeritus of Biological Chemistry [1981]

Mark E. Molliver, M.D.
Professor Emeritus of Neuroscience [2006; 1980], Professor Emeritus of Neurology [1984; 1971]

Vernon B. Mountcastle, M.D., D.Sc. (Hon.)
University Professor Emeritus of Neuroscience [1992; 1980], Director of the Department of Physiology [1980; 1964]

George T. Nager, M.D.
Andelot Professor Emeritus of Laryngology and Otology and University Distinguished Service Professor Emeritus [1988; 1954] (to 12/09/2010), Director of the Department of Laryngology and Otology [1984; 1970]

Ernst F.L. Niedermeyer, M.D.
Professor Emeritus of Neurological Surgery [1990; 1965], Professor Emeritus of Neurology [1990; 1973]

Albert H. Owens, Jr., M.D.
University Distinguished Service Professor Emeritus of Oncology [1999; 1973], University Distinguished Service Professor Emeritus of Medicine [1999; 1950], Eli Kennerly Marshall, Jr. Professor and Director of the Oncology Center [1992; 1973]

Solbert Permutt, M.D.
Professor Emeritus of Medicine [2006; 1971]

Irvin P. Pollack, M.D.
Professor Emeritus of Ophthalmology [1986; 1961]

Robert A. Prendergast, M.D.
Professor Emeritus of Ophthalmology [2000; 1965], Professor Emeritus of Pathology [2000; 1965]

Donald L. Price, M.D.
Professor Emeritus of Pathology [1978; 1971], Professor Emeritus of Neurology [1978; 1971], Professor Emeritus of Neuroscience [1983]

Cecil H. Robinson, Ph.D.
Professor Emeritus of Pharmacology and Molecular Sciences [1977; 1963]

David A. Robinson, Dr.Eng.
University Distinguished Service Professor Emeritus of Ophthalmology [1993; 1971], University Distinguished Service Professor Emeritus of Biomedical Engineering [1993; 1961], University Distinguished Service Professor Emeritus of Neuroscience [1993; 1983]

Richard S. Ross, M.D.
Professor Emeritus of Medicine [1997; 1948], Dean Emeritus of the School of Medicine [1975]

Gerhard Schmeisser, M.D.
Professor Emeritus of Orthopaedic Surgery [1991; 1954]
Marvin M. Schuster, M.D.
Janssen/Strauss-Halbreich Professor Emeritus of Digestive and Motility Disorders in the Department of Medicine [1976; 1961], Joint Appointment in Psychiatry [1980; 1961]

Arthur M. Silverstein, Ph.D.
Odd Fellows Professor Emeritus of Ophthalmic Immunology in the Department of Ophthalmology [1989; 1959], Joint Appointment in History of Medicine [1990; 1986]

Phillip R. Slavney, M.D.
Eugene Meyer III Professor Emeritus of Psychiatry [2008; 1976]

Hamilton O. Smith, M.D.
American Cancer Society Distinguished Research Professor Emeritus of Molecular Biology and Genetics [1998; 1967]

T. Phillip Waalkes, M.D., Ph.D.
Professor Emeritus of Oncology [1988; 1975]

George Melville Williams, M.D.
Dr. Bertram M. Bernheim Research Professor of Surgery [1969]

Jerry A. Winkelstein, M.D.
Professor Emeritus of Pediatrics [1983; 1973], Professor Emeritus of Medicine [1998], Professor Emeritus of Pathology [1998]

John H. Yardley, M.D.
University Distinguished Service Professor Emeritus of Pathology [1972; 1954], Director of the Department of Pathology [1992; 1988]

Ran Zeimer, Ph.D.
Morton F. Goldberg Professor of Ophthalmology [1993]

Philip D. Zieve, M.D.
Professor Emeritus of Medicine [2008; 1963]

William H. Zinkham, M.D.
Professor Emeritus of Pediatrics [1995; 1955], Distinguished Service Professor Emeritus of Pediatrics and Oncology, Professor Emeritus of Oncology [1995; 1975]

ASSOCIATE PROFESSORS
Fizan Abdullah, M.D., Ph.D.
Associate Professor of Pediatric Surgery [2009; 2005]

Theodore P. Abraham, M.B.B.S., M.D.
Associate Professor of Medicine [2004; 2003]

Robert J. Adams, D.V.M.
Associate Professor of Molecular and Comparative Pathobiology [1985; 1977]

Hyo S. Ahn, M.D.
Associate Professor of Radiology [1988; 1980]

Nita Ahuja, M.D.
Associate Professor of Surgery [2010; 2002] (from 10/01/2010), Associate Professor of Oncology [2010; 2005] (from 10/01/2010), Assistant Professor of Surgery [2003; 2002] (to 09/30/2010), Assistant Professor of Oncology [2005] (to 09/30/2010)

Michael C. Ain, M.D.
Associate Professor of Orthopaedic Surgery [2006; 1995], Associate Professor of Neurological Surgery [2006; 2000]

Esen Karamursel Akpek, M.D.
Associate Professor of Ophthalmology [2005; 1999], Associate Professor of Medicine [2010]

Rhoda M. Alani, M.D.
Adjunct Associate Professor of Oncology [2010; 1999]

Eric Matthew Aldrich, M.D., Ph.D.
Associate Professor of Neurology [2008; 1999], Joint Appointment in Physical Medicine and Rehabilitation [2000]

Mohamad Ezzeddine Allaf, M.D.
Associate Professor of Urology [2010; 2006] (from 12/01/2010), Associate Professor of Biomedical Engineering [2010; 2007] (from 12/01/2010), Associate Professor of Oncology [2011] (from 01/01/2011), Assistant Professor of Urology [2006] (to 11/30/2010), Assistant Professor of Biomedical Engineering [2007] (to 11/30/2010)

Richard P. Allen, Ph.D.
Associate Professor of Neurology [2010; 1980]

Robert Albert Anders, M.D., Ph.D.
Associate Professor of Pathology [2010; 2005], Assistant Professor of Oncology [2006]

Andrew Frank Angelino, M.D.
Associate Professor of Psychiatry [2009; 1999]

Lois J. Arend, M.D., Ph.D.
Visiting Associate Professor of Pathology [2010]

Aravind Arepally, M.D.
Associate Professor of Radiology [2008; 1997]

Deborah K. Armstrong, M.D.
Associate Professor of Oncology [2004; 1993], Associate Professor of Gynecology and Obstetrics [2004; 1999]

Dmitri Artemov, Ph.D.
Associate Professor of Radiology [2004; 1997], Associate Professor of Oncology [2004]

Bimal H. Ashar, M.D.
Associate Professor of Medicine [2008; 1999]

Mohamed Gehad Atta, M.B.B.Ch.
Associate Professor of Surgery [2008; 1999]

Paul Gisbert Auwaerter, M.D.
Associate Professor of Medicine [2003; 1996]

Thomas R. Aversano, M.D.
Associate Professor of Medicine [1993; 1985]

Dimitrios G. Avramopoulos, M.D., Ph.D.
Associate Professor of Psychiatry in Genetic Medicine [2007; 2002]

Elizabeth H. Aylward, Ph.D.
Associate Professor of Psychiatry [1993; 1990]

Alan Nathaniel Baer, M.D.
Associate Professor of Medicine [2007]

Serena Maria Bagnasco, M.D.
Associate Professor of Radiology [2004]

Douglas W. Ball, M.D.
Associate Professor of Medicine [2002; 1991], Associate Professor of Oncology [2002; 1995]
Sheila A. Barber, Ph.D.
Adjunct Associate Professor of Molecular and Comparative Pathobiology [2006; 1998]

Norman J. Barker, M.S.
Associate Professor of Pathology [2004; 1991],
Associate Professor of Art as Applied to Medicine [2004; 1991]

Detlef Bartelt, M.D.
Associate Professor of Radiology [2007; 2005]

Klemens H. Barth, M.D.
Associate Professor of Radiology [1980; 1974]

Howard C. Bartner, M.A.
Associate Professor of Art as Applied to Medicine [2000; 1962]

Susan S. Bassett, Ph.D.
Associate Professor of Psychiatry [1999; 1990]

Atul Bedi, M.B.B.S.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008; 2000],
Associate Professor of Oncology [2002; 1994]

Ashley Behrens, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008; 2000],
Associate Professor of Neurology [2009; 2001]

Michele F. Bellantoni, M.D.
Associate Professor of Medicine [1999; 1989]

Allan Joel Belzberg, M.D.
Associate Professor of Neurological Surgery [2000; 1990]

Frank Michael Bengel, M.D.
Associate Professor of Radiology [2005; 2000],
Joint Appointment in Medicine [2007]

Sean Michael Berenholtz, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2009; 2000],
Assistant Professor of Neurology [2003]

Dwight Edward Bergles, Ph.D.
Associate Professor of Neuroscience [2005; 2000],
Assistant Professor of Otolaryngology-Head and Neck Surgery [2005]
Simeon Antonov Boyadjiev, M.D.
Adjunct Associate Professor of Urology [2007]

Cynthia Melinda Boyd, M.D., M.P.H.
Associate Professor of Medicine [2010; 2002]

George M. Boyer, M.D.
Adjunct Associate Professor of Medicine [2004]

Michael Patrick Boyle, M.D.
Associate Professor of Medicine [2006; 1999]

Gerald Brandacher, M.D.
Visiting Associate Professor of Plastic and
Reconstructive Surgery [2010] (from 11/01/2010)

Steven R. Brant, M.D.
Associate Professor of Medicine [2002; 1992]

Cory Flagg Brayton, D.V.M.
Associate Professor of Molecular and Comparative
Pathobiology [2004]

James B. Brayton, D.V.M., M.D., M.P.H.
Associate Professor of Pediatrics [1976; 1969]

Joel I. Brenner, M.D.
Associate Professor of Pediatrics [1999]

Malcolm Vernon Brock, M.D.
Associate Professor of Surgery [2005; 2000],
Associate Professor of Oncology [2005; 2004]

Daniel Joseph Brotman, M.D.
Associate Professor of Medicine [2007; 2005]

David Buchholz, M.D.
Associate Professor of Neurology [1991; 1983]

Fred Bunz, M.D., Ph.D.
Associate Professor of Radiation Oncology and
Molecular Radiation Sciences [2007; 2003],
Associate Professor of Oncology [2007; 1999]

David E. Bush, M.D.
Associate Professor of Medicine [2004; 1983]

Ronald P. Byank, M.D.
Associate Professor of Orthopaedic Surgery
[1995; 1978]

Patrick Joseph Byrne, M.D.
Associate Professor of Otolaryngology-Head and
Neck Surgery [2007; 2001], Associate Professor of
Dermatology [2008]

Kurtis Alan Campbell, M.D.
Associate Professor of Surgery [2003; 1993]

Preston White Campbell, III, M.D.
Visiting Associate Professor of Pediatrics [1998]

Brendan J. Canning, Ph.D.
Associate Professor of Medicine [2002; 1996]

Marcia Irene Foo Canto, M.D.
Associate Professor of Medicine [2004; 1996],
Associate Professor of Oncology [2004; 2003]

George T. Capone, M.D.
Associate Professor of Pediatrics [2006; 1990]

Juan Ricardo Carhuapoma, M.D.
Associate Professor of Neurology [2010; 2004]
(from 11/01/2010), Associate Professor of
Anesthesiology and Critical Care Medicine [2010; 2004]
(from 11/01/2010), Associate Professor of Neurological Surgery [2010; 2004]
(from 11/01/2010), Assistant Professor of Neurology [2004] (to 10/31/2010), Assistant Professor of Anesthesiology and Critical Care Medicine [2004] (to 10/31/2010) , Assistant Professor of Neurological Surgery [2004] (to 10/31/2010)

Joseph A. Carrese, M.D., M.P.H.
Associate Professor of Medicine [2001; 1994]

John Anthony Carrino, M.D., M.P.H.
Associate Professor of Radiology [2006]

Livia A. Casciola-Rosen, Ph.D.
Associate Professor of Medicine [2000]

Vincenzo Casolaro, M.D., Ph.D.
Associate Professor of Medicine [2006; 1996]

Patrizio P. Caturegli, M.D.
Associate Professor of Pathology [2007; 1998],
Joint Appointment in Medicine [2007]

Pablo Ariel Celnik, M.D.
Associate Professor of Physical Medicine and
Rehabilitation [2009; 2003], Associate Professor of
Neurology [2009; 2004]

Richard Duane Cespedes, M.D.
Associate Professor of Urology [2009] (to
12/12/2010)

Shukti Chakravarti, Ph.D.
Associate Professor of Medicine [2004; 2000],
Assistant Professor of Cell Biology [2001],
Associate Professor of Ophthalmology [2004; 2000]

Arjun S. Chanmugam, M.D.
Associate Professor of Emergency Medicine
[2004; 1992]

Charles Patrick Chaulk, M.D., M.P.H.
Adjunct Associate Professor of Medicine [2007; 1994]

Allen R. Chen, M.D., Ph.D.
Associate Professor of Oncology [2005; 1995],
Associate Professor of Pediatrics [2005; 1995]

Linzhao Cheng, Ph.D.
Associate Professor of Medicine [2005], Associate
Professor of Gynecology and Obstetrics [2005; 2003], Associate Professor of Oncology [2005; 1997]

Michael James Choi, M.D.
Associate Professor of Medicine [2002; 1994]

James R. Christensen, M.D.
Associate Professor of Physical Medicine and
Rehabilitation [2002; 1992], Associate Professor of
Pediatrics [2002; 1992]

Christine H. Chung, M.D.
Associate Professor of Oncology [2010]

Jeanne Marie Clark, M.D., M.P.H.
Associate Professor of Medicine [2006; 2000]
Michael Robert Clark, M.D., M.P.H.
Associate Professor of Psychiatry [2000; 1992],
Joint Appointment in Otolaryngology-Head and Neck Surgery [2002]

William Alex Clarke, Ph.D.
Associate Professor of Pathology [2010; 2002]

Joseph Cofrancesco, Jr., M.D., M.P.H.
Associate Professor of Medicine [2004; 1997]

Kenneth J. Cohen, M.D.
Associate Professor of Oncology [2005; 1994],
Associate Professor of Pediatrics [2005; 1994]

Steven P. Cohen, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2006; 2004]

Nathaniel Charles Comfort, Ph.D.
Associate Professor of History of Medicine [2003; 2002]

Anne Marie Comi, M.D.
Associate Professor of Neurology [2007; 1999],
Associate Professor of Pediatrics [2007; 2002]

Katherine Conant, M.D.
Adjunct Associate Professor of Neurology [2009; 1998]

David W. Cooke, M.D.
Associate Professor of Pediatrics [2001; 1993]

Mary Concetta Corretti, M.D.
Associate Professor of Medicine [2003]

Andrea M. Corse, M.D.
Associate Professor of Neurology [2006; 1993],
Associate Professor of Neurological Surgery [2006]

Virginia L. Corson, M.S.
Associate Professor of Gynecology and Obstetrics in Genetic Medicine [2000; 1979], Associate Professor of Pediatrics [2000; 1982]

Sara Elizabeth Cosgrove, M.D.
Associate Professor of Medicine [2009; 2001]

Lino Covi, M.D.
Associate Professor of Psychiatry [1972; 1960]

Andrea Lynn Cox, M.D., Ph.D.
Associate Professor of Medicine [2009; 2003],
Associate Professor of Oncology [2009; 2004]

Barbara J. Crain, M.D., Ph.D.
Associate Professor of Pathology [1993],
Associate Professor of Neurology [1993],
Associate Professor of Oncology [1996]

Thomas O. Crawford, M.D.
Associate Professor of Neurology [1997; 1988],
Associate Professor of Pediatrics [1997; 1991]

William Allen Crawley, D.D.S., M.D.
Associate Professor of Plastic and Reconstructive Surgery [1993; 1984]

Peter S. Creticos, M.D.
Associate Professor of Medicine [1991; 1983]

Nathan E. Crone, M.D.
Associate Professor of Neurology [2006; 1994]

Carmen Cuffari, M.D.
Associate Professor of Pediatrics [2005; 1996]

Laurie E. Cutting, Ph.D.
Adjunct Associate Professor of Neurology [2009; 1999]

Richard W. Dabb, M.D.
Associate Professor of Plastic and Reconstructive Surgery [1999]

Gislin Dagnelle, Ph.D.
Associate Professor of Ophthalmology [2001; 1988]

Mel P. Daly, M.B.B.Ch.
Associate Professor of Medicine [2003]

Marian D. Damewood, M.D.
Associate Professor of Gynecology and Obstetrics [1993]

Peter E. Dans, M.D.
Associate Professor of Medicine [1978]

Gail Lois Daumit, M.D.
Associate Professor of Medicine [2006; 1999],
Joint Appointment in Psychiatry [2008]

Christos Davatzikos, Ph.D.
Associate Professor of Radiology [2001; 1995]

Randy Frank Davis, M.D.
Associate Professor of Orthopaedic Surgery [2003; 1983], Associate Professor of Neurological Surgery [2003; 1991]

Cecilia Teresa Davoli, M.D., M.P.H.
Associate Professor of Pediatrics [2008; 1993]

Iser Guillermo DeLeon, Ph.D.
Associate Professor of Psychiatry [2008; 1999]

Charles Coleman Della Santina, M.D., Ph.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2007; 2002], Associate Professor of Biomedical Engineering [2007; 2002]

Leonard R. Derogatis, Ph.D.
Associate Professor of Psychiatry [2003]

Prashant Desai, Ph.D.
Associate Professor of Oncology [2009; 2003]

John E. Desmond, Ph.D.
Associate Professor of Neurology [2005],
Associate Professor of Neuroscience [2010; 2007]

E. Gene Deune, M.D.
Associate Professor of Orthopaedic Surgery [1999], Associate Professor of Plastic and Reconstructive Surgery [2006; 1998]

Cathy W. DiBernardo,
Associate Professor of Ophthalmology [2004; 2000]

Mukund S. Didolkar, M.B.B.S.
Associate Professor of Surgery [1992]

Gregory Bruce Diette, M.D.
Associate Professor of Medicine [2005; 1998]

Renee Z. Dintzis, Ph.D.
Associate Professor of Cell Biology [1985; 1973],
Associate Professor of Biophysics and Biophysical Chemistry [1985; 1971]
Jeffrey M. Dodd-O, M.D., Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2008; 1995], Assistant Professor of Surgery [2001]

Robert T. Donham, M.D., Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1980; 1979]

Thomas Walter Donner, M.D.
Visiting Associate Professor of Medicine [2010] (from 09/01/2010)

Sylvain Dore, Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2004; 2000] (to 08/31/2010),
Associate Professor of Pharmacology and Molecular Sciences [2009] (to 08/31/2010)

Susan Elizabeth Dorman, M.D.
Associate Professor of Medicine [2008; 2001]

Earl Ray Dorsey, M.D.
Visiting Associate Professor of Neurology [2010] (from 08/09/2010)

Charles George Drake, M.D., Ph.D.
Associate Professor of Oncology [2008; 2002],
Assistant Professor of Urology [2005]

Wenzhen Duan, M.D., Ph.D.
Associate Professor of Psychiatry [2010; 2004] (from 10/01/2010),
Assistant Professor of Psychiatry [2006; 2004] (to 09/30/2010)

Elia Junyat Duh, M.D.
Associate Professor of Ophthalmology [2008; 1999]

Mark Douglas Duncan, M.D.
Associate Professor of Surgery [2001; 1996],
Associate Professor of Oncology [2001; 2000]

James P. Dunn, M.D.
Associate Professor of Ophthalmology [1996; 1991], Occupying the Eugene de Juan Professorship in Ophthalmic Education in the Department of Ophthalmology [2006]

Charles George Eberhart, M.D., Ph.D.
Associate Professor of Pathology [2006; 2001],
Associate Professor of Oncology [2006; 2004],
Associate Professor of Ophthalmology [2006]

David H. Edwin, Ph.D.
Associate Professor of Medical Psychology in the Department of Psychiatry [1999; 1979]

David Thomas Efron, M.D.
Associate Professor of Surgery [2010; 2002],
Associate Professor of Anesthesiology and Critical Care Medicine [2010; 2006]

Jonathan E. Efron, M.D.
Associate Professor of Surgery [2009], Occupying the Mark M. Ravitch Chair in Surgery [2009]

Josephine Mary Egan, M.B.B.Ch.
Associate Professor of Medicine [1998; 1991]

Rebecca D. Elon, M.D.
Associate Professor of Medicine [1994; 1991]

Leisha Ann Emens, M.D., Ph.D.
Associate Professor of Oncology [2009; 2001]

John Eng, M.D.
Associate Professor of Radiology [2005; 1997],
Joint Appointment in Health Sciences Informatics [2001]

Eric Andrew Engels, M.D., M.P.H.
Associate Professor of Medicine [2008; 1998]

Peter J. Espenshade, Ph.D.
Associate Professor of Cell Biology [2008; 2002]

Allen Dale Everett, M.D.
Associate Professor of Pediatrics [2003]

George S. Everly, Jr., Ph.D.
Associate Professor of Psychiatry [2005]

James Courtney Fackler, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1999; 1996]

Peter J. Fagan, Ph.D.
Associate Professor of Medical Psychology in the Department of Psychiatry [1991; 1983]

Nauder Faraday, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2001], Assistant Professor of Surgery [2001]

Richard A. Farrell, Ph.D.
Associate Professor of Ophthalmology [1993]

James A. Fauerbach, Ph.D.
Associate Professor of Medical Psychology in the Department of Psychiatry [2002; 1992],
Associate Professor of Physical Medicine and Rehabilitation [2002; 2004], Joint Appointment in Surgery [2007]

Laura Marie Fayad, M.D.
Associate Professor of Radiology [2009; 2002],
Associate Professor of Oncology [2010], Assistant Professor of Orthopaedic Surgery [2006]

David J. Feller-Kopman, M.D.
Associate Professor of Medicine [2007]

Robert P. Ferguson, M.D.
Associate Professor of Medicine [1993]

Henry E. Fessler, M.D.
Associate Professor of Medicine [1998; 1988]

John Howard Fetting, III, M.D.
Associate Professor of Oncology [1988; 1979],
Associate Professor of Medicine [1990; 1979],
Assistant Professor of Psychiatry [1982; 1981]

Derek Michael Fine, M.D.
Associate Professor of Medicine [2008; 1999]

Michael I. Fingerhood, M.D.
Associate Professor of Medicine [2002; 1989]

Toren Finkel, M.D., Ph.D.
Visiting Associate Professor of Medicine [1998]

Joseph Finkelstein, M.D., Ph.D.
Associate Professor of Medicine [2010; 2008],
Joint Appointment in Health Sciences Informatics [2008]

Rhonda S. Fishel, M.D.
Associate Professor of Surgery [2004; 2000] (to 11/21/2010)

Jodi Anne Flaws, Ph.D.
Adjunct Associate Professor of Gynecology and Obstetrics [2002]
Jerome L. Fleg, M.D.
Adjunct Associate Professor of Medicine [2009]
Kevin Robert Fontaine, Ph.D.
Associate Professor of Medicine [2008; 2001]
Piotr J. Franaszczuk, Ph.D.
Associate Professor of Neurology [2004; 1999]
Howard Wayne Francis, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2002; 1995]
Clair Ann Francomano, M.D.
Associate Professor of Medicine [1992; 1984], Assistant Professor of Pediatrics [1985; 1984]
Steven Frank, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2010]
Deborah Anne Frassica, M.D.
Associate Professor of Radiation Oncology and Molecular Radiation Sciences [2004; 2003], Associate Professor of Oncology [2004; 1999]
Carmelita G. Frondoza, Ph.D.
Associate Professor of Orthopaedic Surgery [1999; 1991]
Ephraim J. Fuchs, M.D.
Associate Professor of Oncology [2002; 1994]
Kathleen Gabrielson, D.V.M., Ph.D.
Associate Professor of Molecular and Comparative Pathobiology [2010; 2000], Associate Professor of Pathology [2010]
Nicholas Roger Gaiano, Ph.D.
Associate Professor of Neuroscience [2007; 2002], Associate Professor of Oncology [2007; 2003]
Philippe Edmond Gailloud, M.D.
Associate Professor of Radiology [2009; 2003]
Emily Germain-Lee, M.D.
Associate Professor of Pediatrics [2003; 1975]
Joan Page Gerring, M.D.
Associate Professor of Psychiatry [2000; 1992], Associate Professor of Pediatrics [2000; 1987]
Arlene C. Gerson, Ph.D.
Associate Professor of Pediatrics [2009; 1999]
Robert D. Gerwin, M.D.
Associate Professor of Neurology [2008; 1990]
Maura Lianne Gillison, M.D.
Adjunct Associate Professor of Oncology [2009; 2000]
Dheeraj Gandhi, M.B.B.S.
Associate Professor of Radiology [2010; 2008] (from 10/01/2010), Associate Professor of Neurological Surgery [2010; 2009] (from 10/01/2010), Associate Professor of Neurology [2010; 2009] (from 10/01/2010), Assistant Professor of Radiology [2008] (to 09/30/2010), Assistant Professor of Neurological Surgery [2009] (to 09/30/2010), Assistant Professor of Neurology [2009] (to 09/30/2010)
Alejandro Gandias, M.D.
Associate Professor of Surgery [2004]
Wei Dong Gao, M.B., M.D., Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2010; 2002]
Jairo E. Garcia, M.D.
Associate Professor of Gynecology and Obstetrics [1997]
Suzanne Gartner, Ph.D.
Adjunct Associate Professor of Neurology [2009; 1995]
Olga M.B. Gatewood, M.D.
Associate Professor of Radiology [1976] (on leave of absence from 12/16/2010), Associate Professor of Urology [1987] (on leave of absence from 12/16/2010)
Bob W. Gayler, M.D.
Associate Professor of Radiology [1973; 1967]
Kelly Anne Gebo, M.D., M.P.H.
Associate Professor of Medicine [2007; 2001]
Peter L. Gehlbach, M.D., Ph.D.
Associate Professor of Ophthalmology [2007; 2000], Associate Professor of Biomedical Engineering [2007]
Allan Charles Gelber, M.D., Ph.D., M.P.H.
Associate Professor of Medicine [2003; 1994]
Rene R. Genadry, M.D.
Associate Professor of Gynecology and Obstetrics [1986; 1975]
Romeryuko Guance Geocadin, M.D.
Associate Professor of Neurology [2007; 1999], Associate Professor of Anesthesiology and Critical Care Medicine [2007; 2006], Associate Professor of Neurological Surgery [2007; 2003]
Christos S. Georgiades, M.D., Ph.D.
Associate Professor of Radiology [2009; 2003]
Golda S. Ginsburg, Ph.D.
Associate Professor of Psychiatry [2003; 1999]
Ebeid Reda Girgis, M.B.B.Ch.
Associate Professor of Medicine [2007; 2000]
Joseph N. Gitlin, D.P.H.
Associate Professor of Radiology [1988; 1986]
Douglas Edward Gladstone, M.D.
Visiting Associate Professor of Oncology [2008]
F. Michael Gloth, III, M.D.
Associate Professor of Medicine [1998; 1990]
Elisabeth B. Glawatzki, Ph.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008; 2000], Associate Professor of Neuroscience [2009; 2007]
Kristine Glunde, Ph.D.
Associate Professor of Radiology [2009; 2004], Associate Professor of Oncology [2009; 2005]
Christopher D. Gocke, M.D.
Associate Professor of Pathology [2005], Associate Professor of Oncology [2007]
Archie S. Golden, M.D., M.P.H.
Associate Professor of Pediatrics [1987; 1970]
David B.K. Golden, M.D.
Associate Professor of Medicine [1996; 1980]
Sherita Hill Golden, M.D.
Associate Professor of Medicine [2007; 2000]
Toby A. Gordon, Sc.D.
Associate Professor of Surgery [1995; 1988]
Sheldon H. Gottlieb, M.D.
Associate Professor of Medicine [1986; 1974]
Allan Gottschalk, M.D., Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2001; 2000]
Christine G. Gourin, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2007]
Emily W. Gower, Ph.D.
Associate Professor of Ophthalmology [2009; 2002]
Dennis John Grab, Ph.D.
Associate Professor of Pathology [2009], Associate Professor of Pediatrics [2002; 2001]
Jeremy David Graden, M.B.B.S.
Associate Professor of Medicine [2000; 1994]
Marco A. Grados, M.D.
Associate Professor of Psychiatry [2010; 1996]
Ernest Marshall Graham, M.D.
Associate Professor of Gynecology and Obstetrics [2005; 1999]
Thomas J. Graham, M.D.
Associate Professor of Plastic and Reconstructive Surgery [2000]
Robert S. Greenberg, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1999; 1991]
Peter Schuyler Greene, M.D.
Associate Professor of Cardiac Surgery [1999; 1994], Joint Appointment in Health Sciences Informatics [2001; 1996], Associate Dean for Emerging Technologies [2001]
Louise Barnett Grochow, M.D.
Associate Professor of Oncology [1990; 1980], Associate Professor of Medicine [1991; 1981]
Richard J. Gross, M.D.
Associate Professor of Medicine [2002; 1977]
Angela Sarah Guarda, M.D.
Associate Professor of Psychiatry [2008; 1995]
Laura A. Guay, M.D.
Adjunct Associate Professor of Pathology [2010; 1996], Adjunct Associate Professor of Pediatrics [2010; 1996]
Sandra E. Guggino, Ph.D.
Associate Professor of Medicine [1995; 1988], Associate Professor of Physiology [2003]
Ahmet Gurakar, M.D.
Visiting Associate Professor of Medicine [2008]
Paul A. Gurbel, M.D.
Associate Professor of Medicine [2003; 1998]
Edith Diament Gurewitsch, M.D.
Associate Professor of Gynecology and Obstetrics [2005; 1997], Associate Professor of Biomedical Engineering [2008; 2005]
Louis P. Hagopian, Ph.D.
Associate Professor of Psychiatry [2003; 1992]
W. Daniel Hale, Ph.D.
Adjunct Associate Professor of Medicine [2009]
Misop Han, M.D.
Associate Professor of Urology [2009; 2006], Associate Professor of Oncology [2009]
Andrew Peter Harris, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1992; 1984] (on leave of absence from 01/05/2011), Associate Professor of Gynecology and Obstetrics [1998; 1987] (on leave of absence from 01/05/2011)
Nancy L. Harthun, M.D.
Associate Professor of Surgery [2010]
Norman James Haughey, Ph.D.
Associate Professor of Neurology [2009; 2002]
Frederick H. Hausheer, M.D.
Adjunct Associate Professor of Oncology [1995]
Elliott Richard Haut, M.D.
Associate Professor of Surgery [2010; 2004], Associate Professor of Anesthesiology and Critical Care Medicine [2010; 2006]
Stephen J. Heishman, Ph.D.
Adjunct Associate Professor of Behavioral Biology in the Department of Psychiatry [2005; 1991]
Eugenie S. Heitmiller, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1993; 1986], Associate Professor of Pediatrics [1994; 1957]
Richard Frank Heitmiller, M.D.
Associate Professor of Surgery [1993; 1987], Associate Professor of Oncology [1995]
H. Franklin Herlong, M.D.
Associate Professor of Medicine [1985; 1980]
Joseph M. Herman, M.D.
Associate Professor of Radiation Oncology and Molecular Radiation Sciences [2011; 2005] (from 02/01/2011), Associate Professor of Oncology [2011; 2005] (from 02/01/2011), (to 01/31/2011), Associate Professor of Surgery [2011; 2007] (from 02/01/2011), Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2007; 2005] (to 01/31/2011), Assistant Professor of Oncology [2007; 2005] (to 01/31/2011), Assistant Professor of Surgery [2007] (to 01/31/2011)
Christian J. Herold, M.D.
Associate Professor of Radiology [1999; 1993]
Charles Steven Hesdorffer, M.B.B.Ch.
Associate Professor of Medicine [2006]
Manuel Hidalgo, M.D.
Adjunct Associate Professor of Oncology [2009; 2001]
Robert D. Hienz, Ph.D.
Associate Professor of Behavioral Biology in the Department of Psychiatry [1982; 1975]
J. Laurance Hill, M.D.
Associate Professor of Pediatric Surgery [1977]

Peter Michael Hill, M.D.
Associate Professor of Emergency Medicine [2010; 1998]

Felicia Hill-Briggs, Ph.D.
Associate Professor of Medicine [2008; 2005], Associate Professor of Physical Medicine and Rehabilitation [2008; 1998]

Jan H. Hoh, Ph.D.
Associate Professor of Physiology [2000; 1994]

Michael J. Holliday, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [1987; 1975], Associate Professor of Neurological Surgery [1989; 1987]

Alexander H. Hoon, Jr., M.D., M.P.H.
Associate Professor of Pediatrics [2002; 1990]

Andrew G. Horti, Ph.D.
Associate Professor of Radiology [2008; 2004]

Maureen Renee Horton, M.D.
Associate Professor of Medicine [2008; 1999]

Keith A. Horvath, M.D.
Adjunct Associate Professor of Cardiac Surgery [2005]

Mir Ahamed Hossain, Ph.D.
Associate Professor of Neurology [2007; 1997]

Eric Edwin Howell, M.D.
Associate Professor of Medicine [2009; 1999]

Edbert Brian Hsu, M.D., M.P.H.
Associate Professor of Emergency Medicine [2008; 2000]

Tah-Hsiung Hsu, M.D.
Associate Professor of Medicine [1977; 1971]

Judy Huang, M.D.
Associate Professor of Neurological Surgery [2008; 2002]

Peng Huang, Ph.D.
Associate Professor of Oncology [2008]

W. Jackson Iliff, M.D.
Associate Professor of Ophthalmology [1984; 1976]

Masaru Ishii, M.D., Ph.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2010; 2002]

Lisa K. Jacobs, M.D.
Associate Professor of Surgery [2010; 2004], Assistant Professor of Oncology [2009]

Michael Anthony Jacobs, Ph.D.
Associate Professor of Radiology [2009; 2001], Associate Professor of Oncology [2009; 2005]

Suzanne M. Jan de Beur, M.D.
Associate Professor of Medicine [2008; 1998]

Jeffrey Stuart Janofsky, M.D.
Associate Professor of Psychiatry [1994; 1986]

Lauren M. Jansson, M.D.
Associate Professor of Pediatrics [2009; 1991]

Geetha Jayaram, M.B.B.S.
Associate Professor of Psychiatry [1997; 1982]

Jin Jen, M.D., Ph.D.
Associate Professor of Oncology [2000; 1996]

Allan D. Jensen, M.D.
Associate Professor of Ophthalmology [1993; 1976]

Alain Joffe, M.D., M.P.H.
Associate Professor of Pediatrics [1988; 1981]

Carl Alvin Johnson, M.D.
Associate Professor of Orthopaedic Surgery [1993; 1984]

Lynne C. Jones, Ph.D.
Associate Professor of Orthopaedic Surgery [2000; 1985]

Daniel Philip Judge, M.D.
Associate Professor of Medicine [2008; 2000]

Albert S. Jun, M.D., Ph.D.
Associate Professor of Ophthalmology [2009; 2002]

Jacqueline Marie Junkins-Hopkins, M.D.
Visiting Associate Professor of Dermatology [2008] (to 02/18/2011), Visiting Associate Professor of Pathology [2010; 2009] (to 02/18/2011)
Ihab R. Kamel, M.D., Ph.D.
Associate Professor of Radiology [2005; 2000],
Associate Professor of Oncology [2009]

Michael J. Kaminsky, M.D.
Associate Professor of Psychiatry [1994; 1976]

James W. Karesh, M.D.
Associate Professor of Ophthalmology [1998; 1991]

Gregory James Kato, M.D.
Associate Professor of Pediatrics [2000; 1991]

Nicholas Katsanis, Ph.D.
Adjunct Associate Professor of Ophthalmology in Genetic Medicine [2009; 2002], Joint Appointment in Molecular Biology and Genetics [2004]

Nevin Margolis Katz, M.D.
Visiting Associate Professor of Surgery [2010]

Richard M. Katz, M.D.
Associate Professor of Pediatrics [2006; 1994]

Satomi Kawamoto, M.D.
Associate Professor of Radiology [2009; 2001]

William G. Kearns, Ph.D.
Adjunct Associate Professor of Gynecology and Obstetrics [2010]

Khaled M. Kebaish, M.B.B.Ch.
Associate Professor of Orthopaedic Surgery [2010; 1999]

Michael H. Kelemen, M.D.
Associate Professor of Medicine [1991; 1975]

James H. Kelly, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [1985], Associate Professor of Neurology [1992]

Akhil Jay Khanna, M.D.
Associate Professor of Orthopaedic Surgery [2009; 2004], Associate Professor of Biomedical Engineering [2009; 2007]

Nagi F. Khouri, M.D.
Associate Professor of Radiology [1990],
Associate Professor of Oncology [2004]

Michael S. Kidorf, Ph.D.
Associate Professor of Psychiatry [2000; 1993]

Karen Eileen King, M.D.
Associate Professor of Pathology [2006; 1996],
Associate Professor of Oncology [2006; 1999]

Van L. King, M.D.
Associate Professor of Psychiatry [2003; 1991]

Alfredo Kirkwood, Ph.D.
Associate Professor of Neuroscience [2004; 1997]

Thomas Dean Kirsch, M.D., M.P.H.
Associate Professor of Emergency Medicine [2008; 2002]

Stanley A. Klatsky, M.D.
Associate Professor of Plastic and Reconstructive Surgery [1996; 1968]

Alison Patricia Klein, Ph.D.
Associate Professor of Oncology [2009; 2004],
Assistant Professor of Pathology [2004]

Lawrence R. Kleinberg, M.D.
Associate Professor of Radiation Oncology and Molecular Radiation Sciences [2004; 2003],
Associate Professor of Neurological Surgery [2004; 2001], Associate Professor of Oncology [2004; 1993]

James J. Knierving, Ph.D.
Associate Professor of Neuroscience [2009]

David L. Knox, M.D.
Associate Professor of Ophthalmology [1967; 1962]

Eric H.W. Kossoff, M.D.
Associate Professor of Neurology [2010; 2002],
Associate Professor of Pediatrics [2010; 2002]

Sabine Kost-Byerly, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2010; 2000]

Jeanne Kowalski, Ph.D.
Adjunct Associate Professor of Oncology [2010; 2001]

Dara L. Kraitchman, D.V.M., Ph.D.
Associate Professor of Radiology [2004; 1996],
Associate Professor of Molecular and Comparative Pathobiology [2009]

John W. Krakauer, M.D.
Visiting Associate Professor of Neurology [2010]
(from 10/01/2010)

Edward S. Kraus, M.D.
Associate Professor of Medicine [1993; 2002]

Michael A. Kraut, M.D.
Associate Professor of Radiology [2001; 1991],
Associate Professor of Neurological Surgery [2002],
Associate Professor of Oncology [2005]

Steven J. Kravet, M.D.
Associate Professor of Medicine [2009; 1995]

Irene C. Kuo, M.D.
Associate Professor of Ophthalmology [2008; 2000]

Scot C. Kuo, Ph.D.
Associate Professor of Biomedical Engineering [2001],
Associate Professor of Cell Biology [2006]

Ellen E. Ladenheim, Ph.D.
Associate Professor of Psychiatry [1998; 1992]

Daniel Alexander Laheru, M.D.
Associate Professor of Oncology [2008; 2001],
Occupying the Ian T. MacMillan Chair in Clinical Pancreatic Cancer Research [2008]

Alan M. Lake, M.D.
Associate Professor of Pediatrics [1991; 1979]

Stanford I. Lambert, M.D.
Associate Professor of Dermatology [1973]

Rebecca Landa, Ph.D.
Associate Professor of Psychiatry [1995; 1986]

Andrew Lane, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2006; 1999]

Julie Robin Lange, M.D.
Associate Professor of Surgery [2009; 1994],
Assistant Professor of Dermatology [2006],
Associate Professor of Oncology [2009; 1996]
Dawn M. Laporte, M.D.
Associate Professor of Orthopaedic Surgery [2009; 2001]
Albert Clark Lardo, Ph.D.
Associate Professor of Medicine [2008; 2002],
Associate Professor of Biomedical Engineering [2008; 2002]
Henry Tien Lau, M.D.
Associate Professor of Pediatric Surgery [1998; 1996]
Carlton K. K. Lee, Pharm.D., M.P.H.
Associate Professor of Pediatrics [2010; 1992] (from 10/01/2010), Assistant Professor of Pediatrics [1995; 1992] (to 09/30/2010)
Ho Chang Benjamin Lee, M.D.
Associate Professor of Psychiatry [2010; 2003] (from 10/01/2010), Assistant Professor of Psychiatry [2003] (to 09/30/2010)
Michael K. Lee, Ph.D.
Adjunct Associate Professor of Pathology [2009; 1995]
Gary P. Lees, M.S.
Associate Professor of Art as Applied to Medicine [1980; 1970], Director of the Department of Art as Applied to Medicine [1983]
Arabella I. Leet, M.D.
Associate Professor of Orthopaedic Surgery [2007; 2002]
Maureen A. Lefton-Greif, Ph.D.
Associate Professor of Pediatrics [2007; 1990], Associate Professor of Otolaryngology-Head and Neck Surgery [2008]
Christoph Ulrich Lehmann, M.D.
Associate Professor of Pediatrics [2007; 1998], Associate Professor of Dermatology [2007; 2005], Joint Appointment in Health Sciences Informatics [2001]
Harold P. Lehmann, M.D., Ph.D.
Associate Professor of Health Sciences Informatics [2004; 1995], Associate Professor of Pediatrics [1999; 1992]
Sean Xiao Leng, M.D., Ph.D.
Associate Professor of Medicine [2010; 2002]
Christoph Lengauer, Ph.D.
Adjunct Associate Professor of Oncology [2003; 1996]
Mark James Levis, M.D., Ph.D.
Associate Professor of Oncology [2008; 2002], Associate Professor of Medicine [2008; 2005]
Victor Levitsky, Ph.D.
Associate Professor of Oncology [2005]
Frederick Levy, J.D., M.D.
Associate Professor of Emergency Medicine [2009; 2005]
Xingde Li, Ph.D.
Associate Professor of Biomedical Engineering [2008]
Zhiping Li, M.D.
Associate Professor of Medicine [2010; 2003]
Charles Joung Woon Limb, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2009; 2003]
Sandra Y. Lin, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2009; 2002]
Karen S. Lindeman, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1994; 1987]
Geoffrey Shiu Fei Ling, M.D., Ph.D.
Adjunct Associate Professor of Neurology [2007], Adjunct Associate Professor of Anesthesiology and Critical Care Medicine [2007]
Paul H. Lipkin, M.D.
Associate Professor of Pediatrics [2008; 1995]
John Richard Lipsey, M.D.
Associate Professor of Psychiatry [1992; 1982]
Mark Chang-Hwa Liu, M.D.
Associate Professor of Medicine [1994; 1981]
Rafael H. Llinas, M.D.
Associate Professor of Neurology [2007; 2000]
David Mark Loeb, M.D., Ph.D.
Associate Professor of Oncology [2010; 2000], Associate Professor of Pediatrics [2010; 2000]
Christine H. Lorenz, Ph.D.
Visiting Associate Professor of Radiology [2005]
Gregory Michael Lucas, M.D., Ph.D.
Associate Professor of Medicine [2006; 1997]
Jeffrey Ryan Lukish, M.D.
Visiting Associate Professor of Pediatric Surgery [2010]
Leo Luznik, M.D.
Associate Professor of Oncology [2008; 2000]
Dean F. Mackinnon, M.D.
Associate Professor of Psychiatry [2004; 1996]
Katarzyna J. Macura, M.D., Ph.D.
Associate Professor of Radiology [2008; 2000], Assistant Professor of Urology [2008]
Donna Lynn Magid, M.D.
Associate Professor of Radiology [1990; 1983], Associate Professor of Functional Anatomy and Evolution [2009], Joint Appointment in Orthopaedic Surgery [1986]
Thomas H. Magnuson, M.D.
Associate Professor of Surgery [1998; 1992]
Mahadevappa Mahesh, Ph.D.
Associate Professor of Radiology [2008; 1996], Associate Professor of Medicine [2008; 2007]
Ernest Mark Mahone, Ph.D.
Associate Professor of Psychiatry [2007; 1997]
Martin A. Makary, M.D., M.P.H.
Associate Professor of Surgery [2007; 2003]
Yukari Carol Manabe, M.D.
Associate Professor of Medicine [2007; 1999]
Joseph Leonard Mankowski, D.V.M., Ph.D.
Associate Professor of Molecular and Comparative Pathobiology [2005; 1996], Associate Professor of Neurology [2007], Associate Professor of Pathology [2005; 1996]
Nicholas John Maragakis, M.D.
Associate Professor of Neurology [2006; 1999]

Joseph E. Marine, M.D.
Associate Professor of Medicine [2009; 2004]

Lynette J. Mark, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1998; 1990], Associate Professor of Otolaryngology-Head and Neck Surgery [1998; 1992]

Harry Milton Marks, Ph.D.
Associate Professor of History of Medicine [1996; 1989] (to 01/25/2011)

Michael Robert Marohn, D.O.
Associate Professor of Surgery [2003]

Laura Marsh, M.D.
Adjunct Associate Professor of Psychiatry [2009; 1998]

Bruce C. Marshall, M.D.
Associate Professor of Medicine [2004]

Elizabeth Anne Martinez, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2008; 1996], Assistant Professor of Surgery [2001]

Ciro Roberto Martins, M.D.
Associate Professor of Dermatology [2005; 1998] (to 03/31/2011), Joint Appointment in Medicine [2000] (to 03/31/2011)

Ranjiv Ignatius Mathews, M.D.
Associate Professor of Urology [2004; 2000], Associate Professor of Pediatrics [2004; 2000]

Brian Richard Matlaga, M.D., M.P.H.
Associate Professor of Urology [2010; 2006]

Elizabeth C. Matsui, M.D.
Associate Professor of Pediatrics [2008; 2003]

William Hikaru Matsui, M.D.
Associate Professor of Oncology [2008; 2001]

Erika L. Matunis, Ph.D.
Associate Professor of Cell Biology [2008; 2002]

Andrew S. McCallion, Ph.D.
Associate Professor of Molecular and Comparative Pathobiology in Genetic Medicine [2009; 2003], Research Associate in Medicine [2000]

Russell McCally, Ph.D.
Associate Professor of Ophthalmology [1994]

Melissa Lee McCarthy, Sc.D.
Adjunct Associate Professor of Emergency Medicine [2010; 1999]

Michael A. McClinton, M.D.
Associate Professor of Plastic and Reconstructive Surgery [2006; 1980]

Timothy James McCulley, M.D.
Visiting Associate Professor of Ophthalmology [2011] (from 01/01/2011)

John Wood McDonald, III, M.D., Ph.D.
Associate Professor of Neurology [2004], Associate Professor of Physical Medicine and Rehabilitation [2004]

John F. McDyer, M.D.
Associate Professor of Medicine [2010; 2000]

Jane E. McGowan, M.D.
Visiting Associate Professor of Pediatrics [2006; 2000] (to 12/31/2010)

Sharon McGrath-Morrow, M.D.
Associate Professor of Pediatrics [2002; 1992]

Melvin Gordon McNinis, M.D.
Adjunct Associate Professor of Psychiatry [1997; 1993]

Robin McKenzie, M.D.
Associate Professor of Medicine [2010; 1997]

Francis Joseph McMahon, M.D.
Visiting Associate Professor of Psychiatry [1997; 1994]

Simon Cavendish Mears, M.D., Ph.D.
Associate Professor of Orthopaedic Surgery [2011; 2003] (from 01/01/2011), Assistant Professor of Orthopaedic Surgery [2003] (to 12/31/2010)

Ronne Charles Mease, Ph.D.
Associate Professor of Radiology [2005; 2003], Associate Professor of Oncology [2009]

Joshua Todd Mendell, M.D., Ph.D.
Associate Professor of Pediatrics in Genetic Medicine [2009; 2004], Joint Appointment in Molecular Biology and Genetics [2004], Associate Professor of Oncology [2010] (from 09/01/2010)

Shannath L. Merbs, M.D., Ph.D.
Associate Professor of Ophthalmology [2005; 1997], Associate Professor of Oncology [2005; 1999]

William T. Merritt, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1994; 1985], Associate Professor of Surgery [1999]

E. Jeffrey Metter, M.D.
Associate Professor of Neurology [1989; 1988]

Jon K. Meyer, M.D.
Associate Professor of Psychiatry [2004]

Andrea Nikki Meyerhoff, M.D.
Adjunct Associate Professor of Medicine [2006]

James D. Michelson, M.D.
Associate Professor of Orthopaedic Surgery [1993; 1987]

Carole B. Miller, M.D.
Associate Professor of Oncology [1997; 1990]

Edgar Raymond Miller, III, M.D., Ph.D.
Associate Professor of Medicine [2003; 1996]

Redonda Gail Miller, M.D.
Associate Professor of Medicine [2006; 1996]

Robert E. Miller, M.D.
Associate Professor of Pathology [1984; 1973], Associate Professor of Biomedical Engineering [1984; 1976], Joint Appointment in Health Sciences Informatics [2001]

Stanley J. Miller, M.D.
Associate Professor of Dermatology [2001; 1992], Associate Professor of Otolaryngology-Head and Neck Surgery [1995]

Francis D. Milligan, M.D.
Associate Professor of Medicine [1976; 1970]
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guo-li Ming, M.D., Ph.D.</td>
<td>Associate Professor of Neurology</td>
<td>2007; 2003</td>
</tr>
<tr>
<td></td>
<td>Associate Professor of Neuroscience</td>
<td>2007; 2003</td>
</tr>
<tr>
<td>Stanley L. Minken, M.D.</td>
<td>Associate Professor of Surgery</td>
<td>1994; 1982</td>
</tr>
<tr>
<td>Miriam Z. Mintzer, Ph.D.</td>
<td>Associate Professor of Psychiatry</td>
<td>2004; 1998</td>
</tr>
<tr>
<td>Mack C. Mitchell, Jr., M.D.</td>
<td>Associate Professor of Medicine</td>
<td>2003</td>
</tr>
<tr>
<td>Peter Joseph Mogayzel, Jr., M.D., Ph.D.</td>
<td>Associate Professor of Pediatrics</td>
<td>2004; 1998</td>
</tr>
<tr>
<td>Alison Rae Moliterno, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>2010; 1976</td>
</tr>
<tr>
<td>Francis Mark Mondimore, M.D.</td>
<td>Associate Professor of Psychiatry</td>
<td>2009; 1999</td>
</tr>
<tr>
<td>John R. Moore, M.D.</td>
<td>Associate Professor of Orthopaedic Surgery</td>
<td>1985; 1980</td>
</tr>
<tr>
<td>W. Tabb Moore, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>1998</td>
</tr>
<tr>
<td>Howard Moses, M.D.</td>
<td>Associate Professor of Neurology</td>
<td>1993; 1966</td>
</tr>
<tr>
<td>Stewart H. Mostofsky, M.D.</td>
<td>Associate Professor of Neurology, Joint Appointment in Psychiatry</td>
<td>2006; 1995</td>
</tr>
<tr>
<td>Morton Maimon Mower, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>2007</td>
</tr>
<tr>
<td>Suheil Jamil Muasher, M.D.</td>
<td>Associate Professor of Gynecology and Obstetrics</td>
<td>2005</td>
</tr>
<tr>
<td>Gerard E. Mullin, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>2009; 2005</td>
</tr>
<tr>
<td>Laura Mae Mumford, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>1992; 1984</td>
</tr>
<tr>
<td>Beatriz Munoz, M.S.</td>
<td>Associate Professor of Ophthalmology</td>
<td>2001; 1987</td>
</tr>
<tr>
<td>Beth Brianna Murinson, M.D., Ph.D.</td>
<td>Associate Professor of Neurology, Joint Appointment in Medicine</td>
<td>2010; 2002</td>
</tr>
<tr>
<td>Kathleen Marie Murphy, Ph.D.</td>
<td>Adjunct Associate Professor of Pathology</td>
<td>2010; 2001</td>
</tr>
<tr>
<td>Allen C. Myers, Ph.D.</td>
<td>Associate Professor of Medicine</td>
<td>1998; 1991</td>
</tr>
<tr>
<td>Maurice Y. Nahabedian, M.D.</td>
<td>Associate Professor of Plastic and Reconstructive Surgery</td>
<td>2000; 1996</td>
</tr>
<tr>
<td>Dale M. Needham, M.D., Ph.D.</td>
<td>Associate Professor of Medicine, Associate Professor of Physical Medicine and Rehabilitation</td>
<td>2010; 2008</td>
</tr>
<tr>
<td>Georges Jabouret Netto, M.D.</td>
<td>Associate Professor of Pathology</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td>Associate Professor of Oncology</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>Associate Professor of Urology</td>
<td>2007</td>
</tr>
<tr>
<td>Alicia Neu, M.D.</td>
<td>Associate Professor of Pediatrics</td>
<td>2002; 1994</td>
</tr>
<tr>
<td>David Neubauer, M.D.</td>
<td>Associate Professor of Psychiatry</td>
<td>2010; 1985</td>
</tr>
<tr>
<td>David Edward Newman-Toker, M.D.</td>
<td>Associate Professor of Neurology</td>
<td>2010; 2002</td>
</tr>
<tr>
<td>Quan Dong Nguyen, M.D.</td>
<td>Associate Professor of Ophthalmology</td>
<td>2008; 2001</td>
</tr>
<tr>
<td>Ernest Niebur, Ph.D.</td>
<td>Associate Professor of Neuroscience</td>
<td>2001; 1995</td>
</tr>
<tr>
<td>Parviz Nikoomanesh, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>1994; 1973</td>
</tr>
<tr>
<td>Dolores B. Njoku, M.D.</td>
<td>Associate Professor of Anesthesiology and Critical Care Medicine</td>
<td>2008; 1994, Assistant Professor of Pathology [2006], Assistant Professor of Pediatrics [2002]</td>
</tr>
<tr>
<td>Edward J. Norris, M.D.</td>
<td>Associate Professor of Anesthesiology and Critical Care Medicine</td>
<td>2001; 1991</td>
</tr>
<tr>
<td>Frances J. Northington, M.D.</td>
<td>Associate Professor of Pediatrics</td>
<td>2000; 1992</td>
</tr>
<tr>
<td>Eric Lee Nueremberger, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>2010; 2000</td>
</tr>
<tr>
<td>Michael F. Ochs, Ph.D.</td>
<td>Associate Professor of Oncology</td>
<td>2006</td>
</tr>
<tr>
<td>Maria Magdalena Oliva-Hemker, M.D.</td>
<td>Associate Professor of Pediatrics</td>
<td>2003; 1993, Occupying the Stermer Family Professorship in Pediatric Inflammatory Bowel Disease in the Department of Pediatrics [2006]</td>
</tr>
<tr>
<td>Nael Fakhry Osman, Ph.D.</td>
<td>Associate Professor of Radiology</td>
<td>2006; 2000, Joint Appointment in Medicine [2007]</td>
</tr>
<tr>
<td>Rick Ostrander, Ed.D.</td>
<td>Associate Professor of Psychiatry</td>
<td>2008; 2003</td>
</tr>
<tr>
<td>Sara Isabel Pai, M.D., Ph.D.</td>
<td>Associate Professor of Otolaryngology-Head and Neck Surgery</td>
<td>2011; 2007 [from 02/01/2011], Assistant Professor of Otolaryngology-Head and Neck Surgery [2007] (to 01/31/2011), Associate Professor of Oncology [2011; 2009] (from 02/01/2011), Assistant Professor of Oncology [2009] (to 01/31/2011)</td>
</tr>
<tr>
<td>Lawrence C. Pakula, M.D.</td>
<td>Associate Professor of Pediatrics</td>
<td>1985; 1963</td>
</tr>
<tr>
<td>Nickolas Papadopoulos, Ph.D.</td>
<td>Associate Professor of Oncology</td>
<td>2006; 2005</td>
</tr>
<tr>
<td>Ira D. Paperl, M.D.</td>
<td>Associate Professor of Otolaryngology-Head and Neck Surgery</td>
<td>1999; 1987</td>
</tr>
</tbody>
</table>
Carlos A. Pardo-Villamizar, M.D.
Associate Professor of Neurology [2007; 1999],
Assistant Professor of Pathology [1999]

Rulan Savita Parekh, M.D.
Associate Professor of Medicine [2007; 1999]

Ben Ho Park, M.D., Ph.D.
Associate Professor of Oncology [2008; 2002]

Gary Roy Pasternack, M.D., Ph.D.
Adjunct Associate Professor of Pathology [2005; 1984],
Adjunct Associate Professor of Medicine [2005; 1988]

L. Reuven Pasternak, M.D.
Adjunct Associate Professor of Anesthesiology and Critical Care Medicine [1993; 1985]

Christian Paul Pavlovich, M.D.
Associate Professor of Urology [2005; 2001]

Timothy Michael Pawlik, M.D., M.P.H.
Associate Professor of Surgery [2008; 2005],
Associate Professor of Oncology [2008; 2007]

David B. Pearse, M.D.
Associate Professor of Medicine [1997; 1988]

Jay D. Pearson, Ph.D.
Adjunct Associate Professor of Urology [1996]

James J. Pekar, Ph.D.
Associate Professor of Radiology [2002; 1999]

Margaret B. Penno, Ph.D.
Associate Professor of Medicine [1994; 1986]

Deborah Persaud, M.D.
Associate Professor of Pediatrics [2005; 1997]

Steve Alan Petersen, M.D.
Associate Professor of Orthopaedic Surgery [2008; 2007]

John D. Petronis, M.D.
Associate Professor of Radiology [1999; 1985]

Brent G. Petty, M.D.
Associate Professor of Medicine [1989; 1979],
Associate Professor of Pharmacology and Molecular Sciences [1999]

Jonathan A. Pevsner, Ph.D.
Associate Professor of Neuroscience [2003; 1995], Joint Appointment in Health Sciences Informatics [2001]

Timothy H. Phelps, M.S.
Associate Professor of Art as Applied to Medicine [1991; 1986]

Frank S. Pidcock, M.D.
Associate Professor of Physical Medicine and Rehabilitation [2003; 1994], Associate Professor of Pediatrics [2003; 1996]

Roberto Pili, M.D.
Adjunct Associate Professor of Oncology [2008; 2000]

Jay J. Pillai, M.D.
Visiting Associate Professor of Radiology [2007]

Mikhail V. Pletnikov, M.D., Ph.D.
Associate Professor of Psychiatry [2008; 1999],
Associate Professor of Molecular and Comparative Pathobiology [2009], Associate Professor of Neuroscience [2009]

Gary D. Plotnick, M.D.
Associate Professor of Medicine [1988; 1974]

Vsevolod Y. Polotsky, M.D., Ph.D.
Associate Professor of Medicine [2008; 2002]

Michael James Polydefkis, M.D.
Associate Professor of Neurology [2007; 2000]

Wendy S. Post, M.D.
Associate Professor of Medicine [2004; 1997]

James Bennett Potash, M.D., M.P.H.
Associate Professor of Psychiatry [2006; 1998], Occupying the Arlene and Robert Kogod Professorship in Mood Disorders [2009], Joint Appointment in Medicine [2009]

Jonathan D. Powell, M.D., Ph.D.
Associate Professor of Oncology [2008; 2001],
Associate Professor of Pharmacology and Molecular Sciences [2008; 2001]

Sarah Louise Poynton, Ph.D.
Associate Professor of Molecular and Comparative Pathobiology [2005; 2001], Associate Professor of Art as Applied to Medicine [2005; 2004]

Kenzie L. Preston, Ph.D.
Visiting Associate Professor of Behavioral Biology in the Department of Psychiatry [2002; 1984]

Annette B. Prim, M.D., M.P.H.
Associate Professor of Psychiatry [2000; 1985]

Jiang Qian, Ph.D.
Associate Professor of Ophthalmology [2010; 2002], Associate Professor of Oncology [2010; 2008]

Alfredo Quinones-Hinojosa, M.D.
Associate Professor of Neurological Surgery [2008; 2005], Associate Professor of Neuroscience [2010; 2007], Associate Professor of Oncology [2008; 2005]

Jeffrey J. Rade, M.D.
Associate Professor of Medicine [2007; 1998]

Venu Raman, Ph.D.
Associate Professor of Radiology [2008; 2000],
Associate Professor of Oncology [2008; 2001]

Vani Arakeri Rao, M.B.B.S., M.D.
Associate Professor of Psychiatry [2008; 2000]

Edward A. Ratovitski, Ph.D.
Associate Professor of Dermatology [2002; 1999],
Assistant Professor of Medicine [1999], Associate Professor of Otolaryngology-Head and Neck Surgery [2002; 1999], Assistant Professor of Pathology [1996]

William J. Ravich, M.D.
Associate Professor of Medicine [1990; 1981],
Associate Professor of Otolaryngology-Head and Neck Surgery [1998]

Stuart Campbell Ray, M.D.
Associate Professor of Medicine [2003; 1997],
Associate Professor of Oncology [2005], Joint Appointment in Health Sciences Informatics [2008]

Richard J. Redett, M.D.
Associate Professor of Plastic and Reconstructive Surgery [2009; 2003], Associate Professor of Pediatrics [2009; 2005]
William G. Reiner, M.D.
Associate Professor of Psychiatry [2000; 1996],
Associate Professor of Urology [2000; 1999]

Jon R. Resar, M.D.
Associate Professor of Medicine [1998; 1992]

Linda M.S. Resar, M.D.
Associate Professor of Medicine [2001; 2005],
Associate Professor of Oncology [2001; 1997]

Irving Michael Reti, M.B.B.S.
Associate Professor of Psychiatry [2009; 2000],
Associate Professor of Neuroscience [2009; 2007]

Steven James Reynolds, M.D.C.M., M.P.H.
Associate Professor of Medicine [2011; 2003]
(from 02/01/2011), Assistant Professor of Medicine
[2003] (to 01/31/2011)

Lee Hunter Riley, III, M.D.
Associate Professor of Orthopaedic Surgery
[2006; 1996], Associate Professor of Neurological
Surgery [2006; 1996]

Richard E. Ringel, M.D.
Associate Professor of Pediatrics [1999]

Matthias Ringkamp, M.D., Ph.D.
Associate Professor of Neurological Surgery
[2009; 1998]

David A. Rini, M.A.
Associate Professor of Art as Applied to Medicine
[2002; 1993]

Richard J. Rivers, M.D., Ph.D.
Associate Professor of Anesthesiology and Critical
Care Medicine [2002], Associate Professor of Ophthalmology [2010]

Courtney L. Robertson, M.D.
Associate Professor of Anesthesiology and Critical
Care Medicine [2011; 2009] (from 02/01/2011),
Assistant Professor of Anesthesiology and Critical
Care Medicine [2009] (to 01/31/2011), Assistant
Professor of Pediatrics [2009]

Alan L. Robin, M.D.
Associate Professor of Ophthalmology [1986; 1980]

Douglas N. Robinson, Ph.D.
Associate Professor of Cell Biology [2008; 2001],
Associate Professor of Pharmacology and Molecular Sciences [2008; 2007]

Robert P. Roca, M.D.
Associate Professor of Psychiatry [1992; 1984]

Eduardo DeJesus Rodriguez, D.D.S., M.D.
Associate Professor of Plastic and Reconstructive Surgery [2009; 2003]

Ronald Rodriguez, M.D., Ph.D.
Associate Professor of Urology [2006; 1998],
Associate Professor of Oncology [2006; 2000],
Associate Professor of Radiation Oncology and Molecular Radiation Sciences [2006; 2003]

Annabelle Rodriguez-Oquendo, M.D.
Associate Professor of Medicine [2007; 1992]

Elizabeth London Rogers, M.D.
Adjunct Associate Professor of Medicine [2003]

Sheila H. Roman, M.D., M.P.H.
Associate Professor of Medicine [2002]
James F. Schauble, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1978]

Paul J. Scheel, Jr., M.D.
Associate Professor of Medicine [1998; 1992]

Ann O. Scheimann, M.D.
Associate Professor of Pediatrics [2008; 2000]

Horst K.A. Schirmer, M.D.
Associate Professor of Urology [1966; 1962]

Thomas E. Schaepfer, M.D.
Associate Professor of Psychiatry [1997; 1994]

D. William Schottl, M.D.
Associate Professor of Medicine [1993; 1969] (to 12/31/2010)

David J. Schretlen, Ph.D.
Associate Professor of Medical Psychology in the Department of Psychiatry [1995; 1988], Associate Professor of Radiology [2003]

John Thomas Schroeder, Ph.D.
Associate Professor of Medicine [2005; 1996]

Michael Craig Schubert, Ph.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2010; 2004] (from 10/01/2010), Assistant Professor of Otolaryngology-Head and Neck Surgery [2005; 2004] (to 09/30/2010)

Kenneth Charles Schuberth, M.D.
Associate Professor of Pediatrics [1993; 1980]

Allen D. Schwartz, M.D.
Associate Professor of Pediatrics [1991]

David B. Schwartz, M.B.B.Ch.
Visiting Associate Professor of Gynecology and Obstetrics [2001]

Michael Schweitzer, M.D.
Associate Professor of Surgery [2007; 2002]

Alan F. Scott, Ph.D.
Associate Professor of Medicine in Genetic Medicine [1988; 1979], Associate Professor of Oncology [1996]

William Wallace Scott, Jr., M.D.
Associate Professor of Radiology [1984; 1975], Joint Appointment in Orthopaedic Surgery [1986]

Jodi Beth Segal, M.D.
Associate Professor of Surgery [2007; 2002]

Larissa Akimi Shimoda, Ph.D.
Associate Professor of Medicine [2007; 1998]
Michael Scott Torbenson, M.D.
Associate Professor of Pathology [2006; 2001],
Associate Professor of Oncology [2009]

Timothy R. Townsend, M.D.
Associate Professor of Pediatrics [1984; 1978]

Cornelia Liu Trimble, M.D.
Associate Professor of Gynecology and Obstetrics
[2004; 1997], Associate Professor of Oncology
[2004; 1998], Associate Professor of Pathology
[2005]

Edward Lloyd Trimble, M.D., M.P.H.
Associate Professor of Gynecology and Obstetrics
[1998; 1992], Associate Professor of Oncology
[1998]

Bruce Jeffrey Trock, Ph.D., M.P.H.
Associate Professor of Urology [2001], Associate
Professor of Oncology [2001]

Theodore N. Tsangaris, M.D.
Associate Professor of Surgery [2002], Associate
Professor of Oncology [2004]

Chung-Ming Tse, Ph.D.
Associate Professor of Medicine [1998; 1988]

Ralph P. Tufano, M.D.
Associate Professor of Otolaryngology-Head and
Neck Surgery [2006; 2000]

Anthony P. Tufaro, D.D.S., M.D.
Associate Professor of Plastic and Reconstructive
Surgery [2008; 1998], Associate Professor of Oncology
[2008; 2005]

Pamela Lynne Tuma, Ph.D.
Visiting Associate Professor of Cell Biology [2010]

David Eric Tunkel, M.D.
Associate Professor of Otolaryngology-Head and
Neck Surgery [1997; 1989], Associate Professor of
Anesthesiology and Critical Care Medicine [2006],
Associate Professor of Pediatrics [1997; 1994]

Sinisa Urban, Ph.D.
Associate Professor of Molecular Biology and
Genetics [2010; 2006]

Alexandra Valsamakis, M.D., Ph.D.
Associate Professor of Pathology [2006; 1998]

Elsken van der Wall, M.D., Ph.D.
Visiting Associate Professor of Oncology [2000]

Russell Vang, M.D.
Associate Professor of Pathology [2008; 2003],
Associate Professor of Gynecology and Obstetrics
[2010; 2005]

Victor E. Velculescu, M.D., Ph.D.
Associate Professor of Oncology [2006; 2002]

Robert W. Veltri, Ph.D.
Associate Professor of Urology [2003; 2002],
Associate Professor of Oncology [2009]

Stanley A. Vinores, Ph.D.
Associate Professor of Ophthalmology [1992; 1991]

Susan Vitale, Ph.D.
Adjunct Associate Professor of Ophthalmology
[2002; 1992]

James E. Vogel, M.D.
Associate Professor of Plastic and Reconstructive
Surgery [2006; 1989]

Luca A. Vricella, M.D.
Associate Professor of Cardiac Surgery [2009; 2002],
Assistant Professor of Pediatrics [2007]

Kathryn Rae Wagner, M.D., Ph.D.
Associate Professor of Neurology [2006; 2000],
Associate Professor of Neuroscience [2009; 2007]

Allen R. Walker, M.D.
Associate Professor of Pediatrics [2001; 1988]

Mei Wan, Ph.D.
Associate Professor of Orthopaedic Surgery
[2009]

Robert F. Ward, M.D.
Associate Professor of Psychiatry [1978; 1965]

Gary Ray Warnock, D.D.S.
Associate Professor of Dermatology [2003; 1997],
Associate Professor of Pathology [2010]

Andrew C. Warren, D.Phil., M.B.B.S.
Associate Professor of Psychiatry [1993; 1988]

Bruce Alan Wasserman, M.D.
Associate Professor of Radiology [2005; 1997]

Terry J. Watnick, M.D.
Associate Professor of Medicine [2009; 1995]

Alan S. Wayne, M.D.
Visiting Associate Professor of Pediatrics [1999]

Elise M. Weerts, Ph.D.
Associate Professor of Behavioral Biology in the
Department of Psychiatry [2004; 1995]

Stephen T. Wegener, Ph.D.
Associate Professor of Physical Medicine and
Rehabilitation [1995]

Robert Stephen Weinberg, M.D.
Associate Professor of Ophthalmology [1997]

Howard D. Weiss, M.D.
Associate Professor of Neurology [1995; 1977]

Robert A. Weiss, M.D.
Associate Professor of Dermatology [2005; 1984]

Paul S. Wheeler, M.D.
Associate Professor of Radiology [1974; 1968]

Glenn J.R. Whitman, M.D.
Associate Professor of Cardiac Surgery [2009]

S. Elizabeth Whitmore, M.D.
Associate Professor of Dermatology [2000; 1988]
(to 11/30/2010)

John H. Wilckens, M.D.
Associate Professor of Orthopaedic Surgery
[2006; 2001]
Ulrich V. Willi, M.D.
Visiting Associate Professor of Radiology [2009]
Penelope R. Williamson, Sc.D.
Associate Professor of Medicine [1993; 1988]
Mary Ann Wilson, Ph.D.
Associate Professor of Neurology [2007; 1994],
Associate Professor of Neuroscience [2007; 2001]
Robert J. Wityk, M.D.
Associate Professor of Neurology [2003; 1992],
Associate Professor of Medicine [2005; 1992]
Andrew Wolfe, Ph.D.
Associate Professor of Pediatrics [2011; 2006]
(from 02/01/2011), Assistant Professor of Pediatrics [2007; 2006],
Assistant Professor of Physiology [2008]
Antonio Carlos Wolff, M.D.
Associate Professor of Oncology [2005; 1998]
Jean-Paul Wolinsky, M.D.
Associate Professor of Neurological Surgery
[2010; 2004], Associate Professor of Oncology
[2010; 2009]
Amina Sarah Woods, Ph.D.
Adjunct Associate Professor of Pharmacology and
Molecular Sciences [2005; 1997]
Mark Thomas Worthington, M.D.
Associate Professor of Medicine [2006]
Edward James Wright, M.D.
Associate Professor of Urology [2009; 2000]
Katherine Chih-Ching Wu, M.D.
Associate Professor of Medicine [2010; 2000]
Michael Mingzhao Xing, M.D., Ph.D.
Associate Professor of Medicine [2006; 2003],
Associate Professor of Oncology [2006]
Joy T. Yang, Ph.D.
Associate Professor of Cell Biology [2004; 1996]
Deborah Sue Rohm Young, Ph.D.
Visiting Associate Professor of Medicine [2001; 1995]
David Daiho Yuh, M.D.
Associate Professor of Cardiac Surgery [2005; 2001]
Richard Cedric Zellars, M.D.
Associate Professor of Radiation Oncology and
Molecular Radiation Sciences [2010; 2003],
Associate Professor of Oncology [2010; 2001]
Jin Zhang, Ph.D.
Associate Professor of Pharmacology and
Molecular Sciences [2009; 2003], Associate
Professor of Neuroscience [2009; 2003],
Associate Professor of Oncology [2009; 2004]
Zhen Zhang, Ph.D.
Associate Professor of Pathology [2003; 2001],
Associate Professor of Oncology [2009]
Yulian Zhao, M.D., Ph.D.
Associate Professor of Gynecology and Obstetrics
[2008; 2001]
Tao Zheng, M.D.
Associate Professor of Medicine [2010; 2004]
Jinyuan Zhou, Ph.D.
Associate Professor of Radiology [2010; 1999]
Shibin Zhou, M.D., Ph.D.
Associate Professor of Oncology [2008; 1998]
Heng Zhu, Ph.D.
Associate Professor of Pharmacology and
Molecular Sciences [2010; 2004] (from
10/01/2010), Assistant Professor of Pharmacology and
Molecular Sciences [2004] (to 09/30/2010),
Assistant Professor of Oncology [2005]
Zhou Zhu, M.D., Ph.D.
Associate Professor of Medicine [2004]
Carol M. Ziminski, M.D.
Associate Professor of Medicine [1997; 1981]
Ingrid E. Zimmer-Galler, M.D.
Associate Professor of Ophthalmology [2007; 1994]
Andrew W. Zimmerman, M.D.
Adjunct Associate Professor of Neurology [2010; 1994] (from 10/11/2010)
, Adjunct Associate Professor of Pediatrics [2010; 2004] (from
10/11/2010), Associate Professor of Neurology
[1994] (to 10/10/2010), Associate Professor of
Pediatrics [2004] (to 10/10/2010), Associate
Professor of Psychiatry [1996] (to 07/31/2010)
Thomas M. Zizic, M.D.
Associate Professor of Medicine [1981; 1971]
Richard David Zorowitz, M.D.
Associate Professor of Physical Medicine and
Rehabilitation [2006]

ASSOCIATE PROFESSORS EMERITI

Neal I. Aronson, M.D.
Associate Professor Emeritus of Neurological
Surgery [1975; 1956]
Wilmot C. Ball, Jr., M.D.
Associate Professor Emeritus of Medicine [1997; 1961]
Theodore A. Baramki, M.D.
Associate Professor Emeritus of Gynecology and
Obstetrics [1980; 1965], Joint Appointment in
Pediatrics [1980; 1969]
Hayden Grant Braine, M.D.
Associate Professor Emeritus of Oncology [2006; 1975]
(to 10/30/2010), Associate Professor Emeritus of Medicine [2006; 1975]
(to 10/30/2010)
Robert K. Brawley, M.D.
Associate Professor Emeritus of Cardiac Surgery
[1995; 1969]
Carol L. Burek, Ph.D.
Associate Professor Emerita of Pathology [1998; 1994]
Jerrie Cherry, M.D.
Associate Professor Emeritus of Otolaryngology-
Head and Neck Surgery [1995; 1973]
James P. Connaughton, M.D.
Associate Professor Emeritus of Psychiatry [1997; 1967],
Associate Professor Emeritus of Pediatrics
[1997; 1967]
Richard A. Currie, M.D.
Associate Professor Emeritus of Surgery [1995; 1970]
Burton C. D’Lugoff, M.D.
Associate Professor Emeritus of Medicine [1998; 1971]

Walter Ehrlich, M.D.
Associate Professor Emeritus of Psychiatry [1981; 1968]

Rainer M.E. Engel, M.D.
Associate Professor Emeritus of Urology [1973; 1970]

Charles H. Epps, Jr., M.D.
Associate Professor Emeritus of Orthopaedic Surgery [1992; 1971]

Ronald H. Fishbein, M.D.
Associate Professor Emeritus of Surgery [1978; 1965]

James C. Fuchs, M.D.
Associate Professor Emeritus of Surgery [2002; 1985]

Ghislaine Godenne, M.D.
Associate Professor Emerita of Psychiatry [2000; 1963], Lecturer in Pediatrics [2000; 1962]

Jacob C. Handelsman, M.D.
Associate Professor Emeritus of Surgery [1992; 1948]

Frederik C. Hansen, M.D.
Associate Professor Emeritus of Plastic and Reconstructive Surgery [1994; 1960]

Paul H. Hardy, Jr., M.D.
Associate Professor Emeritus of Microbiology in the Department of Molecular Biology and Genetics [1981; 1948]

Michael J. C. Im, Ph.D.
Associate Professor Emeritus of Plastic and Reconstructive Surgery [1978; 1970]

Darrell A. Jaques, M.D.
Associate Professor Emeritus of Surgery [1995; 1990], Associate Professor Emeritus of Plastic and Reconstructive Surgery [1995; 1988]

John T.H. Johnson, M.D.
Associate Professor Emeritus of Orthopaedic Surgery [1990; 1950]

Calvin E. Jones, M.D.
Associate Professor Emeritus of Surgery [2002; 1981]

Richard F. Kieffer, Jr., M.D.
Associate Professor Emeritus of Surgery [1979; 1948]

Maurice E. Langham, Ph.D.
Associate Professor Emeritus of Ophthalmology [1991; 1959]

Kenneth B. Lewis, M.D.
Associate Professor Emeritus of Medicine [2000; 1965]

Robert E. Mason, M.D.
Associate Professor Emeritus of Medicine [1990; 1945]

Allan R. McClary, M.D.
Associate Professor Emeritus of Psychiatry [1967; 1950], Instructor Emeritus in Medicine [1952; 1950]

Edmond J. McDonnell, M.D.
Associate Professor Emeritus of Orthopaedic Surgery [1992; 1946]

Marvin M. Nachlas, M.D.
Associate Professor Emeritus of Surgery [1961; 1955]

Lee C. Park, M.D.
Associate Professor Emeritus of Psychiatry [1971; 1959]

Leonard R. Proctor, M.D.
Associate Professor Emeritus of Otolaryngology-Head and Neck Surgery [1976]

Jonas R. Rappeport, M.D.
Associate Professor Emeritus of Psychiatry [2000; 1964]

J. Courtland Robinson, M.D., M.P.H.
Associate Professor Emeritus of Gynecology and Obstetrics [2001]

Alejandro Rodriguez, M.D.
Associate Professor Emeritus of Pediatrics [1978; 1957]

Hiroshi Shimizu, M.D.
Associate Professor Emeritus (Audiology & Speech) of Otolaryngology-Head and Neck Surgery [1990; 1963]

Arnold T. Sigler, M.D.
Associate Professor Emeritus of Pediatrics [1973; 1965]

Charles E. Silberstein, M.D.
Associate Professor Emeritus of Orthopaedic Surgery [1999; 1967]

Joseph H. Stephens, M.D.
Associate Professor Emeritus of Psychiatry [2006; 1959]

Gail Stetten, Ph.D.
Associate Professor Emerita of Gynecology and Obstetrics [2009; 1979]

Judith L. Stiff, M.D.
Associate Professor Emerita of Anesthesiology and Critical Care Medicine [1986; 1978]

Ray E. Stutzman, M.D.
Associate Professor Emeritus of Urology [1984]

Mark L. Teitelbaum, M.D.
Associate Professor Emeritus of Psychiatry [1993; 1977]

Robert B. Welch, M.D.
Associate Professor Emeritus of Ophthalmology [1973; 1958]

Clifford R. Wheeless, Jr., M.D.
Associate Professor Emeritus of Gynecology and Obstetrics [2009; 1970]

E.F. Shaw Wilgis, M.D.
Associate Professor Emeritus of Orthopaedic Surgery [1983; 1970], Associate Professor Emeritus of Plastic and Reconstructive Surgery [1983; 1976]

M. Lee Williams, M.D.
Associate Professor Emeritus of Otolaryngology-Head and Neck Surgery [1999; 1954]
Jerriann M. Wilson, M.Ed.
Associate Professor Emerita of Pediatrics [1997; 1972]

Theodore H. Wilson, Jr., M.D.
Associate Professor Emeritus of Surgery [1988; 1972]

Stewart M. Wolff, M.D.
Associate Professor Emeritus of Ophthalmology [1975; 1957]

Jimmy B. Zachary, M.D.
Associate Professor Emeritus of Medicine [1999; 1963]

Jack M. Zimmerman, M.D.
Associate Professor Emeritus of Surgery [1999; 1965]

ASSISTANT PROFESSORS

Peter M. Abadir, M.D.
Assistant Professor of Medicine [2009]

Hanan Jaber Aboumatar, M.D., M.P.H.
Assistant Professor of Medicine [2008]

Jacob Abraham, M.D.
Adjunct Assistant Professor of Medicine [2009]

John M. Abraham, Ph.D.
Assistant Professor of Medicine [2006]

Maria Roselle Abraham, M.B.B.S.
Assistant Professor of Medicine [2003; 2002]

Andrew Abramowitz, M.D.
Assistant Professor of Pediatrics [2004]

Lisa Shoshana Abrams, M.D.
Assistant Professor of Ophthalmology [1996; 1995]

Rachel Abuav, M.D.
Assistant Professor of Dermatology [2008; 2007] (to 09/14/2010)

Christopher J. Abularrage, M.D.
Assistant Professor of Surgery [2010] (from 08/01/2010)

Jennifer Anne Accardo, M.D.
Assistant Professor of Neurology [2010], Assistant Professor of Pediatrics [2010]

Richard Alan Adler, M.D.
Assistant Professor of Ophthalmology [2005; 2004]

Nishant Agrawal, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2009], Assistant Professor of Oncology [2009]

Allison Lorna Agwu, M.D.
Assistant Professor of Pediatrics [2007], Joint Appointment in Medicine [2007]

Edward Sanghoon Ahn, M.D.
Assistant Professor of Neurological Surgery [2007], Joint Appointment in Plastic and Reconstructive Surgery [2010]

Abimbola J. Aina, M.D.
Assistant Professor of Gynecology and Obstetrics [2004; 2001]

Fadi Gabriel Akar, Ph.D.
Assistant Professor of Medicine [2007; 2004]

Lee M. Akst, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2010]

Nada Alachkar, M.D.
Assistant Professor of Medicine [2010; 2008]

Samuel M. Alaish, M.D.
Assistant Professor of Pediatric Surgery [2003]

Charles Robert Albrecht, III, M.D.
Assistant Professor of Medicine [2005]

Larry E. Alessi, M.D.
Assistant Professor of Psychiatry [1975; 1974]

Joe Alexander, Jr., M.D., Ph.D.
Adjunct Assistant Professor of Biomedical Engineering [2001]

Angelo Homayoun All, M.D.
Assistant Professor of Biomedical Engineering [2008; 2004], Assistant Professor of Neurology [2008]

Anne Reed Altemus, M.A.
Assistant Professor of Art as Applied to Medicine [2007; 1991]

Janyne Althaus, M.D.
Assistant Professor of Gynecology and Obstetrics [2007]

Kristina Ruutiainen Altman, M.D., Ph.D.
Assistant Professor of Gynecology and Obstetrics [1999]

Anika A.H. Alvanzo, M.D.
Assistant Professor of Medicine [2008]

Adrianna Amari, Ph.D.
Assistant Professor of Psychiatry [2009; 2006]

Muhammad Amer, M.B.B.S., M.D.
Assistant Professor of Medicine [2010; 2007]

Jennifer F. Anders, M.D.
Assistant Professor of Pediatrics [2005]

Allan A. Anderson, M.D.
Assistant Professor of Psychiatry [2007]

William Stanley Anderson, M.D., Ph.D.
Assistant Professor of Neurological Surgery [2011] (from 01/01/2011)

Adriana S.A. Andrade, M.D., M.P.H.
Assistant Professor of Medicine [2002]

Felipe A. Andrade, M.D., Ph.D.
Assistant Professor of Medicine [2005]

Clifford G. Andrew, M.D., Ph.D.
Assistant Professor of Neurology [1980]

Alka Aneja, M.B.B.S., M.D.
Assistant Professor of Psychiatry [2006]

Charles S. Angell, M.D.
Assistant Professor of Medicine [1975]

Michael Alan Ankrom, M.D.
Assistant Professor of Medicine [1998; 1997]

Emmanuel Stylianos Antonarakis, M.B.B.Ch.
Assistant Professor of Oncology [2010]

Miguel Antonio Aon, Ph.D.
Assistant Professor of Medicine [2009; 2001]

Brian Stephen Appleby, M.D.
Assistant Professor of Psychiatry [2008]
Armin Arbab-Zadeh, M.D.
Assistant Professor of Medicine [2007; 2006]

Alicia Ines Arbaje, M.D., M.P.H.
Assistant Professor of Medicine [2007]

Kristin R. Archer, Ph.D.
Adjunct Assistant Professor of Orthopaedic Surgery [2008; 2007]

Nkiruka U. Arene, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2006]

Cynthia Holcroft Argani, M.D.
Assistant Professor of Gynecology and Obstetrics [2003; 2000]

Dan Eytan Arking, Ph.D.
Assistant Professor of Medicine in Genetic Medicine [2007; 2005]

Mary Y. Armanios, M.D.
Assistant Professor of Oncology [2005]

Ernest N. Arnett, M.D.
Assistant Professor of Medicine [1978]

Renata Gayle Arrington-Sanders, M.D.
Assistant Professor of Pediatrics [2007]

Ruth S. Ashman, M.D.
Assistant Professor of Pediatrics [1986]

Bolanle A. Asiyanbola, M.D.
Assistant Professor of Surgery [2007; 2006]

Rebecca Ann Aslakson, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008]

Simon Eric Aspland, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010] (from 09/01/2010)

Saadet Atay-Rosenthal, M.D.
Assistant Professor of Surgery [2009]

Michael A. Beer, Ph.D.
Assistant Professor of Biomedical Engineering in Genetic Medicine [2005], Joint Appointment in Molecular Biology and Genetics [2005]

Nicholas John Belitsos, M.D.
Assistant Professor of Medicine [2001; 1998], Assistant Dean of Student Affairs [2004]

Robert A. Bischoff, M.D.
Assistant Professor of Medicine [1994]

Barbara B. Bell, M.D.
Assistant Professor of Pediatrics [1972; 1969]
Melania Maria Bembea, M.D., M.P.H.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009], Assistant Professor of Pediatrics [2009]

Emile A. Bendit, M.D.
Assistant Professor of Psychiatry [1975; 1973]

Errol L. Bennett, M.D.
Assistant Professor of Orthopaedic Surgery [2002; 2001]

Wendy Lynet Bennett, M.D., M.P.H.
Assistant Professor of Medicine [2009]

Jane Ellen Benson, M.D.
Assistant Professor of Radiology [1990], Joint Appointment in Pediatrics [1991]

Elliott M. Berg, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [1974]

Wendie Anderson Berg, M.D., Ph.D.
Assistant Professor of Radiology [1993; 1992]

Robert S. Berger, M.D.
Assistant Professor of Dermatology [2002; 1994]

Zackary Dov Berger, M.D., Ph.D.
Assistant Professor of Medicine [2009]

Gail Valerie Berkenblit, M.D., Ph.D.
Assistant Professor of Medicine [2001]

Joan E. Berkowitz, M.D.
Assistant Professor of Radiology [1986; 1983]

Michael T. Bernstein, M.D.
Assistant Professor of Pediatrics [1972; 1971]

Stephen Arthur Berry, M.D.
Assistant Professor of Medicine [2010]

Lynn M. Billingsley, M.D.
Assistant Professor of Medicine [1998; 1979]

Howard J. Birenbaum, M.D.
Assistant Professor of Radiology [1995; 1992]

Niranjan Bhat, M.D.
Assistant Professor of Oncology [2003; 2001]

Lauren L. Bogue, M.D.
Assistant Professor of Pediatrics [2007]

Niranjan Bhat, M.D.
Assistant Professor of Oncology [2007]

Rinky Bhatia, M.D.
Assistant Professor of Medicine [2008]

Lynn M. Billingsley, M.D.
Assistant Professor of Medicine [1998; 1979]

Julius Birnbaum, M.D.
Assistant Professor of Medicine [2009; 2008], Assistant Professor of Neurology [2010]

Maria M. Birzescu, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Ava K. Bittner, O.D.
Assistant Professor of Ophthalmology [2007; 2002]

Sally Bitzer, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Trinity Jude Bivalacqua, M.D., Ph.D.
Assistant Professor of Urology [2010], Assistant Professor of Oncology [2010]

Betty E. Smith Black, Ph.D.
Assistant Professor of Psychiatry [1997; 1995]

Gabrielle Levine Blackman, M.D.
Assistant Professor of Psychiatry [2005; 2001]

Scott Michael Blackman, M.D., Ph.D.
Assistant Professor of Pediatrics [2009; 2007]

Seth Blackshaw, Ph.D.
Assistant Professor of Neuroscience [2004], Joint Appointment in Ophthalmology [2005]

Jaishri O’Neill Blakeley, M.D.
Assistant Professor of Neurology [2007], Assistant Professor of Neurological Surgery [2007], Assistant Professor of Oncology [2007]

Ray Gervacio F. Blanco, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1998]

Renee J. Blanding, M.D., M.P.H.
Assistant Professor of Anesthesiology and Critical Care Medicine [1995; 1992]

David Mark Blass, M.D.
Assistant Professor of Psychiatry [2002]

Donald Frank Bliss, II, M.A.
Assistant Professor of Art as Applied to Medicine [2006]

Ari Meir Blitz, M.D.
Assistant Professor of Radiology [2007]

Derek Kofi Boahene, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2005], Assistant Professor of Dermatology [2008]

Grant V. Bochicchio, M.D.
Adjunct Assistant Professor of Surgery [2004]

Emad M. Doctora Mikhail, Ph.D.
Assistant Professor of Radiology [2009; 2007]

Ravit Boger, M.D.
Assistant Professor of Pediatrics [2003; 2001]

Michael A. Bogrov, M.D.
Assistant Professor of Psychiatry [1993; 1992]

Lauren L. Bogue, M.D.
Assistant Professor of Pediatrics [1996; 1989]

Eileen Bohan, B.S.
Assistant Professor of Neurological Surgery [2007]

Francesco Boin, M.D.
Assistant Professor of Medicine [2008; 2006]
Michael V. Boland, M.D., Ph.D.
Assistant Professor of Ophthalmology [2005],
Joint Appointment in Health Sciences Informatics [2009]

Javier Bolanos-Meade, M.D.
Assistant Professor of Oncology [2004]

Romsai Tony Boonyasai, M.D., M.P.H.
Assistant Professor of Medicine [2009; 2007]

Anna Bordelon, M.D.
Assistant Professor of Ophthalmology [2010] (from 8/18/2010),
Assistant in Ophthalmology [2009] (to 07/16/2010)

Luciana Lopes Borio, M.D.
Assistant Professor of Medicine [2003]

Carrie S.W. Borrero, Ph.D.
Assistant Professor of Psychiatry [2008]

Emily Frances Boss, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2008]

Renee Denise Boss, M.D.
Assistant Professor of Pediatrics [2007]

Lisa Beth Boult, M.D., M.P.H.
Assistant Professor of Medicine [2001]

G. Steven Bova, M.D.
Assistant Professor of Pathology [1994], Assistant Professor of Oncology [1995],
Assistant Professor of Urology [1994; 1991], Joint Appointment in
Health Sciences Informatics [2003]

Craig William Bowen, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Lynn G. Bowman, M.A.
Assistant Professor of Psychiatry [1999; 1995]

Carolyn Beth Boylan, M.D., Ph.D.
Assistant Professor of Pediatrics [2006]

David A. Bradt, M.D., M.P.H.
Assistant Professor of Emergency Medicine [2009; 1995]

Kathleen D. Brady, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2009]

Mary Beth Brady, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1998; 1997]

Tammy M. Brady, M.D.
Assistant Professor of Pediatrics [2008]

Julie Renee Brahmer, M.D.
Assistant Professor of Oncology [2003; 2000]

Lorraine V.J. Brando, Ph.D.
Assistant Professor of Pediatrics [2009; 1992]

J. Dennis Branger, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1979; 1978]

James Robert Brasic, M.D., M.P.H.
Assistant Professor of Radiology [2009; 2007]

Peter Edward Braverman, M.D.
Assistant Professor of Medicine [2002]
Joyce Kopicky Burd, M.D., Assistant Professor of Medicine [1994; 1985]
Anne E. Burke, M.D., Assistant Professor of Gynecology and Obstetrics [2002; 2000]
Elizabeth M. Burke, M.D., Assistant Professor of Dermatology [1995]
Michael G. Burke, M.D., Assistant Professor of Pediatrics [1996; 1986]
Kathleen Helen Burns, M.D., Ph.D., Assistant Professor of Pathology [2009; 2008], Assistant Professor of Oncology [2009; 2008]
R. Mitchell Bush, D.V.M., Assistant Professor of Molecular and Comparative Pathobiology [1972; 1967]
Ali Bydon, M.D., Assistant Professor of Neurological Surgery [2007; 2006]
Zheqing Cai, Ph.D., Assistant Professor of Medicine [2008; 2006]
Vince Daniel Calhoun, Ph.D., Assistant Professor of Psychiatry [2002]
Preston C. Calvert, M.D., Assistant Professor of Neurology [1998]
Andrew Macgregor Cameron, M.D., Ph.D., Assistant Professor of Surgery [2006]
Claudia Michelle Campbell, Ph.D., Assistant Professor of Psychiatry [2010] (from 08/16/2010)
Maria Valeria Canto Soler, Ph.D., Assistant Professor of Ophthalmology [2008; 2006]
Ying Jun Cao, B.M., Ph.D., Adjunct Assistant Professor of Medicine [2009; 2007]
Randolph Baker Capone, M.D., Assistant Professor of Otolaryngology-Head and Neck Surgery [2004]
Nicholas A. Capozzoli, M.D., Assistant Professor of Neurology [1992]
Teresa Mary Carlin, M.D., Assistant Professor of Emergency Medicine [2001; 1996], Assistant Professor of Pediatrics [2001; 1996]
Hetty Eileen Carraway, M.D., Assistant Professor of Oncology [2008; 2005]
C. Patrick Carroll, M.D., Assistant Professor of Psychiatry [2006; 2004]
Lucy Minnich Carruth, Ph.D., Adjunct Assistant Professor of Molecular and Comparative Pathobiology [2005; 2001]
Nicola Gerardo Cascella, M.D., Assistant Professor of Psychiatry [1999]
Zenobia Ann Casey, M.D., Assistant Professor of Anesthesiology and Critical Care Medicine [2003; 2002]
Christina Lynne Catlett, M.D., Assistant Professor of Emergency Medicine [2007]
Stephen Michael Cattaneo, II, M.D., Assistant Professor of Surgery [2007]
John Cavaluzzi, M.D., Assistant Professor of Radiology [1977]
Danelle Cayea, M.D., Assistant Professor of Medicine [2005]
Paul Celano, M.D., Assistant Professor of Oncology [1988; 1987], Assistant Professor of Gynecology and Obstetrics [1988; 2008]
Mackenzie Carpenter Cervenka, M.D., Assistant Professor of Neurology [2010]
Matthews Chacko, M.D., Assistant Professor of Medicine [2007]
Vadappuram P. Chacko, Ph.D., Assistant Professor of Radiology [1984]
Raman Chahal, M.B.B.S., Assistant Professor of Psychiatry [1986; 1980]
Mayy Farid Chahla, M.D., Assistant Professor of Medicine [2010; 2008]
Geetanjali Chander, M.D., M.P.H., Assistant Professor of Medicine [2004]
Larry William Chang, M.D., M.P.H., Assistant Professor of Medicine [2010; 2009]
Lawrence D. Chang, M.D., Assistant Professor of Plastic and Reconstructive Surgery [1998]
Stephen J. Chanock, M.D., Assistant Professor of Oncology [1998], Lecturer in Pediatrics [1998]
Amina Ashraf Chaudhry, M.D., M.P.H., Assistant Professor of Medicine [2008; 2007]
Zoobia W. Chaudhry, M.B.B.S., Assistant Professor of Medicine [2010] (from 11/01/2010)
Paulo H.M. Chaves, M.D., Ph.D., Assistant Professor of Medicine [2001]
Raul Chavez Valdez, M.D., Visiting Assistant Professor of Pediatrics [2009]
William N. Checkley, M.D., Ph.D., Assistant Professor of Medicine [2010; 2009]
Aaron Edward Chen, M.D., Assistant Professor of Pediatrics [2006] (on leave of absence from 08/01/2010)
Chi Chiung Grace Chen, M.D., Assistant Professor of Gynecology and Obstetrics [2008]
Edward S. Chen, M.D., Assistant Professor of Medicine [2006; 2003]
Elizabeth H. Chen, Ph.D., Assistant Professor of Molecular Biology and Genetics [2004]
Alan Cheng, M.D., Assistant Professor of Medicine [2006]
Roy W. Chesnut, Jr., M.D., Assistant Professor of Medicine [1965; 1954]
Sally Bridgman Cheston, M.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2010]

Kristin Cheung, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006; 1997]

Avneesh Chhabra, M.D.
Assistant Professor of Radiology [2009], Assistant Professor of Orthopaedic Surgery [2009]

Albert Chi, M.D.
Assistant Professor of Surgery [2010] (from 08/01/2010)

Chee Wei Chia, M.D.
Adjunct Assistant Professor of Medicine [2004]

Anna Chien, M.D.
Assistant Professor of Dermatology [2009]

Jeffrey M. Chinsky, M.D., Ph.D.
Assistant Professor of Pediatrics [1995]

Margaret S. Chisolm, M.D.
Assistant Professor of Psychiatry [2006; 1992]

Steve Yoon-Ho Cho, M.D.
Assistant Professor of Radiology [2007], Assistant Professor of Oncology [2009]

Oksoon Hong Choi, Ph.D.
Assistant Professor of Medicine [2003]

Samuel S. Chong, Ph.D.
Assistant Professor of Pediatrics [1997], Joint Appointment in Gynecology and Obstetrics [1997]

Akhil Chopra, M.B.B.S.
Assistant Professor of Oncology [2010; 2009]

Betty Chou, M.D.
Assistant Professor of Gynecology and Obstetrics [2006; 2003]

Robert Tao-Ping Chow, M.D.
Assistant Professor of Medicine [1992]

Colleen Christmas, M.D.
Assistant Professor of Medicine [2000; 1999]

Paul Jordan Christo, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2001]

Lisa Christopher-Stine, M.D., M.P.H.
Assistant Professor of Medicine [2005; 2003], Assistant Professor of Neurology [2008]

Michael R. Christy, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2004]

Kathryn M. Chu, M.D.
Assistant Professor of Surgery [2007]

Kyo U. Chu, M.D.
Assistant Professor of Surgery [2004]

Daniela Cihakova, M.D., Ph.D.
Assistant Professor of Pathology [2008; 2006]

Oscar Horacio Cingolani, M.D.
Assistant Professor of Medicine [2009]

John O’Brien Clarke, III, M.D.
Assistant Professor of Medicine [2007]

Lora L. Clawson, M.S.N.
Assistant Professor of Neurology [2006; 1998]

Steven Michael Claypool, Ph.D.
Assistant Professor of Physiology [2008]

Emmanuelle Marie Clerisme-Beaty, M.D.
Assistant Professor of Medicine [2010; 2009] (from 11/01/2010), Instructor in Medicine [2009] (to 10/31/2010)

Sarah Lou Clever, M.D.
Assistant Professor of Medicine [2003], Assistant Dean of Student Affairs [2009]

Ann-Marie Codori, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1994; 1991]

Nancy Codori, M.D., M.P.H.
Assistant Professor of Medicine [2010; 2006], Joint Appointment in Emergency Medicine [2009]

Alan H. Cohen, M.D.
Adjunct Assistant Professor of Pediatrics [2002]

David B. Cohen, M.D., M.P.H.
Assistant Professor of Orthopaedic Surgery [1998; 1995]

Gary Irvin Cohen, M.D.
Assistant Professor of Oncology [2001; 1983]

Ronald Jay Cohen, M.D.
Assistant Professor of Neurological Surgery [1985; 1980]

Ronald D. Cohn, M.D.
Assistant Professor of Pediatrics in Genetic Medicine [2006], Assistant Professor of Neurology [2006]

Karan A. Cole, Sc.D.
Assistant Professor of Medicine [1994; 1987]

Jenell Coleman, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [2010] (from 08/01/2010), Assistant Professor of Medicine [2010] (from 08/01/2010)

Stan L. Coleman, M.D.
Assistant Professor of Ophthalmology [1983; 1967]

Joseph Michael Collaco, M.D.
Assistant Professor of Pediatrics [2008]

Mary Louise Z. Collins, M.D.
Assistant Professor of Ophthalmology [2000; 1994]

Alan Coltri, M.S.
Assistant Professor of Health Sciences Informatics [2001]

John D. Conroy, Jr., D.O.
Assistant Professor of Oncology [1998]

Stephen A. Contag, M.D.
Assistant Professor of Gynecology and Obstetrics [2010]

Alexander Lewis Coon, M.D.
Assistant Professor of Neurological Surgery [2010], Assistant Professor of Neurology [2010], Assistant Professor of Radiology [2010]

Damon Cooney, M.D., Ph.D.
Assistant Professor of Plastic and Reconstructive Surgery [2010] (from 10/15/2010)

Leslie Cope, Ph.D.
Assistant Professor of Oncology [2006; 2004]
Bruce Eugene Copeland, M.D.
Assistant Professor of Radiology [2004]

Robert A. Cordes, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1974; 1972]

Terri L. Cornelison, M.D.
Assistant Professor of Gynecology and Obstetrics [1998]

Thomas Adams Corson, M.D., M.P.H.
Assistant Professor of Medicine [2000; 1993],
Assistant Professor of Pediatrics [1987]

David Peter Cosgrove, M.B.B.Ch.
Assistant Professor of Oncology [2009]

Janelle Wilder Coughlin, Ph.D.
Assistant Professor of Psychiatry [2008; 2004]

David Cowie, M.D.
Assistant Professor of Psychiatry [1979]

Christianne Sylvia Cox, Ph.D.
Assistant Professor of Neurology [1996]

Todd Scott Cox, M.D.
Assistant Professor of Psychiatry [1999]

Victor Crenstil, M.D.
Assistant Professor of Medicine [2008; 2004]

Deidra Candice Crews, M.D.
Assistant Professor of Medicine [2010; 2009]

Jude P. Crino, M.D.
Assistant Professor of Gynecology and Obstetrics [2000]

Elizabeth Adele Cristofalo, M.D.
Assistant Professor of Pediatrics [2006; 2003]

Michael T. Crocetti, M.D.
Assistant Professor of Pediatrics [1998]

Jennifer Lynn Crockett, Ph.D.
Assistant Professor of Psychiatry [2007]

David M. Cromwell, M.D.
Assistant Professor of Medicine [1997; 1995]

Jane Eleanor Crosson, M.D.
Assistant Professor of Pediatrics [1999]

Marcia Roxana Cruz-Correa, M.D.
Visiting Assistant Professor of Medicine [2002; 2001]

Robin Mary Cuddy, M.D., M.P.H.
Assistant Professor of Emergency Medicine [2000]

Hengmi Cui, Ph.D.
Assistant Professor of Medicine [2002; 2000]

Alan P. B. Dackiw, M.D., Ph.D.
Assistant Professor of Surgery [2003], Assistant Professor of Oncology [2004]

Aditya R. Daftary, M.D.
Adjunct Assistant Professor of Radiology [2009]

Nabil N. Dagher, M.D.
Assistant Professor of Surgery [2010; 2008]

Gerald J. Dal Pan, M.D.
Adjunct Assistant Professor of Neurology [2010; 1993]

Darshan Dalal, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2008; 2007]

David F. Dalury, M.D.
Assistant Professor of Orthopaedic Surgery [1996; 1992]

Nkossi C. Dambita, M.D., M.P.H.
Adjunct Assistant Professor of Health Sciences Informatics [2009; 2007]

Rachel Lynn Damico, M.D., Ph.D.
Assistant Professor of Medicine [2009; 2007]

Stuart R. Dankner, M.D.
Assistant Professor of Ophthalmology [1990]

Salvatore A. D’Anna, M.S.
Assistant Professor of Ophthalmology [1997; 1980]

Sonye Karen Danoff, M.D., Ph.D.
Assistant Professor of Medicine [2005; 2000]

Yassine Jamil Daoud, M.D.
Assistant Professor of Ophthalmology [2010; 2009]

Anil Darbari, M.B.B.S., M.D.
Assistant Professor of Pediatrics [2001]

Jonathan David Darer, M.D., M.P.H.
Assistant Professor of Medicine [2002]

Elizabeth Lee Daugherty, M.D., M.P.H.
Assistant Professor of Medicine [2010; 2008] (from 09/01/2010), Instructor in Medicine [2008] (to 08/31/2010)

Reginald James Davis, M.D.
Assistant Professor of Neurological Surgery [1989; 1987]

Ramon Alberto de Jesus, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2006; 2003]

Kathryn B. de Medeiros, Ph.D.
Assistant Professor of Psychiatry [2009; 2006]

Michael R. Deans, Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2008]

Mark Adam Deitch, M.D.
Assistant Professor of Orthopaedic Surgery [2001]

Karl Eric DeJonge, M.D.
Assistant Professor of Medicine [1999; 1996]

Valerie Burke DeLeon, J.D., Ph.D.
Assistant Professor of Functional Anatomy and Evolution [2006; 2005]

Donald H. Dembo, M.D.
Assistant Professor of Medicine [1992] (to 08/31/2010)

Elizabeth Wood Denne, M.S.
Assistant Professor of Gynecology and Obstetrics [2008; 2003]

Milind Y. Desai, M.B.B.S.
Visiting Assistant Professor of Radiology [2004]

Niraj M. Desai, M.D.
Assistant Professor of Medicine [2009]

Sanjay Virendra Desai, M.D.
Assistant Professor of Medicine [2007; 2004]

Sharad M. Desai, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1998]
Cheryl DeScipio, Ph.D.,
Assistant Professor of Pathology [2009], Assistant Professor of Gynecology and Obstetrics [2009]

Luis A. Diaz, Jr., M.D.
Assistant Professor of Oncology [2005; 2004]

Teresa Del P. Diaz-Montes, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [2006]

Faith B. Dickerson, Ph.D., M.P.H.
Assistant Professor of Psychiatry [2004]

Timm-Michael Lutz Dickfeld, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2004]

Karl W. Diehn, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1982; 1981]

Douglas J. Digirolamo, Ph.D.
Assistant Professor of Orthopaedic Surgery [2010] (from 10/01/2010)

Francesco DiMeco, M.D.
Adjunct Assistant Professor of Neurological Surgery [2005; 2002]

Albena Todorova Dinkova-Kostova, Ph.D.
Assistant Professor of Pharmacology and Molecular Sciences [2006; 2000], Assistant Professor of Medicine [2006]

Sara A. DiVall, M.D.
Assistant Professor of Pediatrics [2008; 2006]

Sameer Dixit, M.D.
Assistant Professor of Orthopaedic Surgery [2009], Assistant Professor of Medicine [2009]

Diana Van Do, M.D.
Assistant Professor of Ophthalmology [2005; 2003]

Danielle Josette Doberman, M.D., M.P.H.
Assistant Professor of Medicine [2009]

Rachel Anne Barnes Dodge, M.D., M.P.H.
Assistant Professor of Pediatrics [2009]

Jennifer Lockwood Dodson, M.D.
Assistant Professor of Urology [2008; 2005]

Angelika Doetzlhofer, Ph.D.
Assistant Professor of Neuroscience [2008]

Kimberly Floy Doheny, Ph.D.
Assistant Professor of Pediatrics [1997]

Meg Caroline Doherty, M.D., Ph.D., M.P.H.
Assistant Professor of Medicine [2005]

Manus J. Donahue, III, Ph.D.
Assistant Professor of Radiology [2009] (to 09/30/2010)

Jun Dong, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2007; 2006]

Xinzong Dong, Ph.D.
Assistant Professor of Neuroscience [2004]

Pamela K. Donohue, M.S.
Assistant Professor of Pediatrics [1996; 1989]

Kelly Elise Dooley, M.D., M.P.H.
Assistant Professor of Medicine [2010], Assistant Professor of Pharmacology and Molecular Sciences [2010]

Amir H. Dorafshar, M.B.B.Ch.
Assistant Professor of Plastic and Reconstructive Surgery [2010]

Timothy F. Doran, M.D.
Assistant Professor of Pediatrics [1989; 1985]

Susan dosReis, Ph.D.
Adjunct Assistant Professor of Psychiatry [2010; 2001]

Maire E. Doyle, Ph.D.
Assistant Professor of Medicine [2010; 2007]

Xavier Dray, Medical Doctoral Degree
Adjunct Assistant Professor of Medicine [2009; 2006]

Michael Bradley Drummond, M.D.
Assistant Professor of Medicine [2011; 2010] (from 01/01/2011), Instructor in Medicine [2010] (to 12/31/2010)

Malcolm S. Druskin, M.D.
Assistant Professor of Medicine [1974]

Marc G. Dubin, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2005]

Robert Arthur Dudas, M.D.
Assistant Professor of Pediatrics [2006]

Sharon Dudley-Brown, Ph.D.
Assistant Professor of Medicine [2007]

Kerry Brandt Dunbar, M.D.
Assistant Professor of Medicine [2008; 2004] (to 03/31/2011)

Kimberly Lynn Duncan, Ph.D.
Visiting Assistant Professor of Surgery [1997]

Gigi Jasmine Ebenezer, M.B.B.S., M.D.
Assistant Professor of Neurology [2010; 2004]

Frank R. Ebert, M.D.
Assistant Professor of Orthopaedic Surgery [2003]

Israel S. Eckman, M.D.
Assistant Professor of Dermatology [2000; 1998]

Richard A.E. Edden, Ph.D.
Assistant Professor of Radiology [2009]

Barish H. Edil, M.D.
Assistant Professor of Surgery [2007; 2006], Assistant Professor of Oncology [2008]

Donald William Edlow, M.D.
Assistant Professor of Pathology [1976]

Robert Randolph Edwards, Ph.D.
Adjunct Assistant Professor of Psychiatry [2008; 2004]

Lawrence Deems Egbert, M.D., M.P.H.
Visiting Assistant Professor of Anesthesiology and Critical Care Medicine [2001]

W. Andrew Eglseder, Jr., M.D.
Assistant Professor of Plastic and Reconstructive Surgery [1994]

Robert M. Ehsanipoor, M.D.
Assistant Professor of Gynecology and Obstetrics [2010]

Shaker Maurice Eid, M.D.
Assistant Professor of Medicine [2010; 2008]
David Jon Eisner, M.D.
Assistant Professor of Radiology [1992; 1990]

Harrold T. Elberfeld, M.D.
Assistant Professor of Gynecology and Obstetrics [1975]

Zayd Adnan Eldadah, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2004]

Lois J. Eldred, Dr.P.H.
Assistant Professor of Medicine [2007]

John Joseph Elias, Ph.D.
Assistant Professor of Orthopaedic Surgery [2005]

Richard Marcus Ellerkmann, M.D.
Assistant Professor of Gynecology and Obstetrics [2005; 1999]

Richard Andrew Elliott, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Michael J. Elman, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2011; 2009] (from 01/01/2011),
Instructor in Anesthesiology and Critical Care Medicine [2009] (to 12/31/2010)

Amgad Ezzat ElSherif, M.B.B.Ch.
Adjunct Assistant Professor of Surgery [2009]

Christopher John Endres, Ph.D.
Assistant Professor of Radiology [2003; 1999]

Calvin Eng, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2011; 2009] (from 01/01/2011),
Instructor in Anesthesiology and Critical Care Medicine [2009] (to 12/31/2010)

Lilly D. Engineer, Dr.P.H., M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Michael Anthony Erdek, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2000]

Nkiruka Ugochi Erekosima, M.D.
Assistant Professor of Medicine [2010] (from 09/01/2010)

Monique Ernst, M.D., Ph.D.
Visiting Assistant Professor of Psychiatry [1996]

Jesus Esquivel, M.D.
Assistant Professor of Gynecology and Obstetrics [2006]

Louis Kofi Essandoh, M.D.
Assistant Professor of Medicine [1997; 1992]

Michelle Mae Estrella, M.D.
Assistant Professor of Medicine [2007; 2006]

Noriko Esumi, M.D., Ph.D.
Assistant Professor of Ophthalmology [2003; 1997]

Anita Smith Everett, M.D.
Assistant Professor of Psychiatry [2004]

Paul M. Evitts, Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2009]

Andrew J. Ewald, Ph.D.
Assistant Professor of Cell Biology [2008],
Assistant Professor of Oncology [2009]

Joshua Benjamin Ewen, M.D.
Assistant Professor of Neurology [2010; 2007]

Camellus Okwochi Ezeugwu, M.D., Ph.D.
Assistant Professor of Medicine [2000]

Amanda Nickles Fader, M.D.
Assistant Professor of Gynecology and Obstetrics [2009]

Jeffrey John Fadrowski, M.D.
Assistant Professor of Pediatrics [2005]

Jennifer Elizabeth Fairman, M.A.
Assistant Professor of Art as Applied to Medicine [2007; 2006]

Carole Fakhry, M.D., M.P.H.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2011; 2010] (from 01/01/2011),
Assistant in Otolaryngology-Head and Neck Surgery [2010] (to 12/31/2010)

Mohamed Hassan Farah, Ph.D.
Assistant Professor of Neurology [2010; 2006]

Jeffrey John Fadrowski, M.D.
Assistant Professor of Pediatrics [2008]

Henry George Fein, M.D.
Assistant Professor of Medicine [2006]

Andrew G. Feinberg, M.D.
Assistant Professor of Psychiatry [1995; 1985]

Richard L. Feinberg, M.D.
Assistant Professor of Surgery [2008]

Leonard S. Feldman, M.D.
Assistant Professor of Medicine [2006; 2004],
Assistant Professor of Pediatrics [2007]

Gregory Fernandopulle, M.B.B.S.
Assistant Professor of Psychiatry [1976; 1974],
Lecturer in Pediatrics [2001; 1974]

Jeanne Steman Findlay, M.N.
Assistant Professor of Dermatology [2008; 2006]

Ira T. Fine, M.D.
Assistant Professor of Medicine [1994; 1982]

Janice Finkelstein, M.D.
Assistant Professor of Pediatrics [1992; 1990]

Dayna Anne Finkenzeller, M.D.
Assistant Professor of Gynecology and Obstetrics [2010; 2008]

Mary Jo Fishburn, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [1994; 1989]

Marc Fishman, M.D.
Assistant Professor of Psychiatry [1995; 1993]

Melinda D. Fitting, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1985; 1984]

Richard Michael Fleming, M.D.
Assistant Professor of Radiology [2010]

Bradley Roger Foerster, M.D.
Assistant Professor of Radiology [2009]

Eric C. Ford, Ph.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2005], Assistant Professor of Oncology [2005]
Perry Jay Foreman, M.D., Ph.D.
Assistant Professor of Neurology [2006]

Yolanda M. Fortenberry, Ph.D.
Assistant Professor of Pediatrics [2006], Assistant Professor of Biological Chemistry [2006; 2007]

Patricia D. Fosarelli, M.D.
Assistant Professor of Pediatrics [1983]

David Foster, Ph.D.
Assistant Professor of Neuroscience [2008]

Majid Fotuhi, M.D., Ph.D.
Assistant Professor of Neurology [2003]

Michael R. Fox, M.D.
Assistant Professor of Psychiatry [1980; 1979]

Michelle Candice Fox, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [2009]

Sonia Franco, M.D., Ph.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2008], Assistant Professor of Oncology [2008]

Dana H. Frank, M.D.
Assistant Professor of Medicine [1987; 1981]

Wayne A. I. Frederick, M.D.
Adjunct Assistant Professor of Oncology [2007]

Gene Yevgeny Fridman, Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2010; 2009]

Nathaniel Michael Fried, Ph.D.
Adjunct Assistant Professor of Urology [2006; 2000]

Baruch Friedman, M.D.
Assistant Professor of Medicine [2001; 1990]

Melvin M. Friedman, M.D.
Assistant Professor of Orthopaedic Surgery [1988; 1971]

Emily J. Frosch, M.D.
Assistant Professor of Psychiatry [1995; 1993]

Dominique Frueh, Ph.D.
Assistant Professor of Biophysics and Biophysical Chemistry [2010]

Ralph Joachim Fuche, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Jyothi Gadde, M.B.B.S.
Assistant Professor of Medicine [1994; 1985]

Giorgio Giovanni Galetto, M.D.
Assistant Professor of Medicine [1996], Joint Appointment in Emergency Medicine [1996]

Gary Louis Gallia, M.D., Ph.D.
Assistant Professor of Neurological Surgery [2008], Assistant Professor of Oncology [2009]

Gerard Gallucci, M.D.
Assistant Professor of Psychiatry [1994; 1988]

Samuel Michael Galvagno, Jr., D.O.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Charlene Edie Gamaldo, M.D.
Assistant Professor of Neurology [2006], Assistant Professor of Medicine [2008; 2006]

Peisong Gao, M.D., Ph.D.
Assistant Professor of Medicine [2008; 2005]

Juan Ramon Garcia, M.A.
Assistant Professor of Art as Applied to Medicine [2001; 1997]

Pedro Garcia, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1986; 1968]

Darryl J. Garfinkel, M.D.
Assistant Professor of Radiology [1977]

Ira Martin Garonzik, M.D.
Assistant Professor of Neurological Surgery [2004; 2003]

John Gartner, Ph.D.
Assistant Professor of Psychiatry [1994; 1993]

Devin Sumner Gary, Ph.D.
Assistant Professor of Biology [2009; 2005]

Luis Andres Garza, M.D., Ph.D.
Assistant Professor of Dermatology [2009]

Brian R. Gastman, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2006]

Susan Lyn Gearhart, M.D.
Assistant Professor of Surgery [2002], Assistant Professor of Oncology [2005]

Duvuru Geetha, M.B.B.S., M.D.
Assistant Professor of Medicine [2001; 1998]

Clarence W. Gehris, Jr., M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1976; 1975]

Fouad E. Gellad, M.D.
Assistant Professor of Radiology [1998]

Thomas Genuit, M.D.
Assistant Professor of Surgery [2004]

Jessica Anne George, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010]

Richard T. George, M.D.
Assistant Professor of Medicine [2007]

Dan Georgescu, M.D., Ph.D.
Assistant Professor of Ophthalmology [2010]

Kevin B. Gerold, D.O., J.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002], Joint Appointment in Emergency Medicine [2007]

Khalil Georges Ghanem, M.D., Ph.D.
Assistant Professor of Medicine [2004]

Bidyut Ghosh, Ph.D.
Assistant Professor of Surgery [2005; 2001]

Nilanjan Ghosh, M.B.B.S., Ph.D.
Assistant Professor of Oncology [2011; 2010] (from 01/01/2011), Instructor in Oncology [2010] (to 12/31/2010)

Brian K. Gibbs, Ph.D.
Assistant Professor of Medicine [2009], Associate Dean for Diversity and Cultural Competence [2009]

B. Robert Gibson, M.D.
Assistant Professor of Surgery [2007; 2006]
Glen Randall Gibson, M.D.
Assistant Professor of Surgery [2008]

Assaf A. Gilad, Ph.D.
Assistant Professor of Radiology [2007; 2006]

Jon Tyler Giles, M.D.
Assistant Professor of Medicine [2006; 2005] (to
12/15/2010)

Harmindar K. Gill, M.D.
Assistant Professor of Radiology [2002; 2000]

Maureen Marie Gilmore, M.D.
Assistant Professor of Pediatrics [2001]

Marta Marsh Gilson, Ph.D.
Assistant Professor of Surgery [2007; 2006]

Luis F. Gimenez, M.D.
Assistant Professor of Medicine [1986; 1985]

Mark R. Ginsberg, Ph.D.
Assistant Professor of Psychiatry [1993], Joint
Appointment in Medicine [1994]

Peter Anthony Girolami, Ph.D.
Assistant Professor of Psychiatry [2007]

Robert L. Giuntoli, II, M.D.
Assistant Professor of Gynecology and Obstetrics
[2003], Assistant Professor of Oncology [2004]

Dean Steven Glaros, M.D.
Assistant Professor of Ophthalmology [2003]

Sheldon D. Glass, M.D.
Assistant Professor of Psychiatry [1968]

David B. Glasser, M.D.
Assistant Professor of Ophthalmology [1996]

Sean T. Gloth, M.D.
Assistant Professor of Medicine [1993]

Sheldon M. Glusman, M.D.
Assistant Professor of Pathology [1973]

Philip Goelet, Ph.D.
Assistant Professor of Anesthesiology and Critical
Care Medicine [2010] (from 09/01/2010)

Fernando Sampaio Goes, M.D.
Assistant Professor of Psychiatry [2008]

Bernadette Cullen Goggins, M.B.B.Ch.
Assistant Professor of Psychiatry [2001]

Xavier Golay, Ph.D.
Assistant Professor of Radiology [2002; 2000]

Harry Randall Goldberg, Ph.D.
Assistant Professor of Biomedical Engineering
[2002; 2000], Joint Appointment in Health
Sciences Informatics [2002], Assistant Dean/
Director of the Office of Academic Computing
[2001]

Melissa Cheryl Goldberg, Ph.D.
Assistant Professor of Psychiatry [2000]

William Christopher Golden, M.D.
Assistant Professor of Pediatrics [2004; 2001]

Edward J. Goldman, M.D.
Assistant Professor of Ophthalmology [1990]

Judith E. Goldstein, O.D.
Assistant Professor of Ophthalmology [2006],
Assistant Professor of Physical Medicine and
Rehabilitation [2006]
Robert I. Griffiths, Sc.D.
Assistant Professor of Medicine [1993]

Stephen Elliot Grill, M.D., Ph.D.
Assistant Professor of Neurology [2002; 1996]

Cordelia T. Grimm, M.D.
Assistant Professor of Medicine [2006]

Lori L. Grover, O.D.
Assistant Professor of Ophthalmology [2007; 2005]

Francis C. Grumbine, M.D.
Assistant Professor of Gynecology and Obstetrics [1980; 1978]

Yun Guan, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Alexander M. Guba, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [1982]

Anthony Lawrence Guerrerio, Jr., M.D., Ph.D.
Assistant Professor of Pediatrics [2009]

Pamela Ann Guerrerio, M.D., Ph.D.
Assistant Professor of Pediatrics [2009]

Sachin K. Gujar, M.B.B.S.
Assistant Professor of Radiology [2008]

Charles S. Gulotta, Ph.D.
Assistant Professor of Behavioral Biology in the Department of Psychiatry [2003; 1999]

Meral Gunay-Aygun, M.D.
Assistant Professor of Pediatrics [2008]

Amita Gupta, M.D.
Assistant Professor of Medicine [2005; 2003]

Ayse P. Gurses, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008], Joint Appointment in Health Sciences Informatics [2010]

Christina Y. Ha, M.D.
Assistant Professor of Medicine [2010]

Patrick Kyongmin Ha, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2006]

Jennifer Pardo Habashi, M.D.
Assistant Professor of Pediatrics [2006]

Mehran Habibi, M.D.
Assistant Professor of Surgery [2007]

David Northrop Hager, M.D., M.P.H.
Assistant Professor of Medicine [2009; 2007]

Adil Hussain Haider, M.B.B.S., M.D., M.P.H.
Assistant Professor of Surgery [2007; 2006], Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Ann Carol Halbower, M.D.
Adjunct Assistant Professor of Pediatrics [2001]

Marc Kenneth Halushka, M.D., Ph.D.
Assistant Professor of Pathology [2005; 2004]

Abdel-Rahim A. Hamad, D.V.M., Ph.D.
Assistant Professor of Pathology [2003; 2000], Assistant Professor of Medicine [2005]

James Peter Adam Hamilton, M.D.
Assistant Professor of Medicine [2007]

Hans Joerg Hammers, M.D., Ph.D.
Assistant Professor of Oncology [2009]

Dina Hammoud, M.D.
Assistant Professor of Radiology [2003]

Kamal A. Hamod, M.D.
Assistant Professor of Gynecology and Obstetrics [1980; 1978]

Fayez Mahmoud Hamzeh, M.B.B.S., Ph.D.
Adjunct Assistant Professor of Medicine [2004; 1994]

Sharon Frances Handel, M.D.
Assistant Professor of Psychiatry [2007; 2001] (to 12/31/2010)

Christine Lee Hann, M.D., Ph.D.
Assistant Professor of Oncology [2008]

Marie N. Hanna, M.B.B.Ch.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005]

Nadia Nathalie Hansel, M.D., M.P.H.
Assistant Professor of Medicine [2006; 2004]

Annette L. Hanson, M.D.
Assistant Professor of Psychiatry [2001]

Marta Hanson, Ph.D.
Assistant Professor of History of Medicine [2004]

Laura Anne Hanyok, M.D.
Assistant Professor of Medicine [2008; 2006]

Uzma Jalal Haque, M.B.B.S., M.D.
Assistant Professor of Medicine [2003]

Joseph Benson Harlan, Jr., M.D.
Assistant Professor of Ophthalmology [2001; 1998]

Allan C. Harrington, M.D.
Assistant Professor of Dermatology [2003; 1995]

Daniel M. Harrison, M.D.
Assistant Professor of Neurology [2010]

Joyce Nolan Harrison, M.D.
Assistant Professor of Psychiatry [2007; 2005]

Katharine Santos Harrison, M.D.
Assistant Professor of Medicine [1998]

Adam Lindsay Hartman, M.D.
Assistant Professor of Neurology [2007], Assistant Professor of Pediatrics [2007]

Theresa Lynn Hartsell, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Waleed A. Hassen, M.D.
Assistant Professor of Urology [2008]

Jennifer Leigh Hayashi, M.D.
Assistant Professor of Medicine [2007; 2004]

Allison Gamboa Hays, M.D.
Assistant Professor of Medicine [2009]

Carlton Haywood, Jr., Ph.D.
Assistant Professor of Medicine [2008]

Richard L. Hazlett, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1997; 1993]
Ling He, M.D., Ph.D.
Assistant Professor of Pediatrics [2010; 2009]
(from 11/01/2010), Instructor in Pediatrics [2009]
to 10/31/2010)

Jennifer A. Heller, M.D.
Assistant Professor of Surgery [2002]

Janice L. Henderson, M.D.
Assistant Professor of Gynecology and Obstetrics
[2002]

William M. Henderson, D.D.S.
Assistant Professor of Oral Surgery [2005; 2001]

Magdi H.G. Henein, M.B.B.Ch.
Assistant Professor of Orthopaedic Surgery [1970; 1962]

Charles Alan Henrikson, M.D., M.P.H.
Assistant Professor of Medicine [2005], Assistant
Professor of Pediatrics [2010]

William Joseph Herring, M.D., Ph.D.
Adjunct Assistant Professor of Neurology [2010; 1997]

Bruce Hershfield, M.D.
Assistant Professor of Psychiatry [1985; 1980]

Daniel Alfredo Herzka, Ph.D.
Assistant Professor of Biomedical Engineering
[2008]

Carrie Ann-Gilbert Herzke, M.D.
Assistant Professor of Medicine [2009; 2008]

William R. Herzog, Jr., M.D.
Assistant Professor of Medicine [2003]

Kenneth M. Heyman, M.A.
Adjunct Assistant Professor of Art as Applied to
Medicine [2009]

James Patrick Higgins, M.D.
Assistant Professor of Plastic and Reconstructive
Surgery [2006; 2002]

Hugh F. Hill, III, J.D., M.D.
Assistant Professor of Emergency Medicine [2006; 1997]

Ginette Hinds, M.D.
Assistant Professor of Dermatology [2009]

Howard C. Hines, M.D.
Assistant Professor of Dermatology [1993; 1984]

Endrika L. Hinton, M.D.
Assistant Professor of Gynecology and Obstetrics
[1995; 1993]

Richard Yarborough Hinton, M.D., M.P.H.
Assistant Professor of Orthopaedic Surgery [1999]

Kenzo Hirose, M.D.
Assistant Professor of Surgery [2008]

Glenn Aaron Hirsch, M.D.
Assistant Professor of Medicine [2006; 2004]

Ricky Regina Hirschlhorn, Ph.D.
Adjunct Assistant Professor of Psychiatry [2004]

Nicola C. Ho, M.D.
Assistant Professor of Pediatrics [2001]

Tony Wei-Hsiu Ho, M.D.
Adjunct Assistant Professor of Neurology [2010; 1997]

Evanne V. Loh Hoehn-Saric, M.D.
Assistant Professor of Psychiatry [1988; 1983]

Beatrice Hoffmann, M.D., Ph.D.
Assistant Professor of Emergency Medicine [2005; 2004]

Christopher J. Hoffmann, M.D., M.P.H.
Assistant Professor of Medicine [2010; 2009]

Gerald A. Hofkin, M.D.
Assistant Professor of Medicine [1992; 1985]

Lawrence Vincent Hofmann, M.D.
Assistant Professor of Radiology [2000]

Christine F. Hohmann, Ph.D.
Assistant Professor of Psychiatry [1990; 1989]

Henry H. Holcomb, M.D.
Assistant Professor of Psychiatry [1998], Assistant
Professor of Radiology [1985]

Matthias Holdhoff, M.D., Ph.D.
Assistant Professor of Oncology [2010] (from
07/03/2010)

Kathryn Wood Holmes, M.D., M.P.H.
Assistant Professor of Pediatrics [2006]

Susan Elizabeth Holmes, Ph.D.
Assistant Professor of Psychiatry [2000; 1999]

Peter Anthony Holt, M.D.
Assistant Professor of Medicine [1989; 1983]

Charles Chong-Hwa Hong, M.D., Ph.D.
Assistant Professor of Psychiatry [1998]

Kelvin K. Hong, M.B.B.S., M.D.
Assistant Professor of Radiology [2004]

Julie Elizabeth Hoover-Fong, M.D.
Assistant Professor of Pediatrics in Genetic
Medicine [2002]

Mohammad Obaidul Hoque, D.D.S., Ph.D.
Assistant Professor of Otolaryngology-Head and
Neck Surgery [2007; 2006], Assistant Professor of
Oncology [2008], Assistant Professor of Urology
[2008]

Alena Horska, Ph.D.
Assistant Professor of Radiology [2000; 1997]

William T. Hosek, M.D.
Assistant Professor of Emergency Medicine [2005; 2001]

Franck Housseau, Ph.D.
Assistant Professor of Oncology [2010; 2002]

Barbara Jo Howard, M.D.
Assistant Professor of Pediatrics [1996]

William T. Howard, M.D.
Assistant Professor of Psychiatry [1999]

Erica E. Howe, M.D.
Assistant Professor of Medicine [2010; 2008]

Randolph Michael Howes, M.D., Ph.D.
Adjunct Assistant Professor of Plastic and
Reconstructive Surgery [2004]

Wen-Son Hsieh, M.D.
Assistant Professor of Oncology [2001]

Yu-Hsiang Hsieh, Ph.D.
Assistant Professor of Emergency Medicine [1998]

FACULTY 385
Jeffrey Hsien-Min Hsu, M.D.
Assistant Professor of Psychiatry [2002; 1999]
Stephanie C. Hsu, M.D., Ph.D.
Adjunct Assistant Professor of Pediatrics [2004]
Tamaro Hudson, Ph.D., M.P.H.
Adjunct Assistant Professor of Oncology [2009]
Matthew Timothy Hueman, M.D.
Assistant Professor of Surgery [2009; 2007]
Nancy Ann Hueppchen, M.D.
Assistant Professor of Gynecology and Obstetrics [1998; 1996]
John Michael Huete, Ph.D.
Assistant Professor of Psychiatry [2010; 2006]
Mark Thomas Hughes, M.D.
Assistant Professor of Medicine [2009]
Mary Margaret Huizinga, M.D., M.P.H.
Assistant Professor of Medicine [2008]
Ianessa Alicia Humbert, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2008]
Laura Kathleen Hummers, M.D.
Assistant Professor of Medicine [2005; 2003]
Marc Wilson Hungerford, M.D.
Assistant Professor of Orthopaedic Surgery [1998]
Elizabeth Anne Hunt, M.D., M.P.H.
Assistant Professor of Anesthesiology and Critical Care Medicine [2003], Assistant Professor of Pediatrics [2006], Joint Appointment in Health Sciences Informatics [2010]
Wayne P. Hunt, Ed.D.
Assistant Professor of Psychiatry [1999; 1992]
Andres Hurtado, M.D.
Assistant Professor of Neurology [2010; 2008]
David F. Hutcheon, M.D.
Assistant Professor of Medicine [1979; 1977]
Heidi E. Hutton, Ph.D.
Assistant Professor of Psychiatry [1998; 1993]
Paul Mingyou Hwang, M.D., Ph.D.
Assistant Professor of Medicine [2001]
Iredell Waddell Iglehart, III, M.D.
Assistant Professor of Medicine [1997; 1988]
Miho Iijima, Ph.D.
Assistant Professor of Cell Biology [2006; 2004]
Peter Bela Illei, M.D.
Assistant Professor of Pathology [2005]
Thomas V. Ingleby, M.D.
Assistant Professor of Medicine [1999]
Nicholas T. Ingolia, Ph.D.
Adjunct Assistant Professor of Molecular Biology and Genetics [2010]
Peter C. Innis, M.D.
Assistant Professor of Orthopaedic Surgery [1994; 1990]
Takanari Inoue, Ph.D.
Assistant Professor of Cell Biology [2008], Assistant Professor of Biological Chemistry [2010], Assistant Professor of Pharmacology and Molecular Sciences [2010]
Kristina Irsch, Ph.D.
Assistant Professor of Ophthalmology [2010]
Gillian Raemi Isaac, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]
Lisa Earnest Ishi, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2007; 2005]
Stacey Lynn Ishman, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2006; 2005], Assistant Professor of Medicine [2010], Assistant Professor of Pediatrics [2008]
Robert Ivkov, Ph.D.
Visiting Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2008]
Izlem Izbudak, M.D.
Assistant Professor of Radiology [2008; 2006]
Bernard Georges Jaar, M.D.
Assistant Professor of Medicine [2003; 2002]
Mahmood Jaberi, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2003]
Heather A. Jacene, M.D.
Assistant Professor of Radiology [2006; 2005]
Annette Marie Jackson, Ph.D.
Assistant Professor of Medicine [2006]
Eric Vincent Jackson, Jr., M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2001]
Michael A. Jacobs, M.D.
Assistant Professor of Orthopaedic Surgery [1993]
Sanjay Kumar Jain, M.B.B.S., M.D.
Assistant Professor of Pediatrics [2006; 2005], Assistant Professor of Radiology [2009]
Sanjay Raj Jain, M.B.B.S., Ph.D.
Adjunct Assistant Professor of Oncology [2009]
Julian Jakobovits, M.B.B.S.
Assistant Professor of Medicine [1996; 1986]
Mariflor S. Jamora, M.D.
Assistant Professor of Psychiatry [2010; 2000]
Roxanne M. Jamshidi, M.D.
Assistant Professor of Gynecology and Obstetrics [2004; 2002]
Yoon-Young Jang, M.D., Ph.D.
Assistant Professor of Oncology [2008; 2005]
Niraj D. Jani, M.D.
Assistant Professor of Medicine [2008]
John Sheppard Jeffreys, Ed.D.
Assistant Professor of Psychiatry [2000; 1988]
Jennifer Lee Jenkins, M.D.
Assistant Professor of Emergency Medicine [2007; 2006]
Heather Kristen Jennett, Ph.D.
Assistant Professor of Psychiatry [2010; 2008]
Jacky M. Jennings, Ph.D., M.P.H.
Assistant Professor of Pediatrics [2007; 2006]
Riyaz H. Jinnah, M.B.B.Ch.
Assistant Professor of Orthopaedic Surgery [1986]
Hylton Victor Joffe, M.D.
Assistant Professor of Medicine [2008; 2006]
Amballur David John, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2003; 2002]
Kristine Erica Johnson, M.D.
Assistant Professor of Medicine [2009; 2008]
Matthew Wayne Johnson, Ph.D.
Assistant Professor of Psychiatry [2009; 2007]
Pamela Tecce Johnson, M.D.
Assistant Professor of Radiology [2001]
Sara B. Johnson, Ph.D., M.P.H.
Assistant Professor of Pediatrics [2007]
Sheree M. Johnson, Ph.D.
Visiting Assistant Professor of Pediatrics [2008]
Timothy S. Johnson, M.D.
Assistant Professor of Orthopaedic Surgery [2005; 2002]
Wallace Robert Johnson, Jr., M.D.
Visiting Assistant Professor of Medicine [2001]
Deirdre M. Johnston, M.B.B.Ch.
Assistant Professor of Psychiatry [2005]
Peter V. Johnston, M.D.
Assistant Professor of Medicine [2008]
Catherine H. Jones, M.D., Ph.D.
Assistant Professor of Pediatrics [2004]
Steven R. Jones, M.D.
Visiting Assistant Professor of Medicine [2008]
Lori Chaffin Jordan, M.D.
Assistant Professor of Neurology [2008; 2007], Assistant Professor of Pediatrics [2008; 2007]
Christophe C. Jouny, Ph.D.
Assistant Professor of Neurology [2008; 2003]
Juan M. Juanteguy, M.D.
Assistant Professor of Surgery [1981; 1971]
Rosalyne Anne Juergens, M.D.
Adjunct Assistant Professor of Oncology [2007], Adjunct Assistant Professor of Medicine [2009]
Julianna Joan Jung, M.D.
Assistant Professor of Emergency Medicine [2007; 2002]
Aaron N. Juni, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2009]
Sushant Krishna Kachhap, Ph.D.
Assistant Professor of Oncology [2010; 2008]
David R. Kafonek, M.D.
Assistant Professor of Medicine [1988; 1986]
SungWoo Kahng, Ph.D.
Assistant Professor of Psychiatry [2001]
Mihoko Kai, Ph.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2008], Assistant Professor of Oncology [2008]
Corinne Allison Keet, M.D.
Assistant Professor of Pediatrics [2010]
Courtney Pierce Keeton, Ph.D.
Assistant Professor of Psychiatry [2010; 2008]
Jean M. Keller, B.S.
Assistant Professor of Gynecology and Obstetrics [2008; 1993]
Newton E. Kendig, M.D.
Assistant Professor of Medicine [1999; 1991]
Hayden Odell Kepley, Ph.D.
Assistant Professor of Psychiatry [2006]
Candace L. Kerr, Ph.D.
Assistant Professor of Gynecology and Obstetrics [2008; 2003]
Jeanne Couturier Keruly, M.S.
Assistant Professor of Medicine [2005; 1998]
Sanjay Chandru Keswani, M.B.B.S.
Adjunct Assistant Professor of Neurology [2003]
Marwan Riad Khalifeh, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2008; 2006]
Saeed R. Khan, Ph.D.
Adjunct Assistant Professor of Oncology [2008; 1999], Adjunct Assistant Professor of Radiology [2008; 2005]
Ron Khazan, M.D.
Assistant Professor of Radiology [1991; 1989] (on leave of absence)
Michelle Kho, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2010]
Victor A. Khouzami, M.D.
Assistant Professor of Gynecology and Obstetrics [1986; 1979]
Ramesh K. Khurana, M.B.B.S.
Assistant Professor of Neurology [1995]
Earl D.R. Kidwell, Jr., M.D.
Assistant Professor of Ophthalmology [1980; 1978]
Jean Kim, M.D., Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1996; 1995], Assistant Professor of Medicine [1996; 1995]
Young Choo Kim, M.D.
Assistant Professor of Radiology [1979; 1971]
Young Jun Kim, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2005], Assistant Professor of Oncology [2009]
Richard M. Kimball, Jr., Ph.D., M.P.H.
Assistant Professor of Neurology [2010] (from 11/01/2010)
Mark King, M.D.
Assistant Professor of Emergency Medicine [2000]
Tracy Meicha King, M.D., M.P.H.
Assistant Professor of Pediatrics [2005; 2004]
Arnold S. Kirshenbaum, M.D.
Assistant Professor of Pediatrics [1990]
Flora N. Kisule, M.D.
Assistant Professor of Medicine [2007; 2004]
Prakash Kulkarni, Ph.D.
Assistant Professor of Urology [2007], Assistant Professor of Oncology [2009]

Kanupriya A. Kumar, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Patricia Ferrans Kurtz, Ph.D.
Assistant Professor of Psychiatry [1996; 1993]

Hirotu Kuwabara, M.D., Ph.D.
Assistant Professor of Radiology [2005; 2003]

Chulan Kwon, Ph.D.
Assistant Professor of Medicine [2010] (from 09/01/2010)

Michael J. Labellarte, M.D.
Assistant Professor of Psychiatry [1997; 1996]

Scott Elliot LaBorwit, M.D.
Assistant Professor of Ophthalmology [1999; 1998]

Aaron Nicholas LacKamp, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009] (to 08/15/2010)

John Gregory Ladas, M.D., Ph.D.
Assistant Professor of Ophthalmology [2001; 2000]

Hong Lai, Ph.D., M.P.H.
Assistant Professor of Radiology [2008], Assistant Professor of Ophthalmology [2001]

Gyanu Lamichhane, Ph.D.
Assistant Professor of Medicine [2006]

Thomas F. Lansdale, III, M.D.
Assistant Professor of Medicine [1997; 1994]

Michael Edward Lantz, M.D.
Assistant Professor of Gynecology and Obstetrics [1995]

Sophie M. Lanzkron, M.D.
Assistant Professor of Medicine [2000], Assistant Professor of Oncology [2000]

Justine Julia Larson, M.D., Ph.D.
Assistant Professor of Psychiatry [2007]

Asad Latif, M.B.B.S.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008]

Albert Y. Lau, Ph.D.
Assistant Professor of Biophysics and Biophysical Chemistry [2010] (from 12/15/2010)

Maren R. Laughlin, Ph.D.
Adjunct Assistant Professor of Radiology [2008]

Josh David Lauring, M.D., Ph.D.
Assistant Professor of Oncology [2008]

Bennett Lavenstein, M.D.
Assistant Professor of Neurology [1997]

Paul Aubrey Law, M.D., M.P.H.
Assistant Professor of Pediatrics [2006]

Cathleen Escallon Lawson, M.S.
Assistant Professor of Gynecology and Obstetrics [2006; 1994]

Shari Martin Lawson, M.D.
Assistant Professor of Gynecology and Obstetrics [2008]

Mark G. Lazarev, M.D.
Assistant Professor of Medicine [2009]

Dung Thi Le, M.D.
Assistant Professor of Oncology [2009; 2007]

William Leahy, M.D.
Assistant Professor of Neurology [1978]

Noah Lechtzin, M.D.
Assistant Professor of Medicine [2001], Assistant Professor of Neurology [2003]

Benjamin H. Lee, M.D., M.P.H.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Jai Sung Lee, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Judy Mon-Hwa Lee, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [2003; 2000]

Linda A. Lee, M.D.
Assistant Professor of Medicine [1995; 1994]

Melissa Ann Lee, M.D.
Assistant Professor of Psychiatry [2005; 2000]

Jennifer Kim Lee-Summers, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010]

Michelle Kim Leff, M.D.
Adjunct Assistant Professor of Psychiatry [2005; 1996]

Susan W. Lehmann, M.D.
Assistant Professor of Medicine [1992; 1989]

Gregory K. Lehne, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1983]

Richard Leigh, M.D.
Assistant Professor of Neurology [2010]

Mesfin Aklilu Lemma, M.D.
Assistant Professor of Orthopaedic Surgery [2003; 2002]

Jeannie-Marie Sheppard Leoutsakos, Ph.D.
Assistant Professor of Psychiatry [2010; 2009]

Mary L. O’Connor Leppert, M.B.B.Ch.
Assistant Professor of Pediatrics [2000; 1995]

Eric Benjamin Levey, M.D.
Assistant Professor of Pediatrics [2003; 1999]

Scott Ryan Levin, M.D.
Assistant Professor of Emergency Medicine [2008]

Rachel Beth Levine, M.D., M.P.H.
Assistant Professor of Medicine [2004]

Stuart M. Levine, M.D.
Assistant Professor of Medicine [2004; 2003]

Dale R. Levitz, M.S.
Adjunct Assistant Professor of Art as Applied to Medicine [1999; 1976]

Howard Philip Levy, M.D., Ph.D.
Assistant Professor of Medicine [2000]

Michael Levy, M.D., Ph.D.
Assistant Professor of Neurology [2009]
Amy Feldman Lewanda, M.D.
Assistant Professor of Pediatrics [1994]

John Lewin, III, Pharm.D.
Adjunct Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Qing Kay Li, M.D., Ph.D.
Assistant Professor of Pathology [2006]

Tong Li, Ph.D.
Assistant Professor of Pathology [2008; 2002]
(from 01/01/2011)

Xuhang Li, Ph.D.
Assistant Professor of Medicine [2004; 2002]

Horace K. Liang, M.D.
Assistant Professor of Emergency Medicine [1990; 1987]

Hsin-Yueh Liang, M.D.
Visiting Assistant Professor of Medicine [2010]

Samuel M. Libber, M.D.
Assistant Professor of Pediatrics [1985; 1978]

Bernard Liberman, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1970; 1968]

Anne O. Lidor, M.D.
Assistant Professor of Surgery [2004; 2003]

Doris D.M. Lin, M.D., Ph.D.
Adjunct Assistant Professor of Oncology [2009], Adjunct Assistant Professor of Plastic and Reconstructive Surgery [2009; 2007]

Scott David Lifchez, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2006]

Michael Kwon Lim, M.D.
Assistant Professor of Neurological Surgery [2007], Assistant Professor of Oncology [2007]

Vanessa Limawararut, M.D.
Assistant Professor of Ophthalmology [2007]

Susan Lee Limb, M.D.
Assistant Professor of Medicine [2006]

Doris D.M. Lin, M.D., Ph.D.
Assistant Professor of Radiology [2003; 2002]

Frank Robert Lin, M.D., Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2010]

Li Lin, Ph.D.
Adjunct Assistant Professor of Medicine [2000]

Ming-Tsueh Lin, M.D., Ph.D.
Assistant Professor of Pathology [2010]

Steven E. Lindauer, Ph.D.
Assistant Professor of Psychiatry [2005]

Nikeea Copeland Linder, Ph.D., M.P.H.
Assistant Professor of Pediatrics [2007]

Mark Evan Lindsay, M.D., Ph.D.
Assistant Professor of Pediatrics [2010]

Shari Miura Ling, M.D.
Assistant Professor of Medicine [1996]

Michael Scott Linkinhoker, M.A.
Adjunct Assistant Professor of Art as Applied to Medicine [2010]
Thomas Lynch, M.B.B.Ch.
Assistant Professor of Psychiatry [1986; 1961]
Loralie D. Ma, M.D., Ph.D.
Adjunct Assistant Professor of Radiology [2006]
Steven R. Machlin, M.D.
Assistant Professor of Psychiatry [2004]
Crystal L. Mackall, M.D.
Assistant Professor of Oncology [1998], Assistant Professor of Pediatrics [1998]
Igal Madar, Ph.D.
Assistant Professor of Radiology [2010]
David H. Madoff, M.D., Ph.D.
Assistant Professor of Medicine [1997]
Gustavo H.B. Maegawa, M.D.
Assistant Professor of Pediatrics in Genetic Medicine [2009]
Ronald H. Magarick, Ph.D.
Assistant Professor of Gynecology and Obstetrics [1986; 1979]
Jeffrey Lance Magaziner, M.D.
Assistant Professor of Medicine [2001; 1997]
Priscilla Magno, M.D.
Adjunct Assistant Professor of Medicine [2007; 2006]
Gina Marie Magyar-Russell, Ph.D.
Adjunct Assistant Professor of Psychiatry [2009; 2007]
Christine Lan Mai, M.D.
Adjunct Assistant Professor of Anesthesiology and Critical Care Medicine [2010; 2009]
Mohammad Maisami, M.D.
Assistant Professor of Psychiatry [1978], Assistant Professor of Pediatrics [1978]
Mahmoud B. Malas, M.D.
Assistant Professor of Surgery [2005]
Zahra Maleki, M.D.
Assistant Professor of Pathology [2010; 2007]
Andrew Lee Mammen, M.D., Ph.D.
Assistant Professor of Neurology [2007], Assistant Professor of Medicine [2009]
Michele Ann Manahan, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2007]
Steven F. Mandell, M.S.
Assistant Professor of Health Sciences Informatics [2001]
Allen S. Mandir, M.D., Ph.D.
Assistant Professor of Neurology [1999; 1998]
Lisa L. Maragakis, M.D.
Assistant Professor of Medicine [2004]
Christopher M. Marano, M.D.
Assistant Professor of Psychiatry [2008]
Arik V. Marcell, M.D., M.P.H.
Assistant Professor of Pediatrics [2006]
Luigi Marchionni, M.D., Ph.D.
Assistant Professor of Oncology [2010; 2007]
Mohamed K. Mardini, M.D.
Assistant Professor of Pediatrics [1986]
Zoltan Mari, M.D.
Assistant Professor of Neurology [2006]
Spyridon S. Marinopoulos, M.D.
Assistant Professor of Medicine [2002; 2001]
Nicholas Marsh-Armstrong, Ph.D.
Assistant Professor of Neuroscience [2001], Joint Appointment in Ophthalmology [2005]
Don Richard Martin, M.D.
Assistant Professor of Medicine [1994; 1992]
L. David Martin, M.D.
Assistant Professor of Medicine [2007; 2003]
Neil Alexander Martinson, M.B.B.Ch., M.P.H.
Assistant Professor of Medicine [2006; 2002]
Joseph R. Martire, M.D.
Adjunct Assistant Professor of Radiology [2009]
Shanithi Marur, M.B.B.S.
Assistant Professor of Oncology [2009; 2007]
Nisa Marika Maruthur, M.D.
Assistant Professor of Medicine [2009]
Cherie Lynn Marvel, Ph.D.
Richard P. Marvel, M.D.
Assistant Professor of Gynecology and Obstetrics [2004]
Andrea Slotkoff Marx, M.D.
Assistant Professor of Medicine [1999; 1998]
Barry S. Marx, M.D.
Assistant Professor of Pediatrics [1998; 1985]
Jonathan K. Marx, M.D.
Assistant Professor of Radiology [2010; 2006] (from 10/01/2010), Instructor in Radiology [2006] (to 09/30/2010)
Shawn Thomas Mason, Ph.D.
Adjunct Assistant Professor of Psychiatry [2010]
Stephen Carl Mathai, M.D.
Assistant Professor of Medicine [2009; 2008]
Debra Juanita Hale Mathews, Ph.D.
Assistant Professor of Pediatrics [2006]
Rasika Ann Mathias, Sc.D.
Assistant Professor of Medicine [2009]
Vineesh Mathur, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2005]
Pamela Mathy, Ph.D.
Assistant Professor of Psychiatry [2008]
Rebecca E. Matsakis, M.D.
Assistant Professor of Pediatrics [1984; 1983]
Alan K. Matsumoto, M.D.
Assistant Professor of Medicine [1993]
Ichihiro Matsuo, D.D.S.
Adjunct Assistant Professor of Physical Medicine and Rehabilitation [2008; 2005]
Leslie S. Matthews, M.D.
Assistant Professor of Orthopaedic Surgery [1981]
Robert Samuel Mayer, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2007]
Susan A. Mayer, M.D.
Assistant Professor of Medicine [2004]
Janet Willoughby Maynard, M.D.
Assistant Professor of Medicine [2010] (from 10/15/2010)
Andrew R. Mayer, M.D.
Assistant Professor of Medicine [1984]
Reza Mazhari, Ph.D.
Adjunct Assistant Professor of Medicine [2003; 2002]
Tori Metcalf McCambridge, M.D.
Assistant Professor of Pediatrics [2003; 2000]
Robert Emmett McCarthy, III, M.D.
Assistant Professor of Medicine [1998]
Jeanne M. McCauley, M.D., M.P.H.
Assistant Professor of Medicine [1997]
Michael E. McCollum, M.D.
Assistant Professor of Gynecology and Obstetrics [1997]
Meredith Christine McCormack, M.D.
Assistant Professor of Medicine [2009; 2008]
Susan Sifford McDermott, M.D.
Adjunct Assistant Professor of Neurology [2010; 2002]
Michael A. McDevitt, M.D., Ph.D.
Assistant Professor of Medicine [2002], Assistant Professor of Oncology [2006]
Raegan McDonald-Mosley, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [2010; 2008] (from 08/01/2010), Instructor in Gynecology and Obstetrics [2008] (on leave of absence to 07/31/2010)
Henry F. McFarland, M.D.
Adjunct Assistant Professor of Neurology [2010; 1973]
Bernard M. McGibbon, M.B.B.S.
Assistant Professor of Plastic and Reconstructive Surgery [1971]
Brian Michael McGinley, M.D.
Assistant Professor of Pediatrics [2006]
Marsden H. McGuire, M.D.
Assistant Professor of Psychiatry [1997; 1993]
Maura Joyce McGuire, M.D.
Assistant Professor of Medicine [1994; 1989], Assistant Dean of the Part-Time Faculty [2010]
Joseph D. McIlrney, M.S.
Visiting Assistant Professor of Pediatrics [2000]
Anne B. McKusick, M.D.
Assistant Professor of Medicine [1969; 1952]
Rhondalyn C. McLean, M.D.
Assistant Professor of Medicine [2008]
Gabrielle Lynn McLemore, Ph.D.
Adjunct Assistant Professor of Pediatrics [2004; 2002]
Michael T. McMahon, Ph.D.
Assistant Professor of Radiology [2006; 2003]
Matthew K. McNabney, M.D.
Assistant Professor of Medicine [1998]
Todd R. McNutt, Ph.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2005], Assistant Professor of Oncology [2005]
Nathaniel McQuay, Jr., M.D.
Assistant Professor of Surgery [2010]
Alan Keith Meeker, Ph.D.
Assistant Professor of Pathology [2005], Assistant Professor of Oncology [2009], Assistant Professor of Urology [2005]
Mollie K. Meffert, M.D., Ph.D.
Assistant Professor of Biological Chemistry [2004], Assistant Professor of Neuroscience [2004]
Sherif M. Meleka, M.B.B.Ch.
Assistant Professor of Neurological Surgery [1995; 1993]
Michael Melia, M.D.
Assistant Professor of Medicine [2010; 2008]
Elizabeth Pynadath Menachery, M.D.
Assistant Professor of Medicine [2006; 2001]
Pedro Alejandro Mendez-Tellez, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2000], Assistant Professor of Surgery [2001]
Avedis Meneshian, M.D.
Assistant Professor of Surgery [2009]
Jose G. Merino-Juarez, M.D.
Adjunct Assistant Professor of Neurology [2010]
Christian Avery Merlo, M.D., M.P.H.
Assistant Professor of Medicine [2006; 2004]
James Harris Mersey, M.D.
Assistant Professor of Medicine [1994; 1977]
John O. Meyerhoff, M.D.
Assistant Professor of Medicine [1996]
Jon Hamilton Meyerle, M.D.
Assistant Professor of Dermatology [2006; 2005]
Caren L. Freal Meyers, Ph.D.
Assistant Professor of Pharmacology and Molecular Sciences [2005], Assistant Professor of Oncology [2009]
Theresa M. Michele, M.D.
Assistant Professor of Medicine [2004]
Erin Donnelly Michos, M.D.
Assistant Professor of Medicine [2008; 2007]
Hubert S. Mickel, M.D.
Assistant Professor of Emergency Medicine [1995]
Michelle Marie Mielke, Ph.D.
Assistant Professor of Psychiatry [2007; 2006]
Americo Aniello Migliaccio, Ph.D.
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery [2008; 2004]
Lorraine A. Millo, M.D.
Assistant Professor of Gynecology and Obstetrics [1996]
Christina Rose Miller, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010]
Julie Marie Miller, M.D.
Assistant Professor of Medicine [1999]
Leslie Rachel Miller, M.D.
Assistant Professor of Psychiatry [2008]
Robert S. Miller, M.D.
Assistant Professor of Oncology [2010]
Ryan Scott Miller, M.D.
Assistant Professor of Pediatrics [2011; 2006]
(from 01/01/2011), Instructor in Pediatrics [2006]
(to 12/31/2010)
Susan R. Miller, Sc.D.
Assistant Professor of Gynecology and Obstetrics [2009]
Katherine Miller-Bass, M.D.
Assistant Professor of Gynecology and Obstetrics [1991]
Michael G. Millin, M.D., M.P.H.
Assistant Professor of Emergency Medicine [2006; 2004]
Aaron Michael Milstone, M.D.
Assistant Professor of Pediatrics [2007]
John S. Minkowski, M.D.
Assistant Professor of Ophthalmology [1985; 1984]
Nanhi R. Mitter, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]
Scott H. Mittman, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1996; 1994]
Abhay Rajeshwar Moghekar, M.B.B.S.
Assistant Professor of Neurology [2008; 2006]
Mona Adel Mohamed, M.B.B.Ch., Ph.D.
Assistant Professor of Radiology [2010; 2007]
(from 07/15/2010), Research Associate in Radiology [2007] (to 07/14/2010)
Mark Nicolai Mollenhauer, M.D.
Assistant Professor of Psychiatry [1996; 1994]
Brian E. Mondell, M.D.
Assistant Professor of Neurology [1985]
Anna T. Monias, M.D.
Assistant Professor of Medicine [2007]
Michael B. Monias, M.D.
Assistant Professor of Gynecology and Obstetrics [1975]
Constance L. Monitto, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1996; 1993]
David J. Monroe, M.D.
Assistant Professor of Pediatrics [2000]
Richard J. Montali, D.V.M.
Assistant Professor of Molecular and Comparative Pathobiology [1971; 1970]
Chulso Moon, M.D., Ph.D.
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery [2008; 2001]
Margaret Rusha Moon, M.D., M.P.H.
Assistant Professor of Pediatrics [2004]
Graham Mooney, Ph.D.
Assistant Professor of History of Medicine [2006; 2003]
G. William Moore, M.D., Ph.D.
Adjunct Assistant Professor of Pathology [1997]
Athr Hamid Morad, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008; 2007], Assistant Professor of Neurology [2009]
Basil Sylvestre Morgan, M.D.
Assistant Professor of Ophthalmology [1985; 1982]
Yuriko Mori, M.D., Ph.D.
Assistant Professor of Medicine [2006]
Patrice Jean-Luc Morín, Ph.D.
Adjunct Assistant Professor of Pathology [2006; 1998]
Brett Michael Morrison, M.D., Ph.D.
Assistant Professor of Neurology [2007; 2006]
Ali Moshirifar, M.D.
Assistant Professor of Orthopaedic Surgery [2004]
Nathan Moskowitz, M.D., Ph.D.
Assistant Professor of Neurological Surgery [1992; 1990]
James Otis Mudd, M.D.
Adjunct Assistant Professor of Medicine [2010; 2008]
J. Cameron Muir, M.D.
Assistant Professor of Oncology [2009]
Girish S. Munavalli, M.D.
Assistant Professor of Dermatology [1988]
Cynthia Shelton Munro, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [2002; 2000]
Emi Zuiki Murano, M.D., Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2009]
Jamie Deneen Murphy, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008; 2007]
Michael S. Murphy, M.D.
Assistant Professor of Orthopaedic Surgery [2003; 1995]
Biljana Musicki, Ph.D.
Assistant Professor of Urology [2010; 2001]
Donna I. Myers, M.D.
Assistant Professor of Urology [2010; 1977]
Elliott Howard Myrowitz, O.D., M.P.H.
Assistant Professor of Ophthalmology [2002; 1998]
Neal Jamison Naff, M.D.
Assistant Professor of Neurological Surgery [1998; 1997]
Hind Nassar, M.D.
Assistant Professor of Pathology [2007] (to 12/02/2010), Assistant Professor of Oncology [2009] (to 12/02/2010)
Neeraj Sunderrajan Naval, M.B.B.S.
Assistant Professor of Neurology [2010; 2006]
(from 08/12/2010), Assistant Professor of Anesthesiology and Critical Care Medicine [2010; 2006] (from 08/12/2010)

Tariq Ali Nayfeh, M.D., Ph.D.
Assistant Professor of Orthopaedic Surgery [2006]

Saman Nazarian, M.D.
Assistant Professor of Orthopedic Surgery [2006]

Donna Maria Neale, M.D.
Assistant Professor of Medicine [2007]

Tariq Ali Nayfeh, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010; 2006] (from 08/12/2010)

Kristen Leigh Nelson, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2007], Assistant Professor of Pediatrics [2007]

Dionissios Neofytos, M.D., M.P.H.
Assistant Professor of Medicine [2009]

Enid Rose Neptune, M.D.
Assistant Professor of Medicine [2003; 2000]

Dale M. Netski, Ph.D.
Adjunct Assistant Professor of Medicine [2007; 2001]

Philip R. Neubauer, M.D.
Assistant Professor of Orthopaedic Surgery [2009; 2008]

Karin Jane Neufeld, M.D., M.P.H.
Assistant Professor of Psychiatry [1996]

Mary M. Newman, M.D.
Assistant Professor of Medicine [1992; 1984]

Julie R. Newman-Toker, M.D.
Assistant Professor of Psychiatry [2004]

Scott Douglas Newsome, D.O.
Assistant Professor of Neurology [2010]

Geoffrey Christopher Nguyen, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2007]

Hien Tan Nguyen, M.D.
Assistant Professor of Surgery [2009; 2008]

Theresa T.H. Nguyen, M.D.
Assistant Professor of Pediatrics [2003; 2000]

Thien Tuong Nguyen, M.D., Ph.D.
Assistant Professor of Neurology [2005]

Anna Nidecker, M.D.
Assistant Professor of Radiology [2010]

William A. Niermann, M.D.
Assistant Professor of Pediatrics [1967; 1958]

Satnam Singh Nijjar, M.D.
Assistant Professor of Neurology [2010] (from 07/12/2010)

Sridhar Nimmagadda, Ph.D.
Assistant Professor of Radiology [2009; 2008], Joint Appointment in Medicine [2009], Assistant Professor of Oncology [2009]

Jack Edward Nissim, M.D.
Assistant Professor of Medicine [1997; 1978]

William Ellis Northington, M.D.
Assistant Professor of Emergency Medicine [2009; 2008]

Hany R. Nosir, M.B.B.Ch.
Adjunct Assistant Professor of Physical Medicine and Rehabilitation [2007]

Emmanuel Nchinda Naah, M.D.
Assistant Professor of Medicine [1998]

Frederick C. Nuciifora, Jr., D.O., Ph.D.
Assistant Professor of Psychiatry [2008]

Gary W. Nyman, M.D.
Assistant Professor of Psychiatry [1974]

Paul Alan Nyquist, M.D., M.P.H.
Assistant Professor of Neurology [2004], Assistant Professor of Anesthesiology and Critical Care Medicine [2004], Assistant Professor of Medicine [2010], Assistant Professor of Neurological Surgery [2010]

Anne Marie O’Broin Lennon, M.B.B.Ch., Ph.D.
Assistant Professor of Medicine [2010] (from 11/01/2010)

Julia Teresa O’Connor, Ph.D.
Assistant Professor of Behavioral Biology in the Department of Psychiatry [2003; 1995]

Lale E. Odekon, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2007]

Mathias Oelke, Ph.D.
Assistant Professor of Pathology [2004; 2003]

C. Jean Ogborn, M.D.
Assistant Professor of Pediatrics [1993; 1991]

Thomas J. Oglesby, M.D.
Assistant Professor of Psychiatry [1992]

Naomi P. O’Grady, M.D.
Assistant Professor of Medicine [2004]

Esther Seunghee Oh, M.D.
Assistant Professor of Medicine [2008; 2005], Instructor in Pathology [2005], Joint Appointment in Psychiatry [2009]

Shinji Ohara, M.D., Ph.D.
Adjunct Assistant Professor of Neurological Surgery [2006; 2002]

Kenichi Oishi, M.D.
Assistant Professor of Radiology [2009; 2008]

Sande O. Okelo, M.D.
Assistant Professor of Pediatrics [2003]

Patrick I. Okolo, III, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2001]

Yngvild Kristine Olsen, M.D., M.P.H.
Assistant Professor of Medicine [2004]

Tola B. Omotosho, M.D.
Assistant Professor of Gynecology and Obstetrics [2009]

Patrick Onyango, Ph.D.
Assistant Professor of Medicine [2004; 2003]

Chiadi Uchendu Onyike, M.B.B.S., M.D.
Assistant Professor of Psychiatry [2004; 2002]

Joseph C. Orlando, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [1983; 1982], Assistant Professor of Physical Medicine and Rehabilitation [1983]
Diane Julie Orlinsky, M.D.  
Assistant Professor of Dermatology [2000; 1998], Assistant Professor of Medicine [2004], Assistant Professor of Plastic and Reconstructive Surgery [2010] (from 10/01/2010)  
Peggy R. Orr, M.P.H.  
Assistant Professor of Ophthalmology [2002; 1995]  
Eduardo Ortiz, M.D., M.P.H.  
Visiting Assistant Professor of Health Sciences Informatics [2003]  
Cynthia S. Osborne, M.S.W.  
Assistant Professor of Psychiatry [2001; 2000]  
Greg M. Osgood, M.D.  
Assistant Professor of Orthopaedic Surgery [2009]  
Thomas P. O’Toole, M.D.  
Adjunct Assistant Professor of Psychiatry [2003]  
Ronald Ouwerkerk, Ph.D.  
Adjunct Assistant Professor of Radiology [2010; 2006] (to 10/31/2010)  
Elba M. Pacheco, M.D.  
Assistant Professor of Ophthalmology [1992; 1989]  
Theodosia Renata Paclawskyj, Ph.D.  
Assistant Professor of Psychiatry [2003; 2001]  
Kathleen Raquel Page, M.D.  
Assistant Professor of Medicine [2008; 2006]  
Sara Palmer, Ph.D.  
Assistant Professor of Physical Medicine and Rehabilitation [1999]  
Fan Pan, M.D., Ph.D.  
Assistant Professor of Oncology [2010; 2002] (from 11/01/2010), Research Associate in Oncology [2002; 2006] (to 10/31/2010)  
Xiaowu Pang, Ph.D.  
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery [2007]  
Susan R. Panny, M.D.  
Assistant Professor of Pediatrics [1997; 1981]  
Hardin Attwood Pantle, M.D.  
Assistant Professor of Emergency Medicine [2010; 2004], Assistant Professor of Pediatrics [2010; 2004]  
Maryland Pao, M.D.  
Assistant Professor of Psychiatry [1993]  
Nazareno Paolicci, M.D., Ph.D.  
Assistant Professor of Medicine [2002]  
Alexander Papangelou, M.D.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2008], Assistant Professor of Neurology [2009]  
Dimitrios Pappas, M.D.  
Assistant Professor of Medicine [2010; 2009] (to 11/28/2010)  
Shruti Makandar Paranjape, M.D.  
Assistant Professor of Pediatrics [2005]  
Anand Kamlesh Parekh, M.D., M.P.H.  
Adjunct Assistant Professor of Medicine [2005]  
Choon Myong Park, M.D.  
Assistant Professor of Otolaryngology-Head and Neck Surgery [1979; 1978]  
EunMi Park, Ed.D.  
Assistant Professor of Medicine [2005] (to 09/30/2010)  
Hee-Jung Park, M.D., M.P.H.  
Assistant Professor of Ophthalmology [2009]  
Nicole M. Parrish, Ph.D.  
Assistant Professor of Pathology [2002; 2001]  
Cameron F. Parsa, M.D.  
Assistant Professor of Ophthalmology [2000; 1997] (to 09/15/2010)  
Michael John Parsons, Ph.D.  
Assistant Professor of Surgery [2004]  
Leonard M. Parver, M.D.  
Assistant Professor of Ophthalmology [1985]  
Catherine Louise Passaretti, M.D.  
Assistant Professor of Medicine [2008]  
Manisha J. Patel, M.D.  
Assistant Professor of Dermatology [2008; 2007]  
Shivani Mayank Patel, M.B.B.S.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2010] (from 07/19/2010)  
Arvind P. Pathak, Ph.D.  
Assistant Professor of Radiology [2005; 2004], Assistant Professor of Oncology [2005]  
Susheel Pandit Patil, M.D., M.P.H.  
Assistant Professor of Medicine [2008; 2004]  
Scott Mitchell Paul, M.D.  
Adjunct Assistant Professor of Biomedical Engineering [2009]  
Jennifer Lanier Payne, M.D.  
Assistant Professor of Psychiatry [2003]  
Aldo T. Paz-Guevara, M.D.  
Assistant Professor of Medicine [1996; 1975]  
Ido Paz-Priel, M.D.  
Assistant Professor of Oncology [2008; 2005]  
Craig Douglas Peacock, Ph.D.  
Assistant Professor of Oncology [2008; 2006]  
Kimberly Sue Peairs, M.D.  
Assistant Professor of Medicine [1997; 1996]  
Richard N. Peeler, M.D.  
Assistant Professor of Medicine [1977; 1955]  
Jessica M. Peeler, M.D.  
Assistant Professor of Psychiatry [2004; 2000]  
Galit Pelled, Ph.D.  
Assistant Professor of Radiology [2009]  
Cathy A. Pelletier, Ph.D.  
Assistant Professor of Physical Medicine and Rehabilitation [2008]  
Joseph Vincent Pergolizzi, Jr., M.D.  
Adjunct Assistant Professor of Medicine [2000]  
Barbara Lee Peterlin, D.O.  
Assistant Professor of Neurology [2010] (from 08/01/2010)  
John Petrone, D.D.S.  
Assistant Professor of Oral Surgery [2010]
Myria Petrou, M.B.B.Ch.
Assistant Professor of Radiology [2008]

Michelle Antonieta Petrovic, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2007]

Mark F. Peyrot, Ph.D.
Assistant Professor of Medicine [1997; 1988]

Julius Cuong Pham, M.D.
Assistant Professor of Emergency Medicine [2005], Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Karran Alexandra Phillips, M.D.
Assistant Professor of Medicine [2010; 2007]

Daniel L. Picard, M.D.
Assistant Professor of Surgery [1994]

Joseph P. Pillion, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2001]

Sally Mae Pinkstaff, M.D., Ph.D.
Assistant Professor of Medicine [2005; 2004]

Mark F. Pittenger, Ph.D.
Adjunct Assistant Professor of Medicine [2007; 2005]

Rohan Varuna Piyasena, M.D.
Assistant Professor of Radiology [2009; 2008] (to 09/30/2010)

Christopher Vine Plowe, M.D., M.P.H.
Assistant Professor of Medicine [1995]

Jennifer L. Pluznick, Ph.D.
Assistant Professor of Physiology [2010]

Michelle Antoinette Poirier, M.D., Ph.D.
Assistant Professor of Psychiatry [2004; 2001]

Gregory S. Pokrywka, M.D.
Assistant Professor of Medicine [2005]

Albert John Polito, M.D.
Assistant Professor of Medicine [1997]

Sarah Polk, M.D.
Assistant Professor of Pediatrics [2007]

Craig Pollack, M.D.
Assistant Professor of Medicine [2010] (from 09/01/2010), Assistant Professor of Oncology [2010] (from 11/01/2010)

Joel L. Pomerantz, Ph.D.
Assistant Professor of Biological Chemistry [2004]

Gregory Michael Pontone, M.D.
Assistant Professor of Psychiatry [2008]

James K. Porterfield, M.D.
Assistant Professor of Medicine [1987; 1984]

Christopher J. Potter, Ph.D.
Assistant Professor of Neuroscience [2010]

Thomas Pozefsky, M.D.
Assistant Professor of Medicine [1970]

Kalpana Rao Prakasa, M.B.B.S.
Assistant Professor of Medicine [2007]

Nijaguna B. Prasad, Ph.D.
Assistant Professor of Surgery [2008; 2005] (to 03/31/2011)

Keith William Pratz, M.D.
Assistant Professor of Oncology [2009]

Gregory Paul Prokopowicz, M.D., M.P.H.
Assistant Professor of Medicine [1997]

Elizabeth W. Pugh, Ph.D., M.P.H.
Assistant Professor of Pediatrics [1999]

Pere Puigserver, Ph.D.
Visiting Assistant Professor of Cell Biology [2006; 2002]

Michael J. Purcell, M.D., Ph.D.
Assistant Professor of Oncology [2004; 1985]

Aliaksei Pustavoitau, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008; 2007]

Hans Adrian Puttgen, M.D.
Assistant Professor of Neurology [2009; 2008], Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Katherine Brown Puttgen, M.D.
Assistant Professor of Dermatology [2008; 2007]

Rehan Qayyum, M.B.B.S.
Assistant Professor of Medicine [2006]

Feng Qian, Ph.D.
Assistant Professor of Medicine [2002; 1995]

Tao Qiu, Ph.D.
Assistant Professor of Orthopaedic Surgery [2010; 2009] (from 10/01/2010), Instructor in Orthopaedic Surgery [2009] (to 09/30/2010)

Sandra D. Quartner, M.D.
Assistant Professor of Gynecology and Obstetrics [1981]

William Scott Queale, M.D.
Assistant Professor of Medicine [2001]

Patricia M. Quigley, M.D.
Assistant Professor of Pediatrics [1994]

Bruce A. Rabin, M.D., Ph.D.
Assistant Professor of Neurology [1996; 1994]

Sherwin Rabizadeh, M.D.
Adjunct Assistant Professor of Pediatrics [2008]

Ariel N. Rad, M.D., Ph.D.
Assistant Professor of Surgery [2009]

Lewis Joseph Radonovich, M.D.
Adjunct Assistant Professor of Medicine [2004]

Martin Geza Radvany, M.D.
Assistant Professor of Radiology [2009]

Arman Rahmim, Ph.D.
Assistant Professor of Radiology [2005]

Rudrajit M. Rai, M.B.B.S.
Assistant Professor of Medicine [2007]

Murugappan Ramanathan, Jr., M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2010]

Jessica C. Ramella-Roman, Ph.D.
Adjunct Assistant Professor of Medicine [2008]

Oscar M. Ramirez, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [1987; 1984]
Pradeep Ramulu, M.D., Ph.D.
Assistant Professor of Ophthalmology [2007]

Padmini D. Ranasinghe, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2007; 2006]

Harry G. Randall, M.D.
Assistant Professor of Ophthalmology [1982; 1966]

Srinivas S. Rao, D.V.M., Ph.D.
Adjunct Assistant Professor of Molecular and Comparative Pathobiology [2007]

Darius A. Rastegar, M.D.
Assistant Professor of Medicine [1998]

Neda Ratanawongsa, M.D., M.P.H.
Assistant Professor of Medicine [2007]

Elizabeth Ratchford, M.D.
Assistant Professor of Medicine [2007]

John Nolan Ratchford, M.D.
Assistant Professor of Neurology [2010; 2009]

Roman E. Ratych, M.D.
Assistant Professor of Surgery [1985; 1984]

William J. Ravekes, M.D.
Assistant Professor of Pediatrics [2000]

Rajani K. Ravi, Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2002; 2008], Assistant Professor of Oncology [2002; 1998]

Mark J. Reader, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1988; 1987]

Lauri E. Reamer, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004; 2001]

Albert C. Recio, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2010; 2007]

Janet Denise Record, M.D.
Assistant Professor of Medicine [2010; 2006], Instructor in Medicine [2006]

Karen L. Reddy, Ph.D.
Assistant Professor of Biological Chemistry [2009], Joint Appointment in Medicine [2009]

Graham Wester Redgrave, M.D.
Assistant Professor of Medicine [2006; 2003]

Stephanie L. Reel, M.B.A.
Assistant Professor of Health Sciences Informatics [2003]

Linda Ann Regan, M.D.
Assistant Professor of Emergency Medicine [2007]

Douglas David Reh, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2007]

Daniel Salo Reich, M.D., Ph.D.
Adjunct Assistant Professor of Neurology [2009], Adjunct Assistant Professor of Radiology [2009]

Ruben Reider, M.D.
Assistant Professor of Medicine [2000]

Thomas Reifsnyder, M.D.
Assistant Professor of Surgery [2006]
Hector A. Robles, M.D., M.P.H.
Assistant Professor of Radiology [1999]

Fausto Rodriguez, M.D.
Assistant Professor of Pathology [2010] (from 11/01/2010)

John F. Rogers, M.D.
Assistant Professor of Medicine [1984]

Peter G. Roma, Ph.D.
Adjunct Assistant Professor of Psychiatry [2010]

Mark Cole Romig, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010; 2008]

Glen Stanley Roseborough, M.D.
Adjunct Assistant Professor of Surgery [2009; 2000]

Michael A. Rosen, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2011] (from 01/01/2011)

Jason David Rosenberg, M.D.
Assistant Professor of Neurology [2006; 2003]

Jo Ann Rosenfeld, M.D.
Assistant Professor of Medicine [2000]

Ariella Mirowski Rosengard, M.D.
Adjunct Assistant Professor of Pathology [1999; 1994]

Richard R. Rosenthal, M.D.
Assistant Professor of Medicine [1975; 1973]

Mark I. Rossberg, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1997; 1996]

Judith P. Rossiter, M.D.
Assistant Professor of Gynecology and Obstetrics [1994]

Gedge David Rosson, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2005; 2004], Assistant Professor of Oncology [2009]

David M. Roth, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1980]

Rosanne Rouf, M.D.
Assistant Professor of Medicine [2010]

Wilma A. Rowe, M.D.
Adjunct Assistant Professor of Medicine [2004]

Anastasia Rowland-Seymour, M.D.
Assistant Professor of Medicine [2007]

Cindy N. Roy, Ph.D.
Assistant Professor of Medicine [2007]

Dawn Shuress Ruben, D.V.M.
Assistant Professor of Molecular and Comparative Pathobiology [2010; 2007]

James Rubenstein, M.D.
Assistant Professor of Neurology [2007; 2001], Instructor in Pediatrics [2001]

Michelle A. Rudek, Ph.D., Pharm.D.
Assistant Professor of Oncology [2003; 2001]

Dobrila D. Rudnicki, Ph.D.
Assistant Professor of Psychiatry [2009; 2006]

Walter L. Rush, M.D.
Assistant Professor of Dermatology [2005]

John D. Rybock, M.D.
Assistant Professor of Neurological Surgery [1979; 1977], Assistant Dean and Compliance Officer for Graduate Medical Education [2004]

Janice B. Ryden, M.D.
Assistant Professor of Medicine [1996; 1992]

Sarven H. Sabunciyan, Ph.D.
Assistant Professor of Pediatrics [2009; 2007]

K. George Sachariah, M.D.
Assistant Professor of Radiology [1981; 1980]

Bethany C. Sacks, M.D.
Assistant Professor of Surgery [2011] (from 02/01/2011)

Justin M. Sacks, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2011] (from 01/01/2011)

Cristina L. Sadowsky, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2005]

Haris Iqbal Sair, M.D.
Assistant Professor of Radiology [2010] (from 07/15/2010)

Neal T. Sakima, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1991; 1989]

Maya J. Salameh, M.D.
Assistant Professor of Medicine [2010] (from 10/04/2010)

Rachel Marie E. Salas, M.D.
Assistant Professor of Neurology [2008], Assistant Professor of Medicine [2008]

Betty Jo Salmeron, M.D.
Assistant Professor of Psychiatry [2006]

Cynthia Frances Salorio, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2005; 2002], Joint Appointment in Psychiatry [2010]

Donald I. Saltzman, M.D.
Assistant Professor of Orthopaedic Surgery [1990; 1974]

John B. Sampson, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Quincy Miles Samus, Ph.D.
Assistant Professor of Psychiatry [2008; 2007]

Devin Douglas Sanders, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005]

Alvin Monteclaro Sanico, M.D.
Assistant Professor of Medicine [1999; 1998]

Christine A. Sannerud, Ph.D.
Assistant Professor of Behavioral Biology in the Department of Psychiatry [1990; 1988]

Lakshmi Santhanam, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010; 2009]
Antonio Santillan-Gomez, M.D.
Assistant Professor of Gynecology and Obstetrics [2007]

M. Catherine Sargent, M.D.
Adjunct Assistant Professor of Orthopaedic Surgery [2009; 2005]

Maryam Sattari, M.D.
Assistant Professor of Medicine [2008]

William Jacob Savage, M.D.
Assistant Professor of Pathology [2009]

Joseph Mark Savitt, M.D., Ph.D.
Assistant Professor of Neurology [2003]

Alena V. Savonenko, M.D., Ph.D.
Assistant Professor of Pathology [2006; 2001],
Assistant Professor of Neurology [2008]

John C. Scatarige, M.D.
Assistant Professor of Radiology [2000]

John A. Schaefer, M.S.
Assistant Professor of Medicine [1994]

Allen Hess Schaeffer, M.D.
Assistant Professor of Medicine [1989]

Edward Matthew Schaeffer, M.D., Ph.D.
Assistant Professor of Urology [2007], Assistant Professor of Oncology [2009]

Robert B. Scharpf, Ph.D.
Assistant Professor of Oncology [2010]

Stephen Schatz, M.D.
Assistant Professor of Urology [2009]

Janet Nagel Scheel, M.D.
Assistant Professor of Pediatrics [1999]

Adam Joseph Schiavi, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2008], Assistant Professor of Neurology [2009]

Nicoline Schiess, M.D.
Assistant Professor of Neurology [2010; 2008]

Michael W. Schlund, Ph.D.
Assistant Professor of Psychiatry [2001]

Hartmut Schneider, M.D., Ph.D.
Assistant Professor of Medicine [2005; 2001]

Karen Anne Schneider, M.D.
Assistant Professor of Pediatrics [2006; 2002]

Christine R. Schneyer, M.D.
Assistant Professor of Medicine [1990; 1988]

Miguel Antonio Schoen, Ph.D.
Assistant Professor of Art as Applied to Medicine [2000; 1998]

Richard T. Scholz, M.D.
Assistant Professor of Ophthalmology [1987; 1984]

Lew C. Schon, M.D.
Assistant Professor of Orthopaedic Surgery [2003], Assistant Professor of Biomedical Engineering [2010; 2009]

Steven A. Schonfeld, M.D.
Assistant Professor of Medicine [1982]

Robert K. Schreter, M.D.
Assistant Professor of Psychiatry [1981; 1978]
Catherine Angela Sewell, M.D.
Assistant Professor of Gynecology and Obstetrics [2007]

Janel D. Sexton, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Karen Sandell Sfanos, Ph.D.
Assistant Professor of Pathology [2011] (from 01/01/2011)

Tariq Shafi, M.B.B.S.
Assistant Professor of Medicine [2009; 2008]

Ami Aalok Shah, M.D.
Assistant Professor of Medicine [2009]

Ashish S. Shah, M.D.
Assistant Professor of Cardiac Surgery [2005]

Michael Joseph Shamblott, Ph.D.
Assistant Professor of Neurology [2008]

Satish Shanbhag, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2010], Assistant Professor of Oncology [2010]

Punita T. Sharma, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005; 2002]

Susan J. Shaw, M.D., Ph.D.
Adjunct Assistant Professor of Neurology [2009]

Joanne E. Shay, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Farooq Hameed Sheikh, M.D.
Assistant Professor of Medicine [2010]

Anding Shen, Ph.D.
Visiting Assistant Professor of Medicine [2010; 2006] (to 08/27/2010)

Wen Shen, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [2005; 2002]

James Christopher Shepherd, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2005]

Michael E. Sherlock, M.D.
Assistant Professor of Pediatrics [1983; 1976]

Steven H. Sherman, M.D.
Assistant Professor of Ophthalmology [1986; 1984]

John Timothy Sherwood, M.D.
Assistant Professor of Surgery [2005]

Mary Sheu, M.D.
Assistant Professor of Dermatology [2009; 2007]

Nicole Ann Shikofskis, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2007], Assistant Professor of Pediatrics [2007]

Eun Ji Shin, M.D.
Assistant Professor of Medicine [2009; 2008]

Robert B. Shochet, M.D.
Assistant Professor of Medicine [1994]

Ronald N. Shore, M.D.
Assistant Professor of Dermatology [1978]

Charles I. Shubin, M.D.
Assistant Professor of Pediatrics [1971; 1969]

Yin Yao Shugart, Ph.D.
Assistant Professor of Pediatrics [1999]

Marshall G. Hussain Shuler, Ph.D.
Assistant Professor of Neuroscience [2008]

George Kelly Siberry, M.D.
Assistant Professor of Pediatrics [2003]

Erica M.S. Sibinga, M.D.
Assistant Professor of Pediatrics [2004; 2000]

Christopher Tate Sibley, M.D.
Adjunct Assistant Professor of Medicine [2009]

Venkatarama K. Sidhaye, M.D.
Assistant Professor of Medicine [2009; 2006]

Ann N. Sieber, M.S.
Assistant Professor of Orthopaedic Surgery [2000; 1998]

Everett R. Siegel, M.D.
Assistant Professor of Psychiatry [1994; 1986]

Ulgan I. Sila, M.D.
Assistant Professor of Pediatrics [1970; 1966]

Glenn M. Silber, M.D.
Assistant Professor of Pediatrics [1987]

Harry Abraham Silber, M.D., Ph.D.
Assistant Professor of Medicine [2000]

Janet M. Siliciano, Ph.D.
Assistant Professor of Medicine [2005; 1998]

Oliver P. Simmons, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2006] (to 09/30/2010)

Eva Simmons-O’Brien, M.D.
Assistant Professor of Dermatology [1994; 1993], Assistant Professor of Medicine [1994; 1993]

Lisa Ann Simonson, M.D.
Assistant Professor of Medicine [1996; 1993]

Crystal Felicia Simpson, M.D.
Assistant Professor of Medicine [2003]

Alon Sinai, Ph.D.
Adjunct Assistant Professor of Neurology [2008]

Andrew Lawrence Singer, M.D., Ph.D.
Assistant Professor of Surgery [2008; 2006]

Devinder Singh, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2010; 2009]

H. Rosy Singh, M.D.
Assistant Professor of Radiology [1992]

Navin Singh, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2001; 1999], Assistant Professor of Neurological Surgery [2006]

Sonal Singh, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2009]

Vikesh Kumar Singh, M.D.
Assistant Professor of Medicine [2010; 2008]

Debasis Sinha, Ph.D.
Assistant Professor of Ophthalmology [2001]

Gita Anjali Sinha, M.D., M.P.H.
Assistant Professor of Medicine [2008; 2007]
Sunil Kumar Sinha, M.D.
Assistant Professor of Medicine [2005]

Lynne Ann Skaryak, M.D.
Assistant Professor of Surgery [2003]

Margaret Leigh Skinner, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2008]

Mary D. Skinner, M.D.
Assistant Professor of Medicine [1977]

Richard Leroy Skolasky, Jr., Sc.D.
Assistant Professor of Orthopaedic Surgery [2004]

Sheri Sleazak, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [1989; 1988]

Peter Jeffrey Sloane, M.D.
Assistant Professor of Medicine [1998; 1994]

Martin Konrad Slodzinski, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002] (to 12/31/2010)

David P. Smith, M.D.
Assistant Professor of Radiology [1994; 1991]

Jeffrey M. Smith, M.D., M.P.H.
Assistant Professor of Gynecology and Obstetrics [1996; 1994]

Stephen R. Smith, M.D.
Assistant Professor of Medicine [1982; 1981]

Wanli Smith, M.D., Ph.D.
Adjunct Assistant Professor of Psychiatry [2009; 2005]

Wilbur King Smith, D.D.S.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2010] (from 07/15/2010)

Constance Leonie Smith-Hicks, M.D., Ph.D.
Assistant Professor of Neurology [2008; 2006]

Tracey L. Smith-Stierer, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1995; 1993]

Akrit Singh Sodhi, M.D., Ph.D.
Assistant Professor of Ophthalmology [2010; 2008]

Janet M. Soeffing, M.D.
Assistant Professor of Medicine [2007; 2006] (to 07/06/2010)

Jungsan Sohn, Ph.D.
Assistant Professor of Biophysics and Biophysical Chemistry [2011] (from 02/01/2011)

Steven Francis Solga, M.D.
Visiting Assistant Professor of Medicine [2007; 2004]

Steven J. Sollott, M.D.
Assistant Professor of Medicine [1992]

Clifford T. Solomon, M.D.
Assistant Professor of Neurological Surgery [1999; 1992]

David Solomon, M.D., Ph.D.
Assistant Professor of Neurology [2004], Assistant Professor of Otolaryngology-Head and Neck Surgery [2004]

Christine Chia-Chi Soong, M.D.
Assistant Professor of Medicine [2009; 2007] (to 11/30/2010)

Leonardo Sosa Valencia, M.D.
Adjunct Assistant Professor of Medicine [2009]

Gabriel Soudry, M.D.
Assistant Professor of Radiology [2008]

Stephen Martin Sozio, M.D.
Assistant Professor of Medicine [2010; 2009]

Lisa Ann Spacek, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2009; 2004]

Christopher John Sperati, M.D.
Assistant Professor of Medicine [2007]

Melissa Riedy Spevak, M.D.
Assistant Professor of Radiology [1995]

Ethan J. Spiegler, M.D.
Assistant Professor of Radiology [1993; 1990], Instructor in Medicine [1991]

David Douglass Spragg, M.D.
Assistant Professor of Medicine [2006]

Sharmila Sridedy, M.A., M.S.
Assistant Professor(Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2000; 1997]

Janet F. Staab, Ph.D.
Assistant Professor of Medicine [2008]

Simona Stager, Ph.D.
Assistant Professor of Molecular and Comparative Pathobiology [2010] (from 09/01/2010), Assistant Professor of Pharmacology and Molecular Sciences [2005]

Heather Maureen Starmer, M.A.
Assistant Professor(Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2009; 2006]

Joseph William Stauffer, D.O.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005]

P. Zoe Stavri, Ph.D.
Visiting Assistant Professor of Health Sciences Informatics [2001]

Duncan Scott Stearns, M.D.
Adjunct Assistant Professor of Pathology [2008]

Cynthia D. Steele, M.P.H.
Assistant Professor of Psychiatry [2005; 1989]

Kimberly Eden Steele, M.D.
Assistant Professor of Surgery [2007; 2005]

Stephan Lewis Steffensen, M.D.
Assistant Professor of Neurology [2010] (from 09/01/2010)

David H. Stein, M.D., M.P.H.
Assistant Professor of Dermatology [1995; 1992]

Ellen M. Stein, M.D.
Assistant Professor of Medicine [2010]

Martin Irwin Steinberg, M.D.
Assistant Professor of Psychiatry [1997; 1996]

Steven Jeffrey Steinberg, Ph.D.
Assistant Professor of Neurology [2003; 2000]
Claudia A. Steiner, M.D., M.P.H.  
Assistant Professor of Medicine [1994]  
Mary Ann Chutuape Stephens, Ph.D.  
Assistant Professor of Psychiatry [2010]  
Laura Marie Sterni, M.D.  
Assistant Professor of Pediatrics [1996]  
Kent A. Stevens, M.D.  
Assistant Professor of Surgery [2008]  
Jennifer E. Stevenson, Ph.D., M.P.H.  
Assistant Professor of Physical Medicine and Rehabilitation [2010] (from 08/30/2010)  
Charles Matthew Stewart, M.D., Ph.D.  
Assistant Professor of Otolaryngology-Head and Neck Surgery [2010]  
Fray Dylan Stewart, M.D.  
Assistant Professor of Pediatric Surgery [2010]  
Rosalyn W. Stewart, M.D.  
Assistant Professor of Medicine [2004]  
Andrew J. Surmak, M.D.  
Assistant Professor of Surgery [1981]  
Mary Ann Chutuape Stephens, Ph.D.  
Assistant Professor of Physical Medicine and Rehabilitation [2008; 2007], Assistant Professor of Pediatrics [2010]  
Marc Steven Sussman, M.D.  
Assistant Professor of Surgery [1993]  
Ronald J. Sweren, M.D.  
Assistant Professor of Dermatology [2009; 1989]  
Terrance Swift, Ph.D.  
Adjunct Assistant Professor of Health Sciences Informatics [2009]  
Heather Jill Symons, M.D.  
Assistant Professor of Oncology [2009; 2007]  
Lorraine Tafra, M.D.  
Assistant Professor of Surgery [2009]  
Katsuyuki Taguchi, Ph.D.  
Assistant Professor of Radiology [2007; 2005]  
Eiki Takimoto, M.D., Ph.D.  
Assistant Professor of Medicine [2007; 2006]  
Kellie Louise Keiko Tamashiro, Ph.D.  
Assistant Professor of Psychiatry [2008]  
Shiv Darius Tandori, M.B.B.S.  
Assistant Professor of Pediatrics [2006; 2002]  
Harikrishna S. Tandri, M.B.B.S.  
Assistant Professor of Medicine [2008]  
Nelson Tang, M.D.  
Associate Professor of Emergency Medicine [2010; 1987] (from 10/01/2010), Assistant Professor of Emergency Medicine [1987] (to 09/30/2010)  
Craig P. Tanio, M.D.  
Assistant Professor of Medicine [1997]  
Jennifer Williams Tanio, M.D.  
Assistant Professor of Medicine [1998; 1996]  
Elizabeth Lyn Tanzi, M.D.  
Assistant Professor of Dermatology [2009; 2005]  
Feng Tao, M.D., Ph.D.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2005]  
Xuguang Tao, M.D., Ph.D.  
Assistant Professor of Medicine [2003]  
Janis Marie Taube, M.D.  
Assistant Professor of Dermatology [2009], Assistant Professor of Pathology [2009]  
Sean Dixon Taverna, Ph.D.  
Assistant Professor of Pharmacology and Molecular Sciences [2008], Joint Appointment in Medicine [2009], Assistant Professor of Oncology [2009]  
Dean R. Taylor, M.D.  
Assistant Professor of Medicine [1971; 1970]  
Gregory Harry Taylor, M.D.  
Adjunct Assistant Professor of Medicine [2005]  
Aylin Tekes, M.D.  
Assistant Professor of Radiology [2008]
Christiane Tellefsen, M.D.,
Assistant Professor of Psychiatry [1993]

Stephanie Alicia Terezakis, M.D.,
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2010; 2009] (from 09/01/2010), Instructor in Radiation Oncology and Molecular Radiation Sciences [2009] (to 08/31/2010), Assistant Professor of Oncology [2010] (from 09/01/2010)

Rajiv N. Thakkar, M.B.B.S., M.D.,
Assistant Professor of Medicine [2010; 2006]

Madhav Thambisetty, M.B.B.S., Ph.D.,
Adjunct Assistant Professor of Neurology [2009]

Sumeska Thavarajah, M.D.,
Assistant Professor of Medicine [2010; 2005]

Christiane Theda, M.D.,
Visiting Assistant Professor of Pediatrics [2009; 1996]

Asha Thomas, M.D.,
Assistant Professor of Medicine [2007]

Claudia Lynn Thomas, M.D.,
Assistant Professor of Orthopaedic Surgery [1992]

Darcy A. Thompson, M.D.,
Assistant Professor of Pediatrics [2006]

David A. Thompson, D.N.Sc.,
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

John Tilynn Thompson, M.D.,
Assistant Professor of Ophthalmology [2001]

William Reid Thompson, III, M.D.,
Assistant Professor of Pediatrics [1992]

Robert William Thomsen, M.D.,
Assistant Professor of Anesthesiology and Critical Care Medicine [2005], Assistant Professor of Surgery [2008]

Katherine Anne Thornton, M.D.,
Assistant Professor of Oncology [2007]

Rachel Johnson Thornton, M.D., Ph.D.,
Assistant Professor of Pediatrics [2009]

Jagan N. Thupari, M.B.B.S., Ph.D.,
Adjunct Assistant Professor of Pathology [2008; 2001]

John R. Ticehurst, M.D.,
Assistant Professor of Pathology [1995]

Stuart A. Tiegel, M.S.W.,
Assistant Professor of Psychiatry [2001; 1995]

Donna Clark Tippett, M.A., M.P.H.,
Assistant Professor of Otolaryngology-Head and Neck Surgery [1997], Assistant Professor of Physical Medicine and Rehabilitation [1997; 1990]

John E. Tis, M.D.,
Assistant Professor of Orthopaedic Surgery [2008]

Aaron Andrew Ross Tobian, M.D., Ph.D.,
Assistant Professor of Pathology [2010]

David Andrew Tompkins, M.D.,
Assistant Professor of Psychiatry [2010; 2008]

Haruka Matsubara Torok, M.D.,
Assistant Professor of Medicine [2010; 2009]

P. Justin Tortolani, M.D.,
Assistant Professor of Orthopaedic Surgery [1988]

Pegah Touradj, Ph.D.,
Assistant Professor of Physical Medicine and Rehabilitation [2007; 2006]

Phuoc T. Tran, M.D., Ph.D.,
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2009], Assistant Professor of Oncology [2010]

Bryan J. Traynor, M.D.,
Adjunct Assistant Professor of Neurology [2010]

Maria Trent, M.D.,
Assistant Professor of Pediatrics [2001]

Michael Edward Trice, M.D.,
Assistant Professor of Orthopaedic Surgery [2006]

Barry Trink, Ph.D.,
Assistant Professor of Otolaryngology-Head and Neck Surgery [2000]

Patrick Todd Triplett, M.D.,
Assistant Professor of Psychiatry [2008; 2004], Joint Appointment in Emergency Medicine [2008]

Louis C. Tripoli, M.D.,
Adjunct Assistant Professor of Medicine [1998]

Jeffrey C. Trost, M.D.,
Assistant Professor of Medicine [2006; 2005]

Melissa Katrina Trovato, M.D.,
Assistant Professor of Physical Medicine and Rehabilitation [2005; 2001]

Cristina I. Truica, M.D., Ph.D.,
Assistant Professor of Medicine [2007]

Erik John Tryggestad, Ph.D.,
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2010; 2006], Assistant Professor of Oncology [2010]

Li-Hui Tseng, M.D., Ph.D.,
Visiting Assistant Professor of Oncology [2008]

Takashi Tsukamoto, Ph.D.,
Assistant Professor of Neurology [2009]

David N. Tuchman, M.D.,
Assistant Professor of Pediatrics [1986]

Sean R. Tunis, M.D.,
Adjunct Assistant Professor of Medicine [1996]

Sharon I. Turban, M.D.,
Assistant Professor of Medicine [2009; 2007]

Janet E. Turner, Ph.D.,
Assistant Professor of Physical Medicine and Rehabilitation [2001]

L. Michelle Tuten, M.S.W.,
Assistant Professor of Psychiatry [2008; 2006]

Betty Tyler, B.A.,
Assistant Professor of Neurological Surgery [2005; 2004]

Magdalena Uhart, M.D.,
Assistant Professor of Medicine [2008; 2007]

Annie Umbricht, M.D.,
Assistant Professor of Psychiatry [2002], Joint Appointment in Medicine [2003; 1994]
Christopher Benedict Umbricht, M.D., Ph.D.
Assistant Professor of Surgery [2000], Assistant Professor of Oncology [2001], Assistant Professor of Pathology [2000]

John C. Urbaitis, M.D.
Assistant Professor of Psychiatry [1974; 1972]

Victor C. Urrutia, M.D.
Assistant Professor of Neurology [2005]

Dhananjay Madhukar Vaidya, M.B.B.S., M.D., Ph.D., M.P.H.
Assistant Professor of Medicine [2005]

Varsha Vaidya, M.B.B.S.
Assistant Professor of Psychiatry [2000; 1996]

Daniel J. Valaik, M.D.
Assistant Professor of Orthopaedic Surgery [2009]

Mustafa Shakir Vali, M.B.B.S.
Assistant Professor of Radiology [2003]

Ryan Gregory Vandrey, Ph.D.
Assistant Professor of Psychiatry [2008; 2007]

Ravi Varadhan, Ph.D.
Assistant Professor of Medicine [2004]

Stuart R. Varon, M.D.
Assistant Professor of Psychiatry [2001; 1994]

Roma A. Vasa, M.D.
Assistant Professor of Psychiatry [2002; 1997]

Rebecca Gaye Vaurio, Ph.D.
Assistant Professor of Psychiatry [2010; 2007]

Michael A. Veltri, Pharm.D.
Assistant Professor of Pediatrics [2010]

Arun Venkatesan, M.D., Ph.D.
Assistant Professor of Neurology [2007; 2006]

Neeraj Vij, Ph.D.
Assistant Professor of Pediatrics [2008; 2006]

Michael Y. Viksman, M.D., Ph.D.
Assistant Professor of Medicine [1996]

Virginia Susan Villani, M.D.
Assistant Professor of Psychiatry [2000]

Nikos F. Vlahos, M.D.
Assistant Professor of Gynecology and Obstetrics [2000; 1999]

Jens Vogel-Clausen, M.B.B.S.
Assistant Professor of Radiology [2007] (on leave of absence to 09/30/2010)

Becky Marie Vonakis, Ph.D.
Assistant Professor of Medicine [2001]

Carolyn Clymer Voorhees, Ph.D.
Assistant Professor of Medicine [1996; 1993]

Alexander Vu, D.O., M.P.H.
Assistant Professor of Emergency Medicine [2005; 2003]

Milena Vuica-Ross, M.D.
Assistant Professor of Pathology [2004; 2003]

Lee Elizabeth Wachtel, M.D.
Assistant Professor of Psychiatry [2006; 2003]

Herschel V. Wade, Ph.D.
Assistant Professor of Biophysics and Biophysical Chemistry [2006]

J. Ronald Walcher, M.D.
Assistant Professor of Pediatrics [1972]

Piotr Walczak, M.D.
Assistant Professor of Radiology [2008; 2006]

Shetarra Walker, M.D.
Assistant Professor of Pediatrics [2010]

A. Terry Walmian, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1984; 1982]

George Cho-Ching Wang, M.D.
Assistant Professor of Medicine [2010; 2008]

Hao Wang, Ph.D.
Assistant Professor of Oncology [2009]

Jean Sandy Wang, M.D.
Adjunct Assistant Professor of Medicine [2005; 2004]

Jian Wang, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008; 2006]

Jian Wang, M.D.
Assistant Professor of Medicine [2007; 2001]

Ming-Hsien Wang, M.D.
Assistant Professor of Urology [2009]

Nae-Yuh Wang, Ph.D.
Assistant Professor of Medicine [2001; 1998]

Tao Wang, M.D., Ph.D.
Assistant Professor of Pediatrics in Genetic Medicine [2002]

H. Richard Waranch, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1981; 1979]

Cynthia Maynard Ward, Psy.D.
Assistant Professor of Psychiatry [2010]

Julianna Ward, Ph.D.
Assistant Professor of Psychiatry [2005; 2003]

Daniel Scott Warren, Ph.D.
Assistant Professor of Surgery [2003; 2000]

Barbara A. Wasowska, Ph.D.
Assistant Professor of Pathology [1999; 1996]

David Neil Watkins, M.B.B.S., Ph.D.
Assistant Professor of Oncology [2003; 2002]

Stanley P. Watkins, Jr., M.D.
Assistant Professor of Oncology [1987; 1977]

Julie Watson, Vet.M.B.
Assistant Professor of Molecular and Comparative Pathobiology [2002]

Debbie Lakin Weaver, M.D.
Assistant Professor of Psychiatry [2004; 2003]

Kim Webster, M.A.
Assistant Professor (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2009; 1999]

Michael Riley Weed, Ph.D.
Adjunct Assistant Professor of Behavioral Biology in the Department of Psychiatry [2008; 2001],
Adjunct Assistant Professor of Molecular and Comparative Pathobiology [2008; 2005]
Ashani Tanaija Weeraratna, Ph.D.
Adjunct Assistant Professor of Oncology [2010]

Sharon Lynn Weintraub, M.D.
Assistant Professor of Surgery [2008]

Carlos Orval Weiss, M.D.
Assistant Professor of Medicine [2006]

Clifford Raabe Weiss, M.D.
Assistant Professor of Radiology [2008]

Margaret A. Weiss, M.D.
Assistant Professor of Dermatology [1993; 1982]

Alyson Wells, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2004], Assistant Professor of Otolaryngology-Head and Neck Surgery [2004]

Weili Weng, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Debra S. Wertheimer, M.D.
Assistant Professor of Medicine [1998]

Katharine Ashley Whartenby, Ph.D.
Assistant Professor of Neurology [2010], Assistant Professor of Oncology [2003; 2000]

Sarah Jo Wheelan, M.D., Ph.D.
Assistant Professor of Oncology [2008]

Elizabeth C. Wick, M.D.
Assistant Professor of Surgery [2008]

Brigitte C. Widemann, M.D.
Assistant Professor of Oncology [2000], Assistant Professor of Pediatrics [2000]

Holly C. Wilcox, Ph.D.
Assistant Professor of Psychiatry [2006; 2005]

Eric Howard Williams, M.D.
Assistant Professor of Plastic and Reconstructive Surgery [2006; 2005]

Kayode Ayodele Williams, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Mark F. Williams, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1999]

Richard Bland Williams, III, M.D.
Adjunct Assistant Professor of Medicine [2009]

Simon Alexander Williams, Ph.D.
Assistant Professor of Urology [2010] (on leave of absence from 11/01/2010-02/28/2011), Assistant Professor of Oncology [2010] (on leave of absence from 11/01/2010-02/28/2011)

Stephen Bryan Williams, M.D., M.P.H.
Assistant Professor of Medicine [2008]

Virginia Lea Willour, Ph.D.
Assistant Professor of Psychiatry [2004; 2001]

Lucy Edlin Wilson, M.D.
Adjunct Assistant Professor of Medicine [2008; 2002]

William C. Wimmer, M.D.
Assistant Professor of Psychiatry [1978]

Bradford D. Winters, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1998; 1997], Assistant Professor of Neurological Surgery [1998], Assistant Professor of Neurology [1998], Assistant Professor of Surgery [2001]

James B. Wirth, M.D., Ph.D.
Assistant Professor of Psychiatry [1977]

Amy Beth Wisniewski, Ph.D.
Assistant Professor of Pediatrics [2003; 2002]

Timothy Francis Witham, M.D.
Assistant Professor of Neurological Surgery [2006; 2005]

Ilan Shor Wittstein, M.D.
Assistant Professor of Medicine [1998]

Leah Wolfe, M.D.
Assistant Professor of Medicine [2003; 2001]

Christopher L. Wolfgang, M.D., Ph.D.
Assistant Professor of Surgery [2005; 2004], Assistant Professor of Oncology [2008]

Michael J. Wolfgang, Ph.D.
Assistant Professor of Biological Chemistry [2008]

Karl L. Womer, M.D.
Assistant Professor of Medicine [2006]

Bang Thoai Wong, M.A.
Adjunct Assistant Professor of Art as Applied to Medicine [2001]

Conrad Jung Liang Wong, Ph.D.
Adjunct Assistant Professor of Behavioral Biology in the Department of Psychiatry [2003; 2000]

Guang William Wong, Ph.D.
Assistant Professor of Physiology [2008]

Patricia Wong, M.D.
Assistant Professor of Medicine [2008]

Megan C. Wright, Ph.D.
Adjunct Assistant Professor of Neurology [2010] (from 09/01/2010)

Renee Wright, M.D.
Assistant Professor of Medicine [2009; 2006]

Mark N. Wu, M.D., Ph.D.
Assistant Professor of Neurology [2009], Assistant Professor of Medicine [2009]

Lisa A. Wuyek, Ph.D.
Assistant Professor of Psychiatry [2010; 2008]

Lu Xia, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2010; 2009]

Shuli Xia, Ph.D.
Assistant Professor of Neurology [2010; 2006]

Jie Xiao, Ph.D.
Assistant Professor of Biophysics and Biophysical Chemistry [2006]
Qian-Li Xue, Ph.D.
Assistant Professor of Medicine [2004]

Andrew Yang, M.D.
Assistant Professor of Radiology [1992; 1988]

Chris Park Yang, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2010], Assistant Professor of Pediatrics [2010]

Samuel Pai-Sun Yang, M.D.
Assistant Professor of Emergency Medicine [2005; 2002]

Sevil Yasar, M.D.
Assistant Professor of Medicine [2001]

Melissa Marie Yates, M.D.
Assistant Professor of Gynecology and Obstetrics [2010] (from 08/01/2010)

Youseph Yazdi, Ph.D.
Assistant Professor of Biomedical Engineering [2009]

Ricardo A. Yazigi, M.D.
Assistant Professor of Gynecology and Obstetrics [2006]

Srinivasan Yeğnasubramanian, M.D., Ph.D.
Assistant Professor of Oncology [2008; 2006]

Hsin-Chieh Yeh, Ph.D.
Assistant Professor of Medicine [2008; 2005]

Anna Yemelyanova, M.D.
Assistant Professor of Pathology [2008; 2005]

Howard S. C. Ying, M.D., Ph.D.
Assistant Professor of Ophthalmology [2004; 2002]

Sarah Hung Ying, M.D.
Assistant Professor of Neurology [2004] (to 12/31/2010), Assistant Professor of Ophthalmology [2004] (to 12/31/2010)

Elaine Yong, M.D.
Visiting Assistant Professor of Medicine [2007; 2006]

Kiyoshi Yoshimura, M.D., Ph.D.
Adjunct Assistant Professor of Surgery [2010; 2006], Adjunct Assistant Professor of Oncology [2010; 2006]

Jeffery Hunter Young, M.D.
Assistant Professor of Medicine [2002; 2000]

Mark Allen Young, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2009]

Rex Chin-Wei Young, M.D.
Assistant Professor of Medicine [2000], Assistant Professor of Oncology [2000]

T. Andrew Zabel, Ph.D.
Assistant Professor of Psychiatry [2005; 2003]

Natasha Elizabeth Zachara, Ph.D.
Assistant Professor of Biomedical Chemistry [2005]

Nicholas Constantine Zachos, Ph.D.
Assistant Professor of Medicine [2008]

Kathleen Marie Zackowski, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2006; 2004], Assistant Professor of Neurology [2006]

Atif Zaheer, M.D.
Assistant Professor of Radiology [2008]

Cynthia Ann Zahnov, Ph.D.
Assistant Professor of Oncology [2001; 2000]

Ari Lev Zaiman, M.D., Ph.D., M.P.H.
Assistant Professor of Medicine [2008; 2004]

Elias Thomas Zambidis, M.D., Ph.D.
Assistant Professor of Oncology [2005; 2004], Assistant Professor of Pediatrics [2005; 2004]

Steven Robert Zeiler, M.D., Ph.D.
Assistant Professor of Neurology [2010]

Aglaia Zellos, M.D.
Visiting Assistant Professor of Pediatrics [2000; 1999]

Hui Zhang, Ph.D.
Assistant Professor of Pathology [2006]

Jiangyang Zhang, Ph.D.
Assistant Professor of Radiology [2006; 2005]

Ke Chen Zhang, Ph.D.
Assistant Professor of Biomedical Engineering [2002], Assistant Professor of Neuroscience [2003]

Sean X. Zhang, M.D., Ph.D.
Assistant Professor of Pathology [2010] (from 08/01/2010)

Rong Zhang-Howard, M.D., Ph.D.
Assistant Professor of Medicine [2009; 2001]

Qi Zhao, Ph.D.
Adjunct Assistant Professor of Neurological Surgery [2010] (from 09/13/2010)

Lei Zheng, M.D., Ph.D.
Assistant Professor of Oncology [2009], Assistant Professor of Surgery [2010; 2009]

Feng-Quan Zhou, Ph.D.
Assistant Professor of Orthopaedic Surgery [2005], Assistant Professor of Neuroscience [2005]

Yong-di Zhou, Ph.D.
Adjunct Assistant Professor of Neurological Surgery [2009; 2001]

Yun Zhou, Ph.D.
Assistant Professor of Radiology [2003; 2002]

Yao-Yao Zhu, M.D., Ph.D.
Assistant Professor of Medicine [2000]

Wendy Catharina Ziai, M.D.
Assistant Professor of Neurology [2003; 2001], Assistant Professor of Anesthesiology and Critical Care Medicine [2003; 2001], Assistant Professor of Neurological Surgery [2003]

Susan Jane Ziem, M.D.
Adjunct Assistant Professor of Medicine [2010; 2001]

J. Samuel Zigler, Jr., Ph.D.
Assistant Professor of Ophthalmology [2007; 2006]
Bashir Ahmed Zikria, M.D.
Assistant Professor of Orthopaedic Surgery [2007]

Karen Paul Zimmer, M.D.
Assistant Professor of Pediatrics [2005]

Stefan L. Zimmerman, M.D.
Assistant Professor of Radiology [2010] (from 08/01/2010)

Brian Michael Zimnitzky, M.D.
Assistant Professor of Psychiatry [2002]

Eva S. Zinreich, M.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2003]

Peter K. Zucker, M.D.
Assistant Professor of Gynecology and Obstetrics [1984]

Rhonda L. Zuckerman, M.D.
Assistant Professor Emeritus in Otolaryngology-Head and Neck Surgery [1999; 1956]

George C. Alderman, M.D.
Assistant Professor Emeritus in Urology [1989]

Harold Joseph Alfert, M.D.
Assistant Professor Emeritus in Urology [1989]

Shaukat A. Ashai, M.B.B.S.
Assistant Professor Emeritus in Gynecology and Obstetrics [2009; 1976]

Arthur Baitch, M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1967]

Frank T. Barranco, M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1962]

H. Vaughan Belcher, M.D.
Assistant Professor Emeritus in Surgery [1989; 1973]

Mary Jane Blaustein.
Assistant Professor Emerita in Psychiatry [1992; 1974]

James B. Brooks, M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1955]

Mervyn L. Carey, M.D.
Assistant Professor Emeritus in Gynecology and Obstetrics [1981; 1956]

Gaylord L. Clark, Jr., M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1969; 1964]

Walter E. Dandy, Jr., M.D.
Assistant Professor Emeritus in Anesthesiology and Critical Care Medicine [1991; 1952]

Erinda F. Deleon-Gaston, M.D.
Assistant Professor Emerita in Radiology [1990; 1969]

James H. Dorsey, M.D.
Assistant Professor Emeritus in Gynecology and Obstetrics [2001; 1964]

Albert E. Dreyfus, M.D.
Assistant Professor Emeritus in Psychiatry [1998; 1950]

James R. Duke, M.D.
Assistant Professor Emeritus in Ophthalmology [1983; 1955]

Robert E. Ensor, M.D.
Assistant Professor Emeritus in Radiology [1990; 1972]

John J. Fahey, M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1955]

William F. Fritz, M.D.
Assistant Professor Emeritus in Medicine [1992; 1955]

Gerald A. Glowacki, M.D.
Assistant Professor Emeritus in Gynecology and Obstetrics [2001; 1968]

Emily M.S. Haller, M.D.
Assistant Professor Emerita in Gynecology and Obstetrics [1980; 1976]

Harriet L. Haskins, A.M.
Assistant Professor Emerita in Otolaryngology-Head and Neck Surgery [1976; 1949]

Elmer Hoffman, M.D.
Assistant Professor Emeritus in Surgery [1994; 1955]

Thomas M. Holcomb, M.D.
Assistant Professor Emeritus in Pediatrics [2000; 1969]

Thomas E. Hunt, Jr., M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1956]

C. Ramadas Kamath, M.D.
Assistant Professor Emeritus in Otolaryngology-Head and Neck Surgery [1983; 1981]

Anne J. Krush, M.S.S.A.
Assistant Professor Emeritus in Medicine [1985; 1976]

Arnold F. Lavenstein, M.D.
Assistant Professor Emeritus in Pediatrics [1982; 1958]

James Lawrence, III, M.D.
Assistant Professor Emeritus in Otolaryngology-Head and Neck Surgery [1976; 1973]

Paul M. Leand, M.D.
Assistant Professor Emeritus in Surgery [1968]

Samuel M.M. Lumpkin, M.D.
Assistant Professor Emeritus in Otolaryngology-Head and Neck Surgery [1979; 1966]

Roger H. Michael, M.D.
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1976]

Ambadas Pathak, M.D.
Assistant Professor Emeritus in Pediatrics [1978]
Howard H. Patt, M.D.  
Assistant Professor Emeritus in Surgery [1984; 1956]

Lydia L. Pauli, M.D.  
Assistant Professor Emerita in Pediatrics [1985; 1957]

Thomas H. Powell, M.D.  
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1969]

Harold E. Ramsey, M.D.  
Assistant Professor Emeritus in Surgery [1980; 1969], Assistant Professor Emeritus in Otolaryngology-Head and Neck Surgery [1980]

Anne B. Redfern, M.D.  
Assistant Professor Emerita in Plastic and Reconstructive Surgery [1997; 1977]

Nasser Rezai, M.D.  
Assistant Professor Emeritus in Gynecology and Obstetrics [1979; 1973]

Edward H. Richardson, Jr., M.D.  
Assistant Professor Emeritus in Gynecology and Obstetrics [1982; 1947] (to 11/04/2010)

William F. Rienhoff, III, M.D.  
Assistant Professor Emeritus in Surgery [1992; 1953]

Charles Savage, M.D.  
Assistant Professor Emeritus in Psychiatry [1982; 1965]

Peter Schilder, M.D., Ph.D.  
Assistant Professor Emeritus in Neurology [2006; 1972]

Frank F. Schuster, M.D.  
Assistant Professor Emeritus in Neurology [1993; 1969]

Woodrow Seamone, B.S.  
Assistant Professor Emeritus (Research) in Orthopaedic Surgery [1991; 1980]

Waldron M. Sennott, M.D.  
Assistant Professor Emeritus in Radiology [1974; 1966]

Sylvan M.E. Shane, D.D.S.  
Assistant Professor Emeritus in Oral Surgery [1989; 1980]

Lex B. Smith, M.D.  
Assistant Professor Emeritus in Psychiatry [1968; 1954]

Thomas W. Snider, M.D.  
Assistant Professor Emeritus in Radiology [1994; 1962]

Donald B. Spangler, M.D.  
Assistant Professor Emeritus in Gynecology and Obstetrics [2001; 1992]

Alvin A. Stambler, M.D.  
Assistant Professor Emeritus in Pediatrics [1972; 1960]

Edward L. Suarez-Murias, M.D.  
Assistant Professor Emeritus in Psychiatry [1972; 1950]

Bernard Tabatznik, M.B.B.Ch.  
Assistant Professor Emeritus in Medicine [1990; 1961]

Alan J. Tapper, M.D.  
Assistant Professor Emeritus in Gynecology and Obstetrics [1975; 1972]

Mahmud Thamer, M.D.  
Assistant Professor Emeritus in Medicine [1997; 1970]

Kirby L.C. VonKessler, M.D.  
Assistant Professor Emeritus in Orthopaedic Surgery [2004; 1967]

Barbara Young, M.D.  
Assistant Professor Emerita in Psychiatry [1993; 1953]

Robert E. Zadek, M.D.  
Assistant Professor Emeritus in Orthopaedic Surgery [1992; 1961]

INSTRUCTORS

Fouad M. Abbas, M.D.  
Instructor in Gynecology and Obstetrics [2006]

Riad Zuhdi Abdelkarim, M.D.  
Instructor in Medicine [2008]

Mohammed Marwan Abuzahra, M.D.  
Instructor in Medicine [2010]

Edore Adewuya, M.B.B.S.  
Instructor in Psychiatry [2010]

Bachar Afandi, M.D.  
Instructor in Medicine [2010]

Kia Afshar, M.D.  
Instructor in Medicine [2010]

Neil Raj Aggarwal, M.D.  
Instructor in Medicine [2010]

Gautam A. Agrawal, M.D.  
Instructor in Radiology [2006]

Abdullah Shafique Ahmad, Ph.D.  
Instructor in Anesthesiology and Critical Care Medicine [2008] (to 10/24/2010)

Akinwande Akanji Akintola, M.B.B.S., M.D.  
Instructor in Psychiatry [2003]

Andrew Stephen Akman, M.D.  
Instructor in Radiology [2010] (from 08/01/2010)

Samuel Robert Akman, M.D.  
Instructor in Gynecology and Obstetrics [2007]

Eli B. Alegado, M.D.  
Instructor in Medicine [2005]

Jihad Mohamad Alhariri, M.D.  
Instructor in Dermatology [2008]

Suleiman S. Alibhai, O.D.  
Instructor in Ophthalmology [1995]

Saadia Alizai-Cowan, M.D.  
Instructor in Psychiatry [2005]

Ravi Kumar Aloor, M.B.B.S.  
Instructor in Plastic and Reconstructive Surgery [2007]

Ruben Amarasingham, M.D.  
Instructor in Medicine [2006]
Timothy Amukele, M.D., Ph.D.
Instructor in Pathology [2010] (from 08/01/2010)

Merrill Ansher, M.D.
Instructor in Neurology [1993]

William C. Anthony, M.D.
Instructor in Medicine [1984]

Colette M.J. ap Rhys, Ph.D.
Instructor in Neurological Surgery [2007]

Eleni Aretouli, Ph.D.
Instructor in Psychiatry [2010]

Raya Armaly, M.D.
Instructor in Ophthalmology [2002]

W. Perry Arnold, M.D.
Instructor in Radiology [1976]

Beth L. Aronson, M.D.
Instructor in Gynecology and Obstetrics [1985]

Pedro Pablo Arrabal, M.D.
Instructor in Gynecology and Obstetrics [2006]

Martin Joseph Ankrah Aryee, Ph.D.
Instructor in Oncology [2010]

Thelma S. Asare, M.D.
Instructor in Gynecology and Obstetrics [2007]

Paul L. Asdourian, M.D.
Instructor in Orthopaedic Surgery [1988]

Walter Fleming Atha, M.D.
Instructor in Emergency Medicine [2000]

John Nathaniel Aucott, M.D.
Instructor in Medicine [1996]

Amal Awadalla, M.B.B.S.
Instructor in Medicine [2011] (from 01/01/2011)

Shahid Aziz, M.D.
Instructor in Pediatrics [1992]

Richard Babkes, M.D.
Instructor in Neurology [1981]

Susan Elaine Bailey, M.D.
Instructor in Psychiatry [2003]

Alva Sayrs Baker, III, M.D.
Instructor in Psychiatry [1999]

Eric Darius Balighian, M.D.
Instructor in Pediatrics [2009]

Sylvia Chen Bank, M.D.
Instructor in Pediatrics [2003]

Nia Danielle Banks, M.D., Ph.D.
Instructor in Plastic and Reconstructive Surgery [2009]

Michael S. Barr, M.D.
Instructor in Medicine [2000]

David C. Bastacky, D.M.D.
Instructor in Oral Surgery [2004]

Kiran Batra, M.B.B.S.
Instructor in Radiology [2010]

Michael J. Battaglia, II, M.D.
Instructor in Orthopaedic Surgery [2006] (to 12/31/2010)

Pierre-Louis Bazin, Ph.D.
Instructor in Radiology [2009; 2006]

Sheldon B. Bearman, M.D.
Instructor in Radiology [1974]

C. Elizabeth Beasley, M.D.
Instructor in Psychiatry [1991]

Andrew N. Becker, D.O.
Instructor in Medicine [2005]

Shahnaz Begum, M.B.B.S., Ph.D.
Instructor in Pathology [2008]

Heidi Beilis, M.D.
Instructor in Radiology [1997]

Azin Elizabeth Bekhrad, M.D.
Instructor in Psychiatry [2005]

Samuel I. Benesh, M.D.
Instructor in Medicine [1997]

Adam Richard Berliner, M.D.
Instructor in Medicine [2006]

Pasquale Bernardi, M.D.
Instructor in Pediatrics [2011] (from 01/01/2011)

Benjamin David Bernstein, M.D.
Instructor in Dermatology [1988]

Arun K. Bhasin, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2003]

Harjit Bhogal, M.B.B.S.
Instructor in Medicine [2009]

Mario Antonio Bianchet, Ph.D.
Instructor in Biophysics and Biophysical Chemistry [2004]

James D. Biles, M.D.
Instructor in Urology [1975]

Bernhard Birnbaum, M.D.
Instructor in Medicine [1991; 1986]

Kevin E. Bishoff-Carlson, M.D.
Instructor in Medicine [1998]

Sharen M. B. Bisson, M.D.
Instructor in Psychiatry [1994]

Deborah Gisriel Bittar, M.D.
Instructor in Pediatrics [1996]

Cary Frederick Bizzell, M.D.
Instructor in Radiology [2010]

Jason Wesley Black, M.D.
Instructor in Medicine [2005]

Lucien Vandy Black, M.D.
Instructor in Pediatrics [2009]

Karen Beth Bleich, M.D.
Instructor in Radiology [2005]

Brian Michael Block, M.D., Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2003]

Joan L. Blomquist, M.D.
Instructor in Gynecology and Obstetrics [2001]

Lois H. Blum, M.M.H.
Instructor in Psychiatry [1978; 1974]

Myron Barry Blum, M.D.
Instructor in Ophthalmology [1994]

Stuart D. Blumenthal, D.D.S.
Instructor in Pediatrics [1998]
Joanna M. Bock, M.D.
Instructor in Medicine [2009]

Richard Boehler, M.D.
Instructor in Medicine [2006]

Ashley Denise Bone, M.D.
Instructor in Psychiatry [2009]

Catherine A. Booher, M.D.
Instructor in Medicine [1997]

Sharon P. Bord, M.D.
Instructor in Emergency Medicine [2008]

Jasenka Borzan, Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2009; 2006]

Glendaliz Bosques, M.D.
Instructor in Physical Medicine and Rehabilitation [2009]

Douglas M. Bourque, M.D.
Instructor in Gynecology and Obstetrics [1984]

Sean Bouvet, M.D.
Instructor in Emergency Medicine [2009]

Jennifer E. Bracey, M.D.
Instructor in Medicine [2009]

Gregory William Branch, M.D.
Instructor in Medicine [1994]

Karen A. Broderick, M.D.
Instructor in Pediatrics [1987]

Barton S. Brown, M.D.
Instructor in Emergency Medicine [2010]

Maria Karapelou Brown, M.D.
Instructor in Pediatrics [2006]

Melva Joan Brown, M.D.
Instructor in Medicine [2004]

Rochelle Vanessa Brown, M.D.
Instructor in Medicine [2007]

Ilene Stephanie Browner, M.D.
Instructor in Oncology [2006], Joint Appointment in Medicine [2008]

Tracee Burroughs, M.D.
Instructor in Psychiatry [2008]

Anitha Byreddy, M.B.B.S., M.P.H.
Instructor in Medicine [2007]

Youngjoo Byun, Ph.D.
Instructor in Radiology [2009; 2007]

Suzanne Mary Caccamese, M.D.
Instructor in Medicine [2000]

Emilie J.B. Calvello, M.D., M.P.H.
Instructor in Emergency Medicine [2009]

Wangsen Cao, M.D., Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2008] (to 12/31/2010)

Lemore Carmi, M.D.
Instructor in Radiology [2009]

Gary H. Cassel, M.D.
Instructor in Ophthalmology [1986]

Jennifer N. Caudle, D.O.
Instructor in Medicine [2009]

Sabrina Theresa Chaklos, M.D.
Instructor in Medicine [2009]

Anutosh Chakraborty, Ph.D.
Instructor in Neuroscience [2009; 2008]

Fred Tsong Chan, M.D.
Instructor in Medicine [2003]

Shalini Chandra, M.D.
Instructor in Medicine [2007]

Aruna Chandran, M.D., M.P.H.
Instructor in Pediatrics [2008]

Esther I-Ping Chang, M.D.
Instructor in Ophthalmology [2010]

Stephanie Ming Chang, M.D., M.P.H.
Instructor in Medicine [2006]

Franklin Earl Chatham, M.D.
Instructor in Medicine [2005]

Aditi Chatterjee, Ph.D.
Instructor in Otolaryngology-Head and Neck Surgery [2008]

Ranee Chatterjee, M.D.
Instructor in Medicine [2010] (from 08/16/2010)

Zachary Lee Chatterly, D.P.M.
Instructor in Orthopaedic Surgery [2001]

Sajida Saeed Chaudry, M.D., M.P.H.
Instructor in Medicine [2006]

Belinda Yim Chen, M.D.
Instructor in Medicine [1994]

Cindy Hsin-I Chen, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2010] (to 07/31/2010)

Mok-Chung Jennifer Cheng, M.D.
Instructor in Medicine [2010]

Kenneth H. Cho, M.D.
Instructor in Radiology [2005]

Alexander Christoff, B.S.
Instructor in Ophthalmology [2009]

Tracey Lynn Chunn, M.D.
Instructor in Medicine [2000]

John Michael Cmar, M.D.
Instructor in Medicine [2008]

Timothy P. Codd, M.D.
Instructor in Orthopaedic Surgery [1995]

Robert Norman Cole, Ph.D.
Instructor in Biological Chemistry [2000; 1998]

Brendan Joseph Collins, M.D.
Instructor in Surgery [2009]

Robert L. Connors, M.D.
Instructor in Medicine [2006]

Barbara G. Cook, M.D.
Instructor in Medicine [2006]

Heidi Marie Cooper, M.D.
Instructor in Radiology [2010]

Damian D. Crawford, M.D.
Instructor in Medicine [2009]

Joy Elizabeth Crook, M.D.
Instructor in Emergency Medicine [2007]
Martin P. Curry, D.O., O.D.
Instructor in Otolaryngology-Head and Neck Surgery [2010]

Naomi Paula Cutler, M.D.
Instructor in Medicine [2002]

Holly Ryerson Dahlman, M.D.
Instructor in Medicine [2005]

Franco Rafael D'Alessio, M.D.
Instructor in Medicine [2008]

Mahendra Damarla, M.D.
Instructor in Medicine [2009]

Sara Damewood, M.D.
Instructor in Emergency Medicine [2010]

Paul Dash, M.D.
Instructor in Medicine [2010]

Kisha N. Davis, M.D.
Instructor in Medicine [2010]

Anthony Louis DeFulio, Ph.D.
Instructor in Psychiatry [2009]

Ana M. DeJesus-Acosta, M.D.
Instructor in Oncology [2010]

Melissa L. DeLong, M.D.
Instructor in Medicine [2011] (from 01/01/2011)

Melissa Ann DeMore, Ph.D.
Instructor in Psychiatry [2008] (to 09/03/2010)

Pankaj R. Desai, M.D.
Instructor in Medicine [2006]

Samit Prakash Desai, M.D.
Instructor in Emergency Medicine [2009]

Ledys Julia DiMarsico, M.D.
Instructor in Medicine [2005]

Joseph Peter DiPietro, M.D.
Instructor in Radiology [2009]

Susan J. Dirks, M.D.
Instructor in Medicine [1998]

Etosha Dixon, M.D.
Instructor in Medicine [2007]

Sharon Dlhosh, M.D.
Instructor in Medicine [2006]

Devon A. Dobrosielski, Ph.D.
Instructor in Medicine [2009]

Kelly Lynn Drake, Ph.D.
Instructor in Psychiatry [2010]

Anthony Jack Drobnick, M.D.
Instructor in Psychiatry [1998]

Yong Du, Ph.D.
Instructor in Radiology [2010; 2005]

Jonathan Dubois Dubin, M.D.
Instructor in Medicine [1990]

Gwen L. DuBois, M.D.
Instructor in Medicine [1989]

Amy Susan Duffield, M.D., Ph.D.
Instructor in Pathology [2010]

Andrea Freyer Dugas, M.D.
Instructor in Emergency Medicine [2010]

Karen Dunlap, O.D.
Instructor in Ophthalmology [2008]

Caroline McDonald DuPont, M.D.
Instructor in Psychiatry [1999]

Sridhar M. Durbhakula, M.D.
Instructor in Orthopaedic Surgery [2005]

Stephanie Durruthy, M.D.
Instructor in Psychiatry [1989]

Jacquelyn Duval-Harvey, Ph.D.
Instructor in Psychiatry [2002; 2000]

Norman M. Dy, M.D.
Instructor in Medicine [2011] (from 01/01/2011)

Mary Cheffings Eaton, Ph.D.
Instructor in Psychiatry [1996]

Deena R. Ebright, M.D.
Instructor in Medicine [2003]

Roland C. Einhorn, M.D.
Instructor in Medicine [1987; 1981]

David Lee Eisenberg, M.D.
Instructor in Medicine [2006]

AbdEl-Monem Mohamed A. El-Sharkawy, Ph.D.
Instructor in Radiology [2008]

Karen A. Engstrom, M.D.
Instructor in Gynecology and Obstetrics [1982]

Laura Maciel Erdman, M.D.
Instructor in Gynecology and Obstetrics [2005]

Chete Margaret Eze-Nliam, M.B.B.S., M.P.H.
Instructor in Medicine [2010] (from 11/01/2010)

Dalia A.H. Fadul, M.D.
Instructor in Radiology [2007]

Eddy Fan, M.D.
Instructor in Medicine [2007]

Robyn Neblett Fanfair, M.D., M.P.H.
Instructor in Medicine [2009]

Tzan-Wei Fang, M.D.
Instructor in Radiology [2010]

Jason Eli Farrar, M.D.
Instructor in Oncology [2007]

Michael Andrew Fatt, M.D.
Instructor in Radiology [2010]

Scott A. Feese, M.D.
Instructor in Medicine [1993]

Daniel Feirtag, M.D.
Instructor in Medicine [1989; 1981]

Dorianne Rachelle Feldman, M.D.
Instructor in Physical Medicine and Rehabilitation [2009]

Naomi Ruth Feldman, M.D.
Instructor in Medicine [1989]

Sylvan Feldman, D.D.S.
Instructor in Plastic and Reconstructive Surgery [2003]

Virginia MacVeagh Ferrante, M.A.
Instructor in Art as Applied to Medicine [2002]

Elana Judith Fertig, Ph.D.
Instructor in Oncology [2010] (from 11/01/2010)
Diana Fertsch, M.D., Ph.D.
Instructor in Pediatrics [2010]

Marjorie Ann Fessler, Ed.D.
Instructor in Pediatrics [1995]

Gregory Charles Fey, M.D.
Instructor in Psychiatry [2004]

Cynthia Dianne Fields, M.D.
Instructor in Psychiatry [2010]

Beverly A. Fischer, M.D.
Instructor in Plastic and Reconstructive Surgery [1995]

April S. Fitzgerald, M.D.
Instructor in Medicine [2007]

Jason Fixler, M.D.
Instructor in Pediatrics [2003]

Jerold H. Fleishman, M.D.
Instructor in Neurology [1992]

Kenneth Charles Fletcher, Jr., M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2010] (from 12/01/2010)

Kenneth E. Fligsten, M.D.
Instructor in Psychiatry [1973]

Charles Timothy Floyd, M.D.
Instructor in Orthopaedic Surgery [1998] (to 11/30/2010)

Jelles N. Fonda, M.D.
Instructor in Medicine [1991]

Catherine Anne Foss, Ph.D.
Instructor in Radiology [2006]

Paul N. Foster, M.D.
Instructor in Medicine [2005]

James E. Fragetta, M.D.
Instructor in Pediatrics [1998]

Phillip J. Franklin, M.D., M.P.H.
Instructor in Medicine [2001]

Daniel J. Freedenburg, M.D.
Instructor in Psychiatry [1974], Joint Appointment in Medicine [2002]

Joan Audrey Freedman, M.S.
Instructor in Art as Applied to Medicine [2002; 1993]

Howard Stephen Freeland, M.D.
Instructor in Medicine [2010]

Kathleen Breilsford French, M.D.
Instructor in Neurological Surgery [1992]

Nancy Jane C. Friedley, M.D.
Instructor in Medicine [1999]

Neil B. Friedman, M.D.
Instructor in Surgery [1989]

Drew C. Fuller, M.D., M.P.H.
Instructor in Emergency Medicine [2006]

George Shiu-Kai Fung, Ph.D.
Instructor in Radiology [2010; 2008]

Sandra Beatriz Gabelli, Ph.D.
Instructor in Biophysics and Biophysical Chemistry [2006; 2002], Instructor in Art as Applied to Medicine [2010], Instructor in Oncology [2009]

Nicole Jean Gable, M.D.
Instructor in Pediatrics [2008]

Dhruv Arvind Gadhia, M.B.B.S.
Instructor in Medicine [2009]

Christopher Jordan Gamber, M.D., Ph.D.
Instructor in Oncology [2008]

Shanmugasundaram Ganapathy Kanniappan, Ph.D.
Instructor in Radiology [2010; 2006] (from 08/01/2010), Research Associate in Radiology [2006] (to 07/31/2010)

Neeraj Gandotra, M.D.
Instructor in Psychiatry [2008]

David Gannon, D.P.M.
Instructor in Orthopaedic Surgery [2002]

Travis Francis Ganunis, M.D.
Instructor in Pediatrics [2000]

Li Gao, M.D., Ph.D.
Instructor in Medicine [2010; 2005]

Ivan H. Garcia, M.D.
Instructor in Ophthalmology [1997]

Donald E. Garland, D.O.
Instructor in Gynecology and Obstetrics [1981]

Abraham Allan Genut, M.D.
Instructor in Neurology [1995]

Patricia Rausch Geraghty, M.D.
Instructor in Radiology [2010]

Jonathan Michael Gerber, M.D.
Instructor in Medicine [2008]

Alan M. Geringer, M.D.
Instructor in Urology [1987]

Marc H. Gertner, M.D.
Instructor in Surgery [1986; 1989]

Elias Camille Ghandour, M.D.
Instructor in Medicine [1997]

Nina Glasner, M.A., M.S.W.
Instructor in Ophthalmology [1995]

Braeme S. Glaun, M.B.B.Ch.
Instructor in Neurology [2004]

Kenneth L. Glick, M.D.
Instructor in Medicine [2006]

Stephen B. Goldberg, M.D.
Instructor in Psychiatry [2000]

Jeremy Goldman, O.D.
Instructor in Ophthalmology [2008]

Michael H. Goldman, M.D., Ph.D.
Instructor in Medicine [1996]

Jason Neil Goldstein, M.D.
Instructor in Pediatrics [2005]

Adrian J. Goldszmidt, M.D.
Instructor in Neurology [1998]

Anna Marie Gonzaga, M.D.
Instructor in Psychiatry [2003]

Denise A. Gonzalez, M.D.
Instructor in Medicine [2005]

Eduardo J. Gonzalez, M.D.
Instructor in Medicine [2010] (from 10/01/2010)
John L. Goodier, Ph.D.  
Instructor in Pediatrics [2010]

Helen Minifie Gordon, M.D.  
Instructor in Medicine [2000]

Rhoda J. Gottfried, M.D.  
Instructor in Psychiatry [2010]

Gene E. Green, M.D.  
Instructor in Medicine [2006]

Melva Isadora Green, M.D.  
Instructor in Psychiatry [2004]

Dmitry N. Grigoriev, M.D., Ph.D.  
Instructor in Medicine [2005]

Michael Richard Grunwald, M.D.  
Instructor in Medicine [2010]

Rafael Enrique Guerrero-Preston, Ph.D., M.P.H.  
Instructor in Otolaryngology-Head and Neck Surgery [2008] (to 01/31/2011)

Kenneth S. Gummerson, M.D., Ph.D.  
Instructor in Medicine [1995]

Venkat Pradeep Gundareddy, M.B.B.S.  
Instructor in Medicine [2010]

Hilary Eileen Gwynn, M.D.  
Instructor in Neurology [2007]

Florence Hackerman, M.A.  
Instructor in Psychiatry [2004; 2002]

Tammy Denise Hadley, M.D.  
Instructor in Medicine [1995]

Luba Hafkin, M.D.  
Instructor in Medicine [2010] (from 09/01/2010)

Charles A. Haile, M.D.  
Instructor in Medicine [1996; 1982]

Tigist Hailu, M.D.  
Instructor in Medicine [2010]

Sandra Watson Hairston, M.D.  
Instructor in Medicine [2006]

Russell Kenneth Hales, M.D.  
Instructor in Radiation Oncology and Molecular Radiation Sciences [2010]

Cherilyn C. Hall, M.D.  
Instructor in Medicine [2010]

John Clayton Hall, Ph.D.  
Instructor in Medicine [2010] (from 10/01/2010)

Ellen W. Halle, M.M.H.  
Instructor in Psychiatry [1977; 1974]

Elizabeth A. Halloran, M.D.  
Instructor in Medicine [2004]

Lenard H. Hammer, M.D.  
Instructor in Ophthalmology [1991]

F. Chris Hansen, III, M.D.  
Instructor in Medicine [1987]

Kaleem Ul Haque, M.B.B.S.  
Instructor in Medicine [2003]

Daniel C. Hardesty, M.D.  
Instructor in Medicine [1995]

Ayaz M. Haroon, M.D.  
Instructor in Medicine [2010]

Anthony J. Harrell, M.D.  
Instructor in Medicine [2006]

Colleen Mary Harrington, M.D.  
Instructor in Medicine [2010]

Che M. Harris, M.D.  
Instructor in Medicine [2009]

Dasharatha Harsewak, M.D.  
Instructor in Radiology [2010]

Raymond J. Harshbarger, III, M.D.  
Instructor in Plastic and Reconstructive Surgery [2004]

Hilary R. Hatch, Ph.D.  
Instructor in Medicine [2010]

Howard W. Hauptman, M.D.  
Instructor in Medicine [1991]

Xin He, Ph.D.  

Michelle L. Hearns, M.D.  
Instructor in Pediatrics [1998]

David Heath, Ph.D.  
Instructor in Radiology [1993; 1992]

Deborah L. Hebb, M.D.  
Instructor in Gynecology and Obstetrics [1988; 1984]

Alvin W. Hecker, M.D.  
Instructor in Pediatrics [1992; 1985]

Todd D. Heller, M.D.  
Instructor in Medicine [1991; 1992]

Linda Smith Helfmann, M.S.W.  
Instructor in Psychiatry [1997]

Jennifer M. Hendi, M.D., M.P.H.  
Instructor in Radiology [2010]

George Hennawi, M.D.  
Instructor in Medicine [2010]

Leanna J. Herman, Ph.D.  
Instructor in Psychiatry [2008]

Ruben Hernaez, M.D., Ph.D., M.P.H.  
Instructor in Medicine [2010]

Bonnie L. Hiatt, M.D.  
Instructor in Medicine [2006]

Arthur McLean Hildreth, M.D.  
Instructor in Psychiatry [1996]

Stephen A. Hirsch, M.D.  
Instructor in Psychiatry [1963]

Lauren R. Hodos, M.D.  
Instructor in Psychiatry [1994]

Sheila Mohajer Hofert, M.D.  
Instructor in Pediatrics [2009]

Susan E. Hofkamp, Ph.D.  
Instructor in Physical Medicine and Rehabilitation [2008]

George Martin Hoke, M.D.  
Instructor in Medicine [2003]

Stephanie C. Holtzclaw, M.D.  
Instructor in Emergency Medicine [1995]
Liam C. Holtzman, D.O.
Instructor in Emergency Medicine [2010]

Marc Adam Honig, M.D.
Instructor in Ophthalmology [1996]

Tana L. Hope, Ph.D.
Instructor in Psychiatry [2007]

Cescili D. Hopkins, M.D.
Instructor in Gynecology and Obstetrics [2006]

Mark Stephen Hopkins, B.S.
Instructor in Physical Medicine and Rehabilitation [2004]

Avril Melissa Houston, M.D., M.P.H.
Instructor in Pediatrics [2008]

Lisa Simone Hovermale, M.D.
Instructor in Psychiatry [2002]

Renee P. Howard, M.D.
Instructor in Pediatrics [1986]

Vanessa Catherine Howells, M.D.
Instructor in Psychiatry [2007]

Erik Hans Hoyer, M.D.
Instructor in Physical Medicine and Rehabilitation [2010]

Robert Y. Hsiao, M.D.
Instructor in Medicine [2005]

Amy Laura Huberman, M.D.
Instructor in Psychiatry [2010] (from 09/01/2010)

Michael Vincent Huppmann, M.D.
Instructor in Radiology [2010]

Paula Jill Hurley, Ph.D.
Instructor in Urology [2008]

Susan Huttlless, Ph.D.
Instructor in Medicine [2010]

Constance W. Hwang, M.D., M.P.H.
Instructor in Medicine [2006]

Elias S. Hyams, M.D.
Instructor in Urology [2010]

Matthew Eric Hyndman, M.D.
Instructor in Urology [2009]

Sandra Schwartz Isbister, M.D.
Instructor in Gynecology and Obstetrics [2000]

Christopher Ish, M.D.
Instructor in Medicine [2006]

Hanna Jaaro-Peled, Ph.D.
Instructor in Psychiatry [2010]

Allesa Paige Jackson, M.D.
Instructor in Psychiatry [2002]

Cheryl Anne Jackson, M.D.
Instructor in Medicine [1996]

Lisa Anne Jacobson, Ph.D.
Instructor in Psychiatry [2010] (from 10/01/2010)

Julie Mendelson Jacobstein, M.D.
Instructor in Gynecology and Obstetrics [2006]

Alpa Laheri Jani, M.D.
Instructor in Medicine [2005]

Jason Simon Javillo, M.D.
Instructor in Medicine [2010]

Laura Boyle Jaweed, D.P.T.
Instructor in Physical Medicine and Rehabilitation [2009]

Fern Marie Jeffries, M.D.
Instructor in Medicine [1998]

Gerald J. Jerome, Ph.D.
Instructor in Medicine [2006]

Na Young Ji, M.D.
Instructor in Psychiatry [2008]

Stacie Nicole Johnson, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2010]

Ann Elizabeth Jones, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2001]

Candice Watters Jones, M.D.
Instructor in Pediatrics [2011; 2006] (from 01/01/2011)

Carolyn V. Jones
Instructor in Art as Applied to Medicine [2001]

Milan K. Joshi, M.D.
Instructor in Psychiatry [1981]

Shilpa D. Kadam, Ph.D.
Instructor in Neurology [2010; 2008] (from 11/01/2010), Research Associate in Neurology [2008]

Christine Kajubi, M.D.
Instructor in Medicine [2007]

Paul J. Kaloudis, M.D.
Instructor in Emergency Medicine [2009] (to 07/31/2010)

Zachary Aaron Kaminsky, M.D.
Instructor in Plastic and Reconstructive Surgery [1990]

William R. Kanter, M.D.
Instructor in Plastic and Reconstructive Surgery [1989]

Ira E. Kaplan, M.D.
Instructor in Medicine [2001]

George John Kargul, M.D.
Instructor in Medicine [2008]

Frederick J. Karkowski, M.D.
Instructor in Medicine [2003]

Harvey H. Kasner, M.D.
Instructor in Gynecology and Obstetrics [2007]

Robert Neil Kass, M.D.
Instructor in Medicine [2006]

Pearl Katz, Ph.D.
Instructor in Psychiatry [1986]

Ryan David Katz, M.D.
Instructor in Plastic and Reconstructive Surgery [2010]

Mirajul Hoque Kazi, Ph.D.
Instructor in Medicine [2010] (from 08/01/2010)
Sanjay Ramkrishna Kedhar, M.D.
Instructor in Ophthalmology [2008; 2003] (to 01/31/2011)
Gregory B. Kelly, M.D.
Instructor in Medicine [1986; 1981]
Kevin P. Kelly, M.D.
Instructor in Pediatrics [2011] (from 01/01/2011)
Patrick Michael Kelly, M.D.
Instructor in Psychiatry [2010]
Martha M. Kennedy, Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2006]
Waseem Khaliq, M.B.B.S., M.P.H.
Instructor in Medicine [2010]
Adnan Nawaz Kiani, M.B.B.S., M.D., M.P.H.
Instructor in Medicine [2008; 2006]
Barbara Ann Kim, M.D.
Instructor in Psychiatry [2002]
Jenny J. Kim, M.D.
Instructor in Oncology [2010] (from 09/01/2010)
Myoung Sook Kim, Ph.D.
Instructor in Otolaryngology-Head and Neck Surgery [2007]
Sung E. Kim, M.D.
Instructor in Gynecology and Obstetrics [1994]
Thomas J. Kim, M.D., M.P.H.
Instructor in Medicine [2005]
Angela Kim-Lee, M.D.
Instructor in Psychiatry [2000]
Lisle Reynolds Kingery, Ph.D.
Instructor in Psychiatry [2005]
Sybil Ann Klaus, M.D.
Instructor in Pediatrics [2009]
Antonie Debra Kline, M.D.
Instructor in Pediatrics [1996]
James A. Kopper, M.D.
Instructor in Pediatrics [2009]
Sitaramma Kottapalli, M.B.B.S.
Instructor in Pediatrics [1984; 1980]
Vinayak Kotoor, M.B.B.S.
Instructor in Medicine [2010] (from 08/01/2010)
Buddy Gene Kozen, Jr., M.D.
Instructor in Emergency Medicine [2007]
Chris Kraft, Ph.D.
Instructor in Psychiatry [2001]
Michelle M. Kubancik, O.D.
Instructor in Ophthalmology [2010] (from 09/01/2010)
Pallavi P. Kumar, M.D.
Instructor in Medicine [2007]
George Peter Kuo, M.D.
Instructor in Radiology [2010]
Delese E. LaCour, M.D.
Instructor in Gynecology and Obstetrics [2008]
Oliver B. Laeyendecker, M.B.A., M.S.
Instructor in Medicine [2008; 2005]
Huamin Li, M.D., Ph.D.  
Instructor in Medicine [2001]

Wenxue Li, Ph.D.  
Instructor in Neurology [2009; 2004]

Yunqing Li, Ph.D.  
Instructor in Neurology [2010; 2009]

Eleni Apostolos Liapi, M.D.  
Instructor in Radiology [2010]

David Lichtman, A.S., B.S.  
Instructor in Medicine [2010]

Hyung Min Lim, M.D.  
Instructor in Medicine [1996]

Dingxie Liu, M.D., Ph.D.  
Instructor in Medicine [2009]

Guanshu Liu, Ph.D.  
Instructor in Radiology [2010; 2008]

Manchang Liu, M.D., Ph.D.  
Instructor in Medicine [2010; 2006]

Benjamin N. Lockshin, M.D.  
Instructor in Dermatology [2007]

Bart Leo Loey, M.D.  
Instructor in Pediatrics [2006]

Dora D. Logue, M.D.  
Instructor in Psychiatry [1976]

Scott D. London, M.D.  
Instructor in Otolaryngology-Head and Neck Surgery [2001]

Dominique Noe Long, M.D.  
Instructor in Pediatrics [2006]

Theresa R. Lorch, M.D.  
Instructor in Medicine [2006]

Mark Allan Lottes, D.D.S., M.D.  
Instructor in Radiology [2007]

Olga I. Lurye, M.D.  
Instructor in Medicine [2007]

Henry Carlton Lusane, Jr., M.D.  
Instructor in Radiology [2006]

Steven J. Lypen, M.D.  
Instructor in Radiology [2010]

Brent Bruce Macdonald, M.D.  
Instructor in Medicine [1998]

M. Isabelle MacGregor, M.B.B.S.  
Instructor in Medicine [1974; 1971]

David Alan Madder, D.O.  
Instructor in Medicine [2007]

Marcella Madera, M.D.  
Instructor in Neurological Surgery [2010]

Rajneesh Mahajan, M.D.  
Instructor in Psychiatry [2007]

Pamela Belmonte Mahon, Ph.D.  
Instructor in Psychiatry [2008]

Scott E. Maizel, M.D.  
Instructor in Surgery [1991]

Cynthia Renee Major, M.D.  
Instructor in Psychiatry [2001]

Alexis G. Malkin, O.D.  
Instructor in Ophthalmology [2010; 2009]

Jennifer Sophie Roberts Mammen, M.D.  
Instructor in Medicine [2010]

Ira N. Mandell, M.D.  
Instructor in Medicine [1987]

Gary A. Manko, M.D.  
Instructor in Medicine [2010]

Gena Taylor Manley, M.D.  
Instructor in Gynecology and Obstetrics [2006]

Rosemarie Maraj, M.B.B.S.  
Instructor in Medicine [2004]

Kenneth Margolis, M.D.  
Instructor in Medicine [2000]

Yvonne Mark, M.D.  
Instructor in Pediatrics [2005]

Pooja Marria, M.D.  
Instructor in Pediatrics [2008]

Deborah J. Martin, M.D.  
Instructor in Gynecology and Obstetrics [1988]

Zachary Martin, M.D.  
Instructor in Plastic and Reconstructive Surgery [2005]

Anthony Martinez, M.D.  
Instructor in Medicine [1995]

Jason J. Marx, M.D.  
Instructor in Medicine [2001]

Richard J. Mason, M.D.  
Instructor in Orthopaedic Surgery [2001]

Adhuna Chhabra Mathuria, M.D.  
Instructor in Medicine [2009]

Christine S. Mativo, M.D.  
Instructor in Medicine [2010]

Pamela A. Matson, Ph.D., M.P.H.  
Instructor in Pediatrics [2007]

Jonathan Matz, M.D.  
Instructor in Medicine [1992]

Serena Lynn Mcclam, M.D.  
Instructor in Radiology [2010]

William D. McConnell, M.D.  
Instructor in Medicine [1992]

Sharon McCormack, M.D.  
Instructor in Medicine [2003]

Kathleen L. McDonald, M.D.  
Instructor in Pediatrics [1996]

Susan Rebecca McFarland, M.D.  
Instructor in Pediatrics [2009]

Elizabeth C. McFarlane, Ph.D., M.P.H.  
Instructor in Pediatrics [2008]

David Eliot McGinnis, M.D.  
Instructor in Medicine [1996]

Karl Winston Mcintosh, M.D.  
Instructor in Psychiatry [2003]

Danni Li Meany, Ph.D.  
Instructor in Pathology [2010]
Marco A. Mejia, M.D.
Instructor in Medicine [2006]

Tatiana Melnikova, M.D., Ph.D.
Instructor in Pathology [2010; 2008]

Deepa Unnikrishnan Menon, M.B.B.S.
Instructor in Neurology [2007]

Akil Abid Merchant, M.D.
Instructor in Medicine [2010], Instructor in Oncology [2010]

Sarah A. Mess, M.D.
Instructor in Plastic and Reconstructive Surgery [2009]

Jennifer Mary Meuchel, M.D.
Instructor in Psychiatry [2008]

Christian Frederick Meyer, M.D., Ph.D.
Instructor in Oncology [2010]

Dinah Miller, M.D.
Instructor in Psychiatry [1992]

Gail Wilson Miller, M.D.
Instructor in Medicine [2006]

Louis W. Miller, M.D.
Instructor in Medicine [1997]

Gary A. Milles, M.D., M.P.H.
Instructor in Medicine [1997]

Lawrence Mills, Jr., M.D.
Instructor in Medicine [2010]

Judah A. Minkove, M.D.
Instructor in Medicine [2011] (from 01/01/2011)

Keiffer J. Mitchell, M.D.
Instructor in Medicine [1971]

Rameen James Molavi, M.D.
Instructor in Medicine [2001]

Susan Melley Molinaro, M.D.
Instructor in Medicine [1988]

Richard A. Mones, M.D.
Instructor in Radiology [1990]

Allan J. Monfried, M.D.
Instructor in Pediatrics [1992]

George William Moran, M.D.
Instructor in Medicine [1982]

Clayton L. Moravec, Jr., M.D.
Instructor in Medicine [1973; 1971]

Athol Winston Morgan, M.D.
Instructor in Medicine [1996]

Susan K. Moriarty, M.D.
Instructor in Pediatrics [1990]

Nicholas W. Morog, M.D.
Instructor in Medicine [1998]

Ann Cassidy Morrill, M.D.
Instructor in Medicine [1993]

Deborah J. Morris, M.D.
Instructor in Medicine [1985]

Rose M. Mulaikal, M.B.B.S.
Instructor in Pediatrics [1991]

John J. Murphy, D.P.M.
Instructor in Orthopaedic Surgery [2002] (to 01/31/2011)

Rakhi Prakash Naik, M.D.
Instructor in Medicine [2010]

Alejandro Jose Necochea, M.D., M.P.H.
Instructor in Medicine [2009]

John Allison Nesbitt, III, M.D.
Instructor in Medicine [1978]

Lenore Nii, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2010]

Avigdor I. Niv, M.D.
Instructor in Orthopaedic Surgery [1980; 1978]

Philip Jaratsak Nivatpumin, M.D.
Instructor in Medicine [2007]

Bindu Noor, M.B.B.S.
Instructor in Medicine [2011] (from 01/01/2011)

Gary John Noronha, M.D.
Instructor in Medicine [2006]

Horacio Javier Novaia, Ph.D.
Instructor in Pediatrics [2010]

James S. Novick, M.D.
Instructor in Medicine [2002]

Irwin J. Nudelman, M.D.
Instructor in Urology [1963]

Jeanne Sabine Nunez, M.D.
Instructor in Pediatrics [2006]

Rajesh Kumar NV, Ph.D.
Instructor in Oncology [2009; 2007]

Thomas P. O’Brien, M.D.
Instructor in Pediatrics [1993]

John B. O’Donnell, M.D.
Instructor in Orthopaedic Surgery [1989]

J. Crossan O’Donovan, M.D.
Instructor in Pediatrics [1976]

Ibironke Oduyebo, M.D.
Instructor in Medicine [2009]

Sun Young Oh, Ph.D.
Instructor in Medicine [2008]

Elizabeth Kay Olivera, M.D.
Instructor in Pediatrics [2006]

Rodney Omron, M.D.
Instructor in Emergency Medicine [2010]

Joan Ormdan, M.D.
Instructor in Medicine [2006]

Geralyn C. O’Reilly, M.D.
Instructor in Gynecology and Obstetrics [2010]

Bonnie L. Orzech, M.D.
Instructor in Pediatrics [2009]

William Owen Osburn, Ph.D.
Instructor in Medicine [2010]

Lyle W. Ostrow, M.D., Ph.D.
Instructor in Neurology [2010]

Lynn Marie Oswald, Ph.D.
Instructor in Psychiatry [2003]

Yvonne Lynn Ottaviano, M.D.
Instructor in Medicine [1995]
Jean-Pierre Ouanes, D.O.
Instructor in Anesthesiology and Critical Care Medicine [2010] (from 07/26/2010)

Thomas J. Pace, M.D., M.P.H.
Instructor in Medicine [2007]

Amit Kumar Pahwa, M.D.
Instructor in Medicine [2010]

Jennifer Teitelbaum Palmer, M.D.
Instructor in Psychiatry [2008]

Mini A. Panikar, M.D.
Instructor in Medicine [2010]

Donna F. Parker, M.D.
Instructor in Pediatrics [1985]

Glenda Ferguson Parker, M.D.
Instructor in Medicine [2008]

William S. Parker, M.D.
Instructor in Pediatrics [1966]

Kathleen Gage Parr, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2003; 2000]

Catherine A. Parrish, M.D.
Instructor in Pediatrics [2009]

Clarissa L. Parrish, M.D.
Instructor in Pediatrics [2007]

James P. Paskert, M.D.
Instructor in Plastic and Reconstructive Surgery [1987]

Kashiben G.J. Patel, M.B.B.Ch.
Instructor in Medicine [2004]

Monica Smith Pearl, M.D.
Instructor in Radiology [2010]

Robert Fielding Pegues, M.D.
Instructor in Gynecology and Obstetrics [2007]

Marie-France Penet, Ph.D.
Instructor in Radiology [2010]

Suzanne Prestwich, M.D.
Instructor in Pediatrics [2008]

Tatiana Michelle Prowell, M.D.
Instructor in Oncology [2006]

Michael Perline, M.D.
Instructor in Emergency Medicine [2004]

Jamila Burgess Perritt, M.D.
Instructor in Gynecology and Obstetrics [2009]

Jamie J. Perry, M.D., M.P.H.
Instructor in Pediatrics [2009]

Carisa Katherine Perry-Parrish, Ph.D.
Instructor in Psychiatry [2010]

Sadie Anthea Peters, M.D.
Instructor in Medicine [2010]

Kiemanh Pham, M.D.
Instructor in Emergency Medicine [2009]

Swati Phatak, M.D.
Instructor in Medicine [2006]

Michael Alan Phelps, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2008]

Carmen Paz Pichard-Encina, M.D.
Instructor in Orthopaedic Surgery [2010] (from 09/01/2010)

Anthony Pinto, M.D.
Instructor in Pediatrics [1986]

Claro L. Pioroda, M.D.
Instructor in Surgery [1982]

Matthew Robert Pipeling, M.D.
Instructor in Medicine [2010]

Jerome S. Plasse, M.D.
Instructor in Plastic and Reconstructive Surgery [1985]

Antonis Politis, M.D.
Instructor in Psychiatry [2003]

Steven T. Pondek, M.D.
Instructor in Medicine [2002]

Ileana Lucia Ponor, M.D.
Instructor in Medicine [2010]

John B. Posey, M.D.
Instructor in Neurological Surgery [1977]

Jeffrey N. Posner, M.D.
Instructor in Medicine [1987]

David Bryan Powers, D.M.D., M.D.
Instructor in Plastic and Reconstructive Surgery [2008]

Sudeep Pramanik, M.D.
Instructor in Ophthalmology [2009]

P. Gregory Rausch, M.D.
Instructor in Oncology [1994]

Sangeeta Ray, Ph.D.
Instructor in Radiology [2009; 2005]

Shirley Elizabeth Reddoch, M.D.
Instructor in Pediatrics [2008]

Kristin Ann Redmond, M.D., M.P.H.
Instructor in Radiation Oncology and Molecular Radiation Sciences [2010] (from 10/04/2010), Instructor in Oncology [2010] (from 10/04/2010)

Jennifer H. Reesman, Ph.D.
Instructor in Psychiatry [2010] (from 09/01/2010)

Lisa C. Reichenbach, Ph.D.
Instructor in Psychiatry [1995]

Jerome P. Reichmister, M.D.
Instructor in Orthopaedic Surgery [1978]

Stephanie A. Reid, M.D.
Instructor in Radiology [2010]
Barry J. Reiner, M.D.
Instructor in Pediatrics [1992]

Rodica Retezar, M.D.
Instructor in Emergency Medicine [2007]

Charles B. Reuland, Sc.D.
Instructor in Medicine [2006]

Stasia Stott Reynolds, M.D.
Instructor in Medicine [2002]

Courtney Paige Rhoades, D.O.
Instructor in Gynecology and Obstetrics [2003]

Jeffrey M. Richardson, M.D.
Instructor in Medicine [1988]

Paul R. Ringelman, M.D.
Instructor in Plastic and Reconstructive Surgery [1993]

Michael Lawrence Rinke, M.D.
Instructor in Pediatrics [2010]

Carol Ehlinger Ritter, M.D.
Instructor in Gynecology and Obstetrics [2010] (from 11/01/2010)

Beatrice M. Robbins, M.S.N.
Instructor in Psychiatry [2006]

Carolyn G.P. Roberts, M.D.
Instructor in Medicine [2008]

David G. Roberts, III, M.D.
Instructor in Medicine [1991]

Howard N. Robinson, M.D.
Instructor in Dermatology [1985]

Robert K. Roby, M.D.
Instructor in Medicine [1991]

Ricardo L. Rodriguez, M.D.
Instructor in Plastic and Reconstructive Surgery [1991]

Krista Rodriguez-Bruno, M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2010]

Francisco Rojas, M.D.
Instructor in Gynecology and Obstetrics [2006]

Christopher Joseph Romero, M.D.
Instructor in Pediatrics [2008]

Bruce Rosenberg, M.D.
Instructor in Medicine [2010]

Lawrence Irat Rosenberg, M.D.
Instructor in Plastic and Reconstructive Surgery [2005]

Jerome Ross, M.D.
Instructor in Ophthalmology [1991]

Theresa Anne Rowe, D.O.
Instructor in Medicine [2010]

Patricia Sarah Roy, M.D.
Instructor in Psychiatry [2008]

Allan I. Rubin, M.D.
Instructor in Gynecology and Obstetrics [2007]

Eric Daniel Rubin, M.D.
Instructor in Pediatrics [1996]

Kathryn Ruble, Ph.D.
Instructor in Oncology [2009]

Michael T. Rudikoff, M.D.
Instructor in Medicine [1977]

Paul A. Rusonis, M.D.
Instructor in Dermatology [1986]

Bahman Saatian, M.D.
Instructor in Medicine [2008]

Mustapha Saheed, M.D.
Instructor in Emergency Medicine [2008]

Mahsa Salehi, O.D.
Instructor in Ophthalmology [2010] (from 08/30/2010)

Rose Marie Samaniego, M.D.
Instructor in Pediatrics [1985]

Eric Alan Samstad, M.D.
Instructor in Psychiatry [2005]

Geeta Sarphare, Ph.D.
Instructor in Psychiatry [2006]

Nicola C. Sater, M.D.
Instructor in Psychiatry [2003]

Mark David Scarupa, M.D.
Instructor in Medicine [2004]

Esteban Schabelman, M.D.
Instructor in Emergency Medicine [2010] (from 09/01/2010)

Eric Stephen Schafer, M.D.
Instructor in Oncology [2010]

Jeffrey Evan Schreiber, M.D.
Instructor in Plastic and Reconstructive Surgery [2006]

Arthur Schroeder, M.D.
Instructor in Medicine [1984]

Scott C. Schultz, M.D.
Instructor in Physical Medicine and Rehabilitation [2010] (from 08/01/2010)

Julia Jarrard Scialia, M.D.
Instructor in Medicine [2010]

Jerry Ellis Seals, M.D.
Instructor in Medicine [1997]

Paul Eric Segal, D.O.
Instructor in Medicine [2007]

Margaret Seide, M.D.
Instructor in Psychiatry [2010]

Laura Jean Seidel, M.D.
Instructor in Psychiatry [2001]

Valerie B. Seligson, O.D.
Instructor in Ophthalmology [2009]

Stephen Robert Selinger, M.D.
Instructor in Medicine [2010]

Michelle Jo Semins, M.D.
Instructor in Urology [2011] (from 01/01/2011)

Carlton C. Sexton, M.D.
Instructor in Radiology [1983]

Deepak A. Shah, M.D.
Instructor in Medicine [2008]

Maunank Rajendra Kumar Shah, M.D.
Instructor in Medicine [2010]
Meir Shamay, Ph.D.
Instructor in Oncology [2007]
Lauren T. Shapiro, M.D.
Instructor in Physical Medicine and Rehabilitation [2008]
Michael B. Shapiro, M.D.
Instructor in Orthopaedic Surgery [2002; 2001]
Richard Morris Shapiro, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2002]
Sariya A. Sharp, M.D.
Instructor in Radiology [2010]
Robert A. Shaw, M.D.
Instructor in Medicine [1988]
Elias K. Shaya, M.D.
Instructor in Radiology [1990], Instructor in Medicine [1990; 2007]
Ardele G. Shefchek, M.D.
Instructor in Pediatrics [1987]
Ronald L. Sherman, D.P.M.
Instructor in Orthopaedic Surgery [2002]
Himani Singh Shishodia, M.D.
Instructor in Medicine [2010]
Mansur E. Shomali, M.D.
Instructor in Medicine [2010]
Marilyn Short, M.D.
Instructor in Gynecology and Obstetrics [1988]
Samir F. Shureih, M.D.
Instructor in Plastic and Reconstructive Surgery [1984]
Janet Volk Siddiqui, M.D.
Instructor in Pediatrics [2005]
Zishan K. Siddiqui, M.D.
Instructor in Medicine [2006]
Aniket Ram Sidhaye, M.D.
Instructor in Pediatrics [2006], Instructor in Medicine [2007]
Stephen Siegel, M.D.
Instructor in Medicine [2010]
Allen E. Silver, M.D.
Michael A. Silverman, M.D.
Instructor in Emergency Medicine [1998]
Eric Simball, M.D.
Instructor in Medicine [2001]
Gabriel P. Simon, M.D.
Instructor in Emergency Medicine [2010]
Georgette A. Sims, M.D.
Instructor in Pediatrics [1988]
Michele Singer, M.D.
Instructor in Pediatrics [2004]
Bharat Singh, M.B.B.S.
Instructor in Medicine [2010]
I-Mei Siu, Ph.D.
Instructor in Neurological Surgery [2009; 2003]
Bernard Slosberg, M.D., M.P.H.
Instructor in Medicine [2005]
Brad Tibbetts Smith, M.B.A., M.P.H.
Instructor in Medicine [2008]
Cynthia A. Smith, Ph.D.
Instructor in Psychiatry [2002]
Hermon W. Smith, M.D.
Instructor in Pediatrics [1989]
Milena Hruby Smith, M.D., Ph.D.
Instructor in Psychiatry [2005]
Lee Alison Snyder, M.D.
Instructor in Ophthalmology [2008; 2003]
Ramona F. Sobhani, M.D., M.P.H.
Instructor in Medicine [2006]
Patrick Ryan Sosnay, M.D.
Instructor in Medicine [2008]
Armando Soto, M.D.
Instructor in Plastic and Reconstructive Surgery [2002]
Paul Levi Soto, Ph.D.
Instructor in Psychiatry [2008]
Matt W. Specht, Ph.D.
Instructor in Psychiatry [2008]
Sara N. Spinner-Block, M.D.
Instructor in Pediatrics [2009]
Stanislav Spivak, M.D.
Instructor in Psychiatry [2010]
Anirudh Sridharan, M.D.
Instructor in Medicine [2006]
Howard Steiner, M.D.
Instructor in Medicine [1990]
Robert Scott Stephens, M.D.
Instructor in Medicine [2010]
R. Scott Strahlman, M.D.
Instructor in Pediatrics [1985]
Leon Strauss, M.D., Ph.D.
Instructor in Ophthalmology [1990]
David Strobel, M.D.
Instructor in Dermatology [1984]
Troy Sullivan, M.D.
Instructor in Medicine [2008]
Meenakshi Suman, M.D.
Instructor in Psychiatry [2007]
Richard M. Susel, M.D.
Instructor in Ophthalmology [2006]
Labib H. Syed, M.D., M.P.H.
Instructor in Radiology [2008] (to 07/31/2010)
Boglarka Szabo, M.D.
Instructor in Psychiatry [2004]
Myron J. Szczukowski, Jr., M.D.
Instructor in Orthopaedic Surgery [1998]
Arman Taghizadeh, M.D.
Instructor in Psychiatry [2009]

Jade Marie Tan, M.D.
Instructor in Pediatrics [2008]

Carol Fletcher Tankard, Ph.D.
Instructor in Psychiatry [2007]

Lila Tarmin, M.D.
Instructor in Medicine [2000]

Raymond Taylor, Jr., M.D.
Instructor in Medicine [2006]

Nik Tchopev, M.D.
Instructor in Pediatrics [2008], Instructor in Medicine [2008; 2009]

Jacob Tendler, M.D.
Instructor in Psychiatry [1982]

Larisa Gennadijevna Tereshchenko, M.D., Ph.D.
Instructor in Medicine [2010; 2009]

Tamara DeShawn Terry, M.D.
Instructor in Gynecology and Obstetrics [2006]

Christopher Testa, M.D.
Instructor in Radiology [2010]

S. Marc Testa, Ph.D.
Instructor in Psychiatry [2007]

Kathryn Thomas, Ph.D.
Instructor in Psychiatry [2005]

April S. Tignor, M.D.
Instructor in Medicine [2010]

Jon Charles Tilburt, M.D., M.P.H.
Instructor in Medicine [2007]

Patryce Alyson Toye, M.D.
Instructor in Medicine [1990]

Tina Pham Tran, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2008]

Alice Ho Tsai, M.D.
Instructor in Pediatrics [2006]

Jackson T. Tsai, M.D.
Instructor in Pediatrics [2006]

Salina Doris Tsai, M.D.
Instructor in Radiology [2008]

Tonya Denise Tuggle, M.D.
Instructor in Psychiatry [1998]

Elizabeth Turin, M.D.
Instructor in Psychiatry [2005]

Naser Uddin, Ph.D.
Instructor in Urology [2010]

Punit Vijay Vaidya, M.D.
Instructor in Psychiatry [2010]

Tracy D. Vannorsdall, Ph.D.
Instructor in Psychiatry [2009]

Edith Margaret Vargo, M.D.
Instructor in Medicine [1998]

Martha Luz Velez, M.D.
Instructor in Pediatrics [2000]

Farhad Vesuna, Ph.D.
Instructor in Radiology [2009]

Radhika Vij, M.D.
Instructor in Medicine [2010]

Kittane S. Vishnupriya, M.B.B.S., M.D.
Instructor in Medicine [2007]

Thomas B. Volatile, M.D.
Instructor in Orthopaedic Surgery [1998]

Stanley B. Wadsworth, M.S.
Instructor in Radiology [1975]

Barry Jay Waldman, M.D.
Instructor in Orthopaedic Surgery [1998]

Gregory L. Walker, M.D.
Instructor in Medicine [2010]

Hang Wang, Ph.D.
Instructor in Urology [2007]

Kenneth Chung-Yi Wang, M.D., Ph.D.
Instructor in Radiology [2009]

Lana Warren, M.S.
Instructor in Physical Medicine and Rehabilitation [1981]

Catherine L. Washburn, M.D.
Instructor in Medicine [2006]

Carla J. Weisman, M.D.
Instructor in Gynecology and Obstetrics [2006]

David S. Weisman, D.O.
Instructor in Medicine [2004]

Claire Marie Weitz, M.D.
Instructor in Gynecology and Obstetrics [1983]

Melvin Welinsky, M.D.
Instructor in Medicine [1989]

Walter R. Weizant, M.D.
Instructor in Medicine [1964; 1962]

Bo Wen, Ph.D.
Instructor in Medicine [2009]

Michael James West, M.D., Ph.D.
Instructor in Medicine [2008]

Mary Westergaard, M.D.
Instructor in Emergency Medicine [2008]

Jeffrey Lawrence Wexler, M.D.
Instructor in Ophthalmology [1995]

Kanthi Wickramaratine, M.D.
Instructor in Medicine [2006]

Alice L. Wilkenfeld, M.D.
Instructor in Medicine [2010] (from 11/01/2010),
Assistant in Emergency Medicine [2004] (to 10/31/2010)

Zoe Rebecca Williams, M.D.
Instructor in Ophthalmology [2009]

Donna L. Willis, M.D.
Instructor in Medicine [1991]

Anna Maria Wilms Floet, M.D.
Instructor in Pediatrics [2010]

E. Hunter Wilson, Jr., M.D.
Instructor in Medicine [1973; 1959]

Thomas Scott Wilson, M.D., Ph.D.
Instructor in Medicine [1995]

Elizabeth Caroline Winter, M.D.
Instructor in Psychiatry [2010]
John P. Witt, M.D.  
Instructor in Psychiatry [1973; 2002]

Raymond A. Wittstadt, M.D.  
Instructor in Orthopaedic Surgery [2001]

Ericka Lisle Wodka, Ph.D.  
Instructor in Psychiatry [2008]

Edward J. Wolf, M.D.  
Instructor in Medicine [1994; 1986]

Irving D. Wolfe, M.D.  
Instructor in Dermatology [1992] (to 09/01/2010)

Bruce S. Wolock, M.D.  
Instructor in Orthopaedic Surgery [1990]

Siew-Jyu Wong, M.D.  
Instructor in Pediatrics [1991]

Charlyne Wu, M.D.  
Instructor in Radiology [2010]

Dona Tsihwa Wu, M.D., Ph.D.  
Instructor in Medicine [2009]

Jean Wu, M.D.  
Instructor in Medicine [2006; 1999]

Shaoguang Wu, M.D.  
Instructor in Medicine [2003; 1997]

Xinyan Wu, Ph.D.  
Instructor in Biological Chemistry [2009]

Peter Kuo-Yen Wung, M.D.  
Instructor in Medicine [2009]

Jenel Steele Wyatt, M.D.  
Instructor in Medicine [2006]

Jingyan Xu, Ph.D.  
Instructor in Radiology [2010; 2005]

Zi Rong Xu, M.D.  
Instructor in Radiology [2010]

Dawn Yan, M.D.  
Instructor in Anesthesiology and Critical Care Medicine [2010] (to 07/31/2010)

Lisa Renee Yanek, M.P.H.  
Instructor in Medicine [2009; 2000]

Jun Yang, Ph.D.  
Instructor in Pediatrics [2006]

Zeng-Jin Yang, M.D., Ph.D.  
Instructor in Anesthesiology and Critical Care Medicine [2009]

Laurel G. Yap, M.D.  
Instructor in Pediatrics [1992]

Lonny Brett Yarmus, D.O.  
Instructor in Medicine [2010; 2009]

Nancy Younan, M.D.  
Instructor in Psychiatry [2000]

Mohammed Younus, M.D.  
Instructor in Psychiatry [2001]

Fang Yu, M.D.  
Instructor in Radiology [2010]

Albert Anthony Zachik, M.D.  
Instructor in Psychiatry [1996]

Asifa K. Zaidi, Ph.D.  
Instructor in Medicine [2009; 2008]

Sammy Zakaria, M.D., M.P.H.  
Instructor in Medicine [2008]

Xiangcan Zhan, Ph.D.  
Instructor in Neurology [2010]

Jianmin Zhang, B.M., Ph.D.  
Instructor in Neurology [2009]

Yimao Zhang, M.S.  
Instructor in Radiology [2009; 2004]

Neal B. Zimmerman, M.D.  
Instructor in Orthopaedic Surgery [1989]

Raymond H. Zollinger, M.D.  
Instructor in Medicine [2003]

Jamsheed A. Zuberi, M.D., M.P.H.  
Instructor in Surgery [2008]

**INSTRUCTORS EMERITI**

John A.C. Colston, Jr., M.D.  
Instructor Emeritus in Urology [1994; 1954]

Myrna T. Estruch, M.D.  
Instructor Emerita in Medicine [1998; 1971]

D.C. Wharton Finney, M.D.  
Instructor Emeritus in Surgery [1990; 1960]

Norman R. Freeman, Jr., M.D.  
Instructor Emeritus in Medicine [1989; 1950]

Donald I. Gallagher, M.D.  
Instructor Emeritus in Gynecology and Obstetrics [1989]

Norton I. Gettes, M.D.  
Instructor Emeritus in Orthopaedic Surgery [1962]

James M. Hitzrot, II, M.D.  
Instructor Emeritus in Orthopaedic Surgery [1992; 1962]

Walter T. Kees, M.D.  
Instructor Emeritus in Medicine [1974; 1951]

Clayton N. Norton, M.D.  
Instructor Emeritus in Pediatrics [1989; 1957]

Proinnsias O’Croinin, M.B.B.Ch.  
Instructor Emeritus in Pediatrics [2000; 1974]

Michael D. Potash, M.D.  
Instructor Emeritus in Psychiatry [1962]

John B. Saratsiotis, M.D.  
Instructor Emeritus in Pediatrics [1981; 1972]

Jerome Sherman, M.D.  
Instructor Emeritus in Medicine [1989; 1959]

Eli Anthony Timoll, M.D.  
Instructor Emeritus in Gynecology and Obstetrics [2006; 1977]

H. Thomas Unger, M.D.  
Instructor Emeritus in Psychiatry [1997; 1966]

**ASSISTANTS**

Jesse Affonso, M.D.  
Assistant in Orthopaedic Surgery [2010] (from 08/01/2010)

Donald W. Alves, M.D.  
Assistant in Emergency Medicine [2007]

Denis Godwin Antoine, II, M.D.  
Assistant in Psychiatry [2010]
Agustus Alexander Beck, M.D.
Assistant in Medicine [2010] (to 07/24/2010)

Charles Andrew Bergman, M.D.
Assistant in Emergency Medicine [2004]

Deborah G. Bervinchak, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [1998]

Justin Avery Bishop, M.D.
Assistant in Pathology [2010]

Joel Leon Borgen, M.D.
Assistant in Pathology [2010]

Kristina Rachelle Borgen, M.D.
Assistant in Pathology [2010]

Stephen Bowditch, M.S.
Assistant in Otolaryngology-Head and Neck Surgery [1999]

Jill D. Brensinger Trimbath, M.S.
Assistant in Medicine [2002]

Kristen Ann Burns, M.S.
Assistant in Urology [2010] (from 09/01/2010)

Emily Streyer Carlisle, M.D.
Assistant in Emergency Medicine [2010] (from 08/01/2010)

Courtney L. Carver, Au.D.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2004]

Kristin Marie Ceh, M.E.
Assistant in Otolaryngology-Head and Neck Surgery [1999]

Carroll F. Celentano, M.S.N.
Assistant in Gynecology and Obstetrics [1992; 1991]

Firas M. Chamas, M.D., Ph.D.
Assistant in Orthopaedic Surgery [2010] (from 08/01/2010)

Alex Gee Mun Chang, M.D.
Assistant in Pathology [2010]

Jill E. Chinnici, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [1998]

Alan B. Cohen, M.D.
Assistant in Medicine [1967]

Toby Charles Cornish, M.D., Ph.D.
Assistant in Pathology [2010]

James E. Corwin, M.D.
Assistant in Emergency Medicine [2006]

Tyler C. DeLange, M.D.
Assistant in Emergency Medicine [2009]

Niccolo Deno Della Penna, M.D.
Assistant in Psychiatry [2007]

Aram Demirjian, M.D.
Assistant in Surgery [2009]

Mark P. Diamond, M.D.
Assistant in Medicine [1979]

Roni E. Dinkes, M.S.
Assistant in Otolaryngology-Head and Neck Surgery [2002]

Hamid Ehsani, M.D.
Assistant in Emergency Medicine [2007]

Caren Euster, M.D., M.P.H.
Assistant in Emergency Medicine [2006], Assistant in Medicine [2011] (from 01/01/2011)

Isadore A. Feldman, M.D.
Assistant in Emergency Medicine [2006]

E. Robert Feroli, Jr., PharM.D.
Assistant in Medicine [1980]

Krista J. Follmer, Au.D.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2008]

Joel Mark Fradin, M.D.
Assistant in Radiology [1998; 1993]

Theresa J. Gan, M.D.
Assistant in Ophthalmology [2010]

Hillary Ganek, M.A.
Assistant in Otolaryngology-Head and Neck Surgery [2009]

Jaleh Sue Garman, M.S.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2002]

Rashna Ginwalla, M.D.
Assistant in Cardiac Surgery [2010]

Helene S. Goldberg, M.P.H.
Assistant in Psychiatry [1993]

Arusha Gupta, M.D.
Assistant in Ophthalmology [2010] (from 07/06/2010)

Mamta Gupta, M.D.
Assistant in Pathology [2010]

Janice E. Hedblom, M.S.W.
Assistant in Psychiatry [1981; 2004]

Alexander Tell Hillel, M.D.
Assistant in Otolaryngology-Head and Neck Surgery [2011] (from 01/01/2011)

Karen Marie Hladik, M.D.
Assistant in Emergency Medicine [2001]

Bradley S. Hochstetler, M.D.
Assistant in Ophthalmology [2010] (from 07/06/2010)

Charles F. Hoesch, M.D.
Assistant in Orthopaedic Surgery [2009] (to 07/31/2010)

John A. Johansen, M.D.
Assistant in Orthopaedic Surgery [2009] (to 07/31/2010)
Keegan Johnson, M.D.
Assistant in Ophthalmology [2010] (from 07/06/2010)

Muge R. Kesen, M.D.
Assistant in Ophthalmology [2009]

George Joseph Koenig, Jr., D.O.
Assistant in Surgery [2009] (to 07/15/2010)

Gail Glotfety Kramer, M.D.
Assistant in Emergency Medicine [2006]

Jacklynn R. Krick, M.S.
Assistant in Pediatrics [1980]

Angela Teresa Lataille, Au.D.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2004]

George D. Lawrence, M.D.
Assistant in Medicine [1981]

Meredith A. Lazar-Antman, M.D.
Assistant in Orthopaedic Surgery [2010] (from 08/01/2010)

Hamilton S. Le, M.D.
Assistant in Surgery [2010]

Tao Tuan Le, M.D.
Assistant in Medicine [2005]

Henry Alexander Leder, M.D.
Assistant in Ophthalmology [2010; 2006]

David James Leu, M.D.
Assistant in Orthopaedic Surgery [2009] (to 07/31/2010)

Fanghong Li, M.D.
Assistant in Pathology [2010]

Yang Li, M.D., Ph.D.
Assistant in Ophthalmology [2010]

Jayme E. Locke, M.D.
Assistant in Surgery [2010]

Emily Cely Maambo, M.D.
Assistant in Pathology [2010]

Aisha Ann Macedo, M.D.
Assistant in Ophthalmology [2009] (to 07/05/2010)

Ross B.L. Macintyre, M.D.
Assistant in Orthopaedic Surgery [2010] (from 08/01/2010)

Alexander MacKenzie, Ph.D.
Assistant in Medical Psychology in the Department of Psychiatry [1985; 1976]

Nicholas Mahoney, M.D.
Assistant in Ophthalmology [2010]

John P. Malloy, IV, D.O.
Assistant in Orthopaedic Surgery [2010] (from 08/01/2010)

Andrea Marlowe, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2006]

Dawn L. Marsiglia, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2010] (from 08/01/2010)

Michael D. Mauro, D.O.
Assistant in Orthopaedic Surgery [2009] (to 07/31/2010)

Gregory Stuart McLoughlin, M.D.
Assistant in Orthopaedic Surgery [2009] (to 07/31/2010)

Mariah P. Menichino, Au.D.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2006]

David I. Miller, M.D.
Assistant in Medicine [1962]

Ala Moshiri, M.D., Ph.D.
Assistant in Ophthalmology [2010]

Vijayachandra S. Nair, M.D.
Assistant in Medicine [1985]

Brian Pinto, Pharm.D.
Assistant in Medicine [2007]

Marshall Frank Prentice, D.D.
Assistant in Medicine [1993]

Maximilian Psolka, M.D.
Assistant in Ophthalmology [2010] (from 07/06/2010)

Shannon Bandy Putman, M.D.
Assistant in Emergency Medicine [2005]

Lynn Reeni Rider, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2008]

Norman Robertson, M.D.
Assistant in Psychiatry [2007]

Linda Rogers, B.S.
Assistant in Psychiatry [2000]

Arthur Louis Rudo, M.D.
Assistant in Medicine [1980]

Amy Page Rushing, M.D.
Assistant in Surgery [2010]

Colleen E. Ryan-Bane, M.S.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2000]

Saeed Salehinia, M.D.
Assistant in Psychiatry [2007]

Patricia Ann Savadel, M.D.
Assistant in Medicine [1984]

Nicholas P. Schweizer, M.S.
Assistant in Psychiatry [2006] (to 10/24/2010)

Nathan A. Scott, III, M.D.
Assistant in Medicine [1987]

Kenneth M. Shermock, Pharm.D.
Assistant in Medicine [2009]

Christopher Eric Simpkins, M.D., M.P.H.
Assistant in Surgery [2010]

Dyanne Simpson, D.O.
Assistant in Psychiatry [2007]

Nathan R. Sklar, M.D.
Assistant in Radiology [1998; 1993]

Ian Michael Smith, M.D.
Assistant in Otolaryngology-Head and Neck Surgery [2011] (from 01/01/2011)

Patricia Smouse, M.S.N.
Assistant in Pediatrics [1989]
Richard G. S. Spencer, M.D., Ph.D.
Assistant in Emergency Medicine [2010]
Divya Srikumaran, M.D.
Assistant in Ophthalmology [2009] (to 07/16/2010)
Rana Taji, O.D.
Melvin B. Tuggle, II, D.D.
Assistant in Medicine [1993]
Kevin Michael Tymitz, M.D.
Assistant in Surgery [2010]
Herbert W. Watson, Jr., M.Div
Assistant in Medicine [1994]
Derek Stuart Welsbie, M.D., Ph.D.
Assistant in Ophthalmology [2010]
Adam Scott Wenick, M.D., Ph.D.
Assistant in Ophthalmology [2010]
Alicia D. White, M.S.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2003]
Jennifer Dobson Yeagle, M.E.
Assistant in Otolaryngology-Head and Neck Surgery [1999]

LECTURERS
Kulwant S. Ahluwalia, M.D.
Lecturer in Pediatrics [2001; 1976]
Jill Irene Allbritton, M.D.
Lecturer in Pathology [2010]
David C. Allison, M.D., Ph.D.
Lecturer in Surgery [1992; 1986]
Robert John Ancona, M.D.
Lecturer in Pediatrics [2007; 1985]
Arnold E. Andersen, M.D.
Lecturer in Psychiatry [1991; 1976]
James R. Banks, M.D.
Lecturer in Pediatrics [2007; 1984]
John E. Bennett, M.D.
Lecturer in Medicine [1980; 1977]
John A. Boscia, M.D.
Lecturer in Pediatrics [2007; 1983]
Steven E. Caplan, M.D.
Lecturer in Pediatrics [2007; 1979]
Mark Emory Cartwright, D.V.M., Ph.D.
Lecturer in Molecular and Comparative Pathobiology [2010]
Tracey Ann Clark, M.D.
Lecturer in Pediatrics [2006]
Michael R. Cranfield, D.V.M.
Lecturer in Molecular and Comparative Pathobiology [1982]
Vittorio Daniore, M.D.
Lecturer in Gynecology and Obstetrics [2003]
Joseph M. Dieter, Jr.
Lecturer in Art as Applied to Medicine [1980]
Barbara A. Duffy, M.D.
Lecturer in Pediatrics [2007; 1993]
Anthony G. Durmowicz, M.D.
Lecturer in Pediatrics [2007]
Thomas R. Gadacz, M.D.
Lecturer in Surgery [1991; 1975]
Elizabeth M. Galik, M.S.N.
Lecturer in Psychiatry [1999]
Grace K. Gelletly, M.D.
Lecturer in Pediatrics [2007; 1987]
Dawn Goodman, D.V.M.
Lecturer in Molecular and Comparative Pathobiology [1978]
Florence P. Haseltine, M.D., Ph.D.
Lecturer in Gynecology and Obstetrics [2001]
Dennis L. Headings, M.D.
Lecturer in Pediatrics [2001; 1988]
Paul S. Hees, Ph.D.
Lecturer in Medicine [2005; 1994]
Stephen A. Holve, M.D.
Lecturer in Pediatrics [1999; 1991]
Linda Hovanec, M.Ed.
Lecturer in Psychiatry [1999]
Diana C. Hu, M.D.
Lecturer in Pediatrics [1999; 1991]
Walter T. Hughes, Jr., M.D.
Lecturer in Pediatrics [1981; 1977]
Jeffrey Stephen Iding, M.D.
Lecturer in Pathology [2008; 2007]
A. Everette James, Jr., J.D., M.D.
Lecturer in Radiology [1994]
Mohammed Khalid, M.D.
Lecturer in Medicine [2005]
Catherine E. Kiefe, B.S.
Lecturer in Art as Applied to Medicine [2004]
Michael E. Langbaum, M.D.
Lecturer in Pediatrics [2007; 1992]
Moira P. Larsen, M.D.
Lecturer in Pathology [1991]
James Laron Locke, M.D.
Lecturer in Pathology [1996]
Mary J. Marcin, M.D.
Lecturer in Pediatrics [2007; 1977]
Diana Weedman Molavi, M.D., Ph.D.
Lecturer in Pathology [2007; 2006]
John D. Newman, Ph.D.
Visiting Lecturer in Pediatrics [1988]
Arnold L. Oronsky, Ph.D.
Lecturer in Medicine [1982]
Byron C. Pevehouse, M.D.
Visiting Lecturer in Neurological Surgery [1991]
Henry A. Pitt, M.D.
Lecturer in Surgery [1998; 1985]
Carmel Roques, M.A.
Lecturer in Psychiatry [1999]
Steven A. Rosenberg, M.D., Ph.D.
Lecturer in Surgery [1977]
Christine A. Ruggere, M.S.
Lecturer in History of Medicine [1997]

David Andrew Salikof, M.D.
Lecturer in Pediatrics [2006] (to 09/30/2010)

Arturo Q. Santos, M.D.
Lecturer in Pediatrics [2001; 1988]

Steven S. Sharfstein, M.D.
Lecturer in Psychiatry [1987]

Melissa Marks Sparrow, M.D.
Lecturer in Pediatrics [2006]

Willard E. Standiford, M.D.
Lecturer in Pediatrics [2007]

Michael D. Walker, M.D.
Visiting Lecturer in Neurological Surgery [1986; 1974]

Joan Whitehouse-Gibble, M.D.
Lecturer in Pathology [1992; 1981]

David Yager, M.F.A.
Lecturer in Pediatrics [2006]

Julie Yeh, M.D.
Lecturer in Pediatrics [2006]

Jennifer M. Zanni, M.S.
Lecturer in Physical Medicine and Rehabilitation [2009]

Mohsen Ziai, M.D.
Lecturer in Pediatrics [1969; 1965]

Michael J. Zinner, M.D.
Lecturer in Surgery [1992; 1985]

LECTURERS EMERITI

Gerald D. Klee, M.D.
Lecturer Emeritus in Psychiatry [1976]

George D. Zuidema, M.D.
Lecturer Emeritus in Surgery [1999; 1964]

RESEARCH ASSOCIATES

Neeta Adhikari, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2010] (from 12/01/2010)

Yohannes Afework, M.Sc.
Research Associate in Radiology [2002]

Rachana Agarwal, Ph.D.
Research Associate in Medicine [2006]

Susan M. Aja, Ph.D.
Research Associate in Neuroscience [2010]

Emilia Albesiano, Ph.D.
Research Associate in Oncology [2008]

Jonathan Kimball Alder, Ph.D.
Research Associate in Oncology [2010]

Ravi Kumar Anchoori, Ph.D.
Research Associate in Oncology [2008]

Syed Shaida Ahmad Andrabi, Ph.D.
Research Associate in Neurology [2010] (from 09/01/2010)

Eva Andres-Mateos, Ph.D.
Research Associate in Pediatrics [2010] (from 11/01/2010)

Daniel John Angelini, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2009]

Todd D. Armstrong, Ph.D.
Research Associate in Oncology [2003]

Stacey Marie Arnold, Ph.D.
Research Associate in Medicine [2009]

Jennifer E. Axilbund, M.S.
Research Associate in Oncology [2005]

Renyuan Bai, M.B.B.S.
Research Associate in Neurological Surgery [2005]

Gilson Baia, Ph.D.
Research Associate in Neurological Surgery [2009]

Marie Bailey-Kloch, M.S.W.
Research Associate in Medicine [2008]

Rosanna P. Baker, M.Sc.
Research Associate in Molecular Biology and Genetics [2006]

Rahul P. Bakshi, Ph.D.
Research Associate in Medicine [2005]

Veera Venkata Ratnam Bandaru, Ph.D.
Research Associate in Neurology [2008]

Grace Link Barnes, M.P.H.
Research Associate in Medicine [2006]

Roxanne K. Barrow, B.S.
Research Associate in Neuroscience [1988]

Marian L. Batta-Turner, M.S.N.
Research Associate in Medicine [2001]

Robert McFaddin Beaty, Ph.D.
Research Associate in Oncology [2003; 2007]

Visar Belegu, Ph.D.
Research Associate in Neurology [2010]

Jason J. Benkoski, Ph.D.
Research Associate in Biomedical Engineering [2010]

Cynthia A. Berlinicke, Ph.D.
Research Associate in Ophthalmology [2005]

Lena Bezman, M.D., M.P.H.
Research Associate in Neurology [2003]

Anil Kumar Bhunia, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2008]

Imran Ahmed Bhatti, M.B.B.S., Ph.D.
Research Associate in Ophthalmology [2007]

Genila Mamarugo Bibat, M.D.
Research Associate in Pediatrics [2001]

Barbara Anne Bledzyczki, M.S.N.
Research Associate in Oncology [2001]

Joan Glick Bieler, Ph.D.
Research Associate in Pathology [1995]

Subrata Biswas, Ph.D.
Research Associate in Medicine [2009]

Susanne Bonekamp, D.V.M., Ph.D.
Research Associate in Radiology [2006]
Marta Bosch-Marce, Ph.D.
Research Associate in Neurology [2007] (to 09/30/2010)

Mahendran Botlagunta, Ph.D.
Research Associate in Neurology [2010] (from 10/01/2010)

Lelita Talamantez Braiterman, Ph.D.
Research Associate in Cell Biology [1998]

Mary Elizabeth Brummet, M.S.
Research Associate in Medicine [2003]

Frederick M. Burkle, Jr., M.D., M.P.H.
Research Associate in Emergency Medicine [2002; 2000]

Dominic T. Cheng, Ph.D.
Research Associate in Neurology [2010] (from 10/01/2010)

Jie Cheng, Ph.D.
Research Associate in Physiology [2002]

Fumin Chang, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2008]

Tsung-Cheng Chang, Ph.D.
Research Associate in Pediatrics in Genetic Medicine [2011] (from 01/01/2011)

Wei-Zhong Chang, Ph.D.
Research Associate in Orthopaedic Surgery [2010] (from 10/01/2010)

Chris Cheadle, Ph.D.
Research Associate in Medicine [2005]

Daming Chen, Ph.D.
Research Associate in Oncology [2010]

Tian-E Chen, M.D., Ph.D.
Research Associate in Medicine [2010]

Weiran Chen, M.D.
Research Associate in Neurology [2003]

Ying Chen, Ph.D.
Research Associate in Radiology [2008]

Sonia del Carmen Cortassa, Ph.D.
Research Associate in Medicine [2004; 2001]

Jing Jie Cheng, Ph.D.
Research Associate in Radiology [2010]

Joseph M. Collet, B.S.
Research Associate in Oncology [1993]

Mary Jo Fackler, Ph.D.
Research Associate in Medicine [2002]
Jed W. Fahey, M.S.
Research Associate in Pharmacology and Molecular Sciences [1993]

Jinshui Fan, M.D., Ph.D.
Research Associate in Medicine [2010; 2007]

Andrea V. Faria, M.D., Ph.D.
Research Associate in Radiology [2009]

Marcella Ferlito, Ph.D.
Research Associate in Medicine [2006]

Iwona Fijalkowska, Ph.D.
Research Associate in Medicine [2008]

Scott Finley, M.D., M.P.H.
Research Associate in Health Sciences Informatics [2004; 2003]

Raquel Formica, M.D.
Research Associate in Ophthalmology [2006]

Darren Brian Foster, Ph.D.
Research Associate in Medicine [2008]

Augusto A. Franco-Mora, Ph.D.
Research Associate in Medicine [2008; 2001]

Diane L. Frankenfield, D.P.H.
Research Associate in Pediatrics [2002]

Jodie G. Franklin, B.S.
Research Associate in Biological Chemistry [1990]

Timothy P. Friel, M.S.
Research Associate in Ophthalmology [1997]

Dexue Fu, M.D., Ph.D.
Research Associate in Oncology [2006]

Jie Fu, Ph.D.
Research Associate in Ophthalmology [2010]

Qin Fu, Ph.D.
Research Associate in Medicine [2005]

Zongming Fu, Ph.D.
Research Associate in Pediatrics [2008]

Edward J. Fuchs, M.B.A.
Research Associate in Medicine [2004]

Lucio Gama, M.Sc.
Research Associate in Molecular and Comparative Pathobiology [1998]

Ping Gao, Ph.D.
Research Associate in Medicine [2007]

Yongjun Gao, Ph.D.
Research Associate in Radiology [2010]

Melissa Garland, M.S.
Research Associate in Radiology [1998]

Sommer Elizabeth Gentry, Ph.D.
Research Associate in Surgery [2005]

Duane R. Geruschat, Ph.D.
Research Associate in Ophthalmology [1988]

Sharon Rachael Ghazarian, M.D.
Research Associate in Pediatrics [2010]

Joseph S. Gillen, B.S.
Research Associate in Radiology [1997]

Anne E. Gocke, Ph.D.
Research Associate in Neurology [2009]

Amy Lynne Goodrich, M.S.N.
Research Associate in Oncology [2005]

Celine Rani Gounder, M.D.
Research Associate in Medicine [2010]

David Green, M.P.H.
Research Associate in Ophthalmology [1999]

Joel Daniel Greenspan, Ph.D.
Research Associate in Neurological Surgery [2000]

Lydia June Gregg, M.A.
Research Associate in Radiology [2007]

Niquiche M. Guilty, Ph.D.
Research Associate in Urology [2010] (from 09/01/2010)

Sergio J. Gutierrez, M.D.
Research Associate in Neurology [2003]

Laura Ivone Gutierrez-Alamillo, M.D.
Research Associate in Medicine [2007]

Jane L. Halpern, D.P.H., M.D., M.P.H.
Research Associate in Medicine [1993]

Maged Mohamed Harraz, Ph.D.
Research Associate in Neurology [2009]

Sachidanand Arvind Hebbar, Ph.D.
Research Associate in Pathology [2010] (from 10/01/2010)

Lynda D. Hester, A.A.
Research Associate in Neuroscience [1985]

Hakim Hiel, Ph.D.
Research Associate in Otolaryngology-Head and Neck Surgery [2001]

Takahiro Higuchi, M.D., Ph.D.
Research Associate in Radiology [2010] (on leave of absence from 07/13/2010-08/10/2010)

Joelle Anne Hillion, Ph.D.
Research Associate in Medicine [2009]

John Hilton, D.Phil.
Research Associate in Radiology [1999]

Toyoko Hiroi, D.V.M., Ph.D.
Research Associate in Medicine [2009]

Paul N. Hoffman, M.D., Ph.D.
Research Associate in Ophthalmology [1998; 1981]

Craig M. Hooker, M.P.H.
Research Associate in Oncology [2002]

Edward Horowitz, B.A.
Research Associate in Medicine [1996]

Jiahua Hu, Ph.D.
Research Associate in Neuroscience [2009]

Lina Hu, M.D., Ph.D.
Research Associate in Neurology [2003]

Hao Huang, Ph.D.
Research Associate in Radiology [2006]

Hu Huang, Ph.D.
Research Associate in Oncology [2009]

Lanqing Huang, M.D., Ph.D.
Research Associate in Ophthalmology [2009]

Yiping Huang, M.D., Ph.D.
Research Associate in Dermatology [2008]
Sherry Ann Hudson, MSB
Research Associate in Medicine [1997]

Travonia Hughes, Ph.D.
Research Associate in Medicine [2010] (from 12/01/2010)

Thanh V. Huynh, Ph.D.
Research Associate in Molecular Biology and Genetics [1992]

You Sang Hwang, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2009]

Hiroshi Ike, Dr. Sc.
Research Associate in Cell Biology [2010] (from 10/01/2010)

Koko Ishizuka, M.D., Ph.D.
Research Associate in Psychiatry [2009]

Jun Seop Jeong, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2009]

Xiaofeng Jia, M.D., Ph.D.
Research Associate in Biomedical Engineering [2007], Research Associate in Physical Medicine and Rehabilitation [2009]

Hangyi Jiang, Ph.D.
Research Associate in Radiology [1999]

Zhe Jin, M.D., Ph.D.
Research Associate in Medicine [2002] (to 08/15/2010)

Craig Jones, Ph.D.
Research Associate in Radiology [2009]

Melina Viola Jones, Ph.D.
Research Associate in Neurology [2006]

Richard Owen Jones, Ph.D.
Research Associate in Neurology [1998]

Laura Marie Kallay, Ph.D.

Yoichiro Kamimura, Ph.D.
Research Associate in Cell Biology [2008] (to 01/26/2011)

Shin Hyeok Kang, Ph.D.
Research Associate in Neuroscience [2010]

Balasubramanyam Karanam, Ph.D.
Research Associate in Pathology [2010]

Parag Perry Karmarkar, M.S.
Research Associate in Radiology [2002; 1998]

Varalakshmi Katuri, Ph.D.
Research Associate in Oncology [2009]

Mohammad Asil Khan, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2010] (from 11/01/2010)

Yasin A. Khan, M.D.
Research Associate in Ophthalmology [2010] (from 09/01/2010)

Zubair Khan, M.B.B.S., M.D., M.P.H.
Research Associate in Otolaryngology-Head and Neck Surgery [2007]

George Robert Kim, M.D.
Research Associate in Pediatrics [2006], Research Associate in Health Sciences Informatics [2006]

Seyun Kim, Ph.D.
Research Associate in Neuroscience [2010]

Bonnie S. King, M.H.S.
Research Associate in Pathology [2009]

Jason Paul Kirkness, Ph.D.
Research Associate in Medicine [2009]

Carol Kobrin, Ph.D.
Research Associate in Oncology [2004]

Irina A. Kolosova, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2008]

Hiroyuki Konishi, M.D., Ph.D.
Research Associate in Oncology [2007]

Anna Korzeniewska-Janiszewska, Ph.D.
Research Associate in Neurology [2009]

Ferdynand J. Kos, Ph.D.
Research Associate in Oncology [2004]

Lisa Elinor Kratz, Ph.D.
Research Associate in Pediatrics [1996]

Balaji Krishnamachary, Ph.D.
Research Associate in Radiology [2006]

Chitra Krishnan, M.S.
Research Associate in Neurology [2005]

Anil Kumar, M.B.B.S.
Research Associate in Radiology [2007]

Hannah Kupfer, M.Sc.
Research Associate in Cell Biology [2004]

Herman E. A. Kwansa, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2003]

Bachchu Lal, Ph.D.
Research Associate in Neurology [2003]

Jessica K.Starnes Law, M.D., M.P.H.
Research Associate in Pediatrics [2006]

Ann Marie Lawler, Ph.D.
Research Associate in Physiology [2004; 2003]

Jeffrey Pettit Leal, B.A.
Research Associate in Radiology [1998; 2007]

Jong Hee Lee, Ph.D.
Research Associate in Medicine [2011] (from 01/01/2011)

Myoung Hwa Lee, Ph.D.
Research Associate in Neurology [2010]
Mohamed Lehar, M.D.  
Research Associate in Otolaryngology-Head and Neck Surgery [2000]  
M. Victor Lemas, Ph.D.  
Research Associate in Oncology [1996]  
Angelo Carmen Lepore, Ph.D.  
Research Associate in Neurology [2010] (to 01/31/2011)  
Gang Li, Ph.D.  
Research Associate in Medicine [2009]  
Guanhan Li, M.D., Ph.D.  
Research Associate in Neurology [2009]  
Huifen Li, Ph.D.  
Research Associate in Medicine [2010]  
Li Li, M.D., Ph.D.  
Research Associate in Oncology [2007]  
Xianghong Li, Ph.D.  
Research Associate in Molecular Biology and Genetics [2008] (to 12/05/2010)  
Xin Li, M.S.  
Research Associate in Radiology [2009]  
Zhao Bo Li, M.D., Ph.D.  
Research Associate in Neurology [2005; 2006]  
Zhi Li, Ph.D.  
Research Associate in Neuroscience [2008]  
Lihua Liang, Ph.D.  
Research Associate in Neurology [2010]  
Yideng Liang, M.D., Ph.D.  
Research Associate in Neurology [2009]  
Gangliang Liao, Ph.D.  
Research Associate in Oncology [2004]  
Zhaohao Liao, M.D.  
Research Associate in Molecular and Comparative Pathobiology [1998; 2005]  
Chia-Ying Liu, Ph.D.  
Research Associate in Radiology [2009]  
Hua Liu, Ph.D.  
Research Associate in Pharmacology and Molecular Sciences [2006]  
Jianyong Liu, M.D., Ph.D.  
Research Associate in Oncology [2007]  
Lin Liu, M.D., Ph.D.  
Research Associate in Medicine [2010] (from 11/01/2010)  
Lixin Liu, Ph.D.  
Research Associate in Surgery [2009]  
Xiaoguang Liu, M.D., Ph.D.  
Research Associate in Anesthesiology and Critical Care Medicine [2005]  
Ye V. Liu, Ph.D.  
Research Associate in Medicine [2007]  
Pablo Hector Horacio Lopez, Ph.D.  
Research Associate in Pharmacology and Molecular Sciences [2009]  
Lili Lu, Ph.D.  
Research Associate in Ophthalmology [2003]  
Wenju Lu, M.D., Ph.D.  
Research Associate in Medicine [2008]  
Shichun Lun, D.V.M., Ph.D.  
Research Associate in Medicine [2010] (from 08/12/2010)  
Dong-Gen Luo, Ph.D.  
Research Associate in Neuroscience [2009]  
David Maag, Jr., Ph.D.  
Research Associate in Neuroscience [2010] (to 08/31/2010)  
Antonio Jose Machado Segundo, M.D.  
Research Associate in Radiology [2008]  
Vasiliki Machairaki, Ph.D.  
Research Associate in Pathology [2010] (from 11/15/2010)  
Farideh Majidi, M.S.  
Research Associate in Oncology [1995]  
Kenji Mandai, M.D., Ph.D.  
Research Associate in Neuroscience [2009]  
Allan B. Massie, M.H.S.  
Research Associate in Surgery [2010] (from 11/01/2010)  
William Burke Mathews, Ph.D.  
Research Associate in Radiology [1997]  
Amy Mahoney Matteini, Ph.D.  
Research Associate in Medicine [2010] (from 09/07/2010)  
Vidyavati Mave, M.D., M.P.H.  
Research Associate in Medicine [2010]  
Mary A. McAllister, M.A.  
Research Associate in Radiology [2004]  
Jeffrey C. McCagh, Pharm.D.  
Research Associate in Psychiatry [2003]  
Nancy McCall, M.L.A.  
Research Associate in History of Medicine [1982]  
Deborah A. McEllan, Ph.D.  
Research Associate in Health Sciences Informatics [1994] (to 07/31/2010), Research Associate in Pharmacology and Molecular Sciences [1986] (to 07/31/2010)  
Owen B. McManus, Ph.D.  
Research Associate in Neuroscience [2010]  
Susan Medghalchi, Ph.D.  
Research Associate in Neuroscience [2010]  
Sonya Nell Meeker, B.S.  
Research Associate in Medicine [1997]  
Pamela Bernadette Meluh, Ph.D.  
Research Associate in Molecular Biology and Genetics [2005]  
David J. Meyers, Ph.D.  
Research Associate in Pharmacology and Molecular Sciences [2005]  
Ruifa Mi, M.D., Ph.D.  
Research Associate in Neurology [2006]  
Helai Mohammad, Ph.D.  
Research Associate in Oncology [2011] (from 01/01/2011)  
Aigul K. Moldobaeva, M.D., Ph.D.  
Research Associate in Medicine [1999]
Noriko Mori, M.S.  
Research Associate in Radiology [2005]

Ann S. Morrison, Ph.D.  
Research Associate in Psychiatry [2005] (to 01/04/2011)

Ann B. Moser, B.A.  
Research Associate in Neurology [1989; 1981]

Mahnaz Motevalli, M.S.  
Research Associate in Pathology [2008]

Taryn F. Moy, M.S.  
Research Associate in Medicine [1995]

Tracy R. Murray-Stewart, M.A.  
Research Associate in Oncology [2009]

Rakhilya A. Murtazina, Ph.D.  
Research Associate in Medicine [2009]

Menechem Muz Zviman, Ph.D.  
Research Associate in Medicine [2005]

Mohammad Naqibuddin, M.B.B.S., M.P.H.  
Research Associate in Medicine [2006]

Gueno G. Nedeltchev, D.V.M.  
Research Associate in Medicine [2006] (to 11/30/2010)

Suzanne Amato Nesbit, Pharm.D.  
Research Associate in Oncology [2005]

Qiang Ni, M.S.  
Research Associate in Pharmacology and Molecular Sciences [2006]

Olga V. Nikolskaia, M.D.  
Research Associate in Pathology [2010]

Kimberly Ann Noonan, M.P.H.  
Research Associate in Oncology [2008]

Heather Maureen O’Hagan, Ph.D.  
Research Associate in Oncology [2011] (from 01/01/2011)

Alexandru Vasile Olaru, M.D.  
Research Associate in Medicine [2009]

Darin B. Ostrander, Ph.D.  
Research Associate in Medicine [2008]

Baohan Pan, Ph.D.  
Research Associate in Neurology [2004; 2007]

Niranjan Pandey, Ph.D.  
Research Associate in Biomedical Engineering [2009]

Jong Myun Park, Ph.D.  
Research Associate in Oncology [2010]

Joo Min Park, Ph.D.  
Research Associate in Neuroscience [2010]

Lisan L. Parker, Ph.D.  
Research Associate in Medicine [2010] (from 08/23/2010)

Thomas L. Parks, M.S.  
Research Associate in Medicine [2007]

Nathan M. Parmer, Psy.D.  
Research Associate in Physical Medicine and Rehabilitation [2010] (from 09/01/2010)

Teresa Lynn Parsons, Ph.D.  
Research Associate in Medicine [2005]

Martin Paukert, M.D.  
Research Associate in Neuroscience [2010] (from 07/15/2010)

Bindu Diana Paul, Ph.D.  
Research Associate in Neuroscience [2010]

Mary Ellen Pease, M.S.  
Research Associate in Ophthalmology [2007]

Zhengtong Pei, M.D.  
Research Associate in Neurology [2005]

Shiwen Peng, Ph.D.  
Research Associate in Pathology [2003]

Nichole Persing, M.P.H.  
Research Associate in Pediatrics [2009]

Doru Stefanita Petrisor, Ph.D.  
Research Associate in Urology [2008]

Paul A. Pham, Pharm.D.  
Research Associate in Medicine [1998]

James Philbin, Ph.D.  
Research Associate in Radiology [2005], Joint Appointment in Health Sciences Informatics [2010]

Klaus Bernd Piontek, Ph.D.  
Research Associate in Oncology [1999; 2009]

Mehdi Pirooznia, Ph.D.  
Research Associate in Psychiatry [2010]

Olga Pletnikova, M.D.  
Research Associate in Pathology [2005]

James J. Potter, B.S.  
Research Associate in Medicine [1995; 1988]

Michele Pucak, Ph.D.  
Research Associate in Neuroscience [2010] (from 12/01/2010)

Umair Qazi, M.D., M.P.H.  
Research Associate in Surgery [2008]

Di Qian, M.S.  
Research Associate in Radiology [2004]

Ye Qiao, Ph.D.  
Research Associate in Radiology [2010] (from 12/09/2010)

Lu Qin, B.S.  
Research Associate in Oncology [2002]

Qin Qin, Ph.D.  
Research Associate in Radiology [2009]

Tamara Ratovitski, M.S.  
Research Associate in Psychiatry [2004]

Amir Rattner, Ph.D.  
Research Associate in Molecular Biology and Genetics [2000]

Hayden T. Ravert, Ph.D.  
Research Associate in Radiology [1993]

Otgonchimeg Rentsendorj, Ph.D.  
Research Associate in Medicine [2009]

Sheikh Amer Riazuddin, Ph.D.  
Research Associate in Ophthalmology [2009]

Laura E. Rocco, M.S.  
Research Associate in Medicine [1992]

Olivier Gaston Rousset, Ph.D.  
Research Associate in Radiology [2004]
Fei Ru, M.D., Ph.D.
Research Associate in Medicine [2008]

Beulah Perdue Sabundayo, Pharm.D., M.P.H.
Research Associate in Medicine [2002]

Gordon R. Sandford, Sc.D.
Research Associate in Oncology [2002]

Yana Sandlers, Ph.D.
Research Associate in Pediatrics [2010]

Kakali Sarkar, Ph.D.
Research Associate in Medicine [2006]

Rafiquel I. Sarker, Ph.D.
Research Associate in Medicine [2004]

Masayuki Sasaki, M.D., Ph.D.
Research Associate in Neurology [2001]

James J. Scheulen, M.B.A.
Research Associate in Emergency Medicine [2000]

Eric B. Schneider, Ph.D.
Research Associate in Surgery [2009]

Barbara W. Schweizer, B.S.
Research Associate in Psychiatry [2004]

Jane Ruble Scocca, Ph.D.
Research Associate in Medicine [2001]

Balakrishnan Selvakumar, Ph.D.
Research Associate in Neuroscience [2010]

Nilkantha Sen, Ph.D.
Research Associate in Neuroscience [2010]

Emily Graves Severance, Ph.D.
Research Associate in Pediatrics [2008]

Gorkem Sevinc, M.S.E.
Research Associate in Radiology [2010] (from 07/19/2010)

Sena Feride Sezen, Ph.D.
Research Associate in Urology [2006]

Tariq Shah, Ph.D.
Research Associate in Radiology [2009]

Judy B. Shahan, M.S.
Research Associate in Emergency Medicine [1999]

Xiaoyan Shan, M.D., Ph.D.
Research Associate in Neurology [2010]

Hanjuan Shao, Ph.D.
Research Associate in Medicine [2010]

Jikui Shen, M.D., Ph.D.
Research Associate in Ophthalmology [2002]

David Lee Sherman, Ph.D.
Research Associate in Biomedical Engineering [2010] (from 08/01/2010)

Hasan M. Shihab, M.P.H.
Research Associate in Medicine [2006]

Wendy Swalm Shore, Ph.D.
Research Associate in Physical Medicine and Rehabilitation [2006]

Kurt A. Simons, Ph.D.
Research Associate in Ophthalmology [1997; 1984]

Victoria J. Sinibaldi, M.S.
Research Associate in Oncology [2002]

Chad Eric Slawson, Ph.D.
Research Associate in Biological Chemistry [2006] (to 12/17/2010)

Adele M. Snowman, B.A.
Research Associate in Neuroscience [1985]

Jitka Sojkova, M.D.
Research Associate in Radiology [2009]

Meiyappan Solaiyappan, B.S.
Research Associate in Radiology [1998; 1996]

Hong Song, Ph.D.
Research Associate in Radiology [2009]

Zhimin Song, M.D.
Research Associate in Medicine [1994]

Tuck Wah Soong, Ph.D.
Research Associate in Biomedical Engineering [2001]

Ioannis A. Stasinopoulos, D.Phil., Ph.D.
Research Associate in Radiology [2007]

Joseph Webster Stayman, Ph.D.
Research Associate in Biomedical Engineering [2009]

Martin J. Stumpf, M.A.
Research Associate in Radiology [2003]

Srinivasa Subramaniam, Ph.D.
Research Associate in Neuroscience [2010]

Hui Sun, Ph.D.
Research Associate in Medicine [2010]

Kai Sun, M.S., M.S.
Research Associate in Ophthalmology [2010]

Kyongje Sung, Ph.D.
Research Associate in Neurology [2010]

Surojit Sur, Ph.D.
Research Associate in Oncology [2008]

Lee J. Swartz, M.B.A.
Research Associate in Medicine [2005]

Polina Sysa, M.D.
Research Associate in Molecular and Comparative Pathobiology [2010]

Katalina Szabo, M.D.
Research Associate in Radiology [1994]

Paul Thiam Joo Tan, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2008] (to 11/30/2010)

William P. Tew, Ph.D.
Research Associate in Biological Chemistry [1985]

Meridith Hill Thanner, Ph.D.
Research Associate in Emergency Medicine [2006] (to 12/03/2010)

Gareth Michael Thomas, Ph.D.
Research Associate in Neuroscience [2005] (to 12/31/2010)

Jing Tian, Ph.D.
Research Associate in Neurology [2010]

Wenjing Tong, Ph.D.
Research Associate in Pathology [2006]
Kyrana Tsapkini, Ph.D.
Research Associate in Neurology [2009]

Mark J. Vaal, B.S.
Research Associate in Neurology [2008]

Kartik Venkatachalam, Ph.D.
Research Associate in Biological Chemistry [2008] (to 07/16/2010)

Candelaria Vergara, M.D.
Research Associate in Medicine [2009]

Tatyana Y. Verina, M.S.
Research Associate in Neurology [2010] (from 11/01/2010)

Donna L. Vogel, M.D., Ph.D.
Research Associate in Physiology [2007]

Alka Arvindkumar Vyas, Ph.D.
Research Associate in Orthopaedic Surgery [2006]

Janet Ruth Walczak, M.S.
Research Associate in Oncology [2004]

Louise Juliet Walsh, M.P.H.
Research Associate in Medicine [2004]

Tongguang Wang, Ph.D.
Research Associate in Neurology [2006]

XueQing Wang, Ph.D.
Research Associate in Neurology [2009]

Yongchun Wang, M.D., Ph.D.
Research Associate in Surgery [2008]

William R.S. Webber, Ph.D.

Kristina R. Weeks, M.H.S.
Research Associate in Anesthesiology and Critical Care Medicine [2010] (from 12/01/2010)

Karen A. Wehner, Ph.D.

David W. West, Ph.D.
Research Associate in Pediatrics [1989]

Kristin Marie Wilcox, Ph.D.
Research Associate in Psychiatry [2009] (to 10/08/2010)

Allen B. Williams, Ph.D.
Research Associate in Oncology [2003]

Donna Williams, Ph.D.
Research Associate in Medicine [1991]

Deborah Fran Wilsker, Ph.D.
Research Associate in Radiation Oncology and Molecular Radiation Sciences [2010]

Eric Wimmers, M.D.
Research Associate in Plastic and Reconstructive Surgery [2010] (from 12/01/2010)

Paul Thomas Winnard, Jr., Ph.D.
Research Associate in Radiology [2004]

Jerry M. Wright, Ph.D.
Research Associate in Physiology [1997]

Jing Wu, Ph.D.
Research Associate in Neuroscience [2010]

Meng Wu, Ph.D.
Research Associate in Neuroscience [2010]

Xiangwei Wu, M.D.
Research Associate in Orthopaedic Surgery [2009] (to 10/14/2010)

Jinsong Xia, Ph.D.
Research Associate in Radiology [2009]

Lingling Xian, M.D., Ph.D.
Research Associate in Orthopaedic Surgery [2010]

Bo Xiao, M.D., Ph.D.
Research Associate in Neuroscience [2008, 1999]

Huiqing Xiao, M.D.
Research Associate in Medicine [1994]

Yi Xie, Ph.D.
Research Associate in Molecular Biology and Genetics [2009] (to 02/28/2011)

Desheng Xu, M.D.
Research Associate in Neuroscience [2002]

Leyan Xu, M.D., Ph.D.
Research Associate in Pathology [2009]

Xi Xu, M.D.
Research Associate in Molecular and Comparative Pathobiology [2006]

Zhenhua Xu, Ph.D.

Kazuyo Yamaji-Kegan, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2006]

Ye Yan, Ph.D.
Research Associate in Neuroscience [2010]

Xiao Ping Yang, M.D., Ph.D.
Research Associate in Medicine [2004]

Xiaoju Yang, M.D.
Research Associate in Medicine [2000]

Zhiyong Yang, M.D., Ph.D.
Research Associate in Ophthalmology [2010] (from 08/02/2010)

Sheng Yao, Ph.D.
Research Associate in Oncology [2009] (to 12/31/2010)

Xiaobu Ye, M.D.
Research Associate in Oncology [2008]

Ray-Whay Chiu Yen, M.S.
Research Associate in Oncology [1991]

Eunyoung Yi, Ph.D.
Research Associate in Otolaryngology-Head and Neck Surgery [2011] (from 01/01/2011)

Bing Yu, M.D., Ph.D.

Hong Yu, M.D., Ph.D.
Research Associate in Oncology [2003]

Qilu Yu, Ph.D.
Research Associate in Medicine [2006]

Wei Yu, Ph.D.
Research Associate in Oncology [2003]
Yanxing Yu, M.D., Ph.D.
Research Associate in Oncology [2008; 2004]

Daniel Shih-En Yuan, M.D.
Research Associate in Molecular Biology and Genetics [2004] (to 01/04/2011)

Jie Yuan, M.B., M.D.
Research Associate in Neurology [2002]

Xuan Yuan, M.D.
Research Associate in Medicine [2010]

Karen I. Zeller, Ph.D.
Research Associate in Medicine [2004]

Yu Zeng, Ph.D.
Research Associate in Urology [2010] (from 09/01/2010)

Cheng Zhang, M.D.
Research Associate in Ophthalmology [2009] (to 08/20/2010)

Dongming Zhang, M.L.S., M.S.
Research Associate in Health Sciences Informatics [2003]

Huafeng Zhang, Ph.D.
Research Associate in Oncology [2008] (to 11/30/2010)

Jian Zhang, M.D., Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2010]

Li Zhang, Ph.D.
Research Associate in Oncology [2010]

Ping-Wu Zhang, M.D., Ph.D.
Research Associate in Neurology [2008]

Yonggang Zhang, M.D.
Research Associate in Radiation Oncology and Molecular Radiation Sciences [1992; 2003],
Research Associate in Oncology [1992]

Ming Zhao, Ph.D.
Research Associate in Oncology [2000]

Gehua Zhen, M.D.
Research Associate in Orthopaedic Surgery [2010] (from 09/01/2010)

Gefeng Zhu, Ph.D.
Research Associate in Oncology [2009] (to 12/31/2010)

He Zhu, Ph.D.
Research Associate in Radiology [2010] (from 07/15/2010)

Jianhong Zhu, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2010] (07/16/2010-10/31/2010)

Wenlian Zhu, Ph.D.
Research Associate in Radiology [2009]

Jianchao Zong, Ph.D.
Research Associate in Oncology [1997]

Jizhong Zou, Ph.D.
Research Associate in Medicine [2010] (from 10/01/2010)

Michael Guarnieri, Ph.D., M.P.H.
Research Associate Emeritus in Neurological Surgery [1996]

Pamela Talalay, Ph.D.
Research Associate Emerita in Neurology [2007; 1983]

VISITING SCIENTISTS

Abeer Abd Elmoneim, M.B.B.Ch., M.D.
Visiting Scientist in Oncology [2010] (from 12/01/2010)

Abeer Al Mulla, M.B.B.S.
Visiting Scientist in Radiology [2011] (from 02/02/2011)

Tamader Yousef Al-Rammah, Ph.D.
Visiting Scientist in Radiology [2010] (from 11/01/2010)

Sharifah Anisah Alyahya, M.D., Ph.D.
Visiting Scientist in Medicine [2010] (from 12/06/2010)

Ali Saeed Alzahrani, M.B.B.S., M.D.
Visiting Scientist in Medicine [2010]

Hai-Hua Bai, Ph.D.
Visiting Scientist in Neuroscience [2010] (from 09/01/2010)

Walid Khaled Barbour, M.D., Ph.D.
Visiting Scientist in Ophthalmology [2008]

Shridhar Bhat, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2005]

Nicolas Bourdel, M.D.
Visiting Scientist in Medicine [2010] (from 11/01/2010)

Marek Andrzej Cebrat, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2006]

Donald L. Champagne, Ph.D.
Visiting Scientist in Ophthalmology [2008]

Tsung Yuan Chuang, B.A.
Visiting Scientist in Anesthesiology and Critical Care Medicine [2010]

Debasis Dash, Ph.D.
Visiting Scientist in Biological Chemistry [2010]

Alicia Laura Degano, Ph.D.
Visiting Scientist in Neuroscience [2010]

Santiago Di Lella, Ph.D.
Visiting Scientist in Biophysics and Biophysical Chemistry [2011]

Haiyan Ding, Ph.D.
Visiting Scientist in Biomedical Engineering [2009]

Wengang Ding, M.D.
Visiting Scientist in Anesthesiology and Critical Care Medicine [2010]

Craig A. Dionne, Ph.D.
Visiting Scientist in Oncology [2003]

Luciano Ferreira Drager, M.D.
Visiting Scientist in Medicine [2010]
Ashkan Emadi, M.D., Ph.D.  
Visiting Scientist in Medicine [2010] (from 11/01/2010)

Ann M. Ferrie, B.S.  
Visiting Scientist in Neuroscience [2008]

Albert Flotats, M.D., Ph.D.  
Visiting Scientist in Radiology [2010] (08/02/2010-09/30/2010)

Thomas Kwok-Fah Foo, Ph.D.  
Visiting Scientist in Radiology [1998]

Bernd B. Frericks, M.D.  
Visiting Scientist in Radiology [2010]

Sandeep N. Gupta, Ph.D.  
Visiting Scientist in Radiology [1998]

Gyu Cheol Han, M.D.  
Visiting Scientist in Otolaryngology-Head and Neck Surgery [2007]

William David Hankins, Ph.D.  
Visiting Scientist in Medicine [1991]

William Frederick Heinz, Ph.D.  
Visiting Scientist in Physiology [2003]

Thomas R. Hynes, Ph.D.  
Visiting Scientist in Cell Biology [2008]

Soo Kyeong Jeon, M.S.  
Visiting Scientist in Neuroscience [2009]

Li Jiang, M.D.  
Visiting Scientist in Radiology [2007]

Kai Jiao, M.D.  
Visiting Scientist in Orthopaedic Surgery [2010] (from 12/01/2010)

Sung Mee Jung, M.D.  
Visiting Scientist in Anesthesiology and Critical Care Medicine [2010] (from 08/02/2010)

Rahul R. Kaliki, Ph.D.  
Visiting Scientist in Biomedical Engineering [2010] (from 09/01/2010)

Maria Kamber, D.V.M.  
Visiting Scientist in Molecular and Comparative Pathobiology [2010]

Robert Thomas Kambic, Ph.D.  
Visiting Scientist in Health Sciences Informatics [2006]

Christian James Ketchum, Ph.D.  
Visiting Scientist in Physiology [2005], Visiting Scientist in Cell Biology [2005]

Isam Khalaila, Ph.D.  
Visiting Scientist in Biological Chemistry [2010] (09/10/2010-10/10/2010)

Eun-Kyoung Kim, Ph.D.  
Visiting Scientist in Neuroscience [2006]

Hyoung-Nam Kim, Ph.D.  
Visiting Scientist in Biomedical Engineering [2009]

So Yeun Kim, M.Sc.  

Yong Sik Kim, M.D.  
Visiting Scientist in Medicine [2008]

Alan P. Kozikowski, Ph.D.  
Visiting Scientist in Pharmacology and Molecular Sciences [2003]

Masaki Kyoso, Ph.D.  
Visiting Scientist in Biomedical Engineering [2009] (to 08/31/2010)

Seung Han Lee, M.D., Ph.D.  
Visiting Scientist in Neurology [2009]

Weiqi Lei, M.S.  
Visiting Scientist in Orthopaedic Surgery [2009]

Chavonne Danielle Lenoir, Dr.P.H.  
Visiting Scientist in Pediatrics [2006]

Cong Li, Ph.D.  
Visiting Scientist in Radiology [2009]

Dai Jun Li, M.D., Ph.D.  
Visiting Scientist in Pathology [2009]

Jie Li, M.D., Ph.D.  
Visiting Scientist in Pediatrics [2010]

Xiang Li, Ph.D.  
Visiting Scientist in Medicine [2010] (from 08/01/2010)

Zengxia Li, Ph.D.  
Visiting Scientist in Biological Chemistry [2011] (from 01/01/2011)

Chung-Tiang Liang, D.V.M.  
Visiting Scientist in Molecular and Comparative Pathobiology [2010]

Ming De Lin, Ph.D.  
Visiting Scientist in Radiology [2008]

Shizhang Ling, Ph.D.  
Visiting Scientist in Neuroscience [2011] (from 01/03/2011)

Ling Liu, M.D.  
Visiting Scientist in Medicine [2010]

Rong Liu, Ph.D.  
Visiting Scientist in Biomedical Engineering [2010] (from 09/15/2010)

David Gordon Longstaff, Ph.D.  
Visiting Scientist in Molecular Biology and Genetics [2009]

Chao Lu, B.M., Ph.D.  
Visiting Scientist in Molecular Biology and Genetics [2011] (from 01/15/2011)

Neri Luca, M.S.  
Visiting Scientist in Medicine [2010]

Mohammed Abdul Majid, Ph.D.  
Visiting Scientist in Biomedical Engineering [2006]

Barry J. Margulies, Ph.D.  
Visiting Scientist in Pharmacology and Molecular Sciences [2003]

Gesine Marquardt, Ph.D.  
Visiting Scientist in Psychiatry [2009]

Ernesto Torres De Azevedo Marques, Jr., M.D., Ph.D.  
Visiting Scientist in Pharmacology and Molecular Sciences [2009, 1999]

Byung Wook Min, M.D., Ph.D.  
Visiting Scientist in Medicine [2010]
Afsana Momen, M.B.B.S.
Visiting Scientist in Medicine [2010] (from 09/01/2010)

Cheil Moon, Ph.D.
Visiting Scientist in Neuroscience [2005]

Kathryn Elizabeth Muratore, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2008]

Stephanie Nagle, Ph.D.
Visiting Scientist in Neurology [2011] (from 01/03/2011)

Erez Nevo, D.Sc., M.D.
Visiting Scientist in Medicine [1999]

Leonardo Nimrichter, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2010] (from 10/15/2010)

Natalia Ojeda del Pozo, Ph.D.
Visiting Scientist in Psychiatry [2010] (07/05/2010-08/31/2010)

Rebecca Courtney Osthus, Ph.D.
Visiting Scientist in Medicine [2004]

Ronan Francis O’Toole, Ph.D.
Visiting Scientist in Medicine [2010]

Li Pan, Ph.D.
Visiting Scientist in Radiology [2006]

Lijuan Pang, M.D.
Visiting Scientist in Orthopaedic Surgery [2009] (to 01/05/2011)

Keykavous Parang, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2000]

Kerry Ann Pickin Paumi, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2007]

Silvia A. Pineiro, Ph.D.
Visiting Scientist in Biophysics and Biophysical Chemistry [2009]

Jana Plevkova, M.D., Ph.D.

Michael Schar, M.S.
Visiting Scientist in Radiology [2005]

Frank V. Schraml, M.D.
Visiting Scientist in Radiology [2000]

Nicola Alessandro Scichilone, M.D.
Visiting Scientist in Medicine [2003]

Steven M. Shea, Ph.D.
Visiting Scientist in Radiology [2005]

Kui Shen, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2005]

Changqing Shi, M.D.

Sa Shi, Ph.D.
Visiting Scientist in Medicine [2009]

Kye-Shik Shim, M.D.
Visiting Scientist in Pediatrics [2009]

Om Vir Singh, Ph.D.
Visiting Scientist in Pediatrics [2009] (to 08/31/2010)

Glenn Slavin, Ph.D.
Visiting Scientist in Radiology [1999]

Jaclyn Ann Smith, M.B.B.Ch., Ph.D.
Visiting Scientist in Medicine [2009] (to 09/30/2010)

Miroslava Stastna, M.D., Ph.D.
Visiting Scientist in Medicine [2009]

Hiroyuki Suganuma, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2009] (to 12/31/2010)

Haiyan Sun, Ph.D.
Visiting Scientist in Neuroscience [2009]

Yaohui Sun, M.D., Ph.D.

Gihan I. Tennekoon, M.B.B.S.
Visiting Scientist in Neuroscience [2009] (to 02/28/2011)

Elizabeth Tran, Ph.D.
Visiting Scientist in Neuroscience [2008]

Noriko Tsuchiya, Ph.D.
Visiting Scientist in Molecular and Comparative Pathobiology [2010] (from 10/20/2010)

Jian Cheng Tu, M.D., Ph.D.
Visiting Scientist in Neuroscience [2010]

Bochu Wang, Ph.D.

Huiling Wang, M.D., Ph.D.
Visiting Scientist in Psychiatry [2010]

Ming Jie Wang, Ph.D.
Visiting Scientist in Cell Biology [2011] (from 03/01/2011)

Minghua Wang, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2010]

Shuo Wang, M.D.
Visiting Scientist in Neurology [2011] (from 01/01/2011)

Yun Wang, M.D., Ph.D.
Visiting Scientist in Anesthesiology and Critical Care Medicine [2009]

Zhi Wang, M.D., Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2011] (from 01/10/2011)

Zhibo Wen, M.D.
Visiting Scientist in Radiology [2008]

Wendaferaw Wendem Dea, M.D.
Visiting Scientist in Orthopaedic Surgery [2010]

Haiying Wu, M.D.

Tao Wu, M.D.
Visiting Scientist in Anesthesiology and Critical Care Medicine [2009]
Yi Xu, M.D.
Visiting Scientist in Radiology [2010]
Fatih Yalcin, M.D.
Visiting Scientist in Medicine [2009]
Norann Amir Zaghloul, Ph.D.
Visiting Scientist in Surgery [2010] (to 09/30/2010)
Jie Zhang, Ph.D.
Visiting Scientist in Neuroscience [1994]
Min Zhao, M.D., Ph.D.
Visiting Scientist in Cell Biology [2010]
(07/06/2010-07/15/2010)
Dasheng Zheng, Ph.D.
Qun Zhou, M.D., Ph.D.
Visiting Scientist in Oncology [2008; 2006]
Yanfei Zhou, Ph.D.
Visiting Scientist in Otolaryngology-Head and Neck Surgery [2007]
Yun Zhou, M.D.
Visiting Scientist in Neurology [2010]
Mirza Zizak, M.D., Ph.D.
Visiting Scientist in Medicine [2010]

INTERDIVISIONAL JOINT APPOINTMENTS
Patricia Ann Abbott, Ph.D.
Joint Appointment in Health Sciences Informatics [2001]
David Brian Abrams, Ph.D.
Joint Appointment in Oncology [2010]
Peter Courtland Agre, M.D.
Joint Appointment in Biological Chemistry [2008; 1993]
Miriam H. Alexander, M.D., M.P.H.
Joint Appointment in Medicine [2006]
Jerilyn K. Allen, Sc.D.
Joint Appointment in Medicine [1988]
Robert Harry Allen, Ph.D.
Joint Appointment in Gynecology and Obstetrics [2009]
Cheryl Ann Marie Anderson, Ph.D., M.P.H.
Joint Appointment in Medicine [2010]
Gerard F. Anderson, Ph.D.
Joint Appointment in Medicine [1994]
Mehran Armand, Ph.D.
Joint Appointment in Orthopaedic Surgery [2007]
Brad C. Astor, M.D., Ph.D.
Joint Appointment in Medicine [2005]
Joel S. Bader, Ph.D.
Joint Appointment in Biomedical Engineering [2008]
Susan P. Baker, M.P.H.
Joint Appointment in Emergency Medicine [1989], Joint Appointment in Pediatrics [1983]
Gregory F. Ball, Ph.D.
Joint Appointment in Neuroscience [2000]

Marion J. Ball, Ed.D.
Joint Appointment in Health Sciences Informatics [2003]
Karen Bandeen-Roche, Ph.D.
Joint Appointment in Medicine [2004]
Viachaslau M. Barodka, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]
Patrick E. Barta, M.D., Ph.D.
Joint Appointment in Psychiatry [2003; 1989]
Terri H. Beatty, Ph.D.
Joint Appointment in Oncology [1995]
Michael Bender, Ed.D.
Joint Appointment in Pediatrics [1983; 1973]
David M. Bishai, M.D., Ph.D., M.P.H.
Joint Appointment in Pediatrics [1998]
Shyam Sundar Biswal, Ph.D.
Joint Appointment in Medicine [2004], Joint Appointment in Oncology [2001]
Robert E. Black, M.D.
Joint Appointment in Medicine [1985]
Robert W.M. Blum, M.D., Ph.D., M.P.H.
Joint Appointment in Pediatrics [2004]
Lee R. Bone, M.P.H.
Joint Appointment in Medicine [1990]
Charles E. Boutl, M.D., M.P.H.
Joint Appointment in Medicine [2001]
John C.S. Breitner, M.D., M.P.H.
Joint Appointment in Psychiatry [1998]
Patrick N. Breysse, Ph.D.
Joint Appointment in Medicine [2008]
Terry R. Brown, Ph.D.
Joint Appointment in Pediatrics [1991; 1978]
Donald Scott Burke, M.D.
Joint Appointment in Medicine [2000]
Thomas A. Burke, Ph.D., M.P.H.
Joint Appointment in Oncology [1995]
Gilbert M. Burnham, M.D., Ph.D.
Joint Appointment in Medicine [1992]
Benjamin Caballero, M.D., Ph.D.
Joint Appointment in Pediatrics [1990]
Renan Castillo, Ph.D.
Joint Appointment in Physical Medicine and Rehabilitation [2010]
Carlos Castillo-Salgado, D.P.H., M.D., M.P.H.
Joint Appointment in Health Sciences Informatics [2010] (from 09/01/2010)
David DuPuy Celentano, Sc.D.
Joint Appointment in Medicine [2002]
Jeanne Charleston,
Joint Appointment in Medicine [2005]
Lawrence J. Cheskin, M.D.
Joint Appointment in Medicine [2001; 1986]
Josef Coresh, M.D., Ph.D.
Joint Appointment in Medicine [1994]

FACULTY  437
Pierre A. Coulombe, Ph.D.
Joint Appointment in Biological Chemistry [2008; 1992], Joint Appointment in Dermatology [2008; 1992]

Susan M. Courtney, Ph.D.
Joint Appointment in Neuroscience [2001]

Rosa M. Crum, M.D.
Joint Appointment in Psychiatry [1991]

Mary F. Cwik, Ph.D.
Joint Appointment in Psychiatry [2009]

Arthur M. Dannenberg, Jr., M.D., Ph.D.
Joint Appointment in Pathology [1978; 1964]

Luigi Maria De Luca, M.D.
Joint Appointment in Pharmacology and Molecular Sciences [2010]

Cheryl R. Dennison, Ph.D.
Joint Appointment in Health Sciences Informatics [2007]

Marie Diener-West, Ph.D.
Joint Appointment in Ophthalmology [1990; 1986]

Janet A. DiPietro, Ph.D.
Joint Appointment in Gynecology and Obstetrics [1993]

Andrew S. Douglas, Ph.D.
Joint Appointment in Biomedical Engineering [1989]

Gyspsyamber D’Souza, Ph.D.
Joint Appointment in Oncology [2010] (from 09/01/2010)

Anna Palmer Durbin, M.D.
Joint Appointment in Medicine [1999]

Sydney Eileen Dy, M.D.
Joint Appointment in Medicine [2002; 2001], Joint Appointment in Oncology [2002]

William W. Eaton, Ph.D.
Joint Appointment in Psychiatry [1995]

Michael Aaron Edidin, Ph.D.
Joint Appointment in Medicine [1994], Joint Appointment in Pathology [1999]

Howard Elliott Egeth, Ph.D.
Joint Appointment in Neuroscience [2002]

Margaret E. Ensminger, Ph.D.
Joint Appointment in Psychiatry [1983]

Ruth R. Faden, Ph.D.
Joint Appointment in Medicine [1992], Occupying the Philip Franklin Wagley Chair in Biomedical Ethics

DeLisa Fairweather, Ph.D.
Joint Appointment in Pathology [2005; 2003]

Margaret Daniele Fallin, Ph.D.
Joint Appointment in Medicine [2003]

Gabor Fichtinger, Ph.D.
Joint Appointment in Radiology [2001]

Nancy E. Fink, M.P.H.
Joint Appointment in Medicine [1998]

Robert S. Fitzgerald, Ph.D.
Joint Appointment in Medicine [1990], Joint Appointment in Physiology [1978; 1977]

Jean G. Ford, M.D.
Joint Appointment in Medicine [2003], Joint Appointment in Oncology [2002]

Eric Scott Fortune, Ph.D.
Joint Appointment in Neuroscience [2001]

Ernesto Freire, Ph.D.
Joint Appointment in Biophysics and Biophysical Chemistry [2004]

Kevin D. Frick, Ph.D.
Joint Appointment in Oncology [2010] (from 09/01/2010), Joint Appointment in Ophthalmology [2001]

Michela Gallagher, Ph.D.
Joint Appointment in Neuroscience [1998]

Tiffany L. Gary, Ph.D., M.P.H.
Joint Appointment in Medicine [2005]

Fannie Gaston-Johansson, Dr.Med.Sc.
Joint Appointment in Oncology [1996]

Pearl S. German, Sc.D.
Joint Appointment in Medicine [1985; 1993]

Michael Christopher Gibbons, M.D., M.P.H.
Joint Appointment in Health Sciences Informatics [2010], Joint Appointment in Medicine [2003]

Robert H. Gilman, M.D.
Joint Appointment in Medicine [1985; 1975]

Lynn R. Goldman, M.D., M.P.H.
Joint Appointment in Emergency Medicine [2005]

Patti E. Gravitt, Ph.D.
Joint Appointment in Oncology [2008]

Jeffrey J. Gray, Ph.D.
Joint Appointment in Oncology [2005]

M. Diane E. Griffin, M.D., Ph.D.

John D. Groopman, Ph.D.
Joint Appointment in Oncology [1994]

Deborah Gross, D.N.Sc.
Joint Appointment in Psychiatry [2008]

Eliseo Guallar, M.D., M.P.H.
Joint Appointment in Medicine [2005]

Bernard Gayer, M.D.
Joint Appointment in Pediatrics [1990]

Neal A. Halsey, M.D.
Joint Appointment in Pediatrics [1985]

J. Marie Hardwick, Ph.D.
Joint Appointment in Neurology [1995; 1988], Joint Appointment in Oncology [1999], Joint Appointment in Pharmacology and Molecular Sciences [1988; 1986]

Samer S. Hattar, Ph.D.
Joint Appointment in Neuroscience [1965]

Joseph G. Hennessey, B.S.
Joint Appointment in Psychiatry [2006; 1979]

Martha N. Hill, Ph.D.
Joint Appointment in Medicine [2003]

Peter C. Holland, Ph.D.
Joint Appointment in Neuroscience [2001]
<table>
<thead>
<tr>
<th>Name</th>
<th>Joint Appointment in Medicine [Year]</th>
<th>Joint Appointment in Oncology [Year]</th>
<th>Joint Appointment in Biomedical Engineering [Year]</th>
<th>Joint Appointment in Biomedical Engineering [Year]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalina Hristova, Ph.D.</td>
<td></td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Pablo A. Iglesias, Ph.D.</td>
<td></td>
<td></td>
<td>2003</td>
<td>2003</td>
</tr>
<tr>
<td>Rafael A. Irizarry, Ph.D.</td>
<td>2009</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Jeffrey V. Johnson, Ph.D.</td>
<td>1989</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Hee-Soon Juon, Ph.D.</td>
<td>2005</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Wen Hong Linda Kao, Ph.D.</td>
<td>2006</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Sharon Elizabeth Kingsland, Ph.D.</td>
<td>2006</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Ann Carroll Klassen, Ph.D.</td>
<td>1996</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Konstantinos Konstantopoulos, Ph.D.</td>
<td>1998</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Joan Ellen Kub, Ph.D.</td>
<td>1995</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Reiji Kuruvilla, Ph.D.</td>
<td>2007</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Barbara Landau, Ph.D.</td>
<td>2001</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Bryan Lau, Ph.D.</td>
<td>2004</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Thomas A. LaVeist, Ph.D.</td>
<td>2005</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Robert Swan Lawrence, M.D.</td>
<td>1996</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Philip Leaf, Ph.D.</td>
<td>1991</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Stuart W. Leslie, Ph.D.</td>
<td></td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>John R. Lever, Ph.D.</td>
<td>1985</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Richard B. Markham, M.D.</td>
<td>1989</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Lawrence S. Mayer, Ph.D.</td>
<td>2002</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Cynthia Schaffer Minkovitz, M.D.</td>
<td>1996</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Ramin Mojtahai, M.D., Ph.D., M.P.H.</td>
<td>2008</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Sharon Jean Olsen, M.S.</td>
<td>1999</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>Anna O. Orlova, Ph.D.</td>
<td>2001</td>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
</tbody>
</table>
Sekhar PothiReddy, Ph.D.
Joint Appointment in Oncology [2000]

Sean Taylor Prigge, Ph.D.
Joint Appointment in Biophysics and Biophysical Chemistry [2002; 1999]

Jerry L. Prince, Ph.D.
Joint Appointment in Biomedical Engineering [1993], Joint Appointment in Radiology [1989]

Milo A. Puhan, M.D., Ph.D.
Joint Appointment in Medicine [2009]

M. Hafizur Rahman, Ph.D.
Joint Appointment in Medicine [2006; 2004]

Brenda C. Rapp, Ph.D.
Joint Appointment in Neuroscience [2001]

George W. Rebok, Ph.D.
Joint Appointment in Psychiatry [1994]

Raymond Reid, M.D.
Joint Appointment in Medicine [1985; 1984]

Anne W. Riley, Ph.D.
Joint Appointment in Psychiatry [1991; 1987]

Rajiv N. Rimal, Ph.D.
Joint Appointment in Oncology [2005]

George D. Rose, Ph.D.
Joint Appointment in Biophysics and Biophysical Chemistry [2002; 1994]

Noel R. Rose, M.D., Ph.D.
Joint Appointment in Medicine [1982], Professor of Pathology [1994]

Leon A. Rosenberg, Ph.D.

Debra L. Roter, D.P.H.
Joint Appointment in Medicine [1986], Joint Appointment in Oncology [1986; 2005]

Andrea J. Ruff, M.D.
Joint Appointment in Pediatrics [1987]

Cynda Hylton Rushton, D.N.Sc.
Joint Appointment in Pediatrics [2004]

David A. Sack, M.D.
Joint Appointment in Medicine [1985; 1976]

R. Bradley Sack, M.D., Sc.D.
Joint Appointment in Medicine [1985; 1976]

Mathuram Santosham, M.D., M.P.H.
Joint Appointment in Pediatrics [1985; 1976]

Edyth H. Schoenrich, M.D.
Joint Appointment in Medicine [1978; 1949]

Brian S. Schwartz, M.D.
Joint Appointment in Medicine [1990]

Peter C. Seargon, Ph.D.
Joint Appointment in Oncology [2009]

Elizabeth Selvin, Ph.D., M.P.H.
Joint Appointment in Medicine [2007]

David M. Shade, J.D.
Joint Appointment in Medicine [2009; 2001]

Keerti V. Shah, Dr.P.H., M.B.B.S.
Joint Appointment in Oncology [2000]

Amy Lynne Shelton, Ph.D.
Joint Appointment in Neuroscience [2002]

MacHiko Shirahata, M.D.
Joint Appointment in Anesthesiology and Critical Care Medicine [1990; 1988]

Jane C. Shivnan, M.Sc.
Joint Appointment in Oncology [2009]

Katherine Clegg Smith, Ph.D.
Joint Appointment in Oncology [2005]

Barbara H. Starfield, M.D.
Joint Appointment in Oncology [2005]

Mark C. Steinhoff, M.D.
Joint Appointment in Pediatrics [1987]

Donald M. Steinwachs, Ph.D.
Joint Appointment in Health Sciences Informatics [2006], Joint Appointment in Medicine [1988], Joint Appointment in Psychiatry [1986]

Ina Burrows Stephens, M.D.
Joint Appointment in Pediatrics [1995]

Frances Stillman, Ed.D.
Joint Appointment in Oncology [2005]

Paul T. Strickland, Ph.D.
Joint Appointment in Oncology [1995]

Veit Stuphorn, Ph.D.
Joint Appointment in Neuroscience [2005]

Elizabeth Sugar, Ph.D.
Joint Appointment in Oncology [2010] (from 09/01/2010)

David Joseph Sullivan, Jr., M.D.
Joint Appointment in Medicine [1998]

Moyses Szkelo, M.D., M.P.H.
Joint Appointment in Medicine [2000]

Kawar R. Talaat, M.D.
Joint Appointment in Medicine [2007]

David N. Taylor, M.D.
Joint Appointment in Medicine [2003]

Russell H. Taylor, Ph.D.
Joint Appointment in Radiology [1995], Joint Appointment in Surgery [1995; 2005]

Stephen P. Teret, J.D.
Joint Appointment in Emergency Medicine [1989], Joint Appointment in Pediatrics [1984]

James M. Tielsch, Ph.D.
Joint Appointment in Ophthalmology [1994; 1982]

Michael A. Trush, Ph.D.
Joint Appointment in Oncology [1997]

Barbara L. Van de Castle, M.S.N.
Joint Appointment in Health Sciences Informatics [2001]

Kala Visvanathan, M.B.B.S.
Joint Appointment in Oncology [2003]

Jiou Wang, B.M., Ph.D.
Joint Appointment in Neuroscience [2009]

Tza-Huei Wang, Ph.D.
Joint Appointment in Oncology [2009]

Virginia Marie Weaver, M.D., M.P.H.
Joint Appointment in Medicine [1993], Joint Appointment in Oncology [1996]
Jonathan P. Weiner, D.P.H.
Joint Appointment in Health Sciences Informatics [1982; 2007], Joint Appointment in Medicine [1982]
William M. Weiss, Dr.P.H.
Joint Appointment in Health Sciences Informatics [2007]
Jennifer A. Wenzel, Ph.D.
Joint Appointment in Oncology [2009]
Keith Parker West, Jr., D.P.H.
Joint Appointment in Ophthalmology [1994; 1982]
Denis Wirtz, Ph.D.
Joint Appointment in Oncology [2008]
Lawrence S. Wissow, M.D.
Joint Appointment in Pediatrics [1997; 1984], Joint Appointment in Psychiatry [2001]
Jennifer L. Wolff, Ph.D.
Joint Appointment in Medicine [2003]
Albert W. Wu, M.D.
Joint Appointment in Medicine [1990], Joint Appointment in Surgery [2007]
James D. Yager, Jr., Ph.D.
Joint Appointment in Oncology [1995]
Steven Yantis, Ph.D.
Joint Appointment in Neuroscience [2001]
Laurie S. Zabin, Ph.D.
Joint Appointment in Gynecology and Obstetrics [1986; 1979]
Peter P. Zandi, Ph.D., M.P.H.
Joint Appointment in Psychiatry [2006]
Ying Zhang, M.D., Ph.D.
Joint Appointment in Medicine [2004]
Barry R. Zirkin, Ph.D.
Joint Appointment in Gynecology and Obstetrics [1991]

INTERDIVISIONAL JOINT APPOINTMENTS EMERITI

Donald A. Cornely, M.D.
Joint Appointment Emeritus in Pediatrics [1991; 1966]
Sheppard G. Kellam, M.D.
Joint Appointment Emeritus in Psychiatry [2000; 1982]
Thomas W. Simpson, M.D.
Joint Appointment Emeritus in Medicine [1983; 1970]
ANESTHESIOLOGY AND CRITICAL CARE MEDICINE

Amy Eman Abdallah, M.D., M.P.H. 1
Devon Olatunbosun Aganga, M.D. 1
Ankur Anand, M.D. 1
Luis Arce, M.D. from 10/01/2010 to 10/31/2010
Promise Temidayo Ariyo, M.D. 1
Rebecca Ann Aslakson, M.D. to 08/31/2010
Mosunnmola O. Babade, M.D. 1
Jinsung Bae, M.D. from 08/01/2010 to 08/31/2010
Valerie Garrone Barauna, Ph.D. to 01/31/2011
Viacheslav M. Barodka, M.D. 1
Promise Temidayo Ariyo, M.D. 1
Rebecca Ann Aslakson, M.D. to 08/31/2010
Mosunnmola O. Babade, M.D. 1
Jinsung Bae, M.D. from 08/01/2010 to 08/31/2010
Valerie Garrone Barauna, Ph.D. to 01/31/2011
Viacheslav M. Barodka, M.D. 1

Postdoctoral Fellows 2010-2011

Temidayo Ariyo, M.D. 1
Rebecca Ann Aslakson, M.D. to 08/31/2010
Mosunnmola O. Babade, M.D. 1
Jinsung Bae, M.D. from 08/01/2010 to 08/31/2010
Valerie Garrone Barauna, Ph.D. to 01/31/2011
Viacheslav M. Barodka, M.D. 1

Adult Cardiothoracic Anesthesiology

Charles Hugh Brown, IV, M.D.
John Francis Coleman, M.D.
Romeo Kaddoum, M.D.
Rosanne Bravin Sheinberg, M.D.
Darcy Louise Towsley, M.D. to 08/13/2010

Critical Care Medicine

Akrum Hamed Al Nababteh, M.B.B.S. from 09/13/2010

Peter Charlie Lin, M.D. 1
Isa Maria Lindgren, M.Sc., Ph.D. from 10/19/2010
Jonathan Lissauer, M.D. 1
Todd Liu, M.D. 1
Justin Bradley Long, M.D. 1
Raina Marie Lourens, M.D. 1
Bo Ma, Ph.D.
Michael Fernandez Mantinan, M.D. 1
Courtney Goodwin Masear, M.D. 1
Kyaw Soe Mon, M.D. 1
Jeremy Moore, M.D. to 07/31/2010
Candice Kelley Morrissey, M.D., M.S.P.H. 1
Arnab Mukherjee, M.D. 1
John Young Ok, M.D. 1
Sean Michael Owens, D.O.
Melissa Lynn Pant, M.D. to 08/13/2010 1
Amit Manu Patel, M.D. 1
Ketan B. Patel, M.D. 1
Blake Martin Paterson, M.D. from 02/21/2011 to 10/15/2010
Priyadarshini Ravichandran Pennathur, Ph.D. from 09/07/2010
Rebecca Lynn Reeves, D.O. 1
James Adam Rothschild, M.D. 1
Andrei Dumitru Sdruila, M.D., Ph.D. 1
Xiaoxu Shen, Ph.D. from 10/11/2010
Gautam Sikka, M.D.
Patricia Sara Arauz Soucy, Ph.D. to 08/13/2010
Jochen Steppan, M.D. 1
Lori Ann Wilkinson Suffredini, D.O. 1
Shawn Michelle Sumida, M.D. to 09/21/2010
Dora Syin, M.D. 1
Babak Tabatabaii, M.D. 1
carin Marie Tauring, M.D. 1
Brandon Michael Tojiska, M.D. 1
Lia Ellen Tron, M.D., M.P.H. 1
Jonelon Gabriel Tsang, M.B.B.S. 1
Ali Turabi, M.D. from 03/01/2011 to 03/31/2011
Matthew Robert Vana, M.D. 1
April Joy Runa Villamayor, M.D. 1
Bing Wang, M.D.
Emmett E. Whitaker, M.D. 1
Brian Gerlad Wilhelmi, J.D., M.D. 1
Jamie Rene Wingate, M.D. 1
Caroline Culbertson Wright, M.D. 1
He Wu, Ph.D.
Sarah Elaine Wyhs, M.D. 1
Ji-Tian Xu, Ph.D. to 03/14/2011
Ya Yang, Ph.D.
Zhao Yang, M.D. 1
Diao-Yun Zhang, Ph.D. from 11/01/2010
Xiuli Zhao, Ph.D. to 01/31/2011
Gehua Zhen, M.D. to 07/31/2010
Fei Zheng, M.D., M.P.H. 1
Wei Zheng, M.D.
Jianhong Zhu, Ph.D. to 07/15/2010

Adult Cardiothoracic Anesthesiology

Charles Hugh Brown, IV, M.D.
John Francis Coleman, M.D.
Romeo Kaddoum, M.D.
Rosanne Bravin Sheinberg, M.D.
Darcy Louise Towsley, M.D. to 08/13/2010

Critical Care Medicine

Akrum Hamed Al Nababteh, M.B.B.S. from 09/13/2010
Anquenetta Douglas, M.D. from 07/12/2010
Dragos Mihael Galusca, M.D. from 07/12/2010
Randeep Gill, M.D.
Caron Hong, M.D. to 07/12/2010
Aaron Nicholas LacKamp, M.D. from 08/16/2010
Absar Mirza, M.B.B.S. to 07/12/2010
Randeep Gill, M.D. to 07/12/2010
Caron Hong, M.D. to 07/12/2010
Aaron Nicholas LacKamp, M.D. from 08/16/2010
Absar Mirza, M.B.B.S. to 07/12/2010
Sungwon Na, M.D. to 04/30/2011
Sadeq Ali Quraishi, M.D. to 07/12/2010
Bilal A. Rana, D.O. from 07/12/2010
Imani Thornton, M.D. to 07/12/2010
Christopher Yen, M.D. from 07/12/2010

Pain Medicine
Meredith Claire Brandt Adams, M.D. to 07/14/2010
Haitham A. Al-Grain, M.D. to 07/14/2010
Karsten Bartels, M.D. to 08/18/2010
Michael Bottros, M.D. from 08/15/2010
Jeffrey Max Gambel, M.D. from 08/16/2010
Spencer Scott Heaton, M.D. to 08/14/2010
Sean Li, M.D. from 08/15/2010
Kai McGreevy, M.D. from 07/15/2010
Christopher Yen, M.D. from 07/12/2010

Pediatric Critical Care
Elizabeth Alexis Charnovich, M.D.
Michael Dallman, M.D. from 01/29/2011 to 02/04/2011
Michael Dallman, M.D. from 02/26/2011 to 03/18/2011
Paola V. Genovese, M.D. from 01/13/2011 to 01/24/2011
Dheeraj Goswami, M.D.
John James Holcroft, M.D.
Ayesha Iqbal, M.B.B.S. from 08/26/2010 to 09/11/2010
Right Terrence Legg, M.D. from 10/21/2010 to 11/17/2010
Justin Lawrence Lockman, M.D.
Laila Aziz Mahmood, M.D. to 07/28/2010
Michael Conor McCrory, M.D.
Corina Noje, M.D.
Melissa Jerdonek Sacco, M.D., M.S.
Nazia Tabassum, M.B.B.S. from 07/29/2010 to 08/25/2010
Rajeev Singh Wadia, M.D.

Pain Medicine
Paul Jacob Adams, Ph.D. from 01/17/2011
Faris Alqadah, Ph.D. from 07/19/2010
Pritam Chanda, Ph.D.
Yong Ping Chen, Ph.D.
Ivy Ellen Dick, Ph.D. from 12/15/2010
Stacey Deleria Finley, Ph.D.
Nalinankanth Veerabradan Ghone, Ph.D. to 06/14/2011
Adrian Mark Haith, Ph.D.
Li Huo, Ph.D. to 07/15/2010
Princess Izevbua Imoukhuede, Ph.D.
Toufic Gerges Jabbour, M.S., Ph.D. to 06/19/2011
Rosi Rani Joshi-Mukherjee, Ph.D.
Aysa Saad Keisler, Ph.D. to 01/31/2011
Feipeng Li, Ph.D.
Gang Liu, Ph.D.
Anil Digambar Maybhate, Ph.D.
Kartikeya Murari, Ph.D. to 04/21/2011
Vignesh Muthuvijayan, Ph.D. to 08/31/2010
Jean-Jacques Orban de Xivry, M.S., Ph.D. to 12/15/2010
Michael Scott Osmanski, Ph.D.
Corban Gregory Rivera, Ph.D.
Elena Victoria Rosca, Ph.D.
Troy Kent Rubin, Ph.D. from 12/08/2010
Kartikeya Murari, Ph.D.
Spyridon Konstantinos Stamatelos, Ph.D. to 02/01/2011
Marianne Odile Stefanini, M.A., M.S., Ph.D. to 10/31/2010
Caitlin Susannah Torgerson, Ph.D. to 08/13/2010
In Hong Yang, Ph.D.
Matthew Ralph Zahner, Ph.D.
Yuying Zhang, Ph.D.
Yi Zhou, Ph.D.

BIOPHYSICS AND BIOPHYSICAL CHEMISTRY
Colin Echeverria Aitken, Ph.D.
Christopher Edward Berndsen, Ph.D.
Ajit Bikram Datta, Ph.D. to 01/24/2011
Tao Huang, Ph.D. to 07/09/2010
Jennifer Marie Kavran, Ph.D.
Kwangsoo Kim, Ph.D.
Min Sung Kim, Ph.D.
Pankaj Kumar, Ph.D. from 03/01/2011
Ping Liu, M.S., Ph.D. to 03/31/2011
Subrata H. Mishra, M.S., Ph.D. (on leave of absence from 10/08/2010 to 10/31/2010)
Jagpreet Singh Nanda, Ph.D.
Vaishnavi Rajagopal, Ph.D.
Katarzyna Marta Rudzka, M.S.C., Ph.D. from 07/15/2010 to 06/14/2011
Mauro Cecilia Urquiza, Ph.D. from 07/16/2010
Sarah Elizabeth Walker, Ph.D.
Ming Yan, Ph.D. from 02/01/2011

CELL BIOLOGY
Marina Allary, Ph.D.
Yulia Artemenko, Ph.D.
Jemima R. Barrowman, Ph.D.
Rita Thomas Brookheart, Ph.D.
Huqing Cai, M.S., Ph.D.
Ming Yan, Ph.D. from 02/01/2011
Se Yeon Chung, Ph.D.
Rebecca Marie Fox, Ph.D.
Chun-Lin Chen, Ph.D.
Tianzhi Luo, Ph.D. to 06/15/2011
Chuan-Hsiang Huang, M.D., Ph.D.
Mark Adam Goldstein, M.D.
Afshan Ismat, Ph.D.
Yulia Artemenko, Ph.D.
Jemima R. Barrowman, Ph.D.
Rita Thomas Brookheart, Ph.D.
Huaqing Cai, M.S., Ph.D.
Chun-Lin Chen, Ph.D.
Se Yeon Chung, Ph.D.
Rebecca Marie Fox, Ph.D.
Zachary Richard Gagnon, Ph.D.
Ryan S. Gray, Ph.D. to 10/29/2010
Chuan-Hsiang Huang, M.D., Ph.D.
Hiroshi Ike, Dr. Sc., M.A. to 09/30/2010
Afshan Ismat, Ph.D.
Kie Ito, Ph.D. from 04/01/2011
Tianzhi Luo, Ph.D. to 06/15/2011
Sarah Elizabeth Walker, Ph.D.
Reuven Wiener, Ph.D.
Ming Yan, Ph.D. from 02/01/2011

EMERGENCY MEDICINE
Sarah Jean Carle, M.D.
Timothy Ting-Han Chang, M.D.
Kuan-Fu Chen, M.D. to 03/05/2011
Michael Christopher Cordeiro, M.D.
Chidiebere Uzoma Ekeocha, M.B.A., M.D.
Tiffany Clair Fong, M.D.
David Douglas Gilbert, M.D. to 11/30/2010
Kristen Nicole Miller, M.D. from 12/16/2010 to 01/12/2011
Erin Spillane, M.D. from 08/02/2010 to 08/31/2010
Jennifer Sri, M.D. from 01/18/2011 to 01/28/2011
Kristen L. Toren, M.D. from 10/01/2010 to 10/31/2010
Cory Trickett, D.O. from 02/01/2011 to 02/28/2011

DERMATOLOGY
Margaret Welsh Cavanaugh-Hussey, M.D., M.P.H.
Amena Marie DeLuca, M.D.
Nada M. Elbuluk, M.D., M.S.
Yelena Mirensky Frankel, M.D., M.P.H.
Jo Marin Martin, M.D.
Amanda Marie Nelson, Ph.D. from 07/15/2010
Susan Marie Peterson, M.D.
Staci Nicole Reintjes, D.O.
Randall Trenton Rhyne, M.D.
Sneha Harshad Shah, M.D.
Ryan Scott Shanahan, M.D.
Rebecca Lawrence Smith, M.D.
Sarah Anne Stewart De Ramirez, M.D., M.P.H., M.Sc.
Roshni Ishwarsinh Thakore, M.D.
Vanessa Vasquez, M.D.
Stephen Charles Viel, M.D.
Daniel Carl Windels, M.D.

FUNCTIONAL ANATOMY AND EVOLUTION
Rachel Heather Dunn, Ph.D.
Juho-Antti Junno, M.A., Ph.D. from 11/15/2010 to 04/20/2011

GYNECOLOGY AND OBSTETRICS
Modupe Veronique Aghufe, M.D.
Francisco Aguirre, M.D.
Shazia Bashir, M.D., M.P.H.
Codi Dawn Beam, M.D.
Meredith Lee Birser, M.D.
Alaina Joelle Brown, M.D.
Alexandre Buckelew De Meritens, M.D.
Veena Choube, M.D.
Mindy Sue Christianson, M.D.
Abigail Elizabeth Dennis, M.D.
Jennifer Ann Dicie, M.A., M.D.
Cindy Vertoria Duke, M.D.
Jill Edson, M.D., M.P.H.
Maureen Elise Grundy, M.D.
Camille Catherine Gunderson, M.D.
Jennifer Lani Hallock, M.D.¹
Aimee Catherine Jacobs, M.D. from 08/02/2010 to 09/03/2010
Amelia Marie Jernigan, M.D.¹
Clark Timothy Johnson, M.D., M.P.H.¹
Michelle Joanne Khan, M.D., M.P.H.¹
Lauren Dorothy Smith Krill, M.D.¹
Kimberly Lynn Levinson, M.D., M.P.H.¹
Amr Mohamed Monir Madkour, M.D.¹
Jennifer Acton Robinson, M.D., M.P.H.
Aimee Catherine Jacobs, M.D. from 08/02/2010 to 09/03/2010
Amelia Marie Jernigan, M.D.
Clark Timothy Johnson, M.D., M.P.H.
Michelle Joanne Khan, M.D., M.P.H.
Lauren Dorothy Smith Krill, M.D.
Kimberly Lynn Levinson, M.D., M.P.H.
Amr Mohamed Monir Madkour, M.D.
Jennifer Acton Robinson, M.D., M.P.H.
Jennifer Lani Hallock, M.D.

Female Pelvic Medicine and Reconstructive Surgery
Sarah Friedman, M.D.
Leise Rose Knoepp, M.D.

Gynecologic Oncology
Aimee C. Fleury, M.D.
Okechukwu Anthony Ibeanu, M.B.B.S., M.P.H.

Maternal-Fetal Medicine
Cynthia Lee Anderson, M.D.
Christopher Scott Ennen, M.D.
Kristy Ann Ruis, M.D. to 07/31/2010
Amanda P. Stewart, M.D.
Linda Marie Szymanski, M.D., Ph.D.
Christopher Wayock, M.D.

Reproductive Endocrinology
Paul Robert Brezina, M.B.A., M.D.
LaTasha Alexis Rabsatt, M.D. from 11/01/2010 to 12/03/2010
Jonathan Ringo, M.D. from 09/06/2010 to 10/01/2010
Dana Lynn Shanis, M.D. from 10/04/2010 to 10/29/2010
Benjamin Alan Solomon, M.D. from 01/31/2011 to 02/25/2011
Brad Blachly Swelstad, M.D.
Ana Isabel Tergas, M.D.
Jesse Xiyu Woo, M.D. from 12/06/2010 to 12/31/2010

Health Sciences Informatics
Yair G. Rajwan, Dr. Sc., M.Sc.
Terry Hsin-Yi Shen, M.P.H., Ph.D.

History of Medicine
Karen Kruse Thomas, M.A., Ph.D.

Internal Medicine/Pediatrics
Paul James Doherty, M.D. to 12/04/2010
Monica Clare Mix, M.D.¹
Sara Elizabeth Mixter, M.D., M.P.H.¹
Jacqueline Deanna Wilson, M.D.¹

Mckusick-Nathans Institute of Genetic Medicine
Eva Andres-Mateos, Ph.D. to 10/31/2010
Palav Bhatnagar, Ph.D.
Thi Vu Bui, Ph.D.
Grzegorz Maciej Burzynski, Ph.D.
Raghothama Chaerkady, Ph.D.
Tsung-Cheng Chang, Ph.D. from 12/31/2010
George Shawn Charames, Ph.D.
Pallavi Chaturvedi, Ph.D.
Betty Quynh-Huong Doan, M.P.H., Ph.D.
Vishal Kirtikant Doshi, M.B.B.S., M.P.H. (on leave of absence from 07/08/2010 to 08/19/2010)
Alexander John Doyle, M.B.B.S. from 09/01/2010
Jefferson James Doyle, M.B.B.Ch., M.H.S.
Eran Elhaik, Ph.D.
Adam David Ewing, Ph.D. from 10/01/2010
Audrey E. Fischer, Ph.D. from 01/11/2011
Elena Gallo, Ph.D.
Derese Gotnet, Ph.D. from 10/01/2010
Simone Gupta, M.Sc., Ph.D.
Lindsay Ann Bremer Henderson, Ph.D.
Yen-Yi Ho, Ph.D.
Maimon Eid Hubbi, Ph.D.
Qian Jiang, Ph.D.
Natinijinawath, M.D., Ph.D. to 08/31/2010
Ashish Kapoor, M.Sc., Ph.D.
Vikram Katju, Ph.D. from 11/08/2010
Oliver Andrew Kent, Ph.D.
Yangjian Liu, Ph.D.
David Charles Loch, Ph.D.
Weibo Luo, Ph.D.
Prabhat Kumar Mandal, Ph.D. from 07/06/2010
Teresa Martino, D.O.
David Mark McGaughey, Ph.D. to 08/19/2010
Rebecca Maria Mejias-Estevez, Ph.D.
Vasyl Pihur, M.S., Ph.D.
Sergio Rey, Ph.D.
Srirangan Sampath, Ph.D.
Luana Schito, Ph.D. from 02/22/2011 to 04/30/2011
Neeraj Sharma, Ph.D.
Guanglu Shi, Ph.D. from 01/10/2011
Szlilvia Solyom, Ph.D. from 06/01/2011
Naoharu Takano, Ph.D. from 04/01/2011
Dan-Ju Tso, Ph.D. from 02/01/2011 to 06/27/2011
Christel van Erp, Ph.D.
Ying Wang, M.D., Ph.D. to 01/01/2011
Hong Wei, M.D.
Philip Dane Witmer, M.D., Ph.D. from 01/03/2011
Chak Lui Wong, Ph.D.
Jin Zhong, M.S.C., Ph.D.

Medicine
Johns Hopkins Hospital House Staff-Internal Medicine
Nisha Aggarwal, M.D.
Haitham Mohamed Ahmed, M.D., M.P.H.
Christine Campo Alewine, M.D., Ph.D.
Gobind Anand, M.D.
Annukka Aida Rose Antar, M.D.
James Clifford Balvich, M.D., M.S.
Clarissa Grace Barnes, M.D.
Alexander Carl Billioux, M.D., Ph.D.
Lauren Dara Block, M.D.
Emily Pfeil Brigham, M.D.
Gabriel C. Brooks, M.D.
Jennifer Nicole Brudno, M.D.

Postdoctoral Fellows 445
Mirnella Byku, M.D., Ph.D.
Laura Christine Cappelli, M.D., M.S.
Souvik Chatterjee, M.D.
Eunpi Cho, M.D.
Jonathan Chrispin, M.D.
Bennett William Clark, M.D.
Nancy Cooper, M.D.
William Brian Dalton, M.D., Ph.D.
Rebecca Hope Dezube, M.D.
Adel Rafeh El Boueiz, M.D.
Mohamed Badreldin El-Shazly, M.D.
Matthew Thomas Finn, M.D.
Timothy Foley, M.D., M.P.H., M.S.
Natasha Noelle Fontaine, M.D.
Sumitha Santhoshini Ganji, M.D., M.P.H.
Srinivasavini Gavini, M.D.
Michael Gensheimer, M.D.
Kevin Gibbs, M.D.
Raymond Carlos Givens, M.D., Ph.D.
Christian Burris Gocke, M.D., Ph.D.
Alison Victoria Graziani, M.A., M.D.
Adena Hope Greenbaum, M.D., M.P.H.
Keiko Iwahara Greenberg, M.D.
Evan Kandler Grove, M.D.
Margaret Mary Hayes, M.D.
Barbara Lawson Heil, M.D.
Ashley Procopio Helgeson, M.D.
David Joseph Heller, M.D., M.P.H.
Estebes Akira Hernandez, M.D.
Brian Allan Houston, M.D.
Lynn Jackson Howie, M.D.
Steven Hsu, M.D.
Andrew Hunter Hughes, M.D.
Richard Johnson, M.D.
Clare Kelleher, M.D.
Rina G. Khatri, M.D.
Sharon Bokyong Kim, M.D.
Matthew Christopher Konerman, M.D.
Monica Arlene Konerman, M.D.
Rupa Radhika Krishnaswamy, M.D.
Mikhailia Wanakee Lake, M.D.
Lakshmi Devi Lattimer, M.D.
Edward Felix Lin, M.D.
Anna Litvak, M.D.
Kara Mari Loubser, M.D.
Donald Ray Lynch, Jr., M.D.
Julia Anne Marsh, M.D.
John William McEvoy, M.D.
Camille Michael Minder, M.D.
Satish Misra, M.D.
Venkata Anupama Narla, M.D.
Jennifer Rea Nayor, M.D.
Matthew Gregory Nayor, M.D.
Phuong-Khanh Nguyen-Trong, M.D.
Timothy Michael Niessen, M.D., M.P.H.
Carmelle Tabitha Norice, M.D., M.P.H., Ph.D.
Ifema Obiageli Onuorah, M.D.
Zoe Anne Orecki, M.D., M.P.H.
Arvind Kant Pandey, M.D.
Heather Anne Parsons, M.D., M.P.H.
Harsh Patel, M.D.
Kaustubha Dilipsinh Patel, M.D.
Steven Casey Pugliese, M.D.
Susan Yuani Qian, M.D.
Srivasatsa Raghavan, M.D., M.S., Ph.D.
Rod Amir Rahimi, M.D.
Nitya Prabhakar Raj, M.D.
Kim Anna Reiss Binder, M.D.
Julie Lorraine Rosenthal, M.D.
Sudip Kumar Saha, M.D.
Marcos Coutinho Schechter, M.D.
Aaron Joel Schueneman, M.D.
Tedd Nathaniel Sen, M.D.
Eugenie Chia-Ching Shieh, M.D.
Michael Gordon Silverman, M.D.
Davis Lok Sim, M.D., Ph.D.
Emily Claire Speelman, M.D., Ph.D.
Tomeka Lynette Suber, M.D., Ph.D.
Anthony Derek Sung, M.D.
Karthik S. Suressh, M.D.
Brian Michael Thomas, M.D.
David G. Tian, M.D.
Geoffrey Huang Tison, M.D., M.P.H.
Susan Anne Tuddenham, M.D., M.P.H.
Juan Carlos Varela, M.D., Ph.D.
Christine Lee Vigeland, M.D.
Khinh Ranh Voong, M.D.
Michael N. Vranian, M.D.
Rohan Ravindra Wagle, M.D.
Sophie Becker Wells, M.D.
Sarasvathi Rasika Wickramasinghe, M.D., Ph.D.
Benjamin Robert Winders, M.D.
Rana Ramzi Yehia, M.D.
Jean Yoo Campbell, M.D.
Omar Khwaja Yousuf, M.D.
Joshua Franklin Zeidner, M.D.
Eric Stafford Zollars, M.D., Ph.D.

Johns Hopkins Bayview Medical Center House Staff-Internal Medicine

Anthony Joseph Accurso, M.D.
Sean Tabi Agbor-Enoh, M.D.
Christopher Tran Bach, M.D.
Jemilat Olapeju Badamas, M.D.
Andreas Sebastian Barth, M.D., Ph.D.
LaPrincess Gerse Brewer, M.D., M.P.H.
Jennifer Lynn Brown, M.D., M.S. to 07/14/2010
Audrey Jacqueline Chan, M.D.
David Shi-Ann Chang, M.D.
Ryan Edwin Childers, M.D.
Justin David Chronister, D.O.
Jennifer Lynn Cuahan, M.D.
Melissa Nicole Dattalo, M.D., M.P.H.
Huy Duc Do, D.O.
Claudia P. Dumfeh, M.D.
Justin Ewen Elffrey, D.O.
Mary Katherine Elffrey, D.O.
Lana Rae Elpert, M.D.
Olufunmilayo Olubukola Falade, M.D.
Kristina Michelle Frogale, M.D.
Panagis Galiatou, M.D.
Ashul Govil, M.D.
Lauren Elizabeth Graham, M.D., M.P.H.
Ariel Ruth Green, M.D., M.P.H.
John Patrick Hemming, M.D.
Ramin Sedaghat Herati, M.D.
Brian M. Howard, M.D.
Hamid Majid Kargbo, M.D.
Sarah Shafirstein Kawasaki, M.D.
Anthony Nguyen Khuu, M.D.
Joyce Michelle Koh, M.D.
Marc Robert Larochelle, M.D.
Stanley Shi-Dan Liu, M.D.
Kit Yu Lu, M.D.
Meta M. Mobula, M.D.
Jennifer Beth Monti, M.D., M.P.H.
Melissa Danielle Morgan, M.D.
Agnes Mwakingwe, M.D., Ph.D. to 06/15/2011
David Yao Fei Poan, M.D.
Fernanda Porto Carreiro, M.D.
Atoosa Rabiee, M.D.
Erin Linna Reeve, M.D.
Michael Wayne Sauder, M.D., M.P.H.
Nancy Schoenborn, M.D.
Shannon Jie Cui Shan, M.D., M.S. to 06/09/2011
Bradley Charles Strunk, M.D.
Sean Austin Tackett, M.D.
Paul Ravi Waldron, M.D., M.P.H.
Tanyaporn Wansom, M.D.
Kevin Haitao Zhao, M.D.

Johns Hopkins University/Sinai Hospital
Program-Internal Medicine

Katrina Acedo Abadilla, M.D. to 06/22/2011
Rtika Ryfka Abraham, M.B.B.S. to 06/22/2011 (on leave of absence to 07/18/2010)
Teamrat Araia Adhanom, M.D. to 06/22/2011
Jurga Adomaityte, M.D. to 06/22/2011
Dhaval G. Aghera, M.B.B.S. to 06/22/2011
Antonia B. Ahern, M.D. to 06/22/2011
Steven David Beaudry, D.O. to 06/22/2011
David Roger Benavides, M.D. to 06/22/2011
Aarti Khushal Bhatia, M.B.B.S. to 06/22/2011
Amit Kumar Bhise, M.B.B.S. to 06/22/2011
Michael Thomas Caglia, M.B.B.S. to 06/22/2011
Jyoti Chaudhary, M.B.B.S. from 08/25/2010
Pamela Rondi Damisse, M.D. to 06/22/2011
Schonze Frances Del Pozo, M.D. to 05/31/2011
Graham Dondlinger, M.D. to 06/22/2011
Helen Gharwan, M.D. to 06/22/2011
Mohit Girotra, M.B.B.S. to 06/22/2011
Aneta Petrova Gramatikova, M.D. to 06/22/2011
Gerardo Ismael Gacer Gueco, M.D.
Rajeev Gupta, M.B.B.S. to 06/22/2011
Rachel Anne Hallmark, M.D. to 06/22/2011
Jonathan A. Henesch, M.D. to 06/22/2011
Jessica Mary Reardon, D.O. to 06/22/2011
Amadeo Denina Rivera, Jr., M.D. to 06/22/2011
Nira Amrita Roopnarinesingh, M.B.B.S. to 06/22/2011
Surajit Saha, M.D. to 06/22/2011
Viplove Senadhi, D.O. to 06/22/2011
Deepankar Sharma, M.B.B.S. to 06/22/2011
Justin Michael Shaw, M.D. to 06/22/2011
Namita Singh, M.B.B.S. to 06/22/2011
Rupinder Singh, M.D. from 08/09/2010
Shailendra Singh, M.B.B.S. to 06/22/2011
Naseem Mohammed Mousa Sunnoqrot, M.B.B.Ch.

Immanuel Pradeep Raj Susai, M.B.B.S. to 06/22/2011
Jennifer Lynne Tomich, M.D. to 06/22/2011
David Brookhim Turk, M.D., M.S. to 06/22/2011
Panagiotis Tzevelekos, M.D. to 06/22/2011
Susanna V. Ulahannan, M.D. to 06/22/2011
Anu Verma, M.B.B.S. from 06/22/2011
Cecilia Hiromi Yshii Tamashiro, M.D. to 06/22/2011
Ily Kristine Tolentino Yunul, M.D. to 06/22/2011

Allergy and Clinical Immunology

Laura Kimberly Chong, M.D.
Yang-Ling Chou, Ph.D. to 12/31/2010
Marissa Liana Cook, M.D.
Matthew Michael Hewitt, Ph.D.
Jae Won Jeong, M.D., M.S., Ph.D. to 08/15/2010
Yoon Keun Kim, M.D., Ph.D. to 05/30/2011
Takumi Kiwamoto, Ph.D.
Yukiko Muroi, Ph.D.
Ho Jeong Na, Ph.D.
Dara Lee Neuman-Sunshine, M.D.
Jessica Mai Nguyen, M.D.
Miya Okada Paterniti, M.D.
Carl Robert Potenzieri, Ph.D.
Jessica Rabe Savage, M.D., M.S.
Peter William West, Ph.D. from 10/04/2010 to 10/29/2010
Jinho Yu, M.D., Ph.D. to 08/24/2010
Baohua Yuan, M.D. to 10/30/2010
Yufeng Zhou, M.D.
Yuqi Zhou, M.D. from 01/18/2011

Cardiovascular

Giulio Agnetti, Ph.D.
Ashwin Shivappa Akki, M.B.B.S., Ph.D.
Majd Al Ghatri, M.D. from 11/08/2010 to 12/05/2010
Andre Luiz Correia Almeida, M.D.
Marietta Samantha Ambrose, M.D.
Nivee Pradip Amin, M.D.
Asger Andersen, M.D. from 11/19/2010 to 05/18/2011
Fariba Ariaei, M.S., Ph.D.
Anderson da Costa Armstrong, M.D. from 04/01/2011
Kousalya Arunagiri, M.B.B.S. from 03/28/2011 to 04/10/2011
Patricia Rizzi Belfort Rizzi Padilha Teixeira, M.D. from 03/01/2011
Scott Adam Berkowitz, M.B.A., M.D.
Aditya Bhonsale, M.B.B.S.
Michael Joseph Blaha, M.D.
Lorrel Elizabeth Brown, M.D.
Catherine Young Campbell, M.D.
Rodrigo Julio Cerci, M.D.
Khalid Chakir, M.S., Ph.D.
Angel T. Chan, M.D.
Hana Cho, M.D., Ph.D.
Eui Young Choi, M.D.
Grant Victor Chow, M.D.
Fady Farouk B. Dawoud, Ph.D. from 07/06/2010
Andrew Paul DeFilippis, M.D.
Deepankar Demazummer, M.D.
Santosh Dhital, M.B.B.S. from 01/17/2011 to 02/15/2011
Julian Nahuel Diaz Fraga, M.D. from 01/31/2011 to 02/27/2011
Veronica Lea Jumarang Dimaano, M.D. to 01/31/2011
Sirisha Donekal, M.B.B.S.
Kristian Eskesen, M.D. to 08/31/2010
Heidi Luise Estner, M.D.
Federica Farinelli, Ph.D. from 07/20/2010
Ning Feng, M.D., Ph.D.
Jose Roberto Fernandez, M.D.
Justyna Patrycja Fert-Bober, Ph.D.
Ola Gjesdal, M.D., Ph.D. from 08/09/2010
Garth Nigel Graham, M.D.
Rebekah Lynn Gundry, Ph.D. to 11/30/2010
Ashish Gupta, M.S., Ph.D.
Vabren L. Watts, Ph.D. (on leave of absence to 08/22/2010)

Helge Uhrigshardt, Ph.D.
Hideki Uosaki, M.D. from 04/15/2011
Carolina Isabel Valdiviezo Schlomp, M.D.
Jose Danilo Vargas, M.D., Ph.D.
Naveen Kumar Voore, M.B.B.S. from 08/16/2010 to 09/10/2010
Shengbing Wang, Ph.D.
Heba Sabri Fouad Wassif, M.B.B.Ch., M.P.H.

Clinical and Molecular Rheumatology
Zaki Abou Zahr, M.D. from 07/15/2010 to 08/15/2010
Zaki Abou Zahr, M.D. from 09/15/2010 to 11/16/2010
Amit Bansal, M.B.B.S. from 10/25/2010 to 11/12/2010

Clinical Cardiac Electrophysiology
Fawaz Sulaiman Alhumaid, M.D.
Luciano Costa Amado, M.D.
Hiroshi Ashikaga, M.D., Ph.D.
Sandeep Bansal, M.D., M.P.H.
David Nash Edwards, M.D., Ph.D.
Matthew Needleman, M.D.
Brad Steven Sutton, M.D.

**Clinical Pharmacology**
Jianmeng Chen, M.D., Ph.D.
Francisco Jose Leyva, M.D., Ph.D.
Liye Li, M.D., Ph.D. to 12/31/2010
Nicolette Alexandreia Louissaint, Ph.D.
Florenzia Marine McAllister, M.D.

**Division of Echocardiography**
Miguel Santaularia Tomas, M.D. from 07/21/2010

**Endocrinology and Metabolism**
Katrina Acedo Abadilla, M.D. from 01/18/2011 to 01/31/2011
Sherley Abraham, M.D.
Shabina Roohi Ahmed, M.D.
Murugan Avaniyapuram Kannan, Ph.D.
Shivam Amrut Champaneri, M.D.
Monica Nicole Giles, M.D.
Wenyen Huang, M.D. from 11/23/2010 to 12/13/2010
Ravi Kanti, M.B.B.S. from 10/14/2010 to 11/10/2010
Sanijvani Avinash Kolge, M.B.B.S. from 08/31/2010 to 09/30/2010
Ruixin Liu, Ph.D. from 09/01/2010 to 01/16/2011
Zhi Liu, Ph.D.
Nestoras Nicolas Mathioudakis, M.D.
Shumei Meng, M.D.
Kendall Ford Moseley, M.D.
Raghavendra Mulinti, M.B.B.S. from 01/04/2011 to 01/31/2011
Miguel Munoz, M.D.
Jayzandulam Natsag, M.D. from 02/11/2011
Zin Min Nwe, M.B.B.S. from 07/28/2010
Supneet Kaur Saluja, M.B.B.S. from 02/01/2011 to 02/28/2011
Naseem Mohammed Mousa Sunnoqrot, M.B.B.Ch. from 11/25/2010 to 12/08/2010
San Thida, M.B.B.S. from 09/01/2010 to 09/30/2010
Reena Mary Thomas, M.B.B.S. from 03/30/2011 to 04/19/2011
Vanessa Jeanette Walker Harris, M.D.
Chengyu Xu, M.D. from 09/15/2010 to 10/17/2010
Mihail F. Zilbermint, M.D. from 10/01/2010 to 11/30/2010

**Gastroenterology**
Stuart Kevin Amateau, M.D., Ph.D.
Vivian Abena Asamoah, M.D.
Rukshana Nadia Cader, M.B.B.Ch.
Lea Ann Chen, M.D.
Po-Hung Chen, M.D.
Stefan David, M.D.
Ashwini Sagar Davison, M.D. to 08/31/2010
Sameer Dhalla, M.D.
Zhen Ding, M.D., Ph.D. to 10/22/2010
Lihong Gu, M.D., Ph.D. to 10/31/2010
Murat Taner Gulsen, M.D. from 09/15/2010 to 04/15/2011
Winoah Anya Henry, M.B.B.S.
Naveen Kumar Jha, M.S., Ph.D.
Shi Jin, Ph.D.
Daniela Jodorkovsky, M.D.
Mirajul Hoque Kazi, M.Sc., Ph.D. to 07/31/2010

**General Internal Medicine**
Reza Alavi, M.D.
Saul Bryan Blecker, M.D.
Sarah Stark Casagrande, M.H.S., Ph.D. to 08/25/2010
Ranee Chatterjee, M.D. to 08/15/2010
Dana Kelly Christo, M.P.H., Ph.D.
Brooke Ayoka Cunningham, M.D., Ph.D.
Matthew W. DeCamp, M.D., Ph.D.
Tabor E. Flickinger, M.D.
Meghana Dipti Gadgil, M.D.
Kimberly A. Gudzune, M.D.
Charles Richard Jonassaint, A.M., Ph.D. from 09/01/2010
Jessie Katherine Kimbrough-Sugick, M.D., M.P.H.
Kimberly Daniella Martin, Ph.D.
Henry Joseph Michtalik, M.D., M.P.H.
Anne Kress Monroe, M.D., M.S.P.H.
Najla Nassery, M.D.
Priti Vijay Nikte, M.B.B.S. to 07/25/2010
Tanya Suzanne Sam, M.D.
Salman Waheed, M.D. from 08/01/2010
Letitia Jeanne Wright, M.D.

**Geriatric Medicine**
Scott Adam Berkowitz, M.B.A., M.D.
Jessica Leigh Colburn, M.D.
Erin Rand Giovannetti, Ph.D.
Ashleigh Mica Hicks, M.D.
Mily Kannarkat, M.D.
Robert P. McNeil, M.D.
Kendall Ford Moseley, M.D.
Fatima Sheikh, M.B.B.S. from 01/03/2011
Maranda Ann Trahan, Ph.D. from 08/23/2010

**GI Advanced Therapeutics**
Mouen A. Khashab, M.D.

**Hematology**
Amy M. Belton, Ph.D.
Xiaosong Huang, Ph.D.
Biju Joseph, M.S., Ph.D. to 07/31/2010
Quy Hoa Le Thi, M.D., M.S. to 10/25/2010

**GI Advanced Therapeutics**
Mouen A. Khashab, M.D.
Infectious Diseases
Ahmed Abaza, M.B.B.Ch.
Carolyn Dahlen Alonso, M.D.
Nicole C. Ammerman, Ph.D.
Claire Andrejak, M.D.
Justin Richard Bailey, M.D., Ph.D.
Lila Bouadma, M.D., Ph.D.
Natalie McCarter Bowman, M.D., M.Phil. from 01/31/2011 to 02/28/2011
Edmond John Byrnes, Ph.D. from 02/01/2011
Michael Anand Chattergoon, M.D., Ph.D.
Soumya Chatterjee, M.D. from 10/01/2010 to 11/30/2010
Neelkamal Chaudhary, Ph.D. to 09/30/2010
Kausik Datta, Ph.D.
Bappaditya Dey, Ph.D. from 02/09/2011
Kerry Lynn Dierberg, M.D., M.P.H.
Christine Marie Durand, M.D.
Noton Kumar Dutta, Ph.D. from 01/31/2011
Oluwaseun Omotomilola Falade-Nwulia, M.B.B.S., M.P.H.
Shashank Gupta, Ph.D.
Charles Franklin Haines, M.D.
Muhammad Abdulrahaman Halwani, Ph.D. to 10/21/2010
Fiona Patricia Havers, M.A., M.D.
Abraham Joseph Kandathil, Ph.D. to 05/25/2011
Anup Kumar Kesavan, M.Sc., Ph.D. to 09/30/2010
Lee G. Klinkenberg, Ph.D.
Anastasia Kolyva, M.D. from 01/03/2011
Fuat Mukaddasovich Kurbano, M.D., Ph.D.
Olof Christer Larsson, Ph.D.
Lin Liu, M.D., Ph.D. to 10/31/2010
Shichun Lui, D.V.M., M.Sc., Ph.D. to 08/11/2010
Pasri Maharom, M.D. from 08/23/2010
Sarah Elizabeth Miller, M.D.
Supriya Shaunak Munshaw, Ph.D. to 06/13/2011
Oon Tek Ng, M.B.B.S. to 05/20/2011
Veronique Rachele Nussenblatt, M.D., M.H.S.
Ikwo K. Oboho, M.D.
Carleitta La'Sharn Paige, Ph.D. to 08/13/2010
Leilani Paitoonpong, M.D., M.Sc. from 08/23/2010
Sang Won Park, M.D., M.S., Ph.D. from 08/02/2010 to 09/30/2010
Edward Alan Weinstein, M.D.
Ryan P. Westergaard, M.D., M.P.H.
Bonnie Chun Kwan Wong, M.B.B.Ch. from 08/01/2010 to 01/31/2011
Santhi Priya Yalamanchili, M.B.B.S. to 07/13/2010
Tianyu Zhang, Ph.D. to 08/31/2010

Medical Genetics
Hooi Sian Eng, Ph.D.

Molecular Medicine
Naiara Garcia Bediaga, Ph.D. from 01/01/2011
David James Hiller, Ph.D. from 09/01/2010
Hong Ji, Ph.D.
Yun Liu, Ph.D.
Winston George Timp, Ph.D.

Nephrology
Veena Kalmanje Acharya, M.D.
Valeriu Cebotaru, M.D. from 07/06/2010
Ping Chen, M.D.
Teresa Katie Chen, M.D.
Matthew Carey Foy, M.D.
Judit Gordon, M.D.
Morgan Erika Grams, M.D.
Gaurav Gupta, M.B.B.S.
Youssef Boutros Hokayem, M.D. from 10/12/2010 to 11/07/2010
Tanya S. Johns, M.D.
Hyunho Kim, Ph.D.
Joshua David King, M.D.
Weizhe Li, Ph.D.
Dongyan Liu, M.D.
Jose Manuel Monroy Trujillo, M.D.
Ji-Eun Oh, M.D., Ph.D. from 05/01/2011
Patricia Outeda Garcia, Ph.D.
Qianmei Sun, Ph.D. to 01/01/2011
Yuhong Tao, Ph.D. to 02/28/2011
Jinxiang Yu, Ph.D. to 10/15/2010

Nephrology (Bayview)
Ralph Michel Daher, M.D.
John Paul Havill, M.B.B.S.
Nargiz Munganlinskaya, M.D. from 12/07/2010 to 12/21/2010
Harish Bhanudevan Pillai, M.B.B.S. from 08/19/2010 to 09/15/2010
Gaurav Raman, M.B.B.S.
Putva Dogra Sharma, M.B.B.S.

Occupational Medicine
Sammy Jafar Almashat, M.D.
Nyasha D. Bakare, M.D. to 07/31/2010
Lopa Basu, D.O.
Kevin Lee Bowman, M.B.A., M.D.
Yi-Ning Cheng, M.D.
Michael Jason Crupain, M.D.
Jennifer Lipkowitz Eaton, M.D., M.P.H.
Yelena Globina, M.D., M.P.H.
Travis Roswell Hobart, M.D.
Nimisha Kalia, M.D.
Clarence K. Lam, M.D.
Alefiyah K. Mesiwala, M.D.
Mame Khouiredia Niang, M.D.
Charles Marshall Preston, M.D.
Gayatri Guduru Reddy, M.D.
Elizabeth Marie Salisbury Afshar, M.D.
Young-Rok Shin, M.D.
Ken Lin Tai, M.D.
Aldo Tinoco, M.D.
Kanika Michele Whitehead, M.D.
Meltem Zeytinoglu, M.B.A., M.D.

Pulmonary and Critical Care Medicine
Karunakar Akasapu, M.B.B.S. from 08/31/2010 to 09/30/2010
Karunakar Akasapu, M.B.B.S. from 11/02/2010 to 02/01/2011
Jason Atticus Akulian, M.D., M.P.H. to 06/29/2011
Abdulla Salem Al Damluji, M.D., M.P.H. from 02/01/2011 to 02/28/2011
Cristine Elizabeth Berry, M.D. to 06/29/2011
Christian Bime, M.D. to 06/29/2011
Isabel Blanco, M.D. to 06/29/2011
Sonali Bose, M.D. to 06/29/2011
Andrew Thierman Braun, M.D. to 06/29/2011
Monica Belinda Bueso, M.D.
Zeling Cao, M.D., Ph.D.
Neal F. Chaissou, M.D.
Tom Wen-Hao Cherng, Ph.D. from 09/30/2010
Chien-Hung Chih, M.D.
Ji-Young Choi, Ph.D.
Samuel Lester Collins, Ph.D.
Geoffrey Robert Connors, M.D. to 06/29/2011
Michael Hermann Eberlein, M.D., Ph.D.
Hala El Chami, M.D.
Daniel Clark Files, M.D. to 06/29/2011
William Arthur Fischer, II, M.D. to 06/29/2011
Brian Thomas Garibaldi, M.D. to 06/29/2011
Mohamed A.A. Gashouta, M.B.B.Ch.
Daniel Jamieson, M.D.
Cheilonda Johnson, M.D. to 06/29/2011
Thomas M. Johnson, M.D. from 08/18/2010 to 12/30/2010
Dhruv Joshi, M.B.B.S. from 07/09/2010 to 10/19/2010
Jonathan C. Jun, M.D.
Biren Bharat Kamdar, M.D. to 06/29/2011
Bo Soo Kim, M.D. to 06/29/2011
Todd Matthew Kolb, M.D., Ph.D. to 06/29/2011
Elizabeth Ann Lendermon, M.D. to 06/29/2011
Dalila Watford Lewis, M.D. to 07/30/2010
Hoi Yan Amanda Lin, Ph.D. from 03/01/2011

Transplant Nephrology
Bassam G. Abu Jawdeh, M.D.

Transplantation Infectious Diseases
Simon Dufresne, M.D. from 08/03/2010

MOLECULAR AND COMPARATIVE PATHOBIOLOGY
Nicole Minnette Azene, D.V.M., M.S.
Emily J. Bailey, D.V.M.
Rashmi Bankoti, Ph.D. from 09/01/2010
Victoria Kate Baxter, D.V.M.
Sarah Evelyn Beck, D.V.M.
Jennell Lynn Biggig, D.V.M., M.S. from 07/19/2010
Kathleen Kelly Brennan, D.V.M.
Tracey Ann Graham, D.V.M.
Eric Kenneth Hutchinson, D.V.M.
Katharine Melissa Laughlin, Ph.D.
Simon Yat-Ming Long, V.M.D.
Lisa Michelle Mangus, D.V.M. from 07/26/2010
Kelly Ann Metcalf Pate, D.V.M.
Kelly Ann Rice, D.V.M.
Gillian Curtis Shaw, D.V.M., M.S.
Brian Wesley Simons, D.V.M.
Ceerenea Ubaida Mohien, Ph.D.
Kenneth Whitaker Witwer, Ph.D.

MOLECULAR BIOLOGY AND GENETICS
Tudor Constantin Badea, M.A., M.D., Ph.D. to 10/31/2010
Courtney Rae Busch, Ph.D.
Hugh Brian Cahill, Ph.D.
Jing Cai, Ph.D.
Yizhi Cai, Ph.D. to 05/31/2011
Hao Chang, Ph.D.
Qian Chen, Ph.D.
Ki Young Choi, Ph.D.
Eric Michael Cooper, Ph.D.
Junbiao Dai, Ph.D. (on leave of absence from 02/20/2011)
Lixin Dai, Ph.D.

POSTDOCTORAL FELLOWS 451
POSTDOCTORAL FELLOWS

Karen Kate Ocampo David, Ph.D.
Hua Deng, Ph.D. from 10/04/2010
Sergej Djurjanovic, Ph.D.
Rui Duan, Ph.D.
Hosam El-Din Mohamed Ahmed Ewis, Ph.D.
Christopher Michael Gallo, Ph.D.
Sunil Gangadharan, Ph.D.
Brian Michael Green, Ph.D.
Erik Edmund Griffin, Ph.D.
Nini Guo, Ph.D.
Nicholas Raymond Guydosh, Ph.D. to 10/04/2010
Sergej Djuranovic, Ph.D.
Rui Duan, Ph.D.
Hosam El-Din Mohamed Ahmed Ewis, Ph.D.
Christopher Michael Gallo, Ph.D.
Sunil Gangadharan, Ph.D.
Brian Michael Green, Ph.D.
Erik Edmund Griffin, Ph.D.
Nini Guo, Ph.D.
Nicholas Raymond Guydosh, Ph.D.
Bo Huang, Ph.D.
Nuttara Jamonnak, Ph.D. to 12/31/2010
Ji Hoon Kim, M.S., Ph.D.
Sang Joon Kim, Ph.D.
Chen Ling, Ph.D. to 08/06/2010
Syed Mohammad Moin, Ph.D.
Tammy Morrish, Ph.D.
Fumio Motegi, Ph.D.
Heloise Marie Muller, Ph.D.
Kathryn Ann O'Donnell Mendell, Ph.D.
Alexandre Paix, Ph.D. from 09/01/2010
Slavica Pavlovic-Djurjanovic, Ph.D. to 08/31/2010
Alexandros Petropoulos, Ph.D.
Maria Sevdali, Ph.D.
Feraz Azhar, Ph.D. from 01/01/2011
Chetan Bettegowda, M.D., Ph.D.
Mohamad Bydon, M.D.
Justin Michael Caplan, M.D.
Kaisorn Lee Chaichana, M.D.
Jennifer Jay Cheng, M.D., M.S.
David Andrew Chesler, M.D., Ph.D.
Geoffrey Philip Colby, M.D., Ph.D.
Michael Joseph Dorsi, M.D.
Benjamin D. Elder, M.D.
Tomás Garzón-Muvdi, M.D.
Courtney Rory Goodwin, M.D., Ph.D.
Mari Louise Asaoka Groves, M.D.
Hugo Guerrero-Cazares, M.D., Ph.D.
Wesley Hsu, M.D.
Avadhut Divakar Joshi, Ph.D.
Thomas Adam Kosztowski, M.D.
Ryan Michael Kretzer, M.D.
Jason Andrew Laiuw, M.D.
Li-Mei Lin, M.D.
Chang-Chia Liu, Ph.D.
Sheng-fu Larry Lo, M.D., M.H.S.
Ahmed Medhat Mohyeldin, Ph.D. (on leave of absence from 07/11/2010 to 11/04/2010)

Kiyriakos Papadimitriou, M.D. from 10/10/2010
Jonathan Auram Pindrik, M.D.
Gustavo Pradilla, M.D.
Shaan Mohamed Raza, M.D.
Pablo Fernando Recinos, M.D.
Vafi Salmasi, M.D. to 03/15/2011
Rachel Sarabia-Estrada, Ph.D. to 02/28/2011
Gary Thomas Schwartzbauer, M.D. from 10/01/2010 to 12/31/2010
Meghan Joyce Seltzer, Ph.D. to 02/01/2011
Candice Ann Shaifer, Ph.D. to 05/31/2011
Graeme Frederick Woodworth, M.D.

Pediatric Neurosurgery

Adam Jordan Polifka, M.D. to 09/30/2010

Spine Division

Christopher Michael Maulucci, M.D. from 01/01/2011

NEUROLOGY

Karunakar Akasapu, M.B.B.S. from 07/29/2010 to 08/29/2010
Yama Akbari, M.D.
Syed Shaida Ahmad Andrabi, M.Sc., Ph.D. to 08/31/2010
Martinson Kwaku Arnan, M.D.
Arun K. Azhagiri, M.Sc., Ph.D. (on leave of absence from 08/01/2010 to 08/31/2010)
Mihyun Bae, Ph.D. (on leave of absence from 09/27/2010 to 10/06/2010)
Jee Yun Agnes Bang, M.D.
James Francis Berry, Ph.D. from 07/19/2010
Bharathi, Ph.D. to 07/31/2010
Bridgette Jeanne Billoux, M.D.
Michael A. Bonaguidi, Ph.D.
Saurav Brahmachari, Ph.D. from 09/01/2010
Manuel Mauricio Buitrago Blanco, M.D., Ph.D.
Dominic T. Cheng, M.S., Ph.D. to 09/30/2010
Zhikai Chi, M.D., Ph.D.
Cheng-Hsuan Chiang, M.D., Ph.D. from 12/30/2010
Kimberly Michele Christian, Ph.D.
Pongwut Danchaiwijitr, M.D. from 11/23/2010 to 12/20/2010
Jennifer Lea Dearborn, M.D.
Santosh Dhitai, M.B.B.S. to 07/28/2010
Josh Lee Duckworth, M.D.
Stephen Matthew Eacker, Ph.D.
Romanus Roland Faigle, M.D.
Amos Akintayo Fatokun, Ph.D. to 08/15/2010
Elizabeth Ann Felton, M.D.
Anthony R. Frattalone, M.D.
Yuanzheng Gao, Ph.D.
Mehdi Ghasemi, M.D.
Ichiro Hamazaki, Ph.D. to 09/30/2010
Holly Elaine Hinson, M.D.
Ya-Chun Hsieh, Ph.D. from 08/16/2010
Wenyen Huang, M.D. from 10/26/2010 to 11/22/2010
Laura Beth Jaeger, Ph.D. to 12/31/2010
Amin Jahanbakhehi, M.D. from 01/12/2011
Mi-Hyeon Jang, M.S., Ph.D. to 03/31/2011
Shyian S. Jen, M.D.
Haisong Jiang, Ph.D. from 12/06/2010
Madhavi Jinka, M.B.B.S.
Tarja Alison Juopperi, D.V.M., M.S., Ph.D.
Ho Chul Kang, Ph.D.
Sung Ung Kang, Dr.Med.Sc. from 01/03/2011
Navaz Karanjia, M.D.
Senthilkumar Shanmugam Karuppagounder, Ph.D.

452 POSTDOCTORAL FELLOWS
Amirhossein Seyed Kheradmand, M.D. from 07/08/2010
Ju Young Kim, Ph.D. to 05/09/2011
Sung Hun Kim, Ph.D. from 09/01/2010
Woon Ryoung Kim, Ph.D.
Sanjivani Avinash Kolge, M.B.B.S. from 01/02/2011 to 01/30/2011
Lingling Kong, Ph.D. to 03/31/2011
Ulrike Maria Kraemer, Ph.D.
Elizabeth Henderson Lacev, Ph.D. from 11/01/2010
Lori Ann Lebson, Ph.D.
Byoung Dae Lee, Ph.D.
Youngjin Lee, Ph.D.
Yun-Il Lee, Ph.D. to 04/30/2011
Xiong Li, Ph.D. to 12/31/2010
Ying Li, Ph.D.
Dmitry Liepinsh, M.D. from 02/01/2011 to 02/28/2011
Qili Liu, Ph.D. from 08/01/2010
Sha Liu, Ph.D. from 07/20/2010
Jose Luis Lopez, Jr., M.D.
Denyse Dawn Lutchmansingh, M.B.B.S. from 01/31/2011 to 03/01/2011
James Brian Machamer, Ph.D. from 11/01/2010
Georgia Makri, Ph.D. from 09/07/2010
Concepcion Maldonado Adrian, Ph.D. to 03/31/2011
Xiaobo Mao, Ph.D. from 09/01/2010
Elisabeth Breese Marsh, M.D. ¹
Ian Martin, Ph.D.
Payam Mohassel, M.D. ¹
Melissa Motta, M.D., M.P.H. ¹
Melanie Mueller, Ph.D.
Raghavendra Mulinti, M.B.B.S. from 07/06/2010 to 08/02/2010
Kwan Leung Ng, M.D. ¹
Fnu Nirmal Kumar, M.D. from 09/30/2010 to 10/31/2010
Zin Min Nwe, M.B.B.S. from 11/01/2010 to 11/30/2010
Ozioma Chima Onkonwo, Ph.D.
Margaret Ayo Owegi, D.O. ¹
Venkataraman Palabindala, M.B.B.S. from 09/28/2010 to 10/25/2010
Sophia Theodore Papadeas, Ph.D.
Valery V. Parfenov, M.D.
Srisha Paruchuri, M.B.B.S. from 08/31/2010 to 09/27/2010
Brian Nathaniel Pasley, Ph.D.
Neha Prakash Patel, Ph.D. from 10/15/2010
Amanda Maureen Phillips, Ph.D. from 08/16/2010
Tarran Jean Pierfelice, Ph.D. from 02/04/2011
Louis-Jan Pilaz, Ph.D. from 09/13/2010
Emily Grace Poller, Ph.D.
John Calvin Probasco, M.D. ¹
Abid Y. Qureshi, M.D. ¹
David Shannon Race, Ph.D.
Rana Rais, Ph.D. from 11/29/2010 to 05/31/2011
Asha Geeta Ramesar, M.B.B.S. from 08/03/2010 to 08/30/2010
Aruna Suresh Rao, M.B.B.S. ¹
Liana Isa Shapiro Rosenthal, M.D.
Ali Shabahang Saber Tehran, M.D. from 09/01/2010
Gautam Sachdeva, M.B.B.S. from 01/17/2011 to 02/11/2011
Bogachan Sahin, M.D., Ph.D. ¹
Behrang Saminejad, M.D. from 10/25/2010 to 11/19/2010
Anjali Z. Sharrief, M.D. ¹
Augusta Y. Shestyuk, Ph.D.
Joo Ho Shin, Ph.D.
Krupa Hemantkumar Shukla, Ph.D.
Carrie Leanne Simms, Ph.D. to 04/14/2011
Jonathan Michael Sleazak, Ph.D. to 04/30/2011
Shawn F. Smyth, M.D.
Jian Song, Ph.D.
Jeanette Nicole Stankowski, Ph.D. from 02/14/2011
Yijing Su, Ph.D. (on leave of absence from 12/01/2010 to 12/12/2010)
Alexander Andrea Tarnutzer, M.D. to 07/21/2010
Million Adane Tengenge, Ph.D. to 05/31/2011
Katherine Page Thomas, M.D.
Rajesh Tota-Maharaj, M.D. from 01/04/2011 to 01/31/2011
Luis Bernardo Tovar y Romo, Ph.D. from 09/07/2010
George K. Essien Umanah, Ph.D.
Angela Wabulya, M.B.Ch.B. ¹
Yingfei Wang, Ph.D.
Zhexing Wen, Ph.D.
Shanifa Shunta Wills, Ph.D.
Megan C. Wright, Ph.D. to 08/31/2010
Wei Xiong, M.D.
Yulan Xiong, Ph.D.
Chengyu Xu, M.D. from 12/01/2010 to 01/01/2011
Jinchong Xu, Ph.D.
Nandini Umesh Yadav, M.D. from 08/30/2010 to 09/29/2010
Yongjie Yang, M.S., Ph.D. to 08/30/2010
Jeffrey Min-In Yau, Ph.D.
Huimei Yu, Ph.D.
Changqing Yuan, Ph.D.
Ki-Jun Yun, Ph.D.
Chun Zhong, Ph.D.
Jing Zhu, Ph.D.
Clinical Neurophysiology
Taryn Fortune, M.D. to 05/24/2011
Tung T. Tran, M.D.
Kennedy Krieger Institute
Rooman Ahad, M.D.
Kristin Whittford Baranano, M.D., Ph.D.
Anita Dyan Barber, Ph.D.
Mahendran Botlagunta, M.Sc., Ph.D. to 09/30/2010
Ann Sunah Choe, Ph.D. from 10/13/2010
Parastoo Jangouk, M.D.
Doris Leung, M.D.
Mary Elizabeth Nebel, Ph.D. from 12/20/2010
Andre Wayne Phillips, Ph.D.
Md Al Rahim, Ph.D. from 09/15/2010
Prakash Rath, Ph.D.
Jean-Philippe Georges Louis Richard, Ph.D. to 04/18/2011
Jaswinder Kaur Sharma, M.D. to 04/13/2011
Xiaohai Shi, Ph.D.
Peng Sun, Ph.D.
Peng Wang, Ph.D.
Mingyao Ying, Ph.D.
Neurocritical Care
Ermias Aytenfisu, M.D., M.Sc. from 12/01/2010 to 12/31/2010
Daniel Correa, M.D. from 01/03/2011 to 01/31/2011
Michael Crippsins, M.D. from 11/01/2010 to 11/30/2010
Daniel Lesley, M.D. from 02/01/2011 to 02/28/2011
Tracy L. Levy, D.O. from 02/01/2011 to 02/25/2011
Henry Park, M.D. from 11/01/2010 to 11/30/2010
Elizabeth Stewart, M.D. from 01/17/2011 to 02/13/2011

Neuroimmunology and Neurological Infections
Christopher Paul Eckstein, M.D.
Farrah Jasmine Mateen, M.D.
Jiwon Oh, M.D.
Shiv Satidha, M.B.B.Ch.
Ik Lin Tan, M.B.B.S.

Neurology-Vascular
Yolanda Chik, M.D.

Neuromuscular Medicine
Shan Chen, B.M., Ph.D.
Jeremy Michael Sullivan, Ph.D. from 01/10/2011

Neuro-Oncology
David Scott Wolf, M.D., Ph.D.

Pediatric Neurology
Jennifer Buccyner, M.D. from 12/01/2010 to 12/31/2010
Jennifer Buccyner, M.D. from 02/01/2011 to 02/28/2011
Matthew Davis, M.D. from 12/01/2010 to 01/31/2011
Alison Marie Dolce, M.D. ¹
Ryan Jordan Felling, M.D. ¹
Erika L.F. Hedderick, M.D. to 08/31/2010
Anne Josiah, M.D. from 12/01/2010 to 12/31/2010
Anne Josiah, M.D. from 02/01/2011 to 02/28/2011
Sarah Aminoff Kelley, M.D. ¹
Paul R. Lee, Jr., M.D., Ph.D. ¹
Brian Winston Masselink, M.D. ¹
Christopher Brandon Oakley, M.D. ¹
Samip Patel, M.D. from 10/01/2010 to 10/31/2010
Samip Patel, M.D. from 01/02/2011 to 01/30/2011
Laura Reaven, M.D. from 11/01/2010 to 11/30/2010
Laura Reaven, M.D. from 02/01/2011 to 02/28/2011

NEUROSCIENCE
Victoria Eugenia Abraira, Ph.D.
Amit Agarwal, Ph.D.
Amita Marie Altimus, Ph.D. from 10/01/2010
Victor Anggono, Ph.D.
Yoichi Araki, Ph.D.
Yair Ben-Chaim, Ph.D.
Rajnish Bharadwaj, M.B.B.S., Ph.D. to 02/15/2011
Hannah Justine Block, Ph.D.
Li-Hui Cao, Ph.D.
Ivana Celic, Ph.D.
Jiyong Cha, Ph.D.
Shu-Ling Chiu, Ph.D.
Jeonghoon Choi, Ph.D.
Roger Lee Clem, Ph.D.
Robert H. Cudmore, Ph.D.
Jimmy de Melo, Ph.D.
Michael Tri Hoang Do, Ph.D.
Dang Du, Ph.D. from 02/01/2011
Huaqqiang Fang, Ph.D. from 09/30/2010
James Micah Finley, Ph.D.
Ping Geng, Ph.D. from 09/01/2010
Liang Han, Ph.D.

Randal Alan Hand, Ph.D.
Anthony Weldon Harrington, Ph.D.
Ethan Garrett Hughes, Ph.D.
Natasha Hussain, Ph.D.
Sangyun Jeong, Ph.D.
Qingguang Jiang, Ph.D.
Zheng Jiang, Ph.D.
Yunju Jin, Ph.D.
Krishna Rangadharamarao Juluri, Ph.D. to 08/13/2010
Paul Moonwahan Kim, M.D., Ph.D.
Yu Shin Kim, M.S., Ph.D.
Soumya Korrapatl, Ph.D. from 01/05/2011
Zhihong Lin, Ph.D.
Cheng-Hang Lii, Ph.D.
Qin Liu, Ph.D. to 01/31/2011
Wenqin Luo, Ph.D. to 02/28/2011
Joseph William McFadden, Ph.D.
Benjamin Dwight-Clyde McNeil, Ph.D. from 01/14/2011
Kristin Elizabeth Musselman, Ph.D. from 11/01/2010
Asif Khan Mustafa, M.S., Ph.D. from 09/01/2010
Andrew Scott Nichols, Ph.D.
Min Jung Park, Ph.D. from 09/09/2010
Sungjin Park, Ph.D.
Martin Paukert, M.D. to 07/14/2010
Brad Erich Pfeiffer, Ph.D.
Santosh Ramamurthy, Ph.D.
Xiaozhi Ren, Ph.D. from 02/09/2011
Martin Miguel Riccomagno, M.S., Ph.D.
Juan Ignacio Sbodio, Ph.D.
Kamal Deep Sharma, M.Sc., Ph.D. to 03/31/2011
Gek Ming Sia, Ph.D.
Coryse Naioka St. Hillaire-Clarke, M.S., Ph.D. to 09/10/2010
Zongxiang Tang, Ph.D. to 12/31/2010
Gelsay Torres-Oviedo, Ph.D.
Tracy Samantha Tran, M.S., Ph.D. to 08/15/2010
Richa Tyagi, M.Sc., Ph.D. from 07/02/2010
Erin Virginia Lamont Vasudevan, Ph.D. to 07/15/2010
Lenora Joanne Volk, Ph.D.
Hao-Ran Wang, Ph.D.
Qiang Wang, Ph.D.
Zhen Wang, Ph.D. to 08/16/2010
Kevin Michael Wright, Ph.D.
Jing Xu, M.D., Ph.D. from 08/01/2010
Tian Xue, Ph.D.
Wei Yan, Ph.D.
Haibo Yu, Ph.D.
Jing Zhang, Ph.D. from 12/27/2010
Mei Zhang, Ph.D. from 02/01/2011
Wenchang Zhang, Ph.D.
Yong Zhang, Ph.D.
Jing Zhu, Ph.D.
Camila Lidia Zold, M.S., Ph.D.
Beyian Zou, Ph.D.

ONCOLOGY CENTER
Olaiide Ifelola Ajayi, M.B.B.S. from 02/01/2011 to 02/28/2011
Alexander Vladimirovich Favorov, Ph.D. to 05/31/2011
Elana Judith Fertig, Ph.D. to 10/31/2010
Liangfeng Han, M.D., Ph.D.
Kideok Jin, M.S., Ph.D.
Daniel Kejzman, M.D. to 02/28/2011
Vanessa Ferreira Merino, M.A., Ph.D.
Loris Mularoni, Ph.D.

454 POSTDOCTORAL FELLOWS
Raquel Maria Silhy, M.D. to 12/10/2010

Leyao Wang, Ph.D. to 08/03/2010

Ting Yang, Ph.D. from 01/03/2011

**Cancer Biology**

Marsilio Adriani, Ph.D. from 11/15/2010
Kirsten Florence Block, Ph.D. from 11/01/2010
Evan Thomas Brower, Ph.D.
Guoxiang Cai, Ph.D. from 12/15/2010
Yi Cai, Ph.D.
Ian Shen-Yi Cheong, Ph.D. to 02/03/2011
Yong Gu Cho, M.M.S., Ph.D.
Su Mi Choi, Ph.D.
Young Bong Choi, Ph.D.
Liudmila Vladimirovna Danilova, Ph.D.
Elana S. Ehrlich, Ph.D.
Soma Ghosh, M.S., Ph.D.
Andrew Charles Goodwin, Ph.D.
Christin Lee Hanigan, Ph.D.
Megan Albert Healey, Ph.D.
Margaret Lynne Hoang, Ph.D. from 12/01/2010
Mehammad Zulfikar Hossain, Ph.D.
Jason David Howard, Ph.D. from 10/23/2010
Charlotte Monique Huijts, M.D. from 11/01/2010
Alicia Hubert, M.D.
Hee Jung Hwang, Ph.D.
Yuchen Jiao, M.D., Ph.D.
Lihua Jin, Ph.D.
Christine G. Joseph, Ph.D.
Chandrashekhar Dwarkanath Kamat, Ph.D. (on leave of absence from 02/01/2011)
Kasey Anne Karen, Ph.D. to 10/14/2010
Rebecca Jane Leary, Ph.D.
Huili Li, Ph.D.
Meng Li, M.D., Ph.D. from 11/02/2010
Renfeng Li, Ph.D.
Liang Liang, Ph.D.
Hua Liu, M.D., Ph.D.
Jianjun Luo, Ph.D. from 08/02/2010 to 05/31/2011
Il Minh, Ph.D.
Helai Mohammad, Ph.D. to 12/31/2010
Hanneke Elisabeth Catharina Niessen, Ph.D. from 10/29/2010 to 03/02/2011
Shannon Lyn Nowotarski, Ph.D. from 11/19/2010 to 01/05/2011
Philipp Nuhn, M.D.
Heather Maureen O’Hagan, Ph.D. to 12/31/2010
Hiroyuki Ozawa, Ph.D. from 04/01/2011
Kalpeekshumar Govindbhai Patel, M.B.B.S.
Yuan Qiao, Ph.D.
Arumugam Nagalingam, M.S., Ph.D. from 02/07/2011
Toshihiko Tanno, Ph.D. from 09/09/2010
Danielle Townsley, M.D. from 08/30/2010 to 09/26/2010
Xiaochuan Yang, Ph.D. from 07/08/2010

**Hematologic Malignancies**

Katrina Acedo Abadilla, M.D. from 09/14/2010 to 10/11/2010
Nicolas Acquavella Pesantes, M.D. from 11/22/2010 to 12/19/2010
Jasmin Roya Agarwal, M.D.
Zita Arany, Ph.D. to 12/01/2010
Sudipto Ganguly, Ph.D.
Thomas Prebet, M.D. to 10/14/2010
Sarah Sinclair, D.O. from 08/02/2010 to 08/29/2010

**Hematology/Medical Oncology**

Ani Sarkis Balmanoukian, M.D.
Aditya Bardia, M.B.B.S.
Julia Ann Beaver, M.D.
Aarti Khushal Bhatia, M.B.B.S. to 12/09/2010 to 01/05/2011
Amrit Kumar Bhatia, M.B.B.S. to 07/20/2010
Timothy Francis Burns, M.D., Ph.D.
Jian Li Campan, M.D., M.S., Ph.D.
David Andrew Chesler, M.D., Ph.D.
Kevin J. Cheung, M.D.
Roisin M. Connolly, M.B.B.S.
Goda Damera, M.B.B.S. from 10/01/2010 to 10/28/2010
Amy Elizabeth DeZern, M.D.
Ajoy Lawrence Dias, M.B.B.S. from 09/09/2010 to 09/30/2010
Abiola Yetunde Victoria Fashanu, M.B.B.S. from 11/01/2010 to 11/30/2010
Ibiliba Abike Fashoyin-Aje, M.D.
Stephanie Louise Gaillard, M.D., Ph.D.
Aggegnehu Gebreyes, M.D. from 10/27/2010 to 11/30/2010
Gabriel Ghiaur, M.D., Ph.D.
Gerardo Ismael Gacer Gueto, M.D. from 09/01/2010 to 08/16/2010
Shannarose Guma, M.D. from 07/30/2010 to 08/31/2010
Matthew Holdhoff, M.D., Ph.D. to 07/02/2010
Christoper Simon Hourigan, B.M.-B.Ch., D.Phil.
Hatim Husain, M.D.
Shilpa Naren Jadeja, M.D. from 09/01/2010 to 09/30/2010
Gabriel Jelovac, M.D.
Christopher George Kanakry, M.D.
Jennifer Ann Kanakry, M.D.
Arshpreet Kaur, M.B.B.S. from 12/07/2010 to 01/03/2011
Evan Jacob Lipson, M.D.
Luckson Noe Mathieu, M.D.
Lauren Ann Mauro, M.D.
Florence Marine McAllister, M.D.
Milos Miljkovic, M.D. from 08/17/2010 to 09/13/2010
Milos Miljkovic, M.D. from 03/29/2011 to 04/11/2011
Kelly Westbrook Mitchell, M.D.
Uladzislau Naidzionak, M.D. from 09/30/2010 to 07/27/2010
Channing J.C. Paller, M.D.
Swati Pandey, M.B.B.S. from 10/12/2010 to 11/08/2010
Sirisha Paruchuri, M.B.B.S. from 01/04/2011 to 01/24/2011
Rabindra Nath Paul, M.B.B.S. from 03/01/2011 to 02/28/2011
Zar Zar Pe, M.D. from 12/01/2010 to 01/02/2011
Lorraine Pelosof, M.D., Ph.D.
Jeffrey J. Pu, M.D.
Wassim Taher Radwan Abd El Wahab, M.B.B.Ch. from 09/01/2010 to 09/30/2010
Deepa Rangachari, M.D.
Marie-Anne Damiette Smit, M.D. from 01/03/2011 to 02/01/2011
Brady Lee Stein, M.D. to 07/31/2010
Immanuel Pradeep Raj Susai, M.B.B.S. from 02/01/2011 to 02/28/2011
Hlaing Tint, M.B.B.S. from 10/01/2010 to 10/28/2010
Sumithira Vasu, M.B.B.S. from 03/03/2011 to 03/16/2011
Sangita Verma, M.B.B.S. from 10/18/2010 to 10/28/2010
Breelyn Ann Wilky, M.D.
John Wrangle, M.D., M.P.H.
Fang Yin, M.D. from 01/17/2011 to 02/13/2011
Ily Kristine Tolentino Yumul, M.D. from 01/04/2011 to 03/15/2011
Hyun Don Yun, M.D. from 11/01/2010 to 11/15/2010
Amer Methqal Zeidan, M.B.B.S.

Immunology/Hematopoiesis
Joseph James Barbi, M.S., Ph.D.
William Nathaniel Brennen, Ph.D. from 02/01/2011 to 02/13/2011
Greg Michael Delgoffe, Ph.D. from 08/02/2010 to 12/31/2010
Yukan Duan, Ph.D.
Justin Philip Edwards, Ph.D. to 07/19/2010
Dallas Benjamin Flies, M.S., Ph.D. from 10/22/2010 to 12/31/2010
Tomoe Higuchi, M.D., Ph.D. to 12/31/2010
Silvia Kimpfler, Ph.D.
Eric Richard Lutz, Ph.D.
Ana Markovic, Ph.D.
Jun Wang, Ph.D. to 12/31/2010
Kyung Hee Yi, M.S., Ph.D. to 07/19/2010
Linghua Zheng, Ph.D. to 12/31/2010
Ying Zheng, Ph.D. from 11/16/2010
Yuwen Zhu, M.S., Ph.D. to 12/31/2010

Medical Oncology
Susannah Gabrielle Batko-Yovino, M.D.
Haixia Cheng, Ph.D. (on leave of absence from 02/01/2011)
Alice Ya-Chun Chuang, M.D. to 10/01/2010
Jim Chih Ming Chuang, M.D. from 02/01/2011 to 03/05/2011
Chenglai Fu, Ph.D. from 08/09/2010
Sawa Ito, M.D. to 07/01/2010
Zeshaan Ahmed Rasheed, M.D., Ph.D.
Hlaing Tint, M.B.B.S. to 07/30/2010

Pediatric Oncology
Colleen Elizabeth Annesley, M.D.
Fernanda I. Arnaldez, M.D.
James Thomas Curry Badgett, M.D., Ph.D.
Paul Wesley Burridge, Ph.D.
Nataliya A. Buxbaum, M.D.
Lea C. Cunningham, M.A., M.D.
Deepika Saxena Darbari, M.B.B.S.
Hema Kishore Dave, M.B.B.S.
Julia E. Dooher, M.S., Ph.D. (on leave of absence from 02/01/2011 to 04/30/2011)
Hong Guo, Ph.D.
Diana Heckel, M.D. to 07/26/2010
Sun Hwa Hong, M.S., Ph.D.
Jeffrey Sean Hsu, M.D., Ph.D.
Ilan Mahrer Kaplan, Ph.D. from 10/15/2010
Chimen A. Kesserwan, M.D.
Brian Hansen Ladle, M.D., Ph.D.
Calvin K. Lee, M.D.
Daniel W. Lee, III, M.D.
Deena Rachel Levine, M.D.
Nicolas Jose Llosa, M.D.
Ou Ma, Ph.D.
Leigh Jessica Marcus, M.D.
Allison Martin, M.D.
Joseph Brady Moore, IV, M.S., Ph.D. from 08/02/2010
Ashley Taylor-King Munchel, M.D.
Sandeep Singh Negi, Ph.D.
Toshihiro Onishi, M.D.
Tea Soon Park, Ph.D.
Devang Jagdish Pastakia, M.D.
Marina V. Pryanichkova, Ph.D. to 10/15/2010
Eric Hutton Raabe, M.D., Ph.D.
Rachel Elizabeth Rau, M.D.
Nilay Shah, M.D.
Nirali N. Shah, M.D.
Preeti Shah, M.Sc., Ph.D. to 04/30/2011
Jessica Carolyn Shand, M.D., M.H.S.
John Frederick Shern, M.D.
Edward Allan R. Sison, M.D.
Yang Song, Ph.D.
Matteo M. Trucco, M.D.
Heather Wasserstrom, M.D.
Qingsong Zhu, M.Sc., Ph.D.
Prostate Cancer/GU
Zuhair Ghanem, M.B.B.S. from 10/05/2010 to 11/30/2010

OPHTHALMOLOGY
Delphine Bonnet, Ph.D.
Bryn Melissa Burkholder, M.D. ¹
John Peter Campbell, M.D., M.P.H. ¹
Connie June Chen, M.D.
Malia Michelle Edwards, Ph.D.
Allen Omid Eghrari, M.D.
John Anthony Fuller, Ph.D.
Yan Ge, M.D.
Nguyen Khoi Ha, M.D. ¹
Laszlo Hackler, Ph.D. to 10/25/2010
Ian Carlos Han, M.D. ¹
Elizabeth Houle, M.D. ¹
Jianfei Hu, Ph.D.
Woochang Hwang, Ph.D.
Takeshi Iwase, M.D.
Anthony J. Kim, Ph.D. to 03/30/2011
Fang Sarah Ko, M.D. ¹
Gina P. Kwon, M.D. ¹
Bryan S. Lee, M.D. ¹
Jeong Hee Lee, Ph.D. to 12/31/2010
Sun Young Lee, M.D. to 08/27/2010
Sophie Daisy Liao, M.D.
Julien Antoine Maruotti, Ph.D. from 07/05/2010
Tomohiro Masuda, Ph.D. to 04/09/2011
Allison Norah McCoy, M.D., Ph.D.
Christina Soyoung Moon, M.D.
Valliammai Muthappan, M.D.
Afshan Amin Nanji, M.D., M.P.H.
Daniel Matthew Paskowitz, M.D., Ph.D. ¹
Fatemeh Rajaii, M.D., Ph.D. ¹
David James Ramsey, M.D., Ph.D.
Shaun B. Robinson, M.D.
Guoying Sun, Ph.D. from 03/01/2011
Maria Natalia Vergara, Ph.D.
Karl Jonas Wahlin, M.S., Ph.D. to 05/31/2011
Yanhong Wei, B.M., Ph.D.
Christina Yeeka Weng, M.D.
Fasika Ambachew Woreta, M.D., M.P.H. ¹
Qingguo Xu, Ph.D.
Zhenhua Xu, Ph.D. to 01/12/2011
Zhiyong Yang, M.D., Ph.D. to 08/01/2010
Takeshi Yoshida, Ph.D. to 10/01/2010

Cornea and Anterior Segment Service
Sungdong Chang, M.D., Ph.D. to 08/06/2010
Christoph Engler, M.D. to 12/31/2010
Fabiana Kimie Kashiwabuchi, M.D. from 02/14/2011
Renata Tiemi Kashiwabuchi, M.D. to 07/02/2010
Yasin A. Khan, M.D. to 08/31/2010
Eun Chul Kim, Ph.D. from 01/05/2011
Tang Li, M.D. from 03/21/2011
Mario Magnus Goswin Matthaei, M.D. from 09/01/2010
Claire Nichielleachair, M.B.B.Ch., M.Sc. to 12/30/2010
Qing Pan, M.D. from 12/06/2010 (on leave of absence from 01/07/2011 to 02/28/2011)
Carlos Gustavo Bonfadini Rocha, M.D. from 03/14/2011
Murilo Wendeborn Rodrigues, Jr., M.D. from 04/15/2011
Andrea Isabela Zambrano, M.D. from 12/01/2010

Glaucoma Service
Giedrius Kalesnykas, M.P.H., Ph.D. from 08/19/2010
Tharnsook Kasemsup, M.D. to 05/31/2011
Yuan Bo Liang, M.D. to 10/18/2010

Low Vision Service
Pamela E. Jeter, M.A., Ph.D.
Hendrik Christiaan Stronks, Ph.D. from 07/15/2010

Neuro-ophthalmology/Orbital Unit
Ghada Abdel Hafez, M.B.B.S. from 08/16/2010
Jing Liang Loo, M.B.B.S. to 02/28/2011
Srilaekshmi Missula Sharma, M.B.B.Ch. to 04/30/2011

Oculoplastic Service
Raymond Albert Enke, Ph.D.
Verity Frances Oliver, Ph.D.
Yun-Dun Shen, M.D. from 09/01/2010

Retinal Vascular Service
Katayoon Baradaran Ebrahimi, M.D.
Millena Gomes Bittencourt, M.D. from 03/01/2011
Marisol del Valle Cano, Ph.D. to 08/31/2010
Jangwon Heo, Ph.D. from 07/15/2010
Afsheen Amin Khwaja, M.B.B.S.
Naoshi Kondo, M.D. to 04/30/2011
Thomas Kin-Man Lee, M.D.
Ningdong Li, Ph.D. to 06/27/2011 (on leave of absence from 09/08/2010 to 10/28/2010)
Aiko Miki, M.D. to 10/25/2010
Katsuaki Miki, Ph.D. to 10/25/2010
Keichi Mitarai, M.D. from 03/01/2011
Masayuki Ohnaka, M.D. from 09/01/2010
Geetha Parthasarathy, M.Sc., Ph.D. to 08/27/2010
Farhad Rezaei, M.D. from 01/19/2011
Tanusree Sen, Ph.D. from 01/03/2011 to 05/01/2011
Mizuki Tagami, M.D. from 04/01/2011
Peykan Turkcuoglu, M.D. to 07/31/2010
Jun Wan, Ph.D.
Lei Wang, Ph.D.
Zhi Xie, Ph.D. to 08/03/2010
Shiri Zayit-Soudry, M.D.
Mingbing Zeng, M.D. to 08/16/2010
Xiufeng Zhong, Ph.D.

Strabismus and Pediatric Ophthalmology
Natthira Chaisrisawadsuk, M.D. to 12/31/2010
Kathryn Klein, M.D.

Vitreo-Retinal Surgical Service
Elham Hatif Naimi, M.D.
Mohamed A. Ibrahim, M.B.B.Ch.

ORTHOPAEDIC SURGERY
Rishi Balkissoon, M.D., M.P.H. ¹
Jonathan Alexander Bernard, M.D. ¹
Blavneet Kaur Bharaj, M.B.B.S. from 10/18/2010 to 10/31/2010
John David Cahoy, M.D., Ph.D. ¹
Ashvin Kumar Dewan, M.D. ¹
Caroline D’Souza, M.D. from 10/29/2010 to 11/28/2010
Mostafa Hassib El Dafrawy, M.B.B.Ch. from 01/31/2011
Mohit Gilotra, M.D. from 01/31/2011 to 04/10/2011
Joseph P. Gjolaj, M.D.¹
Hamid Hassananzadeh, M.D.¹
Wenying He, M.D. from 11/18/2010
Casey Jo Humbyrd, M.D.¹
Eun Mi Hur, Ph.D.
James Cooper Johnston, M.D.¹
Jacqueline Karp, M.D. to 09/03/2010
Haytham Galal El-Sayed Khira, M.B.B.Ch. from 11/28/2010
Rushyuan Jay Lee, M.D.¹
Zhaoyang Li, Ph.D. to 08/31/2010
Shuo Liu, M.D. from 11/29/2010
Denyse Dawn Lutchmansingh, M.B.B.S. from 12/15/2010 to 01/01/2011
David Michael Anthony Macias, M.D.¹
Daniel Marsland, M.B.B.Ch. to 10/06/2010
Robert Paxton McKinstry, M.D., M.S. from 07/29/2010 to 03/31/2011
Emmanuel Nganku Menga, M.D.
Addisu Mesfin, M.D.
Ahmed Salem Mohamed, M.B.B.Ch. from 08/01/2010
Ryan Thomas Morgan, M.D. from 09/06/2010 to 11/14/2010
Stuart Hopper Myers, M.D.¹
Shivakumar Narayanan, M.B.B.S. from 07/29/2010
Sergiy Nesterenko, M.D.
Philip Russell Nicovich, Ph.D. to 04/04/2011
Fnu Nirmal Kumar, M.D. from 12/01/2010 to 12/14/2010
Andres Eduardo O’Daly Baquero, M.D.¹
David Irin Oj, M.D.¹
Surbhi C. Panchal, M.D. to 09/30/2010
Benjamin McVay Petre, M.D.¹
Miguel Angel Ramirez, M.D. to 12/31/2010
Kristoff R. Reid, M.D.
Ryan Christopher Riddle, Ph.D. to 09/30/2010
Thomas Milleret Ring, M.D., M.S.¹
Sajilafu, Ph.D.
Nima Salari, M.D.¹
Maryna Shayuk, M.D. from 08/30/2010 to 09/14/2010
Andrea Spiker, M.D.¹
Benjamin Eric Stein, M.D.¹
Eric Wan Tan, M.D., M.S.¹
Miho Jean Tanaka, M.A.
Savvasaschi Chandrashekhkar Thakkar, M.D.¹
Dongqing Wang, M.D.
James Arthur Wilkerson, M.D. from 11/15/2010 to 01/30/2011
Ariel Aila Williams, M.D.¹
Alan Yong Yan, M.D.¹
Mahdy Yazdany, M.D. from 07/29/2010 to 08/29/2010
Mahdy Yazdany, M.D. from 01/17/2011 to 01/30/2011
Gehua Zhen, M.D. from 08/01/2010 to 08/31/2010
Casey Jo Humbyrd, M.D.

Shoulder Surgery
Pingal Anilbhai Desai, M.B.B.S. to 07/31/2010
Juan Garzon-Muvdi, M.D.

OTOLARYNGOLOGY-HEAD AND NECK SURGERY
Jung Ho Ahn, M.D. from 07/15/2010
Sun Mi Ahn, M.D.¹
Simon Roderick Alfred Best, M.D.¹
Sheetal Bhan, M.Sc., Ph.D.
Zhigang Bian, M.D. from 03/01/2011
Mariana Braith Rodrigues De Oliveira, M.Sc., Ph.D.
Jason Ying Kuen Chan, M.B.B.S.¹
Steven Shih-Wei Chang, M.D.¹
Xiaofei Chang, B.M., Ph.D.
Seok-Hyun Cho, M.D., Ph.D. to 04/30/2011
James Henri Clark, M.B.B.Ch.
Chenkai Dai, Ph.D.
Santanu Dasgupta, M.S., Ph.D. to 08/31/2010
Steven Jeffrey Eiaides, M.D., Ph.D.¹
Susan Davis Emmett, M.D.¹
Daria A. Gaykalova, Ph.D.
Dane Jeffery Genther, M.D.¹
Chad Alan Glazer, M.D.¹
Andres Nicolas Godoy, M.D.
Zhen Gooi, M.D.¹
Yubin Hao, Ph.D. to 08/31/2010
Patrick Thomas Hennessey, M.D.¹
Alexander Tell Hillel, M.D. to 12/31/2010
Gi Jung Im, M.D., M.M.S., Ph.D
Kristen Leigh Jank, Au.D., Ph.D. to 02/14/2011
Amit Kochhar, M.D.
Amanda Marie Lauer, M.S., Ph.D.
Ryan Jeffrey Li, M.D.¹
Monica Lopez-Gonzalez, Ph.D. from 10/01/2010
Myriam Del Mar Loyo, M.D.¹
Sofia Lyford-Pike, M.D.
Leonel Francisco Maldonado-Gonzalez, M.D. to 04/11/2011
Rodrigo Martinez Monedero, M.B.B.S.
Thuy-Anh Nguyen Melvin, M.D.
David Jonathan Mener, M.D., M.P.H.
Wojciech Krzysztof Mydlarz, M.D.
Maartje Greta Noordhuis, Ph.D. from 01/24/2011
Takenori Ogawa, Ph.D. from 10/01/2010
Jun Okamura, M.D. from 01/01/2011
Jahn Natalie O’Neil, Ph.D.
Kimberly L. Ostrow, M.A., Ph.D. to 12/31/2010
Summer Kae Rankin, Ph.D. from 01/26/2011
Isabelle Catherina Roux, Ph.D. to 03/31/2011
Soroush Sadeghi Ghandehari, M.D., Ph.D.
Tanusree Sen, Ph.D. to 01/02/2011
Meena Seshamani, M.D., Ph.D. (on leave of absence to 12/31/2010)¹
Chunbo Shao, Ph.D. to 12/31/2010
David Palace Smith, M.D.¹
Ian Michael Smith, M.D. to 12/31/2010¹
Ethan Soudry, M.D.
Babar Sultan, M.D.¹
Wenyue Sun, Ph.D.
Marietta Tan, M.D.¹
Gilberto Vaz Teixeira, M.D., Ph.D. from 10/15/2010
Justin H. Turner, M.D.¹
Mamoru Uemura, M.D.
David Marcel Vasquez, M.D., Ph.D.
Bryan Kevin Ward, M.D.¹
Eric Laurent Wersinger, Ph.D.
Gaosong Wu, Ph.D.
Eunyoung Yi, Ph.D. to 12/31/2010
Halifeng Yin, Ph.D.
Xiaoli Zhong, Ph.D. to 03/03/2011

Dental and Oral Medicine
Ravi Agarwal, D.D.S. to 08/31/2010
Ravi Agarwal, D.D.S. from 01/01/2011 to 01/31/2011
Marilyn Brodeur, D.D.S.
Anthony Henry Hamod, D.D.S.¹
Adam Kaplan, D.D.S. from 11/01/2010 to 12/31/2010

458 POSTDOCTORAL FELLOWS
<table>
<thead>
<tr>
<th>Name and Degree</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam Kaplan, D.D.S.</td>
<td>02/01/2011</td>
<td>02/28/2011</td>
</tr>
<tr>
<td>Jason Kneller, D.D.S.</td>
<td>03/01/2011</td>
<td>03/31/2011</td>
</tr>
<tr>
<td>Jason Kneller, D.D.S.</td>
<td>09/01/2010</td>
<td>10/31/2010</td>
</tr>
<tr>
<td>Jason Kneller, D.D.S.</td>
<td>03/01/2011</td>
<td>03/31/2011</td>
</tr>
<tr>
<td>Yuri Agrawal, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wade W. Chien, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Otology-Neurotology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PATHOLOGY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joseph Aoki, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Vincent Baewer, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erin Michelle Carney, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guoli Chen, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ashley Marie Cimino-Mathews, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carla Lashannon Ellis, M.D., M.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hillary Rose Elwood, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baojin Fu, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grzegorz T. Gurdia, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheng-Ying Ho, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brittany Joy Holmes, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robert Eric LeBlanc, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloria Huang Lewis, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chad Michael McCall, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver Gene McDonald, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zina Meriden, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shiyama V. Mudali, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delicia LaShaun Munfs-Mccray, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>David William Nauen, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew Theodore Olson, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brent Alan Orr, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Justin Scott Poling, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nemanja Rodic, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erika Franco Rodriguez, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>from 02/01/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hillary Maren Ross, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safia Nawazish Salaria, M.B.B.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark Atienza Samols, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aatur Dilip Singh, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nathaniel Evan Smith, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew Paul Tilson, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christopher James Vandenuys-Bussche, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kathryn Jockovic Villa, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeremy Vincent, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laura DeLong Wood, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gang Zheng, B.M., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rui Zheng, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autopsy Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarah Evelyn Beck, D.V.M.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simon Yat-Ming Long, V.M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gillian Curtis Shaw, D.V.M., M.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brian Wesley Simons, D.V.M.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiovascular Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samarjit Das, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark Jeffrey Kohr, Jr., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toshiyuki Yano, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jianshi Yu, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Chemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dylan Minh Bach, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yan Li, Ph.D. to 01/31/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark Albert Marzinke, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>from 02/14/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joely Ann Straseski, M.S., Ph.D. to 12/31/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yuan Tian, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hematologic Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qing Yan Liu, M.D. from 10/07/2010 to 10/31/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cytopathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hui Guan, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wenping Li, M.D. from 01/01/2011 to 01/31/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armanda D. Tatas, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Po Zhao, M.D. from 05/01/2011 to 05/31/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GI-Liver Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christina A. Arnold, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haibo Bai, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shuting Bai, M.D. from 02/01/2011 to 02/25/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seungmin Bang, M.D. from 08/16/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venugopal Chenna, M.S., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marco Dal Molin, M.D. to 05/02/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hubert Darius J. Daniel, M.Sc., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Na'im K. Fanaian, M.D. from 11/01/2010 to 11/30/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sonal Gupta, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adriana Alina Handra-Luca, M.D. to 10/31/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seung-Mo Hong, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chaoxin Hu, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biju Joseph, M.S., Ph.D. from 09/01/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitsuro Kanda, Ph.D. from 09/01/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rajesh Kannanagai, M.D. to 09/03/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adnan Rahman Khan, M.D. from 10/01/2010 to 10/31/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Julie Odile Leclerc, Ph.D. from 10/01/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ang Li, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karen E. Matsukuma, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yoshihisa Matsushita, Ph.D. from 10/04/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hanno Ernst Goswin Mathaile, M.D. to 04/30/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yoshihi Naito, Ph.D. to 08/20/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suchitra Paranj, M.B.B.S. from 09/01/2010 to 09/15/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dipankar Pramanik, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirte Mayke Streppel, M.D. from 02/01/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver Szeto, M.B.A., M.D. from 09/01/2010 to 09/30/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audrey Louise Josette Vincent, Ph.D. to 03/31/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sabrina C. Wentz, M.D. from 09/01/2010 to 09/30/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yang Xu, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shinichi Yabuuchi, Ph.D. from 01/04/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shinichi Yachida, M.D. to 12/28/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun Yu, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yi Zhong, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gynecologic Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wen-Chung Chen, M.D. to 08/21/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An-Jen Chiang, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masayuki Futagami, M.D. from 10/01/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min Gao, M.D. from 10/15/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bianca P. Gomez, Ph.D. to 04/12/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bin Guan, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tae Heung Kang, D.Sc. to 03/31/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jung Won Kim, Ph.D. to 01/24/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elisabetta Kuhn, M.B.B.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dan Lu, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pradeep Kumar Panuganti, M.B.B.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maria E. Romero, M.D. from 12/01/2010 to 12/31/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexander Stoeck, Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michelle Marie Thiaville, Ph.D. to 08/31/2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wai-Hong Wu, Ph.D.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Srividya Sathiyamoorthy, M.B.B.S. from 09/01/2010 to 09/30/2010
John J. Schmieg, M.D., Ph.D.
Andrea Proctor Subhawong, M.D.

**Immunopathology**
Srikanth Iwama, M.D., Ph.D.
Paola Leporati, M.D. to 04/30/2011
Davina LaChelle Ligons, Ph.D. to 09/30/2010
Taylor Louise Reynolds, D.V.M.
Dongmei Xing, M.D., Ph.D.

**Informatics**
Hao Shi, M.D. from 01/10/2011
Hong Tai, Ph.D.

**Kidney-Urologic Pathology**
Kirstie Anne-Merrea Adams, Ph.D.
Turki Omar Alhussain, M.B.B.S.
Leandro Bernardo, M.D. from 08/16/2010 to 08/29/2010
Carlise Renee Bethel, Ph.D.
William Dean Brandt, Ph.D.
Bora Gurel, M.D.
Christopher Michael Heaphy, Ph.D.
Parisa Karimi, M.D. from 03/01/2011
Xiangtian Kong, M.D. from 11/01/2010 to 11/30/2010
Erin Stoltz Marner, M.D. from 01/04/2011 to 01/29/2011
Karen Sandell Stanos, M.S., Ph.D. to 12/31/2010
Po Zhao, M.D. from 01/01/2011 to 01/31/2011

**Medical Microbiology**
Amy Elizabeth Greer, Ph.D. from 08/02/2010
Anneela Mahmud, M.B.B.S.

**Molecular and Cellular Pathology**
Jewel Amethyst Daniel, Ph.D.

**Molecular Genetic Pathology**
Shuko Harada, M.D.
Keila L. Rivera-Roman, M.D. from 03/03/2011

**Neuropathology**
Latanya Delvina Agurs, M.D. from 05/02/2011 to 05/26/2011
Kerstin Elisabeth Braunstein, Ph.D.
Qing Chang, Ph.D.
Po-Min Chiang, M.D., Ph.D. from 11/03/2010 to 05/01/2011
Wing Han Vivian Chow, M.Phil., Ph.D.
Qian Chu, Ph.D. from 01/21/2011
Kari-Elise Tryggestad Codispoti, M.D.

**Ophthalmic Pathology**
Laura Asnaghi, M.S., Ph.D.
Abdalhossein Ghaforian, M.D. from 09/07/2010
D Anand Rajan Kanagasabapathy, M.B.B.S.
Jason Karamchandani, M.D. from 01/01/2011 to 01/31/2011

**Selective (Renal)**
Michael Kuperman, M.D.

**Selective (Urological)**
Ali Amin, M.D.
Michael Shaun Nagar, M.D.
Motohide Uemura, M.D., Ph.D.
Ruisheng Yao, M.D. from 10/01/2010 to 10/31/2010

**Surgical Pathology**
Heather Mary Carney, M.D.
Ife Josanne Rodney, M.D.

**Transfusion Medicine**
Matthew Scott Karafin, M.D.

**PEDIATRICS**
Lubna Qazi Abdullah, M.D.¹
Jennifer Alphonso Abraham, M.A., Ph.D. to 08/31/2010
Amit Agrawal, M.D.
Sharon Kaur Ahluwalia, M.D.
Sama Farheen Ahsan, M.D.
Catherine Michelle Albert, M.D.¹
Melissa Jayne Allman, Ph.D. to 09/30/2010
Kristin Marie Arcara, M.D. to 06/15/2011
Fidelis Eghoateh Atianjoh, Ph.D.
Dimitar Bogdanov Avtanski, M.Sc., Ph.D.
Melanie Hope Bachmeyer, Ph.D. from 09/01/2010
Viveck Balju, M.D. to 07/31/2010
Breanna Skye Barger-Kamate, M.D.¹
Sean Barnes, M.D.¹
Mihee Jeon Bay, M.D.
Katherine A. Beckwith-Fickas, M.D., M.P.H.¹
Tal Eliram Berkowitz, M.D., M.P.H.¹
Meghan Laura Bernier, M.D.¹
Alexis Marie Fisher Bierman, Ph.D. from 01/19/2011
Hans Tomas Bjornsson, M.D., Ph.D.¹
Ashley Marie Blouin, Ph.D.
Manish Bodos, Ph.D.
Kyle William Boerke, M.S., Psy.D. to 08/31/2010
Challice Lee Bonifant, M.D.¹
Emily O. Boudreaux, M.A., Ph.D. from 09/01/2010
Gia Marie Bradley, M.D.
Christine Briccetti, M.D.
Christina Breisch Brooks, M.A., Psy.D.
Nicole Marie Brown, M.D.¹
Marissa Ann Brunetti, M.D.
Christopher Earl Bullock, M.S., Ph.D.
Vera Joanna Burton, M.D., Ph.D.
Luis Francisco Caicedo Oquendo, M.D.
Marc Addison Callender, M.D.¹
Rebecca Faith Carlin, M.D.¹
Diana Nicole Carvajal, M.D.
Kristin Leigh Casasanta, M.D.¹
Sarah Elizabeth Cavanagh, Ph.D.
Jason Paul Cervenka, M.D.¹
Alison Kristen Chapman, M.D.
Maria Izabel Chiamolera, M.D., Ph.D. to 10/15/2010
Sara Marie Christianson, M.A., Ph.D. from 09/01/2010
Jessica Pease Clarke-Pounder, M.D. to 08/23/2010¹
Jessica Pease Clarke-Pounder, M.D. from 08/24/2010
Lauren Merrill Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Sarah Kathleen Shea Crowne, Ph.D.
Faye Kim Curran, Ph.D. to 09/24/2010
Erin Kathleen Dahlinghaus, M.D.
Sumito Dateki, Ph.D. from 09/20/2010
Lauren Merritt Cohee, M.D.¹
Gordon James Cohen, M.D., M.P.H.¹
Katherine Anne Connor, M.D. to 06/29/2011
Stacy Lorine Cooper, M.D.¹
Janet L. Crane, M.D. from 09/27/2010
Kristen Nicole Miller, M.D. from 01/13/2011 to 02/09/2011
Anna Minta, M.D., M.P.H. ¹
John Christopher Mirmanesh, M.D. from 09/23/2010 to 11/17/2010
Kamila Bajwa Mistry, M.P.H., Ph.D. to 06/27/2011
Douglas Mogul, M.D., M.P.H.
Jana Lynn Mohassel, M.D., M.P.H.
Prosenjit Mondal, Ph.D. to 04/30/2011
Eva Michele Moore, M.D.
Jonathan Mullin, M.D. ¹
David Eric Myles, M.D. ¹
Satya Devi Narisety, M.D.
Melanie Kandt Nies, M.D.
Maryam Nobari Tabrizi, M.D.
Julia Noether, M.D. ¹
Chinedu Ifeyinwa Onyedike, M.D., M.P.H. ¹
Maide Ozen, M.D. from 10/21/2010 to 11/17/2010
Valerie Ann Paasch, Ph.D. from 11/01/2010
Jane Park, M.D.
Elyse Dara Pine-Twaddell, M.D.
Andre Poloczek, M.D.
Amy A. Polonsky, M.D., M.P.H.
Cozumel Southern Pruette, M.D., M.S.
Tina Louise Rezaiyan, M.D.
Sarah R. Risen, M.D.
Tessa Taylor Rivet, M.A., Ph.D. from 09/01/2010
Delphine Rose Christine Robotham, M.D. ¹
Griffin Wesley Rooker, Ph.D. from 09/01/2010
Tamar Beth Rubinstein, M.D. ¹
Sara Patricia Salter, Ph.D. from 09/01/2010
Azadeh Sami, D.O. from 07/29/2010 to 08/25/2010
Andrew J. Scherbarth, Ph.D.
Jonathan Dean Schmidt, Ph.D. from 09/01/2010
Emily Dawn Shumate, Ph.D. to 12/03/2010
Michelle Rita Sicard, M.D.
Laura Joan Sigman, M.D. (on leave of absence to 08/23/2010) ¹
Srinivas Sirimalle, M.B.B.S. from 10/01/2010
Ciaran Martin Skerry, Ph.D. to 03/14/2011
Sara Ruth Slovin, M.D.
Tyler Kimberly Smith, M.D.
Katherine Simpson Spencer, M.A., Psy.D. from 09/01/2010
Emily Ann Spengler, M.D. ¹
Siddharth Srivastava, M.D. ¹
Katherine Marie Steffen, M.D. ¹
Bridget Danielle Stuart, M.D.
Katie Goonan Sussman, M.D. to 07/27/2010 ¹
Mayur Chandrakant Tamhane, Ph.D.
Pranita D. Tamma, M.D.
Veronica Grace Tilden, M.S., Psy.D. from 09/01/2010
Laura Tochen, M.D. ¹
Erika Torjusen, M.D.
Megan Marie Tschudy, M.D. to 06/15/2011 ¹
Elizabeth Winsans Tucker, M.D. ¹
Erlanger A. Turner, Ph.D.
Christina Garcia Ulen, M.D. ¹
Christopher John Valente, M.D. ¹
Alexandra Vasilescu, D.O., M.S.
Hilary Joyce Vernon, M.D., Ph.D.
Michael Francis Walsh, M.D. ¹
Caleb Edwin Ward, M.B.B.Ch. to 05/14/2011 ¹
Darcy Kate Weidemann, M.D. ¹
Lisa Marie Williams, M.D.
Sheng Wu, M.S., Ph.D.
Jian-Chun Xiao, Ph.D.
Michiyo Yamazaki, Ph.D. to 08/31/2010
Hao Yu, Ph.D.
Karen Leigha Zimowski, M.D. ¹

PHARMACOLOGY AND MOLECULAR SCIENCES
Young-Hoon Ahn, Ph.D.
Rashmi Bankoti, Ph.D. to 08/31/2010
Adriana Bora, Ph.D.
Manisha Das, Ph.D. from 10/25/2010
Peter Dedecker, Ph.D. from 01/10/2011
Xinxin Gao, Ph.D. from 09/30/2010
Zufeng Guo, Ph.D. from 12/01/2010
Qing Li He, Ph.D.
Shaozhi Hu, Ph.D.
Rong Huang, Ph.D.
Yan Jia, Ph.D. to 06/21/2011
Kannan Karukurichi, M.Sc., Ph.D. to 11/30/2010
Wei Li, Ph.D. from 11/23/2010
Sohum Mehta, Ph.D.
Shonoi Andrea Ming, Ph.D.
Chia Hao Mo, Ph.D. from 11/15/2010
Andrea Mountney, Ph.D. to 11/30/2010
Chandrami Mukherjee, Ph.D. ¹
Robert Howard Newman, Ph.D.
Rodney Louis Nyland, II, Ph.D.
Veronica Tiffany Pinnick, Ph.D.
Hie Sook Rho, Ph.D.
Wei Shi, Ph.D.
Joong Sup Shim, Ph.D.
Mary Regina Stahley, Ph.D. to 10/31/2010
Yan Sun, Ph.D.
Stephen James Swatkoski, Ph.D. to 10/15/2010
Yun Wang, Ph.D. from 01/01/2011
Zhihong Wang, Ph.D.
Jing Xu, M.D., Ph.D. to 07/31/2010
Amit Singh Yadav, M.Sc., Ph.D. from 02/22/2011
Yu Ye, Ph.D.
Bojiao Yin, Ph.D. from 03/01/2011
Seung-Wan Yoo, Ph.D. from 03/14/2011
Xin Zhou, Ph.D. to 05/01/2011

PHYSICAL MEDICINE AND REHABILITATION
Anna V. Agranovich, M.A., Ph.D.
Erik Stanton Brand, M.D., M.Sc. ¹
Philippines Garcia Cabahug, M.D. ¹
Regina Campbell-Malone, Ph.D.
Srikrishna Chandran, M.D. ¹
Asare B. Christian, M.D. ¹
Tae Hwan Chung, M.D. ¹
Michelle Cintron, D.O. ¹
Ethan Dalley, M.D. ¹
Peng Ding, M.D., Ph.D.
Tambrea Toylett Ellison, M.D. ¹
Celene A. Fyffe, M.A., Ph.D. to 08/31/2010
Andrew Hall, M.D. ¹
Haroon Imran Hameed, M.B.B.S. ¹
Mariam Maira Hameed, M.B.B.S. ¹
Takashi Hiraoka, M.D., Ph.D. to 03/31/2011
Haruhi Inokuchi, M.D. from 08/25/2010
Christopher Michael Jones, M.D. from 08/23/2010 to 09/19/2010
Phong Nguyen Kieu, M.D. ¹
Sang Jun Kim, M.D., Ph.D. to 09/30/2010
Nathan Jon Neufeld, D.O. ¹
Nathan M. Parmer, Psy.D. to 08/31/2010
Michelle Poliak, M.D. ¹
John Edward Schlerf, Ph.D. from 08/01/2010
Vishal Thakral, D.O.  
Katherine Dawn Travnicek, M.D.  
Jing Wang, M.D.  
Jessica H. Wolfman, M.S., Ph.D.  
Christine L. Yantz, Ph.D. to 08/31/2010
Mitsumasa Yoda, M.D., Ph.D. from 10/01/2010
Morvarid Yousefi, M.D.  

**Pediatric Rehabilitation Medicine**
Marykatharine Nutini, D.O.  
Scott C. Schultz, M.D. to 07/31/2010

**Rehabilitation Psychology and Neuropsychology**
Lindsey Elizabeth Kirsch Darrow, M.S., Ph.D. from 09/01/2010
Michelle Karen Kramer, Psy.D. from 09/01/2010

**PHYSIOLOGY**
Amanda Nell Barry, M.S., Ph.D.  
Ashima Bhattacharjee, Ph.D.  
Sharmistha Bhattacharyya, Ph.D.  
Mardi Susanna Byerly, Ph.D.  
Arnab Gupta, Ph.D.  
Yuta Hatori, Ph.D.  
Chandra Mohan Khantwal, Ph.D.  
Kalyan Chakravarthy Kondapalli, M.S., Ph.D.  
Huiqing Li, Ph.D.  
Ghenadie Nicolae Mardari, Ph.D. from 08/01/2010
Jonathan Michael Peterson, M.S., Ph.D.  
Owen Maxwell Woodward, Ph.D.  
Meifang Xiao, Ph.D.  
Yongqiang Zhang, Ph.D.  

**PLASTIC AND RECONSTRUCTIVE SURGERY**
Demetrio Juan Aguila, III, M.D.  
Efstathia Andrikopoulou, M.D. to 02/28/2011
Rachel Olga Bluebond-Langner, M.D.  
Valy Bouloum, M.D. from 02/01/2011 to 02/28/2011
Emile N. Brown, M.D.  
Thomas Lawrence Chung, D.O.  
Jeffrey Michael Feiner, M.D.  
Keith E. Follmar, M.D.  
Lori Kathryn Howell, M.D.  
Helen Gloria Hui-Chou, M.D.  
Zuhaib Ibrahim, M.B.B.S. from 12/15/2010
Joseph Alexander Kelamis, M.D.  
Dorian Mark Korz, M.D. from 03/01/2011 to 03/31/2011
Cheng-Hung Lin, M.D. from 12/01/2010
Avron Herschel Lipschitz, M.B.B.Ch.  
Qi Mao, M.D. from 12/15/2010
Suhail Kamrudin Mithani, M.D.  
Raja Mohan, M.D.  
Gerhard Salomo Mundinger, M.D.  
Devin O’Brien, M.D.  
Rika Ohkuma, M.D.  
Erin Mariel Rada, M.D.  
Sachin M. Shridharani, M.D.  
Matthew Gokey Stanwix, M.D.  
Lehao Wu, M.D. from 12/01/2010
Jonathan A. Zelken, M.D.  

**PSYCHIATRY AND BEHAVIORAL SCIENCES**
Bagrat Abazyan, M.D.  
Sofya Abazyan, Pharm.D.  
Shauna Prendergast Acquavita, Ph.D.  
Sergey Sergeyevich Akimov, Ph.D.  
Allan Michael Andersen, M.D.  

Yasue Araki Horiuchi, Ph.D. from 12/02/2010
Nicolas Arbez, Ph.D.  
Charles Ralph Arthur, III, M.D.  
Yuval Asner, M.D.  
Claire Barbier De La Serre, Ph.D. from 02/11/2011
Nicholas Thomas Bello, Ph.D. to 08/31/2010
Rebecca Birnbaum, M.D. to 06/20/2011  
Natalie Rose Bruner, Ph.D. to 03/31/2011
Matthew David Burkey, M.D., M.P.H.  
Claudia Michelle Campbell, Ph.D. to 08/15/2010
Mirrorna Emmanuelle Ceide, M.D.  
Shin-Bey Chang, M.D.  
Cailllin Rose Costello, M.D.  
Jennifer Marie Coughlin, M.D.  
John Michael de Vera Cruz, M.D.  
Megan Jeanne Dailey, Ph.D.  
Catherine Marie Davis, Ph.D.  
James Arthur Disney, M.D.  
Sasikanth Doddapaneni, M.D.  
John William Dougherty, III, D.O. to 10/10/2010
Angela N. Duke, Ph.D. to 04/30/2011
Kelly Elaine Dunn, Ph.D.  
Laura Lynn Ebner, M.D.  
Nicole Renee Edmond, M.D.  
Daniel Patrick Evatt, Ph.D.  
Chete Margaret Eze-Nliam, M.B.B.S., M.P.H. to 10/31/2010
Leslie Giselle Frank, Ph.D.  
Jinrong Fu, Ph.D.  
Meghan Elizabeth Gaare, M.D.  
Gwendolyn Justis Gerner, Psy.D.  
Laura J. Goldstein, Psy.D. from 08/16/2010
Ryan Michael Greytak, M.D.  
Zihong Guo, M.D.  
Sean Philip Heffterman, M.D.  
Meghann Maureen Hennelly, M.D.  
Porche Kirkland Henry, Ph.D.  
Jami Alyson Hom, M.D.  
Yong Huang, Ph.D.  
Amy Laura Huberman, M.D. to 07/31/2010
Mali Jiang, M.D., Ph.D.  
Jing Jin, Ph.D.  
Diana Jochai, Ph.D. from 09/20/2010
Vicki Kalira, M.D.  
Shinichi Kano, M.D., Ph.D.  
Yoshiya Kawamura, M.D. to 09/30/2010
Sun-Hong Kim, Ph.D.  
Mary Claire Kimmel, M.D.  
Mikhail Nikolaas Koffarnus, Ph.D.  
Minori Koga, Ph.D.  
Richard Sang Un Lee, Ph.D. to 12/31/2010
Nu-Chu Liang, M.S., Ph.D.  
Sally Louise Long, Ph.D. to 08/24/2010
Joel D. Mack, M.D.  
Katherine Anne MacLean, Ph.D.  
David Aaron Maroof, Ph.D.  
Geneva Marie Massiello, M.D.  
Daniel C. Mathews, M.D.  
Erin Ann McClure, Ph.D.  
Rachel Rose Morano, M.D.  
Harvey Melton Morris, Ph.D.  
Megan Marie Mroczkowski, M.D.  
Minae Niwa, Ph.D.  
Jun Nomura, Ph.D. to 05/14/2011
Milap Anil Nowrangi, M.D.  
Teresa Mary Kateri O’Herron, M.D.  
Ozioma Chima Okonkwo, Ph.D.  
Renata M. Okonkwo, M.A., Ph.D.  
Christopher Justin Pagnani, M.D.  
Vinay Kishor Parekh, M.D.  

POSTDOCTORAL FELLOWS 463
Minkyung Park, M.A., M.D.
Smitta Vinubhai Patel, M.D., M.P.H.
Joanna Kristine Pearson, M.A., M.D., M.F.A.
Vladimir Mikhailovich Pogorelov, Ph.D.
Savitha Puttaiah, M.B.B.S.
Leon Tan Que, Jr., M.D.
Olga Alexandrovna Rafaelian, M.D.
Kristen Ann Rahn, Ph.D. from 08/16/2010
Jennifer Barsky Reese, M.S., Ph.D.
Erica Martin Richards, M.D., Ph.D.
Rebeca Rios, Ph.D. from 08/16/2010
Jose Y. Rios-Robles, M.D.
Mark David Rogerson, Ph.D.
Anne Elizabeth Ruble, M.D., M.P.H.
Daniel Francis Ruthven, M.D.
Sina A. Saidi, M.A., M.D.
Neelam Shahani, Ph.D.
Lee Samuel Spencer, M.D.
Ryan Edward Stagg, M.D.
Grace Thammasuvimol, M.D.
Jason Burke Williams, M.D.
James Jihoon Yi, M.D., Ph.D.
Yada Treesukosol, Ph.D. from 02/21/2011
Mark Gerson Unschuld, M.D.
Elaine Ann Waldron, D.N.Sc.
Yi Wang, Ph.D. to 07/01/2010
Paul Gerson Unschuld, M.D.
Deirdre Mary Foster, M.D.
Hon Lung Ho, M.D., M.P.H.
Carolyn Jayne Howell, M.D.
Jessica Mathews, Ph.D. to 01/17/2011
Tokunboh Tinuola Rose, M.D.
Jonathan Joel Shepherd, M.D.
Elizabeth Mary Shumann, M.D.
Justin Kuhns Spooner, M.D.
Shiva Prakash Srinivasan, M.B.B.S. from 07/02/2010
Niquiche M. Guity, Ph.D. to 08/31/2010
Lana Maria de Souza, M.D.
Nique M. Guity, Ph.D. to 08/31/2010
Dennis Raymond Harris, Jr., Ph.D.
Kendra Marie Harris, M.D., M.Sc.
Timothy James Harris, M.D., Ph.D.
Mohammad Ali Hedayati, Ph.D.
Rebeccah Forfang Roland, Ph.D.
Min Hwa Shin, Ph.D.
Saravanan Thiagarajan, Ph.D. to 11/17/2010
Owen Clayton Thomas, M.D.
Richard Tuli, M.D., Ph.D.
Julian Frans Wilsker, Ph.D. to 12/05/2010
Binbin Wu, Ph.D. to 12/30/2010
Zhiming Yang, Ph.D.
Ming Yuan, Ph.D.
Jing Zeng, M.D.
Patricio Dario Simari, M.S., Ph.D.
Yidong Yang, M.S., Ph.D. from 08/06/2010
Child Psychiatry
Steven Kai Chao, M.D., Ph.D.
Mary L. Cutler, M.D.
Deirdre Mary Foster, M.D.
Hon Lung Ho, M.D., M.P.H.
Carolyn Jayne Howell, M.D.
Tara Lynn Mathews, Ph.D. to 01/17/2011
Tarak Mathews, Ph.D.
Jonathan Joel Shepherd, M.D.
Elizabeth Mary Shumann, M.D.
Justin Kuhns Spooner, M.D.
Shiva Prakash Srinivasan, M.B.B.S. from 07/02/2010
Niquiche M. Guity, Ph.D. to 08/31/2010
Geriatric Psychiatry
Crystal Chanel Watkins, M.D., Ph.D.
Kennedy Krieger Institute
Lori Ann Day, Ph.D. from 09/01/2010
Anne Pradella Inge, Ph.D.
Lisa Anne Jacobson, M.Ed., Ph.D. to 08/31/2010
Megan Elizabeth Kramer, Ph.D.
Darcy Raches, Ph.D.
Jacqueline Horwitz Sanz, M.A., Ph.D. to 08/31/2010
Saime Tek, Ph.D. from 10/01/2010
Sarah Marie Towne, Psy.D. to 08/31/2010
Jennifer A. Ulbricht, M.Phil., Ph.D.
Psychosomatic Medicine
Xi Sheng, M.Phil., Ph.D. from 09/13/2010
RADIATION ONCOLOGY AND MOLECULAR RADIATION SCIENCES
Todd C. Adams, M.D.
Harold C. Agbahie, M.D.
Baoyan Bai, Ph.D.
David Edwin Bordelon, Ph.D.
Jon Hua Chung, M.Sc., Ph.D.
Laureen Castille Collis, Ph.D.
Sandhya Das, Ph.D. to 01/31/2011
Lana Maria de Souza, M.D.
Nique M. Guity, Ph.D. to 08/31/2010
Dennis Raymond Harris, Jr., Ph.D.
Kendra Marie Harris, M.D., M.Sc.
Timothy James Harris, M.D., Ph.D.
Mohammad Ali Hedayati, Ph.D.
Rachit Kumar, M.D.
Charles Harrison Matthews, M.D.
Raju Rasik Raval, D.Phil., M.D.
Teboh Forfang Roland, Ph.D.
Min Hwa Shin, Ph.D.
Saravanan Thiagarajan, Ph.D. to 11/17/2010
Owen Clayton Thomas, M.D.
Richard Tuli, M.D., Ph.D.
Julian Frans Wilsker, Ph.D. to 12/05/2010
Binbin Wu, Ph.D. to 12/30/2010
Zhiming Yang, Ph.D.
Ming Yuan, Ph.D.
Jing Zeng, M.D.
Medical Physics
RADIATION ONCOLOGY AND MOLECULAR RADIATION SCIENCES
Todd C. Adams, M.D.
Harold C. Agbahie, M.D.
Baoyan Bai, Ph.D.
David Edwin Bordelon, Ph.D.
Jon Hua Chung, M.Sc., Ph.D.
Laureen Castille Collis, Ph.D.
Sandhya Das, Ph.D. to 01/31/2011
Lana Maria de Souza, M.D.
Nique M. Guity, Ph.D. to 08/31/2010
Dennis Raymond Harris, Jr., Ph.D.
Kendra Marie Harris, M.D., M.Sc.
Timothy James Harris, M.D., Ph.D.
Mohammad Ali Hedayati, Ph.D.
Rachit Kumar, M.D.
Charles Harrison Matthews, M.D.
Raju Rasik Raval, D.Phil., M.D.
Teboh Forfang Roland, Ph.D.
Min Hwa Shin, Ph.D.
Saravanan Thiagarajan, Ph.D. to 11/17/2010
Owen Clayton Thomas, M.D.
Richard Tuli, M.D., Ph.D.
Julian Frans Wilsker, Ph.D. to 12/05/2010
Binbin Wu, Ph.D. to 12/30/2010
Zhiming Yang, Ph.D.
Ming Yuan, Ph.D.
Jing Zeng, M.D.
Medical Physics
Patricio Dario Simari, M.S., Ph.D.
Yidong Yang, M.S., Ph.D. from 08/06/2010
Molecular Radiation Science
Susannah Gabrielle Batko-Yovino, M.D. from 10/05/2010
Rajendra Prasad Gajula, M.S., Ph.D. from 10/01/2010 to 05/31/2011
RADIOLOGY AND RADIOLOGICAL SCIENCE
Ashkan A. Akhavan Malayeri, M.D.
Bharath Ambale Venkatesh, Ph.D. from 02/01/2011
Ezana Muluneh Azene, M.D., M.S.
Lukasz S. Babiarz, M.B.A., M.D.
Pavel David Bailey, M.D.
Stacey Ann Bass, M.D.
David Aaron Behrmann, M.D.
David Bonekamp, M.D., Ph.D.
Jeremy Robert Burt, M.D.
Zachary D. Chonka, M.D.
Linda Chi-Hang Chu, M.D.
Christina McGraw Cinelli, M.D.
Daniel James Durand, M.D.
Mark Douglas Ebert, M.D.
Maryam Etesami, M.D.
Jonathan Andrew David Farrell, Ph.D. to 08/31/2010
Anthony Frank Foteno, M.D.
Jan Fritz, M.D.
Jun Hua, Ph.D.
Oluwatoyin Rosemary Idowu, M.D.
Mehrdod Javadi, M.D.
Paras Khandheria, M.D.
Mark Douglas Ebert, M.D.
Svati Singla Long, M.D.
Carl Norman Miller, M.D.
Christopher Patrick Myers, M.D., Ph.D.
Kelly S. Myers, M.D.
Alexander Roman Oshmyansky, M.D.
Sajal Sharma Pokharel, M.D., Ph.D.
Kristin Kelly Porter, M.D., Ph.D.
Steven Patrick Rowe, M.D., Ph.D.¹
Michael Sacerdote, M.D.¹
Brent Vernon Savoie, J.D., M.D.¹
Ty Kanyon Subhawong, M.D.¹
Gaurav Kumar Thawait, M.B.B.S. from 02/01/2011
Collin Michael Torok, M.D.¹
Joseph William Villard, M.D.¹
Ryan William Woods, M.D.¹
Carlos Armando Zamora, M.D.¹

Breast Imaging
Evelyn Andrea May, M.D.

Cardiovascular and Interventional Radiology
Manon Buijs, M.D.
Jason Dana Dunleavy, M.D.
John Michael Fallucca, M.D.
Steven Li-Wen Hsu, M.B.A., M.D.
Derrick Antwon Jones, M.D.
Rani Kunjithapatham, Ph.D.
Byung Kook Kwak, M.D. to 08/31/2010
Romaric Loffroy, M.D. to 10/31/2010
Tarak H. Patel, M.D.
Olivier Pellerin, M.D. from 02/01/2011
Pramod Prabhakar Rao, M.B.B.S.

Diagnostic Radiology
Neda Faridian-Aragh, M.D. from 09/01/2010
Yubo Lu, M.D. from 01/20/2010
Abdelkader Mahammed, M.D. from 02/22/2011
Ameneh Mashayekh, M.D. from 12/01/2010 to 01/07/2011
Theodoros Anastasios Soldatos, M.D. to 09/15/2010

Endovascular Surgical Neuroradiology
Juan Fernando Gomez, M.D.

Magnetic Resonance Research
Harsh Kumar Agarwal, M.S.E., Ph.D. to 02/07/2011
Raag Dar Airan, M.D., Ph.D. from 12/22/2010 to 12/27/2010
Raag Dar Airan, M.D., Ph.D. from 02/15/2011 to 02/28/2011
Raag Dar Airan, M.D., Ph.D. from 03/29/2011 to 05/02/2011
Alireza Akhbardeh, Ph.D.
Dian Respati Arifin, Ph.D.
Amnon Bar-Shir, Ph.D.
Harjit K. Chahal, M.B.B.S.
Wai Yan Chan, Ph.D.
Zhihang Chen, M.S., Ph.D.
Celia Pamela Corona-Villalobos, M.D. from 10/01/2010
Riham El Kouli, M.B.B.Ch.
Charla Chabell Engels, M.D. from 02/01/2011
Yingli Fu, M.S., Ph.D.
Rafaela Elsayed Gabr, Ph.D.
Vivek Gowdra Halappa, M.B.B.S. to 04/19/2011
Sudath S.H. Hapuarachchige, Ph.D. from 09/01/2010
Keichi Ishigame, Ph.D. to 03/31/2011
Aditya Jain, M.B.B.S., M.P.H.
Miroslaw Janowski, M.D. from 02/11/2011
Samson Jarso, M.S., Ph.D.
Lu Jiang, Ph.D.

Heechul Kim, Ph.D.
Carolyn Beth Lauzon, Ph.D. to 09/22/2010
Xu Li, Ph.D. from 10/01/2010
Zhen Li, M.D. to 04/30/2011
Yajie Liang, Ph.D.
Ethel Joso Ngen, Ph.D. from 10/04/2010
Min Jae Park, Ph.D. to 05/31/2011
Nidhi Rumpal, M.S., Ph.D.
Monda Lofty Shehata, M.B.B.Ch., M.D.
Jan Skrok, M.D.
Xiaolei Song, Ph.D.
Evrim Bengi Turkbey, M.D.
Silun Wang, Ph.D.
Jannie Petra Wijnen, Ph.D. from 01/01/2011
Sherry Yen-Yao Wu, Ph.D.
Nirbhay Narayan Yadav, Ph.D. to 05/23/2011
Kun Yan, Ph.D.

Medical Imaging Physics
Jochen Cammin, M.Sc., Ph.D. to 09/30/2010
Taek-Soo Lee, M.S., Ph.D.
Somesh Srivastava, Ph.D.
Qiulin Tang, M.S., Ph.D. to 04/14/2011

Neuroradiology
Alper Akca, M.D. to 09/30/2010
Hyo-eun C. Bhang, Ph.D. from 10/25/2010
Falgun Harish Chokshi, M.D.
Gerard Deib, M.D.
Ravindra Ajith DeSilva, Ph.D. from 09/30/2010
Ira Driscoll, Ph.D.
Netsiri Dumrongpisutikul, M.D. to 06/13/2011
Lauren Elaine Hoffman, Ph.D. from 08/16/2010
Jarunee Intrapipromkul, M.D. from 07/06/2010
Xinyang Liu, M.S., Ph.D. from 10/12/2010
Steven Anthony Messina, M.D.
Saeedeh Mirbagheri, M.D. from 11/01/2010
Mahmud Mossa-Basha, M.D.
Jennifer Nathan, M.D.
Joshua Paul Nickerson, M.D.
Arzu Ozturk, M.D.
Ye Qiao, M.S., Ph.D.
David Rossow, M.D.
Ameet Rajanikant Upadhyaya, M.D.
Xiulan Wang, M.S., Ph.D.
Juan Wei, Ph.D.
Domenico Zaca, Ph.D.
He Zhu, M.S., Ph.D. to 07/14/2010

Nuclear Medicine
Blanca Bisuna, M.D. to 09/15/2010
Paco Eduardo Bravo Valenzuela, M.D.
Majid Chalian, M.D.
Wichana Chamroonrat, M.D. from 09/13/2010
Muhammad A. Chaudhry, M.D.
David Chien, M.D.
Kenji Fukushima, M.D. to 10/31/2010
Kenneth Leslie Gage, M.D., Ph.D.
Ali Gholamrezanezhad, M.D. from 10/06/2010
Hayriye Beril Gok, M.D.¹
Behnaz Goudarzi, M.D.¹
Maria Guevara, M.D.
Takahiro Higuchi, M.D., Ph.D. to 07/12/2010
Robert Francois Hobbs, Ph.D.
Kari D. Hopfer, D.O.¹
Robert Francois Hobbs, Ph.D.
Kari D. Hopfer, D.O.¹
Babar Hussain, M.B.B.S. to 08/13/2010
Takuro Isoda, M.D.

¹ in Bold = Subject Matter Expert
Nikolaos Karakatsanis, Ph.D. from 02/10/2011
Jong Ho Kim, M.D., Ph.D.
Ho Yan Lee, M.D., Ph.D.
Joyce Chipo Mhlanga, M.B.B.Ch. from 08/25/2010
Natalia Zarzhevsky, M.D., Ph.D. to 08/25/2010

Clintondunkel Kemp, M.D.  
Katherine Winifred Khalifeh, M.D., M.S.  
Arman Kilic, M.D.  
Elizabeth A. King, M.D.  
Justin Klaff, M.D.

Pediatric Imaging

Thangamadhan Bosemani, M.B.B.S.
Avner Meoded, M.D. from 09/01/2010 to 04/30/2011
Andrea Poretti, M.D. from 08/01/2010

SURGERY

Fawaz Abdul Raheem, M.B.B.Ch.  
Senan Sabah Abdul-Hamed, M.B.B.Ch. to 04/30/2011
Adesola Akinkuotu, M.D.  
Jeremiah Geoffrey Allen, M.D.  
George John Arnaoutakis, M.D.  
K. Dean John Arnaoutakis, M.D.  
Malachy Eneye Asuku, M.B.B.S.  
Mathew M. Augustine, M.D.  
Jennifer Marie Bailey-Lundberg, Ph.D.
Mark Wayne Ball, M.D.  
Randall Stewart Barre, M.D.  
Claude Anthony Beatty, Jr., M.D.  
Jonathan Carlin Berger, M.D.  
Jens Urs Berli, M.D.  
Gabriel Alon Brat, M.D.  
Benjamin Sands Brooke, M.D.  
William Reece Burns, III, M.D.  
Guoxiang Cai, Ph.D. to 10/31/2010
Marilia de Freitas Calmon, Ph.D. from 04/10/2011
Melissa Suzanne Camp, M.D.  
Shuming Chen, Ph.D.
Michel Alexis Cooper, M.D., Ph.D.  
Alfredo C. Cordova, M.D. from 07/13/2010
Yunfeng Cui, M.D.
Donghang Huang, M.D. from 12/08/2010
Wei Huang, Ph.D.
Seyed Mohammad Hosseini, M.D. from 01/17/2011
Seth Daniel Goldstein, M.D., M.Phil.
Angela Anne Guzzetta, M.D. from 07/06/2010
James Earl Harris, Jr., M.D.  
Jin He, M.D.
Sayed Mohammad Hosseini, M.D. from 01/17/2011
Isaac Howley, M.D.  
Donghang Huang, M.D. from 12/08/2010
Wei Huang, Ph.D.
Amit Kaul, M.B.B.S.
Deborah Kaye, M.D.  

Advanced Adult Cardiac Surgery

Daniel Pereda, M.D. from 07/30/2010

Cardiac Surgery

Christopher J. Barreiro, M.D.  
Stephen James Huddleston, M.D.  
Kaushik Manda, M.B.B.S.  
Masahiro Ono, M.D.
Gregory Duncan Rushing, M.D.  
Christopher Michael Sciortino, M.D., M.S., Ph.D.
Neel Raj Sodha, M.D.  

Craniofacial

Branko Bojovic, M.D.
Endocrine Surgery
Rashmi Roy, M.D.

General Thoracic Surgery
Zhenzong Du, M.D. to 03/14/2011

Halsted/Trauma/Critical Care
Gregory Brent Burgoyne, M.B.B.Ch. from 09/20/2010 to 11/14/2010
Marc Joseph Casasanta, M.D. from 07/26/2010 to 08/22/2010
Marc Joseph Casasanta, M.D. from 11/15/2010 to 12/10/2010

Pediatric Surgery
Chenwi Mlobefu Ambe, M.D. from 12/23/2010 to 01/26/2011
Mohammed Murtaza Kamal Chaudry, M.D. from 10/07/2010 to 11/16/2010
Deiandra Garrett, M.D., Ph.D. from 12/01/2010
Amany Maher Isac Gorgy, M.B.B.Ch. from 10/01/2010
Juan Carlos Gutierrez, M.D. (on leave of absence from 09/27/2010) ¹
Aboubakr Mohammed Khairat, M.B.B.Ch. from 09/01/2010 to 10/06/2010
Shin Miyata, M.D. from 12/01/2010 to 12/31/2010
Dominic Joseph Papandria, M.D.
Sara Kirsten Rasmussen, M.D., Ph.D. ¹
Daniel Sangkyu Rhee, M.D.
Nicholas Steven Tapazoglou, M.D. to 08/31/2010
Jennifer Timmons, M.D. from 01/27/2011 to 02/28/2011
Qihong Wang, M.D.

Plastic Surgery
Michael J. Feldman, M.D. to 07/15/2010

Surgical Critical Care
Dessislava V. Boneva, M.D. to 07/14/2010
Jay G. Shake, M.D., M.S. from 07/12/2010
Jon D. Simmons, M.D. from 07/12/2010

Surgical Oncology and Endocrinology
Janivette Alsina, M.D., Ph.D.
Peter D. Peng, M.D.

Surgical Oncology/Breast Fellowship
Daniel Andrew Carnegie, M.D. from 02/01/2011
Eman Sbaity, M.D. from 07/15/2010
Raghunandan Venkat, M.B.B.S. from 09/15/2010 to 05/23/2011

Transplant Surgery
Valy Boulom, M.D. from 03/01/2011 to 03/31/2011
Erin Carlyle Hall, M.D. to 05/31/2011
Masayuki Hisada, M.D. to 09/15/2010
Xiaopeng Hu, M.D.
Dorian Mark Korz, M.D. from 04/01/2011 to 04/30/2011

Hiromichi Maeda, M.D. from 01/20/2011
Abimereki Dhatemwa Muzalee, M.B.B.Ch., M.P.H. to 05/31/2011
Takehiro Okabayashi, Ph.D. to 03/31/2011
Yoshihiro Ota, M.D. to 05/31/2011

Vascular Surgery
Ying Wei Lum, M.D.
Timothy K. Williams, M.D.

UROLOGY
Christhunesa Soundararajan Christudass, M.Sc., Ph.D.
John Bernard Eifler, Jr., M.D.
Jatinder Goyal, M.B.B.S.
Angela Devi Gupta, M.D. ¹
Rong Hu, Ph.D.
Chien-Ming Huang, M.D. to 08/31/2010
Zhenhua Huang, Ph.D. to 06/21/2011
Kenneth Joseph Hurt, M.D., Ph.D. from 08/30/2010 to 11/30/2010
Michelle Lynn Jones, Ph.D. from 01/03/2011
Adam Jacob Mathias Kern, M.D. ¹
Hyung-Joo Kim, M.D., Ph.D.
Omer Kutlu, M.D. from 08/09/2010
YouQiang Li, M.D., Ph.D. to 03/31/2011
Stacy Leah Loeb, M.D. ¹
Qiang Lu, M.D. from 11/10/2010 to 05/10/2011
Ifeanyichukwu Ifeinywa Megwatu, M.D. ¹
Steven Michael Mooney, Ph.D.
Amarnath Mukherjee, Ph.D.
Jeffrey Kyle Mullins, M.D. ¹
Xiaohua Ni, Ph.D.
Philip Martin Pierorazio, M.D.
Fatema Hogue Rafiqi, Ph.D. from 02/15/2011
Judit Ribas, Ph.D. to 12/31/2010
Ashley Evan Ross, M.D., Ph.D. ¹
Anthony John Schaeffer, M.D. ¹
Michelle Jo Semins, M.D. to 12/31/2010 ¹
Takumi Shiraishi, M.D., Ph.D.
Ninghong Song, M.B.B.S. from 04/01/2011
Debasish Sundi, M.D. ¹
Naoki Terada, M.D.
Kenneth Sheinje Tseng, M.D., M.P.H. ¹
Shuanzeng Wei, M.D.
Ping Wu, Dr.Med.Sc., M.D.
Bo Yin, Ph.D. to 11/30/2010
Yu Zeng, Ph.D. to 08/31/2010

Pediatric Urology
Nima Baradaran, M.D.
Sarah W. Chan, M.D. from 01/01/2011 ¹
Ellen Goldmark, M.D. to 12/31/2010 ¹
William Hilton, M.D. from 09/01/2010 to 09/30/2010
Andrew Alexander Stec, M.D.
Kristina Dawn Suson, M.D.

¹ House Staff, Johns Hopkins Hospital
CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE

FOURTH YEAR

Pooja Aggarwal, Madison, AL
B.A., University of Alabama, 2005

Jane Laurel Andrews, Cincinnati, OH
B.A., Northwestern University, 2005
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

Jordan J. Ash, Mesa, AZ
B.S., Brigham Young University, 2006
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

N'Dama Miankanze Bamba, Baltimore, MD
B.S., Morgan State University, 2005
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2006

Maralyssa Angelique Bann, Eden Prairie, MN
B.S., University of Minnesota (Twin Cities), 2006

Leonid Bartik, Tucson, AZ
B.S., University of Arizona, 2006

Shamik Bhattacharyya, Chelmsford, MA
B.S., Yale University, 2007
M.S., Yale University, 2007

Aaron Justin Bobb, Potomac, MD
B.A., Cornell University, 2003

Curtis William Bone, Baltimore, MD
B.S., Louisiana State University (Baton Rouge), 2004

Jennifer Xiaojin Cai, Canton, MI
A.B., Harvard University, 2007

Luis Carlos Cajás-Monson, Baltimore, MD
B.S., Oregon State University, 2006
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

Ashley Anderson Campbell, New Haven, CT
B.S., Yale University, 2007

Emilia Louise Picard Campbell, Haiku, HI
B.A., Wesleyan University (Connecticut), 2005

James Terrance Carson, Battle Creek, MI
B.S., University of Michigan (Ann Arbor), 2006
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

Deanna Rae Cettomai, Columbus, OH
B.A., Ohio State University, 2005
B.S., Ohio State University, 2005
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2009

Ravi Anant Chandra, Berkeley, CA
B.S., Stanford University, 2002
Ph.D., University of California (Berkeley), 2007

Daniel S. Chang, Santa Monica, CA
B.S., University of Virginia, 2006

Rupsa Chaudhury, Lexington, MA
B.A., Rice University, 2007

Shelly Seungah Choo, Paramus, NJ
A.B., Harvard University, 2006

Kavan Terrence Clifford, Atlanta, GA
B.S., Morehouse College, 2003

Matthew Tyler Crim, Cartersville, GA
B.A., University of Georgia, 2005
B.S., University of Georgia, 2006
M.Sc., University of London, 2006
M.A., Kings College, 2008

Taimur Dad, Billerica, MA
B.S., Brandeis University, 2007

Hormuzdiyar Henry Dasenbrock, Albuquerque, NM
B.A., University of Pennsylvania, 2005

Clare Dean, Clarksville, MD
B.S., Massachusetts Institute of Technology, 2007

Peter James DeBartolo, Tempe, AZ
B.S., Arizona State University, 2007

Kenneth William DeFontes III, Kingsville, MD
B.S., College of William and Mary, 2007

Edith Root McMillan Dietz, Baltimore, MD
B.A., University of North Carolina (Chapel Hill), 2000

Adrian Tae-Won Dokey, Carmichael, CA
B.A., University of California (Berkeley), 2007

Xiaobo Dong, Cincinnati, OH
B.A., Johns Hopkins University, 2005

Swathi Eluri, Chapel Hill, NC
B.S., University of North Carolina (Chapel Hill), 2007

Lorenza Frisoni, Philadelphia, PA
B.S., University of Bologna, 2000
M.H., University of Bologna, 2000

Maria Esteli Garcia, Oakland, CA
B.A., University of California (Berkeley), 2003

Jodel Giraud, Malden, MA
B.S., University of Massachusetts (Boston), 1998
Ph.D., Harvard University, 2004

Lee Andrew Goeddel, St. Louis, MO
B.S., University of Notre Dame, 2006
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

Whitney Morgen Green, Voorhees, NJ
B.A., Princeton University, 2007

Anthony Charles Gregory II, Atlanta, GA
B.S., Georgia State University, 2006

James Freeland Griffin, Waynesboro, GA
B.S., University of Georgia, 2007

Lisa Renee Halbstock, Cary, NC
B.A., Yale University, 2007

Edmund Doo-Hung Hong, Alpharetta, GA
B.S., Vanderbilt University, 2007

Ryan Patrick Houk, Louisville, KY
B.A., University of California (Berkeley), 2004
M.S.W., Columbia University, 2007

Omar Farooq Ishaq, Panama City, FL
B.S., University of Florida, 2007

Alan Richard Johnson, Lyndonville, NY
B.S., Houghton College, 2007
Tara Lynn Johnson, Kingsville, MD
B.Mus, Johns Hopkins University - Peabody Institute, 2002
B.S., Johns Hopkins University, 2002

Vivek Kalia, Fairfax, VA
B.A., University of Alabama, 2006
B.S., University of Alabama, 2006
M.S., University of Alabama, 2006
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

Anisha Khaitan, Unionville, CT
B.S., Tufts University, 2006

Sara Adel Khalil, East Brunswick, NJ
B.A., Rutgers University, 2007

Irene April Kim, Orange, CA
B.S., Johns Hopkins University, 2006

Kavitha Padmanabhan Kolappa, Chocowinity, NC
B.A., University of North Carolina (Chapel Hill), 2005

Michael Alexander Koldobskiy, Columbia, MO
B.S., Yale University, 2003
M.S., Yale University, 2003

Michael Davin Kornberg, Kissimmee, FL
B.S., Yale University, 2003
M.S., Yale University, 2003

Lara Cathleen Kovell, Bethel Park, PA
B.S., Carnegie Mellon University, 2006

Henry Robert Kramer, Smithtown, NY
B.A., Cornell University, 2006

Kopal Shama Kulkarni, State College, PA
B.S., Stanford University, 2007
M.A., Stanford University, 2007

Kathleen C. Lee, Sudbury, Ontario, Canada
B.S., Princeton University, 2007

Jessica Li, San Francisco, CA
B.S., Stanford University, 2007

Jimmy Cheng Ho Lin, New Haven, CT
B.A., Yale University, 2001

Daniel En-Hao Ling, San Diego, CA
B.A., Harvard University, 2005

David Liu, Seattle, WA
B.A., Stanford University, 1999
M.S., Stanford University, 2001

Christopher Matthew Long, Fayetteville, AR
B.S., University of Arkansas, 2003
Ph.D., Johns Hopkins University School of Medicine, 2009

Sydney Boi Thoi Long, Milpitas, CA
B.A., University of California (Berkeley), 2007

Raoul James Manalac, Zachary, LA
B.S., Louisiana State University (Baton Rouge), 2007

Diana Lauren Mandelker, East Northport, NY
B.S., Yale University, 2003
M.S., Yale University, 2003
Ph.D., Johns Hopkins University School of Medicine, 2011

Emily Ann Marcus, Fairfield, IA
B.A., Maharishi University of Management, 2004

Teresa Rose Marie Mark, Aiken, SC
B.S., University of South Carolina (Columbia), 2007

Christopher Thomas Martin, Maple Grove, MN
B.S., University of Wisconsin (Madison), 2007

Chintan Hansraj Maru, Brookfield, CT
B.A., Duke University, 2004

Simon C. Mathews, Suwanee, GA
B.A., University of Virginia, 2004

Chad Edward McCarthy, Baltimore, MD
B.S., University of Maryland (College Park), 2005
M.A., Johns Hopkins University, 2007

Vivek Arjun Mehta, Orange, CA
B.S., University of California (Irvine), 2006

Sara Davenport Miller, New York, NY
B.A., University of Pennsylvania, 1994

Eric Naimet Momin, Acworth, GA
B.A., Harvard University, 2006

Asif Khan Mustafa, Harleysville, PA
B.A., University of Pennsylvania, 2001
M.S., University of Pennsylvania, 2001
Ph.D., Johns Hopkins University School of Medicine, 2010

Anand Kumar Narayan, Pikesville, MD
B.A., Johns Hopkins University, 2004
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2009

Julie Margaret Nogee, Towson, MD
B.A., Tufts University, 2007

Ju-un Julian Park, Baltimore, MD
B.A., Johns Hopkins University, 2006
M.S., Johns Hopkins University, 2007

Scott Lewis Parker, Crosby, TX
B.S., University of Texas (Austin), 2007

Amar Bhargav Patel, Anaheim, CA
B.A., Harvard University, 2006

Lisa Harshad Patel, Houston, TX
B.S., Stanford University, 2001
M.E.Sc., Yale University, 2005

Yuval Adrash Dinesh Patel, Delray Beach, FL
B.S., Duke University, 2006

Sujay Pathak, Baltimore, MD
B.A., Boston University, 1999

Alexandra Rose Paul, Gansevoort, NY
B.S., Union College (New York), 2007

Matthew Eugene Peters, Northumberland, PA
B.S., Pennsylvania State University, 2007
B.S., Pennsylvania State University, 2007

Richard Arthur Pollock, Lake Orion, MI
B.S., Michigan State University, 2007

Haoming Qiu, Shrewsbury, MA
B.A., Cornell University, 2007

Sarah Roxana Ramsay, New York, NY
B.A., Columbia University, 2005

Raymond E. Robinson, Davis, CA
B.S., University of California (Davis), 2004

Elizabeth Sara Rosenblatt, Bethesda, MD
B.S., Massachusetts Institute of Technology, 2007

Jeremy Adam Schneider, St. Louis, MO
B.A., Stanford University, 2007

Kumaran Senthil, North Potomac, MD
B.S., University of Maryland (College Park), 2007
B.S., University of Maryland (College Park), 2007

STUDENTS 469
Adam Christopher Shaner, Manhattan, KS  
B.S., University of Kansas, 2007

Nathan William Skelley, Joplin, MO  
B.A., Cornell University, 2007

Michael Charles Smith Jr, Waco, TX  
B.A., University of Texas (Austin), 2005
M.P.H., Yale University, 2007

Justin Alexander Sobrino, Wichita, KS  
B.S., University of Tulsa, 2006

Jason Frank Solus, Oak Lawn, IL  
B.A., University of Chicago, 2007

Philip In Song, Cambridge, MA  
B.A., Harvard University, 2006

Traci Jenelle Speed, Rocky Hill, CT  
B.A., Colby College, 2003

Arielle Alexandra Stewart, Arlington, VA  
B.A., Virginia Commonwealth University, 2006

Miriam Tamar Stewart, Baltimore, MD  
B.A., Yale University, 2002

Sophia Anne Strike, Takoma Park, MD  
B.S.E., Duke University, 2007

Daniel Quain Sun, Edmonton/Alberta, Canada  
B.S., University of Pennsylvania, 2007

Christine Ngoc Bich Tran, Baltimore, MD  
B.S., Cornell University, 2007

Allison Leigh Tsao, Newburyport, MA  
B.S., Johns Hopkins University, 2007

Cassandra Vanessa Villegas, Los Angeles, CA  
B.S., Stanford University, 2000

Lee Le Wang, Plano, TX  
B.S., Stanford University, 2007

Bridget Marie Wild, Davenport, IA  
B.S., University of Chicago, 2007

Maya Elena Wille, Los Angeles, CA  
B.S., University of California (Los Angeles), 2004

Meraf Amde Wolle, Jersey City, NJ  
B.S., Yale University, 2006
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2010

Alonzo Woodfield, Baltimore, MD  
B.A., Bowdoin College, 2001

Ingrid Jingnan Wu, Livingston, NJ  
B.A., Rutgers University, 2004

Qingyang Yuan, Rockville, MD  
B.S., University of Maryland (College Park), 2006

David Zaboli, Chicago, IL  
B.S., Illinois Institute of Technology, 2006

Nan Zhu, San Diego, CA  
B.A., Harvard University, 2007

112

THIRD YEAR

Sameer Ahmed, Edison, NJ  
B.S., Cornell University, 2007

Hamid R. Alai, Tampa, FL  
B.A., University of South Florida, 2008

Anubhav Gautam Amin, Hasbrouck Heights, NJ  
B.S., New York University, 2008

Kamna Singh Balhara, Sugar Land, TX  
B.A., Rice University, 2007

Jathin Bandari, Westborough, MA  
B.S., University of Rochester, 2008

Bradley Powers Barnett, Clifton, VA  
B.A., University of Virginia, 2001

Jillian Tracey Baron, Lansdale, PA  
B.A., Brown University, 2007

Hatice Basdag, Baltimore, MD  
B.S., Johns Hopkins University, 2006
M.S., Johns Hopkins University, 2007

Noy Bassik, Fair Lawn, NJ  
B.S., Rutgers University, 2003
B.S., Rutgers University, 2004

John Patrick Begly, Geneva, NY  
B.S., McGill University, 2008

Matthew Travis Bender, Chicago, IL  
B.A., Yale University, 2006

Catherine Stebbins Bennet, Chester, CT  
B.S., Georgetown University, 2006

Eike Blohm, Missoula, MT  
B.A., University of Montana (Missoula), 2007

Morgan Michelle Bonds, Hutchinson, KS  
B.S., Kansas State University, 2008

Agedi Nicholson Boto, Baltimore, MD  
B.S., California Institute of Technology, 2002

Jessica Jane Briggs, Katy, TX  
B.A., University of Texas (Austin), 2008
B.S., University of Texas (Austin), 2008

Benjamin Ashby Brinton, Salt Lake City, UT  
B.A., Brigham Young University, 2006

Kevin Broderick, Columbia, MD  
B.S., United States Military Academy, 2008

Kate Josephine Buretta, East Troy, WI  
B.S., University of Wisconsin (Madison), 2008

Alejandro Jose Candelario, Plano, TX  
B.A., Yale University, 2003

Christine Harman Cary, Oakton, VA  
B.A., University of Virginia, 2008

Kevin Zou Chang, Arcadia, CA  
B.A., Johns Hopkins University, 2008

Lisa Yinhua Chen, Edina, MN  
B.S., Duke University, 2007

Alyssa Yoorim Choi, Issaquah, WA  
B.A., Johns Hopkins University, 2008

Joani Marie Christensen, Santa Claus, IN  
B.A., Vanderbilt University, 2007

Sabrinah ATV, University of Nebraska, 2007

Julia Dawn Colchamiro-Smith, Annapolis, MD  
B.A., New York University, 2006

Kate Hannah Cole, Owings Mills, MD  
B.A., Dartmouth College, 2002

Zachary Allen Cordner, Bannock, OH  
B.S., Ohio State University, 2008

Solange Erlyn Cox, South Hadley, MA  
B.A., Mount Holyoke College, 2008

David Do, Savage, MN  
B.M.E., University of Minnesota (Twin Cities), 2008

Robert Jamal Drummond, Jacksonville, FL  
B.S., Morehouse College, 2002

Mahmood El-Gasim, Phoenix, AZ  
B.S., Duke University, 2008
Laura Elizabeth Ellington, Greenville, TX
B.A., Austin College, 2008

Katherine Anne Fallano, Parkton, MD
B.A., Johns Hopkins University, 2007

Tom Shi Feng, Madison, MS
B.A., Princeton University, 2008

Julie Cathleen Fields, Seabrook, SC 1
B.S., University of Maryland (Baltimore County), 2008

Timothy Theodore Flerlage, Reisterstown, MD
B.S., Vanderbilt University, 2007

Edmond Nketti Fomunung, Athens, GA
B.S., University of Georgia, 2008

Mikhail Mikhailovich Gorbounov, South Windsor, CT
B.S., Johns Hopkins University, 2008

Lark Julie Greenwald, Rancho Mirage, CA
B.S., Yale University, 2008

Zachary David Guss, Rancho Mirage, CA
B.A., Harvard University, 2008

Sarah J. Hahn, Lutherville, MD
B.A., Johns Hopkins University, 2008

Thomas Carroll Hanff, Los Angeles, CA
B.S., University of California (Los Angeles), 2008

Amanda May Hong, Beavercreek, OH
B.A., Case Western Reserve University, 2008
B.S., Case Western Reserve University, 2008

Nigel Naichieh Hsu, Edison, NJ
A.B., Dartmouth College, 2008

Christopher Mitchell Jackson, Lebanon, VA
B.A., Wake Forest University, 2008

Amit Jain, Portland, OR
B.S., University of California (Berkeley), 2008

Sarah Elizabeth Johnstone, Cambridge, MA
B.A., University of Chicago, 2001
Ph.D., Massachusetts Institute of Technology, 2008

Arun Jose, Commmack, NY
B.S., Johns Hopkins University, 2007

Elizabeth Ann Ketner, Columbia, MD
B.A., University of Colorado (Boulder), 2004
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2007

Christina Soojin Kim, Sarmisamish, WA
B.A., Johns Hopkins University, 2006

Karan Kumar, Mississauga, Canada
B.S., Cornell University, 2007

Carmen Kut, Baltimore, MD 1
B.S., Johns Hopkins University, 2008

Marwan Grace Lacy, Flagstaff, AZ
B.S., University of Arizona, 2007

Spencer Truman Lake, Saint James, MD
B.S., Stanford University, 2003

Lisa Danielle Lareau, Westborough, MA
B.A., Harvard University, 2006

Katherine Latimer, Bethesda, MD
B.S., Georgetown University, 2008

Kathleen Anne Lee, Weston, MA
B.A., Harvard University, 2006

Nicole Leistikow, Baltimore, MD
B.A., Yale University, 1996
M.Phil., University of Oxford, 2001

Xuan Thanh Le-Nguyen, Forest Park, GA
B.S., Yale University, 2008

Brian Min-hann Lin, Oakland, MI
B.A., Johns Hopkins University, 2007

Tiffany Link, Placentia, CA 1
B.S., California State University (Long Beach), 2004

Jonathan Trent Magruder, Washington, DC
B.A., Princeton University, 2008

Marisa Kristeen Matthes, Farmington Hills, MI
B.S., University of Michigan (Ann Arbor), 2008

Micah Joel Maxwell, Reisterston, MD 1
B.A., Harvard University, 2003

Elizabeth Harlan Michelle, Charlotte, NC
B.S., University of Richmond, 2008

Marko Mircetic, Des Plaines, IL
B.A., Grinnell College, 2005

Craig Bryant Hjemdahl Monsen, Bedford, NY
B.A., Harvard University, 2008

Amanda Jane Morris, N. Potomac, MD
B.S., Massachusetts Institute of Technology, 2008

Jonathan Fink Mosser, York, PA
B.A., Middlebury College, 2006

Di Mu, Philadelphia, PA
A.B., Harvard University, 2007

Benjamin Clark Murphy, Charlottesville, VA
B.S., University of Virginia, 2007

Julie Chung Lam Ng, Richmond, BC, Canada
B.A., University of British Columbia, 2008
B.S., University of British Columbia, 2008

John Hone Nichols, Somerville, MA
A.B., Dartmouth College, 2001

Chiagozie Oliver Ononwui, Beltsville, MD
B.S., Howard University, 2007

Amit Shridar Padaki, Wescosville, PA
B.S., Pennsylvania State University, 2006
M.S., Pennsylvania State University, 2007

Esther Sung Hee Pak, Baltimore, MD
B.A., Johns Hopkins University, 2007

Birju Suresh Patel, San Antonio, TX
B.S., Johns Hopkins University, 2008

Laurel Dineen Pellegrino, Lambertville, NJ
B.A., Bryn Mawr College, 2008

June Shujun Peng, Maple Valley, WA
B.S., University of Washington, 2008

Jacqueline Lee Pipino, Kingsville, MD
B.A., Johns Hopkins University, 2008

Helen Selonick Prevas, Crownsville, MD
B.A., Williams College, 2007

Yelena Prints, San Jose, CA
B.S., Stanford University, 2006

Sarah Brown Puryear, Athens, GA
B.S., University of Georgia, 2007

Rebecca Lynett Recker, Athens, GA
B.A., Claremont McKenna College, 2007

Mona Rezapour, Woodland Hills, CA
B.S., University of California (Berkeley), 2005
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2008

James Richman, Cherry Hill, NJ
B.S., Duke University, 2008
Anne-Marie Rick, Cypress, TX
B.S., University of Notre Dame, 2007

Ian Mathew Rosenthal, Baltimore, MD
B.S., University of Wisconsin (Madison), 2002
Ph.D., Johns Hopkins Bloomberg School of Public Health, 2007

Christopher Robert Roxbury, Bridgewater, NJ
B.S., Johns Hopkins University, 2008

Sherveen Shayegan Salek, Saratoga, CA
B.S., Stanford University, 2007

Katherine Wilson Scangos, Hillsborough, CA
B.A., Amherst College, 2002
Ph.D., Johns Hopkins University School of Medicine, 2012

Eric Lewis Dutton Scholten, West Des Moines, IA
B.A., Saint Olaf College, 2008

Joseph P. Shader, Corvallis, OR
B.S., Oregon State University, 2006

Kerry Lee Shannon, Belle Mead, NJ
B.A., Kenyon College, 2004
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2007

Anna Christina Sick, Baltimore, MD
B.S., University of Maryland (College Park), 2008

Philip Porter Storey, Houston, TX
B.A., Vanderbilt University, 2006
MIPH, University of Sydney, 2008

David Alexander Stroh, Orange Park, FL
B.S., Georgia Institute of Technology, 2008

Kaylin Jessica Beck, Ridgewood, NY
B.A., Johns Hopkins University, 2009

Justin Leandro Bellamy, Walnut Creek, CA
B.S., Yale University, 2009

Ishrat Ahmed, Chesterfield, MO
B.S., Johns Hopkins University, 2009
M.S., Johns Hopkins University, 2009

Javad Raymond Azadi, Columbus, OH
B.S., Case Western Reserve University, 2009

Jithin Yohannan, Nanuet, NY
B.A., New York University, 2008

Byung Chul Yoon, Fullerton, CA
B.A., Johns Hopkins University, 2005

Nance L. Yuan, San Francisco, CA
B.A., University of California (Berkeley), 2007

Patricia Leigh Zadnik, Furlong, PA
A.B., Harvard University, 2008

John George Zampella IV, Glenville, NY
B.A., Siena College, 2008
B.S., Siena College, 2008

Elizabeth Westmore Zollinger, Evanston, IL
B.A., Indiana University, 2008

SECOND YEAR

Ishrat Ahmed, Chesterfield, MO
B.S., Johns Hopkins University, 2009
M.S., Johns Hopkins University, 2009

Javad Raymond Azadi, Columbus, OH
B.S., Case Western Reserve University, 2009

Jithin Yohannan, Nanuet, NY
B.A., New York University, 2008

Byung Chul Yoon, Fullerton, CA
B.A., Johns Hopkins University, 2005

Nance L. Yuan, San Francisco, CA
B.A., University of California (Berkeley), 2007

Patricia Leigh Zadnik, Furlong, PA
A.B., Harvard University, 2008

John George Zampella IV, Glenville, NY
B.A., Siena College, 2008
B.S., Siena College, 2008

Jennifer Qi Zhang, Woodridge, IL
B.S., Ohio State University, 2008

Michael Joshua Brener, New York, NY
B.A., Columbia University, 2009

Tyler Steven Brown, Reno, NV
B.A., Princeton University, 2006

Megan Elizabeth Buresh, Baltimore, MD
B.A., Harvard University, 2008

Kevin Butler, Loveland, CO
B.S., University of Colorado (Boulder), 2004
M.S., University of Colorado (Boulder), 2004

Christopher Robert Cashman, Boston, MA
B.A., Bowdoin College, 2007

Heather Jane Chaffin, Ellicott City, MD
B.S., Carnegie Mellon University, 2009

David Sining Chen, Clarksville, MD
B.S., University of Maryland (College Park), 2009

Eben Clattenburg, Perkinsville, VT
B.A., Dartmouth College, 2009

Lauren Marie Clough, Rochester Hills, MI
B.S., Brigham Young University, 2009

Nathan E. Cutler, Peru, IN
B.S., University of Notre Dame, 2009

Meghan Desale, Sunnyvale, CA
B.A., Boston University, 2008

Avani Satish Dholakia, Middlesboro, KY
B.S., Yale University, 2009

Jonathan Carl Dudley, Grand Rapids, MI
B.S., Calvin College, 2006

Jonathan Dyal, Sarasota, FL
B.A., Stanford University, 2008

SECOND YEAR

Ishrat Ahmed, Chesterfield, MO
B.S., Johns Hopkins University, 2009
M.S., Johns Hopkins University, 2009

Javad Raymond Azadi, Columbus, OH
B.S., Case Western Reserve University, 2009

Jithin Yohannan, Nanuet, NY
B.A., New York University, 2008

Byung Chul Yoon, Fullerton, CA
B.A., Johns Hopkins University, 2005

Nance L. Yuan, San Francisco, CA
B.A., University of California (Berkeley), 2007

Patricia Leigh Zadnik, Furlong, PA
A.B., Harvard University, 2008

John George Zampella IV, Glenville, NY
B.A., Siena College, 2008
B.S., Siena College, 2008

Jennifer Qi Zhang, Woodridge, IL
B.S., Ohio State University, 2008

Michael Joshua Brener, New York, NY
B.A., Columbia University, 2009

Tyler Steven Brown, Reno, NV
B.A., Princeton University, 2006

Megan Elizabeth Buresh, Baltimore, MD
B.A., Harvard University, 2008

Kevin Butler, Loveland, CO
B.S., University of Colorado (Boulder), 2004
M.S., University of Colorado (Boulder), 2004

Christopher Robert Cashman, Boston, MA
B.A., Bowdoin College, 2007

Heather Jane Chaffin, Ellicott City, MD
B.S., Carnegie Mellon University, 2009

David Sining Chen, Clarksville, MD
B.S., University of Maryland (College Park), 2009

Eben Clattenburg, Perkinsville, VT
B.A., Dartmouth College, 2009

Lauren Marie Clough, Rochester Hills, MI
B.S., Brigham Young University, 2009

Nathan E. Cutler, Peru, IN
B.S., University of Notre Dame, 2009

Meghan Desale, Sunnyvale, CA
B.A., Boston University, 2008

Avani Satish Dholakia, Middlesboro, KY
B.S., Yale University, 2009

Jonathan Carl Dudley, Grand Rapids, MI
B.S., Calvin College, 2006

Jonathan Dyal, Sarasota, FL
B.A., Stanford University, 2008
Ramy El-Diwany, Washington, DC
B.A., University of California (Berkeley), 2008

Katherine Yu-Ting Fan, Port Moody, Canada
B.S., Duke University, 2008

Jose Miguel Flores, Dover, PA
B.S., Pennsylvania State University, 2009

Emilee Cahill Flynn, Baltimore, MD
B.S., Canisius College, 2008

Mariam Lomaico Olivia Fofana, Edina, MN
A.B., Harvard University, 2006

Mirinda Ann Gillespie, Baltimore, MD
B.A., Yale University, 2005
M.S., Johns Hopkins Bloomberg School of Public Health, 2009

Brian Chun Kim Goh, Baton Rouge, LA
B.S., Louisiana State University (Baton Rouge), 2009

Brian Wayne Goldner, Sacramento, CA
B.A., Emory University, 2008

Chad Samuel Gorbatkin, Decatur, GA
B.A., Dartmouth College, 2008

Rachel Jennifer Gottlieb-Smith, Williamsonville, NY
B.A., Harvard University, 2009

Yihe Guan, Ann Arbor, MI
B.S., University of Michigan (Ann Arbor), 2008

Richa Gupta, El Paso, TX
B.S., University of Texas (Austin), 2009

Vikash Gupta, Towson, MD
B.S., University of Maryland (College Park), 2007

Alexander Scott Harding, Baltimore, MD
B.A., Yale University, 2008

Thomas Harrison Heflin, Camino, CA
B.A., University of California (Davis), 2009
B.S., University of California (Davis), 2009

Antony Hsieh, Tucson, AZ
B.S., University of Arizona, 2008

Ian Hsu, Troy, MI
B.S., University of Michigan (Ann Arbor), 2009

Rwo-Wen Huang, Cupertino, CA
B.A., Johns Hopkins University, 2008

Matthew George Huddle, Bloomington, IL
B.A., Illinois Wesleyan University, 2009

Stephen Kelly Jacobsen, Springfield, MO
B.S., University of Missouri (Rolla), 2001
M.S., Massachusetts Institute of Technology, 2003

Eric Allen JohnBull, Charlottesville, VA
B.A., Washington University in St. Louis, 2002

Rohan Rajiv Joshi, Yorktown Heights, NY
B.A., Princeton University, 2008

Bonnie Marie Kaas, Myersville, MD
B.S., Ursinus College, 2009

Benjamin William Kelemen, Ann Arbor, MI
B.A., Columbia University, 2008

Darya Aleksandrov Kizub, Baltimore, MD
B.A., Johns Hopkins University, 2008

Lakshmi Krishnan, Sugar Land, TX
B.A., Wake Forest University, 2006

Yuen-Ting Kwong, Timonium, MD
B.A., Johns Hopkins University, 2008

Janet Yum Lee, Philadelphia, PA
B.A., Princeton University, 1999
J.D., Harvard University, 2003

Jason Evan Liebowitz Jr., Rockville, MD
B.A., Johns Hopkins University, 2009

Worawan Limpitikul, Songkhla, Thailand
B.S., Johns Hopkins University, 2009

Thomas William Link, Holbrook, NY
B.S., Johns Hopkins University, 2007
M.S., Johns Hopkins University, 2009

Dianna Liu, Town and Country, MO
B.S., Stanford University, 2009

Lucy Hsinlu Liu, Cupertino, CA
B.S., Johns Hopkins University, 2008

Minghao Liu, Bronx, NY
B.S., Yale University, 2009

Heather Ga Hyung Lyu, Edinburg, VA
B.A., University of Virginia, 2009

Sara Aileen Madanikia, Bethesda, MD
B.S., Georgetown University, 2008

Ian-James Knute Malm, East Greenwich, RI
B.A., Macalester College (St. Paul), 2008

Chih-Ping Mao, Austin, TX
B.S., Johns Hopkins University, 2009

Caitlein Eileen Martin, Chapel Hill, NC
B.S., University of North Carolina (Chapel Hill), 2008

Priya Mary Mathews, Silver Spring, MD
B.S., University of Maryland (Baltimore County), 2009

Peter Christian McCaffrey, Dallas, TX
B.A., Southern Methodist University, 2009

Douglas Hale McMichael, Austin, TX
B.A., University of Texas (Austin), 2009

Steven Philip Menez, Fairmont, WV
B.A., Georgetown University, 2009

Carmel Mercado, Coral Springs, FL
B.S., Massachusetts Institute of Technology, 2009

Eric William Mills, Sterling Heights, MI
B.S., University of Michigan (Ann Arbor), 2009

Euphemia W. Mu, Charlotte, NC
B.A., Princeton University, 2009

Bipasha Mukherjee, San Francisco, CA
B.A., University of California (Berkeley), 2007

David L. Narotsky, Bronx, NY
B.A., Yale University, 2009

Daria Igorevna Nikolaeva, Champaign, IL
B.A., Johns Hopkins University, 2008

Ashwini Niranjan, Englewood, CO
B.S., Johns Hopkins University, 2008

Roosevelt U. Offoha, Baltimore, MD
B.A., Rutgers University, 2008

Ravi Rashmikant Pandit, Hollidaysburg, PA
B.S., University of Pittsburgh, 2009

John Pang, Gainesville, FL
B.S., University of Florida, 2009

Hitendraprasad Patel, Du Quoin, IL
B.A., Washington University in St. Louis, 2009

Louis Anthony Piper, Tampa, FL
B.S., University of Florida, 2003

Elisabet Pujadas, Chicago, IL
B.A., University of Chicago, 2009
Anirudh Ramesh, Holtsville, NY
B.S., Cornell University, 2009
Sandesh Srinivas Rao, Gaithersburg, MD
B.S., University of Maryland (Baltimore County), 2009
Nikhilesh Ray-Mazumder, Baltimore, MD
B.S., Johns Hopkins University, 2008
Naomi Rebecca Rios, Derwood, MD
B.A., Franklin and Marshall College, 2009
Jacob James Ruzevick, Coronado, CA
B.S., Massachusetts Institute of Technology, 2009
Megan Michelle Rybarczyk, Muncie, IN
B.S., University of Notre Dame, 2009
Roger William Samuels, Baltimore, MD
B.S., Syracuse University, 2004
David Rafael Santiago-Dieppa, Northridge, CA
B.S., University of California (Riverside), 2009
Kerry Margaret Schnell, St. Paul, MN
B.A., University of Chicago, 2008
Rajesh Babu Sekar, Baltimore, MD
B.S., Johns Hopkins University, 2007
M.A., Johns Hopkins University, 2009
Elene Harshad Shah, Alexandria, LA
B.A., University of Pennsylvania, 2009
Eugene Shenderov, Brooklyn, NY
B.A., Brooklyn College of the City University of New York, 2005
Kelly Lauren Sloane, Gladwyne, PA
B.A., University of Pennsylvania, 2006
Ashley Nicole Smith, Silver Spring, MD
B.S., Xavier University of Louisiana, 2009
Susan Edith Stanley, Saint Louis, MO
B.S., Stanford University, 2009
Daniel Stevens, Potsdam, NY
B.S., Clarkson University, 2009
B.S., Clarkson University, 2009
Carl Gustaf Streed Jr., Chicago, IL
B.A., University of Chicago, 2007
B.S., University of Chicago, 2007
Vernissia Wei-Si Tam, Providence, RI
B.S., Brown University, 2009
Martha Alice Tesfahal, Houston, TX
B.A., Harvard University, 2009
John Michael Thompson, Baltimore, MD
B.S., Duke University, 2009
Elbert Emanuel Vaca, Coral Springs, FL
B.S., University of Florida, 2008
Pavan Anil Vaswani, Vancouver, WA
B.S., University of Washington, 2009
Christina Ann Velasquez, Dyer, IN
B.S., Purdue University, 2009
Matthew Norman Paul Vogt, Germantown, WI
B.S., University of Wisconsin (Madison), 2009
Brian Wilson Waldersen, Mesa, AZ
B.A., University of California (Berkeley), 2005
B.S., University of California (Berkeley), 2005
Sarah Katherine Wallace, Virginia Beach, VA
B.A., Duke University, 2008
Brett Leon Wanamaker, Livonia, MI
B.S., University of Michigan (Ann Arbor), 2009
Yuxuan Wang, Austin, TX
B.A., University of Texas (Austin), 2009
B.S., University of Texas (Austin), 2009
Joseph J. Wassei, Pleasanton, CA
B.S., University of California (Davis), 2008
Heather Marie Whiting, Catonsville, MD
B.S., Washington College, 2006
Michelle Elizabeth Wilson, Redwood City, CA
B.A., Stanford University, 2007
Molly Margaret Wilson-Murphy, Canton, MA
B.A., Harvard University, 2007
Lila Tracy Worden, Baltimore, MD
B.S., University of Connecticut, 2007
Andrew Rong Song Tzeng Yang, Baltimore, MD
B.A., Johns Hopkins University, 2006
Jesse Xiaolong Yang, Vienna, VA
B.A., Northwestern University, 2009
Jessica Yang, Lake Bluff, IL
B.A., Harvard University, 2008
Wan Jou Yang, Redmond, WA
B.S., University of Washington, 2007
Daniel James Zabransky, Manassas, VA
B.S., College of William and Mary, 2009
Yasmin Zerhouni, San Francisco, CA
B.A., Columbia University, 2001
M.A., Columbia University, 2004
118

FIRST YEAR
Solomon T. Abay, Canal Winchester, OH
B.S., Ohio State University, 2010
Michael Charles Baxter, Miami, FL
B.S., United States Naval Academy, 2009
Andrew Herbert Bissonnette, Grand Rapids, MI
B.S., University of Michigan (Ann Arbor), 2010
Paul Jay Bixenstine, San Francisco, CA
B.A., Brown University, 2008
Rachel Anne Blair, Burlington, MD
B.S., University of Maryland (College Park), 2010
Christine Elizabeth Boone, Philadelphia, PA
B.S., Yale University, 2009
Hansen Chang Bow, Cambridge, MA
B.S., University of California (Berkeley), 2004
Ph.D., Massachusetts Institute of Technology, 2010
Martha Frances Brucato, Durham, NC
B.S., Duke University, 2009
Vivek Chau, Anaheim, CA
B.A., Pomona College, 2009
Sean Chen, Walnut, CA
B.A., University of California (Berkeley), 2009
Wendy Chen, Boston, MA
B.S., Massachusetts Institute of Technology, 2010

474 STUDENTS
Yishan Cheng, Naperville, IL  
B.S., Duke University, 2010

Jina Chung, New Haven, CT  
B.S., Yale University, 2010

Catherine Alessandra Colaianni, Washington, DC  
B.A., Duke University, 2007

Alexander Putnam Cole, Portland, ME  
B.A., Harvard University, 2008

Charles Nicholas Cuneo, Weston, MA  
B.S., Duke University, 2008

Jonathan Ross Dattilo, Cincinnati, OH  
B.S., Northwestern University, 2010

Carla Maria De La Cruz, Milwaukee, WI  
B.S., Marquette University, 2010

Kristina Marie Eipl, Chicago, IL  
B.A., Johns Hopkins University, 2008

Farzana Aziz Faisal, Lake City, FL  
B.A., Yale University, 2010

Mariyam Faiz-Andaria Faiz, Alexandria, VA  
B.S., Johns Hopkins University, 2009

John R. Fan, Ellicott City, MD  
B.S., University of Maryland (College Park), 2010

Mark Fisher, Staten Island, NY  
B.A., Columbia University, 2010

Yarden Samuel Fraiman, Skokie, IL  
B.A., Princeton University, 2009

Sara Kathleen Fuhrhop, Swansea, IL  
B.S., University of Illinois (Urbana-Champaign), 2010

Caleb Pressman Gardner, Cambridge, MA  
B.A., Harvard University, 2006

M.F.A., New York University, 2009

Paul DeMoully Gilbert, Ft. Wayne, IN  
B.S., Purdue University, 2010

Valerie Ann Gordon, Short Hills, NJ  
B.S., Yale University, 2009

Rebecca Susan Greene, Boston, MA  
B.A., Georgetown University, 2007

Natasha Gupta, Tullahoma, TN  
B.S., Duke University, 2010

Kurt Richard Herzer, Melville, NY  
B.A., Johns Hopkins University, 2009

Annie Woan-Yuh Hsu, Fresh Meadows, NY  
B.A., Harvard University, 2007

Kevin Hur, Saratoga, CA  
B.A., University of California (Berkeley), 2010

Melissa Leigh Hutchinson, Baltimore, MD  
B.S., Cornell University, 2006

M.A., Johns Hopkins University, 2008

Khalda Ibrahim, Alexandria, VA  
A.B., Harvard University, 2004

Jennifer Sun im, Torrance, CA  
B.A., Yale University, 2010

Sebastian M. Jara, Belmont, MA  
B.S., Tufts University, 2009

Alexander Miles Jenson, Lexington, MA  
B.A., Yale University, 2009

Christine Cleora Johnson, Lutherville, MD  
B.A., Princeton University, 2010

Thomas Vincent Johnson III, Baltimore, MD  
B.A., Northwestern University, 2005

Andrea Michelle Jonas, Miami, FL  
B.A., Harvard University, 2008

Andrea Lynn Jones, Homewood, IL  
B.S., Brown University, 2010

Krishna Rangadhamarao Juluri, West Palm Beach, FL  
A.B., Cornell University, 1999

Ph.D., Johns Hopkins University School of Medicine, 2008

Laura Beth Kaplan, Memphis, TN  
B.A., Harvard University, 2010

Sam Khalilian, Newport Beach, CA  
B.A., University of California (Berkeley), 2009

June-Ho Kim, Cupertino, CA  
B.A., Harvard University, 2009

Mimmie Kwong, Sacramento, CA  
B.A., Harvard University, 2010

Brian Jinho Lee, Madison, WI  
B.S., University of Wisconsin (Madison), 2010

Kimberley Tashai Lee, Margate, FL  
B.S., Florida International University, 2010

Lorena M. Leite, San Francisco, CA  
B.A., University of California (Berkeley), 2008

Anne K. Leopach, New Orleans, LA  
B.A., Loyola University, 2010

B.S., Loyola University, 2010

Carol Li, Riverdale, NJ  
B.S., Columbia University, 2010

Molong Li, Basking Ridge, NJ  
B.S., Stanford University, 2010

Michael Lin, Walnut, CA  
B.S., University of California (Berkeley), 2009

Susan Miao Lin, New Orleans, LA  
B.A., Amherst College, 2008

Melissa Margaret Liu, Oak Brook, IL  
B.S., Stanford University, 2009

Kyle William Mahoney, East Lansing, MI  
B.S., University of Michigan (Ann Arbor), 2009

Timothy Matthew Markman, Houston, TX  
B.A., Harvard University, 2010

Susan Elise Matesanz, Maynard, MA  
B.A., Dartmouth College, 2008

Rebecca Anne McKibben, Carmel, CA  
B.A., Pomona College, 2008

M.H., University of Legon (Ghana), 2009

Rebecca Lynn McLaren, Scottsdale, AZ  
B.A., Goucher College, 2008

Rachel Lauren Meserole, Drasco, AR  
B.S., Yale University, 2010

Matthew Peter Abe Mesias, Orosi, CA  
B.S., University of California (Davis), 2009

Marcus Raymond Messmer, Cicero, IN  
B.A., Indiana University (Bloomington), 2005

B.S., Indiana University (Bloomington), 2005

Devon Thaddeus Miller, Iowa City, IA  
B.S., Iowa State University, 2010

Stuart Leighton Mitchell, Baltimore, MD  
B.S., Vanderbilt University, 2010

Joseph Edward Molenda, Greenfield, WI  
B.S., University of Wisconsin (Madison), 2009

Matthew John Molloy, Gilbert, AZ  
B.S., University of Notre Dame, 2010
<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shalini Moningi</td>
<td>Charleston, WV</td>
<td>B.A., West Virginia University, 2010</td>
</tr>
<tr>
<td>Kathryn Marie Morton</td>
<td>Hammonton, NJ</td>
<td>B.A., Yale University, 2010</td>
</tr>
<tr>
<td>Luis Alberto Murillo</td>
<td>Lancaster, PA</td>
<td>B.A., Franklin and Marshall College, 2010</td>
</tr>
<tr>
<td>Atul Nakhasi</td>
<td>Iowa City, IA</td>
<td>B.S., University of Iowa, 2009</td>
</tr>
<tr>
<td>Neil Montgomery Neumann</td>
<td>Des Moines, IA</td>
<td>B.A., Johns Hopkins University, 2009</td>
</tr>
<tr>
<td>Angeline Michelle Nguyen</td>
<td>Plano, TX</td>
<td>B.A., Southern Methodist University, 2010</td>
</tr>
<tr>
<td>Ashley Marie Nieves</td>
<td>Oxnard, CA</td>
<td>B.A., Columbia University, 2010</td>
</tr>
<tr>
<td>Daniel Philip Nogee</td>
<td>Towson, MD</td>
<td>B.A., Washington University in St. Louis, 2010</td>
</tr>
<tr>
<td>Jason Adam Norman</td>
<td>Moreno Valley, CA</td>
<td>B.A., University of California (Berkeley), 2008</td>
</tr>
<tr>
<td>Oludare Olatoye</td>
<td>Cottage Grove, MN</td>
<td>B.A., Hamline University, 2008</td>
</tr>
<tr>
<td>Ju Yang Park</td>
<td>Duluth, GA</td>
<td>B.S., Emory University, 2010</td>
</tr>
<tr>
<td>Vanessa Lindsay Pascoe</td>
<td>Hillsborough, CA</td>
<td>B.A., Stanford University, 2008</td>
</tr>
<tr>
<td>Janaki Paskaradevan</td>
<td>Newport, MN</td>
<td>B.S., University of Minnesota (Twin Cities), 2010</td>
</tr>
<tr>
<td>Ralph J. Passarella</td>
<td>Loretto, TN</td>
<td>B.S., Vanderbilt University, 2010</td>
</tr>
<tr>
<td>Michelle Yun Peng</td>
<td>Mountain View, CA</td>
<td>B.S., University of California (Los Angeles), 2009</td>
</tr>
<tr>
<td>Thomas Edward Rappold Jr.</td>
<td>Roanoke, VA</td>
<td>B.S., Clemson University, 2005</td>
</tr>
<tr>
<td>Aymen Rashid</td>
<td>New Castle, DE</td>
<td>B.A., Johns Hopkins University, 2010</td>
</tr>
<tr>
<td>Danielle Helena Rochlin</td>
<td>Pacific Palisades, CA</td>
<td>B.A., Princeton University, 2010</td>
</tr>
<tr>
<td>Max Josef Romano</td>
<td>Baltimore, MD</td>
<td>B.A., Stanford University, 2009</td>
</tr>
<tr>
<td>Christine Lee Sailer</td>
<td>Chapel Hill, NC</td>
<td>B.A., Vanderbilt University, 2010</td>
</tr>
<tr>
<td>Robert Van Ness Same</td>
<td>Ellicott City, MD</td>
<td>B.S., University of Maryland (College Park), 2010</td>
</tr>
<tr>
<td>Claire Sampkanpanich</td>
<td>San Diego, CA</td>
<td>B.S., University of California (Los Angeles), 2010</td>
</tr>
<tr>
<td>Paul Joseph Sampognaro</td>
<td>Metairie, LA</td>
<td>B.S., Georgetown University, 2010</td>
</tr>
<tr>
<td>Patrick John Besserman Sayre</td>
<td>Columbia, MD</td>
<td>B.S., University of Maryland (College Park), 2010</td>
</tr>
<tr>
<td>Gino Joseph Scalabrin</td>
<td>Brewster, NY</td>
<td>B.S., University of Maryland (College Park), 2010</td>
</tr>
<tr>
<td>James Lee Schroeder Jr.</td>
<td>Wilmette, IL</td>
<td>B.S., Stanford University, 2005</td>
</tr>
<tr>
<td>Brett Anthony Shannon</td>
<td>Sanibel, FL</td>
<td>B.S., University of Notre Dame, 2010</td>
</tr>
<tr>
<td>Emily Anne Silverman</td>
<td>Miami, FL</td>
<td>B.A., Brown University, 2009</td>
</tr>
<tr>
<td>Sonal Sodha</td>
<td>Potomac, MD</td>
<td>B.S., Massachusetts Institute of Technology, 2008</td>
</tr>
<tr>
<td>Jose Angel Soria Lopez</td>
<td>Miami, FL</td>
<td>B.S., Florida International University, 2010</td>
</tr>
<tr>
<td>Ellie Stella Souganidis</td>
<td>Chicago, IL</td>
<td>B.S., Massachusetts Institute of Technology, 2010</td>
</tr>
<tr>
<td>Amar Jagdish Srivastava</td>
<td>St. Louis, MO</td>
<td>B.S., Yale University, 2010</td>
</tr>
<tr>
<td>Yong Duk Suh</td>
<td>Winder, GA</td>
<td>B.S., University of West Georgia, 2001</td>
</tr>
<tr>
<td>Julia Marjorie Thorn</td>
<td>Baltimore, MD</td>
<td>B.A., Johns Hopkins University, 2009</td>
</tr>
<tr>
<td>Kanika Trehan</td>
<td>Columbia, MD</td>
<td>B.S., Johns Hopkins University, 2010</td>
</tr>
<tr>
<td>Anne Marie van Bunningen</td>
<td>Atlanta, GA</td>
<td>B.S., Brown University, 2009</td>
</tr>
<tr>
<td>Kipp Douglas Voth</td>
<td>Arkansas City, KS</td>
<td>B.S., Pittsburg State University, 2010</td>
</tr>
<tr>
<td>Mary Beth Vrabel</td>
<td>Brooklyn, NY</td>
<td>B.S., Indiana University (Bloomington), 1997</td>
</tr>
<tr>
<td>Vivian Liting Wang</td>
<td>Ellicott City, MD</td>
<td>B.A., University of Maryland (College Park), 2010</td>
</tr>
<tr>
<td>Katie Odette Washington</td>
<td>Gary, IN</td>
<td>B.S., University of Notre Dame, 2010</td>
</tr>
<tr>
<td>Sharon Ruth Weeks</td>
<td>Chapel Hill, NC</td>
<td>B.A., Princeton University, 2008</td>
</tr>
<tr>
<td>Carla Jeanne Williams</td>
<td>Litchfield, CT</td>
<td>B.A., Dartmouth College, 2009</td>
</tr>
<tr>
<td>Harold Yihao Wu</td>
<td>Strongsville, CT</td>
<td>B.S., Harvard University, 2010</td>
</tr>
<tr>
<td>Yiru Wu</td>
<td>Calgary, Canada</td>
<td>B.S., University of Toronto, 2010</td>
</tr>
<tr>
<td>Wendy Ying</td>
<td>Novi, MI</td>
<td>B.A., Harvard University, 2010</td>
</tr>
<tr>
<td>Xun Zhou</td>
<td>Richmond, VA</td>
<td>B.A., Harvard University, 2010</td>
</tr>
</tbody>
</table>
### M.D. CANDIDATES IN SPECIAL PROGRAMS

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shira Gillian Ziegler, Bethesda, MD</td>
<td>B.A., Oberlin College, 2008</td>
<td>In combined M.D.-Ph.D program</td>
</tr>
<tr>
<td>Erin Nicole Zingarelli, Zephyrhills, FL</td>
<td>B.S., Florida Institute of Technology, 2010</td>
<td></td>
</tr>
<tr>
<td>Tricia Ruth Cottrell, St. Louis, MO</td>
<td>B.S., Washington University in St. Louis, 2004</td>
<td>Ph.D. candidate, Cellular and Molecular Medicine</td>
</tr>
<tr>
<td>Daniel Damtew, Skokie, IL</td>
<td>B.S., University of Illinois (Urbana-Champaign), 2007</td>
<td>Ph.D. candidate, University of Cambridge</td>
</tr>
<tr>
<td>Hornuzdiyar Henry Densenbrock, Albuquerque, NM</td>
<td>B.S., University of Pennsylvania, 2005</td>
<td>Ph.D. candidate, Research in Neurosurgery</td>
</tr>
<tr>
<td>Joshua Adam Denney, Birmingham, AL</td>
<td>B.S., University of Georgia, 2007</td>
<td>Ph.D. candidate, Fogarty International Research Scholarship Program</td>
</tr>
<tr>
<td>Jeffrey Tevebaugh Ehmsen, Goleta, CA</td>
<td>B.S., University of California (Irvine), 2001</td>
<td>Ph.D. candidate, Neuroscience</td>
</tr>
<tr>
<td>Catlin Conner Engelhard, Crozet, VA</td>
<td>B.A., Swarthmore College, 2003</td>
<td>Ph.D. candidate, Neuroscience</td>
</tr>
<tr>
<td>Paul Esteso, Tallahassee, FL</td>
<td>B.S., Florida State University, 2004</td>
<td>Ph.D. candidate, Cellular and Molecular Medicine</td>
</tr>
<tr>
<td>Shiv Gandhi, Mableton, GA</td>
<td>B.S., Johns Hopkins University, 2008</td>
<td>Ph.D. candidate, Biochemistry, Cellular and Molecular Biology</td>
</tr>
<tr>
<td>Catherine Elizabeth Handy, Westbury, NY</td>
<td>B.A., Harvard University, 2006</td>
<td>Ph.D. candidate, Bloomberg School of Public Health</td>
</tr>
<tr>
<td>Aisha Harun, Madison, WI</td>
<td>B.S., University of Wisconsin (Madison), 2007</td>
<td>Ph.D. candidate, Fulbright Fellowship</td>
</tr>
<tr>
<td>Emily Beth Heikamp, Metairie, LA</td>
<td>B.S., Duke University, 2005</td>
<td>Ph.D. candidate, Immunology</td>
</tr>
<tr>
<td>Gary Ping-Hao Ho, Boston, MA</td>
<td>A.B., Harvard University, 2004</td>
<td>Ph.D. candidate, Cellular and Molecular Medicine</td>
</tr>
<tr>
<td>Adam Iddriss, Baltimore, MD</td>
<td>B.S., University of Pittsburgh, 2007</td>
<td>Ph.D. candidate, Fogarty International Clinical Research Scholars Fellowship</td>
</tr>
<tr>
<td>John Bassam Issa, Pueblo, CO</td>
<td>B.S., Johns Hopkins University, 2004</td>
<td>Ph.D. candidate, Biomedical Engineering</td>
</tr>
<tr>
<td>Shiv Gandhi, Mableton, GA</td>
<td>B.S., Johns Hopkins University, 2008</td>
<td>Ph.D. candidate, Biochemistry, Cellular and Molecular Biology</td>
</tr>
<tr>
<td>Matthew Avery Gibson, Charlottesville, VA</td>
<td>B.S., Virginia University, 2002</td>
<td>Ph.D. candidate, Biomedical Engineering</td>
</tr>
<tr>
<td>Inna V. Grishkan, Newton, MA</td>
<td>B.S., Boston College, 2008</td>
<td>Ph.D. candidate, Cellular and Molecular Medicine</td>
</tr>
<tr>
<td>Catherine Elizabeth Handy, Westbury, NY</td>
<td>B.A., Harvard University, 2006</td>
<td>Ph.D. candidate, Bloomberg School of Public Health</td>
</tr>
<tr>
<td>Aisha Harun, Madison, WI</td>
<td>B.S., University of Wisconsin (Madison), 2007</td>
<td>Student in Residence: Fulbright Fellowship</td>
</tr>
<tr>
<td>Adam Iddriss, Baltimore, MD</td>
<td>B.S., University of Pittsburgh, 2007</td>
<td>Student in Residence: Fogarty International Clinical Research Scholars Fellowship</td>
</tr>
<tr>
<td>John Bassam Issa, Pueblo, CO</td>
<td>B.S., Johns Hopkins University, 2004</td>
<td>Ph.D. candidate, Biomedical Engineering</td>
</tr>
</tbody>
</table>

---

**Andrea Lauren Christman, Owings Mills, MD**  
B.A., Johns Hopkins University, 2006; Ph.D. candidate, Bloomberg School of Public Health

---

**Stephan Paul Jurasek, Dedham, MA**  
B.A., Boston College, 2005; Ph.D. candidate, Bloomberg School of Public Health
Allison June Kaeding, Fargo, ND
B.S., University of Michigan (Ann Arbor), 2007; Student in Residence: Research in Oncology

Tymoteusz Jan Kajstura, Ossining, NY 1
B.A., Oberlin College, 2007; Ph.D. candidate, Neuroscience

Bridget Patrice Keenan, Mount Airy, MD 1
B.S., Loyola University, 2006; Ph.D. candidate, Immunology

Grace Yoonhee Kim, Arlington, TX
B.A., Johns Hopkins University, 2007; Student in Residence: Howard Hughes Medical Institute-NIH Research Scholars Program

KiBem Kim, Baltimore, MD 1
B.A., Johns Hopkins University, 2002; Ph.D. candidate, Cellular and Molecular Medicine

Isaac Abraham Kinde, Beaumont, CA 1
B.S., University of Maryland (Baltimore County), 2005; Ph.D. candidate, Cellular and Molecular Medicine

Helen Irene Kinsman, Baltimore, MD
B.S., Haverford College, 2007; M.P.H. candidate, Bloomberg School of Public Health

Theodore Sander Kouo, Peoria, IL 1
B.A., Northwestern University, 2004; Ph.D. candidate, Immunology

Andre Rashad Kydd, Elkins Park, PA 1
B.S., Harvard University, 2004; Ph.D. candidate, Cellular and Molecular Medicine

Thomas Adam Lardaro, Wakefield, RI
B.S., University of Connecticut, 2005; M.P.H. candidate, Bloomberg School of Public Health

Cecilia Alejandra Larocca, Bronx, NY
B.S., Cornell University, 2006; Student in Residence: Howard Hughes Fellowship

Heewon Lee, Denver, CO
B.A., Harvard University, 2006; Student in Residence: Doris Duke Fellowship

Shin Rong Lee, Sugar Land, TX 1
B.S., Yale University, 2007; Ph.D. candidate, Biomedical Engineering

S. Julie-Ann Lloyd, Boston, MA 1
S.B., Massachusetts Institute of Technology, 2003
S.M., Massachusetts Institute of Technology, 2005; Ph.D. candidate, Cellular and Molecular Medicine

Lia Ilona Losonczy, Yonkers, NY
B.A., Columbia University, 2006; M.P.H. candidate, Bloomberg School of Public Health

Geoffrey Martin Lynn, Deland, FL
B.S., Elon College, 2007; Ph.D. candidate, University of Oxford

Chintan Hansraj Maru, Brookfield, CT 2
B.A., Duke University, 2004; Student in Residence: Research in Health Services, Bloomberg School of Public Health

Simon C. Mathews, Suwanee, GA 2
B.A., University of Virginia, 2004; Student in Residence: Research in Anesthesiology

Annemarie McMillan McCartney, Baltimore, MD 1
B.S., Miami University, 2007; Ph.D. candidate, Cellular and Molecular Medicine

Ross Howard McMillan, Tallahassee, FL 1
B.S., Morehouse College, 2007; Ph.D. candidate, Cellular and Molecular Medicine

Melanie McNally, Manchester, NH
B.S., Boston College, 2006; Student in Residence: Research in Molecular Microbiology and Immunology, Bloomberg School of Public Health

Robert Gene Mealer, Bozeman, MT 1
B.S., Montana State University, 2005; Ph.D. candidate, Neuroscience

Brandon Michael Metcalf, Catonsville, MD
B.S., Washington College, 2006; M.P.H. candidate, Bloomberg School of Public Health

Alisa Mo, Plano, TX 1
B.A., Cornell University, 2008; Ph.D. candidate, Neuroscience

Matthew Morgan Moake, Geneva, NY 1
B.S., Cornell University, 2004; Ph.D. candidate, Cellular and Molecular Medicine

Amir Moheb Mohareb, Toronto, Canada
B.S., York University, 2008; Student in Residence: Research in Emergency Medicine

Camilo Alejandro Molina, Naples, FL
B.A., Miami University, 2008; Student in Residence: Research in Neurosurgery

Carolina Maria Montano, Silver Spring, MD 1
B.S., Brigham Young University, 2005; Ph.D. candidate, Human Genetics

Meaghan O’Malley Morris, Springfield, VA 1
B.S., Boston College, 2006; Ph.D. candidate, Biochemistry, Cellular and Molecular Biology

Asif Khan Mustafa, Harleysville, PA 2
B.A., University of Pennsylvania, 2001
M.S., University of Pennsylvania, 2001
Ph.D., Johns Hopkins University School of Medicine, 2010; Student in Residence: Research in Neuroscience

Benjamin Alexander Nacev, Fort Thomas, KY 1
B.A., University of Chicago, 2004; Ph.D. candidate, Biochemistry, Cellular and Molecular Biology

Archana Jayasurya Nelliot, Henderson, NV 1
B.S., University of Nevada, 2006; Ph.D. candidate, Cellular and Molecular Medicine

Kurun Partap Singh Oberoi, Queens Village, NY
B.S., University of Michigan (Ann Arbor), 2008; Student in Residence: Research at Mount Sinai School of Medicine

Erin Michelle Parry, Rockport, MA 1
B.A., Colby College, 2006; Ph.D. candidate, Human Genetics

Courtney Anne Pendleton, Plainville, CT
B.S., New York University, 2004; Student in Residence: Research in Neurosurgery

James Christopher Pendleton, Visalia, CA 1
B.S., Morehouse College, 2005; Ph.D. candidate, Pathobiology

Karlo Perica, Montgomery, MD 1
B.S., Yale University, 2007; Ph.D. candidate, Biomedical Engineering

James Paul Pirruccello, Reno, NV
B.S., Yale University, 2006; Student in Residence: Sarnoff Fellowship
Dellma Postigo, Berkeley, CA  
B.S., University of Michigan (Ann Arbor), 1996;  
M.P.H. candidate, University of California, Berkeley  

Seyed Alireza Rabi, Rosedale, MD 1  
B.A.S., University of Toronto, 2006; Ph.D. candidate, Immunology  

Marianeli Rodriguez, Tulsa, OK 1  
B.S., University of Tulsa, 2005; Ph.D. candidate, Neuroscience  

Evgeni Andrew Russell, Pawtucket, RI  
B.S., Brown University, 2006; Ph.D. candidate, Bloomberg School of Public Health  

Paul Christopher Scherer, Media, PA 1  
B.A., University of Pennsylvania, 2008; Ph.D. candidate Neuroscience  

Jessica Kerr Schiffman, Atlanta, GA  
B.A., Cornell University, 2005; M.P.H. candidate, Harvard School of Public Health  

Karisa Colleen Schreck, Baltimore, MD 1  
B.S., New Jersey Institute of Technology, 2003; Ph.D. candidate Neuroscience  

Pokmeng See, San Jose, CA  
B.S., Johns Hopkins University, 2007; Student in Residence: Research in Neurosurgery  

Amy Nicole Sexauer, Wadmalaw Island, SC 1  
B.A., University of Georgia, 2005  
B.S., University of Georgia, 2005; Ph.D. candidate, Cellular and Molecular Medicine  

Eliash Ruth Shamir, Vienna, VA 1  
B.S., University of Virginia, 2008; Ph.D. candidate, Biochemistry, Cellular and Molecular Biology  

Adrienne Emily Shapiro, Champaign, IL  
B.A., Harvard University, 2002  
M.S., London School of Hygiene and Tropical Medicine, 2003; Ph.D. candidate, Bloomberg School of Public Health  

Leilani Marie Sharpe, Olympia, WA 1  
B.S., University of Washington, 2004; Ph.D. candidate, Biochemistry, Cellular and Molecular Biology  

Thang Rinda Soong, Tai Kok Tsui, Kowloon, Hong Kong  
B.S., University of California (Berkeley), 2003; Ph.D. candidate, Bloomberg School of Public Health  

Joel Chaim Sunshine, Potomac, MD 1  
B.S., Brandeis University, 2007  
M.S., Brandeis University, 2007; Ph.D. candidate Biomedical Engineering  

Sarah Brem Sunshine, Owings Mills, MD  
B.S., Brandeis University, 2008; Student in Residence: Research in Ophthalmology  

Sonia Chin Tang, Great Neck, NY 1  
B.S., Massachusetts Institute of Technology, 2004; Ph.D. candidate, Biochemistry, Cellular and Molecular Biology  

Jacob Louis Taylor, Chevy Chase, MD  
B.A., Yale University, 2003; M.P.H. candidate, Bloomberg School of Public Health  

Martin Samuel Taylor, Baltimore, MD 1  
B.S.E., Princeton University, 2005; Ph.D. candidate, Pharmacology  

Jeffrey John Tosoo, South Lyon, MI  
B.S., University of Michigan (Ann Arbor), 2007;  
M.P.H. candidate, Bloomberg School of Public Health  

William Tsao, East Hanover, NJ 1  
B.S., Johns Hopkins University, 2006; Ph.D. candidate, Cellular and Molecular Medicine  

Amy Ruth Unterman, Pacific Palisades, CA 1  
B.A., Princeton University, 2008; Ph.D. candidate, Cellular and Molecular Medicine  

Matthew Scott Vandiver, Johnson City, TN 1  
B.S., Furman University, 2006; Ph.D. candidate, Pharmacology  

Cassandra Vanessa Villegas, Los Angeles, CA 2  
B.S., Stanford University, 2000; Student in Residence: Research in Surgery  

Natalia Vlassova, Los Angeles, CA  
B.S., University of California (Los Angeles), 2007; Student in Residence: Research in Dermatology  

Trang Minh Vu, Baltimore, MD  
B.S., University of Maryland (College Park), 2007; Student in Residence: Research in Medicine  

Robert Thomas Wicks, Ocean Springs, MS  
B.A., University of Mississippi, 2006; Student in Residence: Research in Neurosurgery  

Emily Turner Wood, Anacortes, WA 1  
AH, Skagit Valley College, 1999  
B.S., University of Washington, 2006; Ph.D. candidate, Neuroscience  

Luke Allister Wylie, Baltimore, MD  
B.A., University of California (San Diego), 2007  
B.S., University of California (San Diego), 2007; Ph.D. Candidate, University of Cambridge  

Risheng Xu, League City, TX 1  
A.B., Harvard University, 2007; Ph.D. candidate, Pharmacology  

David Zaboli, Chicago, IL 2  
B.S., Illinois Institute of Technology, 2006; Student in Residence: Research in Otolaryngology  

Lauren Rachel Zeitels, Warren, NJ 1  
B.A., University of Pennsylvania, 2006; Ph.D. candidate, Pharmacology  

97  

1 In combined M.D.-Ph.D program  
2 Counted in the 4th year M.D. class
Summary

M.D. Candidates:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>121</td>
</tr>
<tr>
<td>Second Year</td>
<td>118</td>
</tr>
<tr>
<td>Third Year</td>
<td>119</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>112</td>
</tr>
<tr>
<td>Students in Special Programs</td>
<td>97</td>
</tr>
<tr>
<td>Total</td>
<td>567</td>
</tr>
</tbody>
</table>

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

<table>
<thead>
<tr>
<th>State</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>3</td>
</tr>
<tr>
<td>Arizona</td>
<td>8</td>
</tr>
<tr>
<td>Arkansas</td>
<td>1</td>
</tr>
<tr>
<td>California</td>
<td>66</td>
</tr>
<tr>
<td>Colorado</td>
<td>6</td>
</tr>
<tr>
<td>Connecticut</td>
<td>11</td>
</tr>
<tr>
<td>Delaware</td>
<td>1</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>3</td>
</tr>
<tr>
<td>Florida</td>
<td>26</td>
</tr>
<tr>
<td>Georgia</td>
<td>17</td>
</tr>
<tr>
<td>Hawaii</td>
<td>1</td>
</tr>
<tr>
<td>Illinois</td>
<td>21</td>
</tr>
<tr>
<td>Indiana</td>
<td>8</td>
</tr>
<tr>
<td>Iowa</td>
<td>6</td>
</tr>
<tr>
<td>Kansas</td>
<td>7</td>
</tr>
<tr>
<td>Kentucky</td>
<td>3</td>
</tr>
<tr>
<td>Louisiana</td>
<td>7</td>
</tr>
<tr>
<td>Maine</td>
<td>1</td>
</tr>
<tr>
<td>Maryland</td>
<td>93</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>29</td>
</tr>
<tr>
<td>Michigan</td>
<td>17</td>
</tr>
<tr>
<td>Minnesota</td>
<td>11</td>
</tr>
<tr>
<td>Mississippi</td>
<td>2</td>
</tr>
<tr>
<td>Missouri</td>
<td>11</td>
</tr>
<tr>
<td>Montana</td>
<td>2</td>
</tr>
<tr>
<td>Nevada</td>
<td>3</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>1</td>
</tr>
<tr>
<td>New Jersey</td>
<td>19</td>
</tr>
<tr>
<td>New Mexico</td>
<td>1</td>
</tr>
<tr>
<td>New York</td>
<td>37</td>
</tr>
<tr>
<td>North Carolina</td>
<td>9</td>
</tr>
<tr>
<td>North Dakota</td>
<td>1</td>
</tr>
<tr>
<td>Ohio</td>
<td>11</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>1</td>
</tr>
<tr>
<td>Oregon</td>
<td>3</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>24</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>3</td>
</tr>
<tr>
<td>South Carolina</td>
<td>3</td>
</tr>
<tr>
<td>Tennessee</td>
<td>5</td>
</tr>
<tr>
<td>Texas</td>
<td>25</td>
</tr>
<tr>
<td>Utah</td>
<td>2</td>
</tr>
<tr>
<td>Virginia</td>
<td>26</td>
</tr>
<tr>
<td>Washington</td>
<td>9</td>
</tr>
<tr>
<td>West Virginia</td>
<td>2</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>6</td>
</tr>
<tr>
<td>Foreign</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>10</td>
</tr>
<tr>
<td>China</td>
<td>1</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1</td>
</tr>
<tr>
<td>India</td>
<td>1</td>
</tr>
<tr>
<td>Korea</td>
<td>1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1</td>
</tr>
</tbody>
</table>
CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE

COLLEGES ATTENDED

Amherst College ........................................... 3
Anna University * ........................................ 1
Arizona State University ................................... 1
Austin College ........................................... 1
Boston College .......................................... 4
Boston University .................................... 2
Bowdoin College ........................................... 2
Brandeis University ..................................... 4
Brigham Young University ................................. 5
Brooklyn College of the City University of
New York .................................................. 1
Brown University .................................... 9
Bryn Mawr College ....................................... 1
California Institute of Technology ....................... 1
California State University (Long Beach) ................. 1
Calvin College ......................................... 1
Canisius College .......................................... 1
Carnegie Mellon University ................................ 2
Case Western Reserve University ......................... 3
Claremont McKenna College ............................. 1
Clarkson University ....................................... 2
Claremont University ...................................... 1
Colby College .............................................. 2
College of William and Mary ............................. 2
Columbia University ..................................... 12
Cornell University ....................................... 16
Dartmouth College ....................................... 9
Duke University ........................................... 16
Elon College ............................................. 1
Emory University ......................................... 3
Florida Institute of Technology ........................... 1
Florida International University ......................... 2
Florida State University ................................... 1
Franklin and Marshall College ......................... 2
Furman University ......................................... 1
Georgetown University ..................................... 6
Georgia Institute of Technology ......................... 1
Georgia State University ................................... 1
Goucher College .......................................... 1
Grinnell College ......................................... 1
Hamline University ........................................
Harvard University ...................................... 46
Haverford College ....................................... 1
Hendrix College .......................................... 1
Houghton College ......................................... 1
Howard University ....................................... 1
Illinois Institute of Technology .......................... 1
Illinois Wesleyan University .............................. 1
Indiana University (Bloomington) ......................... 3
Iowa State University ..................................... 1
Jefferson College of Health Sciences ..................... 1
Johns Hopkins Bloomberg School of
Public Health ........................................... 15
Johns Hopkins University - Peabody Institute ....... 1
Johns Hopkins University ................................ 60
Johns Hopkins University School of Medicine ....... 8
Kansas State University ................................ 1
Kenyon College .......................................... 2
Kings College * ........................................... 1
Lawrence University ...................................... 1
London School of Hygiene and
Tropical Medicine * ..................................... 1
Louisiana State University (Baton Rouge) ............. 3
Loyola University ........................................... 3
Macalester College (St. Paul) .............................. 1
Maharishi University of Management .................... 1
Marianopolis College * .................................. 1
Marquette University ..................................... 1
Massachusetts Institute of Technology .................. 16
McGill University * ...................................... 1
Miami University ........................................ 2
Michigan State University ............................... 1
Middlebury College ...................................... 1
Montana State University .................................. 1
Morehouse College ....................................... 1
Morgan State University ................................... 1
Mount Holyoke College .................................. 1
New Jersey Institute of Technology ....................... 1
New York University ..................................... 5
Northwestern University ................................... 5
Oberlin College ........................................... 2
Ohio State University ................................... 5
Oregon State University ................................ 2
Oxford University Medicine School - Oxford * ..... 1
Pace University ......................................... 1
Peking University * ....................................... 1
Pennsylvania State University ............................ 5
Pittsburg State University .................................. 1
Pomona College .......................................... 2
Princeton University ..................................... 15
Purdue University ....................................... 2
Regis University ......................................... 1
Rice University ........................................... 2
Rutgers University ....................................... 5
Saint Olaf College ........................................ 1
Siena College ............................................. 2
Skagit Valley College ..................................... 1
Southern Methodist University ............................ 3
Stanford University ....................................... 24
Swarthmore College ...................................... 1
Syracuse University ...................................... 1
Tufts University .......................................... 3
Union College (New York) ............................... 1
United States Air Force Academy ......................... 1
United States Military Academy ........................ 1
United States Naval Academy ............................ 2
University of Alabama .................................... 4
University of Arizona ..................................... 3
University of Arkansas .................................... 1
University of Bologna * ................................ 2
University of British Columbia * ......................... 2
University of California (Berkeley) ....................... 21
University of California (Davis) ......................... 5
University of California (Irvine) ......................... 2
University of California (Los Angeles) ................. 5
University of California (Riverside) ..................... 1
University of California (San Diego) .................... 2
University of Chicago .................................... 8
University of Colorado (Boulder) ....................... 3
University of Connecticut ................................ 3
University of Florida ..................................... 4
University of Georgia .................................... 8
University of Illinois (Urbana-Champaign) ........... 2
University of Iowa ....................................... 1
University of Kansas .................................... 1
University of Legon (Ghana) * ........................ 1
University of London * ................................ 1
University of Maryland (Baltimore County) .......... 4
University of Maryland (College Park) ................. 18
University of Massachusetts (Boston) .................. 1
University of Miami ...................................... 1
University of Michigan (Ann Arbor) .................... 12

STUDENTS 481
<table>
<thead>
<tr>
<th>University Name</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Minnesota (Twin Cities)</td>
<td>3</td>
</tr>
<tr>
<td>University of Mississippi</td>
<td>1</td>
</tr>
<tr>
<td>University of Missouri (Columbia)</td>
<td>1</td>
</tr>
<tr>
<td>University of Missouri (Rolla)</td>
<td>1</td>
</tr>
<tr>
<td>University of Montana (Missoula)</td>
<td>1</td>
</tr>
<tr>
<td>University of North Carolina (Chapel Hill)</td>
<td>4</td>
</tr>
<tr>
<td>University of Notre Dame</td>
<td>8</td>
</tr>
<tr>
<td>University of Oregon (Eugene)</td>
<td>1</td>
</tr>
<tr>
<td>University of Oxford *</td>
<td>4</td>
</tr>
<tr>
<td>University of Pennsylvania</td>
<td>10</td>
</tr>
<tr>
<td>University of Pittsburgh</td>
<td>3</td>
</tr>
<tr>
<td>University of Richmond</td>
<td>1</td>
</tr>
<tr>
<td>University of Rochester</td>
<td>2</td>
</tr>
<tr>
<td>University of South Carolina (Columbia)</td>
<td>1</td>
</tr>
<tr>
<td>University of South Florida</td>
<td>1</td>
</tr>
<tr>
<td>University of Southern California</td>
<td>1</td>
</tr>
<tr>
<td>University of Sydney *</td>
<td>1</td>
</tr>
<tr>
<td>University of Texas (Austin)</td>
<td>8</td>
</tr>
<tr>
<td>University of Toronto *</td>
<td>2</td>
</tr>
<tr>
<td>University of Tulsa</td>
<td>2</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>8</td>
</tr>
<tr>
<td>University of Washington</td>
<td>5</td>
</tr>
<tr>
<td>University of West Georgia</td>
<td>1</td>
</tr>
<tr>
<td>University of Wisconsin (Madison)</td>
<td>7</td>
</tr>
<tr>
<td>Ursinus College</td>
<td>1</td>
</tr>
<tr>
<td>Vanderbilt University</td>
<td>7</td>
</tr>
<tr>
<td>Virginia Commonwealth University</td>
<td>1</td>
</tr>
<tr>
<td>Wake Forest University</td>
<td>3</td>
</tr>
<tr>
<td>Washington College</td>
<td>2</td>
</tr>
<tr>
<td>Washington University in St. Louis</td>
<td>4</td>
</tr>
<tr>
<td>Wesleyan University (Connecticut)</td>
<td>1</td>
</tr>
<tr>
<td>West Virginia University</td>
<td>2</td>
</tr>
<tr>
<td>Williams College</td>
<td>1</td>
</tr>
<tr>
<td>Xavier University of Louisiana</td>
<td>1</td>
</tr>
<tr>
<td>Yale University</td>
<td>43</td>
</tr>
<tr>
<td>York University *</td>
<td>1</td>
</tr>
</tbody>
</table>

* Designates foreign schools.

*Inasmuch as a student’s preparation may have been received at more than one institution, this will not check with the total number enrolled. Colleges attended include all students who are M.D. candidates irrespective of current enrollment status.*
CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

BIOCHEMISTRY, CELLULAR AND MOLECULAR BIOLOGY

Department of Biological Chemistry
John William Bullen Jr., Boston, MA
A.B., Dartmouth College, 2001
Chutikarn Butkinaree, Brunswick, ME
A.B., Bowdoin College, 2002
Jose Rogelio Carcamo, Northridge, CA
B.S., California State University (Northridge), 2006
April Clayton, Neeses, SC
B.S., Erskine College, 2008
Erica Christine Dresselhaus, Lanesville, IN
B.A., Boston University, 2008
Elizabeth Carol Huang Eyler, Durham, NC
B.S., Duke University, 2005
Hana Leah Goldschmidt, Berkeley, CA
B.A., Occidental College, 2007
Elizabeth Hwang, Flushing, NY
B.A., State University of New York (Stony Brook), 2003
M.A., Hunter College, 2006
Rakhi Jattani, Floral Park, NY
B.S., Carnegie Mellon University, 2004
Deepak Kalra, Brookline, MA
M.B.B.S., University of Delhi, 2003
M.P.H., Harvard University School of Public Health, 2004
Sang Hoon Kim, Seoul, Korea
B.S., Yonsei University, 2006
Elizabeth Anne Kolar, Baltimore, MD
B.S., Salisbury University, 2007
Juliane Claudia Lessard, Providence, RI
B.S., Brown University, 2006
Teresa Romeo Luperchio, Gibbstown, NJ
B.S., Johns Hopkins University, 2008
Meaghan O'Malley Morris, Springfield, VA
B.S., Boston College, 2006
Susana Rodriguez, Brookline, MA
B.A., California State University (Domínguez Hills), 2004
Jeremy Daniel Rotty, Berea, KY
B.A., Berea College, 2005
Shino Shimoji-Krishnan, Potomac, MD
B.S., University of Rochester, 2001
Yali Zhang, Palo Alto, CA

Department of Biophysics and Biophysical Chemistry
Sharrol Bachas, Elmont, NY
B.S., State University of New York (Albany), 2008
Poonam Jayendra Bheda, Hilliard, OH
B.S., Ohio State University, 2003
Olivier Bauer Simon, Santa Fe, NM
B.S., University of New Mexico, 2007
Julie Ellen Takacs, Riverhead, NY
B.A., Franklin and Marshall College, 2004
Matthew Ward, Derwood, MD
B.S., Clemson University, 2008

Department of Cell Biology
Jason Michael Berk, Storrs Mansfield, CT
B.S., University of Connecticut, 2005
Stacey Marie Cromer Berman, Columbia, MD
B.S., Lafayette College, 2005
Katherine April Bradbury, Vineland, NJ
B.S., Rutgers University, 2008
John Stoddard Burg, Philadelphia, PA
B.S., Pennsylvania State University, 2001
Suchismita Chandran, Burlington, VT
B.S., Bangalore University, 2001
M.S., University of Vermont, 2004
Yim Ling Cheng, New York, NY
B.S., William Smith College, 2007
Zachary Philip Gerhart-Hines, Baltimore, MD
B.S., Pennsylvania State University, 2004
Caitlin Hanlon, Huntington, PA
B.S., Ursinus College, 2007
Phylis Hetie, Baltimore, MD
B.S., Masters College, 2005
Troy Allen Horn, Owings Mills, MD
B.S., Kings College, 1998
M.A., University of Scranton, 2003
Melanie Issigonis, Charlottesville, VA
B.S., University of Virginia, 2003
Timothy James Kelly, State College, PA
B.S., Pennsylvania State University, 2003
Chih-Yung Sean Lee, Baltimore, MD
B.S., National Taiwan University, 2001
Qing Ma, Beijing, China
B.S., Peking University, 2009
B.S.Econ., Peking University, 2009
Matthew Joseph Maurer, Rochester, NY
B.S., University of Rochester, 2004
Christine Nwosu, Durham, NC
B.S., University of Maryland (Eastern Shore), 2004
Cassandra A. Patenaude, Boston, MA
B.S., University of Maine, 2007
Pamela L. Ronco, Webster, NY
B.S., Ithaca College, 2008
Travis Richard Ruch, Holland, MI
B.S., Hope College, 2005
Leilani Marie Sharpe, Olympia, WA
B.S., University of Washington, 2004
Xuting Rebecca Sheng, Philadelphia, PA
B.A., University of Pennsylvania, 2003
Dan Simon, Baltimore, MD
B.S., Johns Hopkins University, 2004
Emerson VanLeuven Stewart, Atlanta, Georgia
B.S., Emory University, 2002
Rachel Raeburn Webster Stine, Baltimore, MD
B.A., Goucher College, 2006
Kristen Franson Swaney, University Park, PA
B.S., Pennsylvania State University, 2004
Ming Tang, Ann Arbor, MI  
B.S., University of Science and Technology of China, 2001

Department of Molecular Biology and Genetics

Luna Alammar, Upper Marlboro, MD  
B.A., Barnard College, 2006

Lindsey James Brown, Baltimore, MD  
B.S., Quinipiac College, 2000

Danfeng Cai, Shanghai, China  
B.S., Peking University, 2009

Juliene Kimberly Go Co, Honolulu, HI  
B.S., University of the Philippines, 2004

Jennifer Renee Cohen, Washington, DC  
B.S., Howard University, 2003

Adrian Creanga, Bucharest, Romania  
B.S., University of Bucharest, 2000  
M.S., University of Bucharest, 2001

Miranda Malouf Darby, Nottingham, MD  
B.A., Carleton College, 2000

Kai Deng, Guangzhou, China  
B.S., Sun Yat-sen University, 2005

Seth Wayne Dickey, Walbridge, OH  
B.S., Michigan State University, 2007

Jessica Erin Siegel Dymond, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2004

Daniel Edward Eyler, Bethesda, MD  
B.S., Georgetown University, 2004

Shan He, Beijing, China  
B.S., Tsinghua University, 2005

Brian Richard Herb, Baltimore, MD  
B.A., Dickinson College, 1999

Nan Hong, Tacoma, WA  
B.S., University of Puget Sound, 2004

Zhong Hua, Tongcheng, China  
B.S., Wuhan University, 2004  
M.S., Tsinghua University, 2007

Qing Huang, Baltimore, MD  
B.S., Peking University, 2005

Junho Hur, New York, NY  
B.S., Seoul National University, 2004

Basil Hussain, Bolingbrook, IL  
B.S., University of Illinois (Urbana-Champaign), 2007

Benjamin Lawrence Jilek, Mankato, MN  
B.S., Minnesota State University (Mankato), 2004

Peng Jin, Beijing, China  
B.S., Tsinghua University, 2002

Laura Michelle Koontz, Chapel Hill, NC  
B.S., University of North Carolina (Chapel Hill), 2004

Zheng Kuang, Gan Zhou, China  
B.S., Tsinghua University, 2008

Yi Liu, Anhui, China  
B.S., University of Science and Technology of China, 2003

Wenyuan Lu, Vermillion, SD  
B.Med., Capital University of Medical Sciences - Beijing, 1996

Michael Lewis Multhaup, Mill Valley, CA  
B.S., Stanford University, 2008

Katherine Frances Murnen, Philadelphia, PA  
B.A., Swarthmore College, 2004

Karen Aileen O’Connell, Marina, CA  
B.S., George town University, 2004

Shih-Jung Pan, Baltimore, MD  
B.S., National Taiwan University, 1996  

Vinod Ranganathan, Baltimore, MD  
B.A., Case Western Reserve University, 2001

Paul Michael Schaughency, Frederick, MD  
B.A., St. Mary’s College of Maryland, 2006

Christopher John Shoemaker, West Chester, OH  
B.A., Miami University, 2007

Cynthia Korin Shrum, Baltimore, MD  
B.A., University of California (Berkeley), 2003

Jeanne Marie Sisk, Baltimore, MD  
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2006

Jeanelle M. Spencer, Hyattsville, MD  
B.S., Howard University, 2003

Sofia Luz Vidal-Cardenas, Baltimore, MD  
B.S., Universidad Peruana Cayetano Heredia - Lima, 2004

Jennifer Tong Wang, Melville, NY  
B.S., Massachusetts Institute of Technology, 2005

Huimin Yu, Shanghai, China  
B.Med., Shanghai Second Medical University, 2001

M. Med, Shanghai Second Medical University, 2004

Nailing Zhang, Shanghai, China  
B.S., Fudan University, 2003

Yulian Zhou, Beijin, China  
B.S., Tsinghua University, 2009

Michelle Kim Zinchenko, New York, NY  
B.A., Columbia University, 1996

Seth Aaron Zonies, Rockville, MD  
B.S., University of Maryland (College Park), 2004

Department of Neuroscience

Muhammad Ali Bangash, Berlin, Germany  
M.B.B.S., Aga Khan Medical College - Aga Khan University - Karachi - Pakistan, 2002

Dean Paul Campbell, Hazleton, PA  
B.S., Bucknell University, 2008

Ka Yam Chak, San Francisco, CA  
B.S., University of California (Davis), 2001

Michael C. Chang, Long Island City, NY  
B.A., University of California (Berkeley), 2001

Ming-Hui Cheng, New York, NY  
B.S., National Taiwan University, 2004

Joong Youn Cho, Seoul, Korea  
B.S., Korea University (Seoul), 2005

Eric Cox, Washington, DC  
B.S., University of California (San Diego), 2004

Judy Van Kim Nguyen, Tulsa, OK  
B.S., University of Oklahoma (Norman), 2006

484 STUDENTS
Yuko Oku, San Francisco, CA
B.S., Worcester Polytechnic Institute (Worcester), 2005

Erin Marie Poth, Oklahoma City, OK
B.S., Tufts University, 2006

Wing Sze Wendy Yue, Hong Kong
B.S., University of Hong Kong, 2008

Hongkang Zhang, Zhuzhou, China
B.S., Peking University, 2008

Department of Pharmacology and Molecular Sciences

Nwe-Nwe Aye-Han, Yangon, Myanmar
A.B., Mount Holyoke College, 2007

Sunetra Shobhan Biswas, Than, India
B.S., Bombay College of Pharmacy (Mumbai), 2006
M.S., Northeastern University, 2008

John Kipchirchir Bitok, Brighton, MA
B.A., Syracuse University, 2004

Tyson David Bowen, Grand Junction, CO
B.A., University of Colorado, 2009

Leighanne Amy Brammer, North Easton, MA
B.S., Stonehill College, 2006

Beverley Marie Dancy, Portland, OR
B.A., Lewis and Clark College, 2006

Blair Christophe Dancy, Baltimore, MD
B.A., Johns Hopkins University, 2006

Charlene Janelle Scotland Depry, Silver Spring, MD
B.A., Vassar College, 2006

Andrew Liese DuFresne, Worcester, MA
B.S., Worcester Polytechnic Institute (Worcester), 2005

Pamela Riva Lowry, Piscataway, NJ
B.S., Johns Hopkins University, 2005

Jessica Elizabeth Mott, Lexington, KY
B.S., University of Kentucky, 2008

Benjamin Alexander Nacev, Fort Thomas, KY
B.A., University of Chicago, 2004

Courtney Marie O’Farrell, Wakefield, MA
B.S., Bates College, 2007

Jillian Marie Prendergast, Pembroke, MA
B.S., University of Massachusetts (Amherst), 2007

Matthew Delton Shirley, Gladstone, MO
B.S., University of Missouri (Columbia), 2008

Sonya Chin Tang, Great Neck, NY
B.S., Massachusetts Institute of Technology, 2004

Department of Physiology

Matthew Garrett Baile, New Windsor, MD
B.S., Shippensburg University of Pennsylvania, 2008

Joseph Daniel Baugher, Elkridge, MD
B.S., Tennessee Temple University, 2000
M.S., University of Maryland (Baltimore County), 2006

Brandie Makeba Cross, Panorama City, CA
B.A., California State University (Northridge), 2003

Duane Currier, Meredith, NH
B.S., Messiah College, 2006

First Year BCMB Students

Saif Al Qassim, Baltimore, MD
B.S., University of Michigan, 2008

Sara Jean Clasen, Scottsdale, AZ
B.S., University of Arizona, 2010

Emily McKenzie Clay, Provo, UT
B.S., Brigham Young University, 2010

Shiv Gandhi, Mableton, GA
B.S., Johns Hopkins University, 2008
M.S., Johns Hopkins University, 2008

Tonya Marie Gilbert, Lockport, NY
B.S., State University of New York (Geneseo), 2008

Andrew Christopher Goodrich, Dublin, OH
B.S., Ohio State University, 2010

Leonardo Nicolas Hagmann, Minneapolis, MN
B.S., University of Minnesota (Twin Cities), 2008

Robert Joseph Huebner, Frederick, MD
B.S., University of Maryland (Baltimore County), 2006

Diedre Joyce Johnson, Green Bay, WI
B.S., University of Minnesota (Twin Cities), 2009

Dorothy Mae Dillon Johnson, Laurel, MD
B.S., University of Maryland (College Park), 2010

Karl Olof Lagerlof, Molndai, Sweden
M. Med, Goteborgs Universitet, 2007
M.D., Goteborgs Universitet, 2010

Weiqiang Li, Beijing, China
B.S., Peking University, 2010

Yijie Li, Shanghai, China
B.S., Peking University, 2009

Zhe Li, Wuhan, China
B.S., Zhejiang University, 2010

Ya-Wen Lu, Samut Prakarn, Thailand
B.A., Williams College, 2009

Jingchuan Luo, Zhanjiang, Guangdong, China
B.S., Sun Yat-sen University, 2010

Jacqueline Melle McCabe, Collegeville, PA
B.S., Georgetown University, 2010

Brandon Tyrre McClary, Frederick, MD
B.S., University of Maryland (Baltimore County), 2010

Christopher John Mitchell, Wildwood Crest, NJ
B.A., University of Pennsylvania, 2009

Kim-Vy Nguyen-Ngoc, Hochimin, Vietnam
B.S., Vietnam National University, 2005
M.S., Radboud University Nijmegen, 2008

Ouma Onguka, Oakland, CA

Yun Qing, Mianyang, China
B.S., University of Science and Technology of China, 2010

Lily Lambert Raines, Auburn, AL
B.S., Eckerd College, 2010

Joshua Lee Schwartz, Florence, KY
B.A., Transylvania University, 2010

Eliah Ruth Shamir, Vienna, VA
B.S., University of Virginia, 2008
Valentin Mikhaylovich Sluch, Stillwater, OK  
B.S., Oklahoma State University, 2010

Allison Gabrielle Suarez, Valley Springs, CA  
B.S., Johns Hopkins University, 2010

Yuemeng Wang, Beijing, China  
B.S., Tsinghua University, 2009

Alyssa Maria Ward, Cleveland, OH  
B.A., Claremont McKenna College, 2009

Hoku Kahele West-Boyle, Seattle, WA  
B.S., University of Washington, 2005

Xianrong Wong, Singapore  
B.Eng., National University of Singapore, 2008

**BIOLOGICAL CHEMISTRY**

David John Blum, Baltimore, MD  
B.A., Saint John’s University, 1995  
B.A., Iowa State University of Science and Technology, 1998  
M.A., Johns Hopkins University School of Medicine, 2000

Yu-Chiuan Chang, Taipei, Taiwan  
B.S., National Taiwan University, 1998  
M.S., National Taiwan University, 2000

Aeri Cho, Boston, MA  
B.A., Amherst College, 2006

Hea Seung Chung, Kyunggi-do, Korea  
B.S., Seoul National University, 2008

Xin Gan, Nanjing, China  
B.S., Nanjing University, 2003

Yi Gu, Beijing, China  
B.S., Tsinghua University, 2003

Jennifer Christina Harr, Baltimore, MD  
B.S., Sonoma State University, 2005

Li He, Beijing, China  
B.S., Tsinghua University, 2003

Mohammad Heydarian, Potomac Falls, VA  
B.S., James Madison University, 2005

Ping Hu, Shanghai, China  
B.S., Fudan University, 2003

Min-Sik Kim, Baltimore, MD  
B.S., Korea University (Seoul), 2002  
M.S., Korea University (Seoul), 2004

Han Gil Lee, Seoul, Korea  
B.S., Seoul National University, 1997

Junjie Luo, Beijing, China  
B.S., Tsinghua University, 2008

Anca Brindusa Mihalas, Pasadena, CA  
M.D., Victor Babes University of Medicine and Pharmacy, 2001

Christopher Isles Murray, Baltimore, MD  
B.S., University of Guelph, 2001

Jinfel Ni, Farmington, CT  
B.S., Fudan University, 2005

Elizabeth Jane Petro, Hales Corners, WI  
B.S., University of Chicago, 2006

Beiyi Shen, State College, PA  
B.S., Fudan University, 2003

Wei Shen, Beijing, China  
B.S., Tsinghua University, 2007

Woojin Song, Baltimore, MD  
B.S., Towson University, 2005

Jr-Ming Yang, Taipei, Taiwan  
B.S., National Taiwan University, 1999  
M.S., National Taiwan University, 2003

Wan Hee Yoon, Suwon, Korea  
B.S., Yonsei University, 1997  
M.S., Yonsei University, 1999

Quira Zeidan, Baltimore, MD  
B.S., Universidad Central de Venezuela, 1999

**BIOMEDICAL ENGINEERING**

Manisha Aggarwal, Baltimore, MD  
B.Tech., Indian Institute of Technology (Kharagpur), 2004

Vikram Aggarwal, Markham, Canada  
B.A.S., University of Waterloo, 2005

Troy Witty Anderson, St. Peter, MN  
B.A., Gustavus Adolphus College, 2003

Hermenegild Javier Arevalo, Moore, OK  
B.S., Tulane University, 2006

Michael Patrick Barry, Brick, NJ  
B.A., Johns Hopkins University, 2010  
M.S., Johns Hopkins University, 2010

Jason Douglas Bayer, New Orleans, LA  
B.S., Syracuse University, 2002  
M.S., State University of New York - Upstate Medical University, Clinical Campus at Binghamton, 2005

Hoijat Bazzazi, Ontario, Canada  
B.S., University of Calgary, 2003

Kara Huffman Beaton, Kingsville, TX  
B.S., University of Illinois College of Medicine (Urbana), 2004

Weijie Beh, Singapore  
B.Eng., National University of Singapore, 2007

Violeta Jivkova Beleva, Baltimore, MD  
B.S., Kent State University, 2005  
M.S., Kent State University, 2005

Robert Joseph Bender, Silver Spring, MD  
B.S., University of Maryland (College Park), 2006

Heather L. Benz, Gaithersburg, MD  
B.S., Case Western Reserve University, 2007

Adriel Bergmann, Baltimore, MD  
B.S., Johns Hopkins University, 2005

Nasir Husain Bhanpuri, Durham, NC  
B.S., Duke University, 2006

Nupura Sudhir Bhise, Fort Collins, CO  
B.S., University of Arkansas, 2007

Corey John Bishop, Midvale, UT  
B.S., University of Utah, 2009

Adriana Blazeski, Canton, MI  
B.S., University of Michigan (Ann Arbor), 2009

Eric Thomas Carlson, Ann Arbor, MI  
B.S., University of Michigan (Ann Arbor), 2002

Hannah Kathryn Carter, Louisville, KY  
B.S.E.E., University of Louisville, 2003  
M.Eng., University of Louisville, 2004

Deborah Graciela Castillo, Coral Gables, FL  
B.S., University of Miami, 2004

Hasan Ertan Cetingul, Istanbul, Turkey  
B.S., Middle East Technical University, 2003
<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jemin Chae</td>
<td>Baltimore, MD</td>
<td>D.V.M., Konkuk University, 1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., Seoul National University, 2008</td>
</tr>
<tr>
<td>Connie Yachan Chang</td>
<td>Princeton Junction, NJ</td>
<td>B.S., Johns Hopkins University, 2005</td>
</tr>
<tr>
<td>Hao Chang</td>
<td>Lanzhou, China</td>
<td>B.S., Tsinghua University, 2003</td>
</tr>
<tr>
<td>Kelly Chiryum Chang</td>
<td>Cambridge, MA</td>
<td>B.S., Massachusetts Institute of Technology, 2008</td>
</tr>
<tr>
<td>Sulin Chen</td>
<td>Singapore</td>
<td>B.S., Johns Hopkins University, 2001</td>
</tr>
<tr>
<td>Yun-Ching Chen</td>
<td>Hsinchu, Taiwan</td>
<td>B.S., National Chiao Tung University, 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., National Chiao Tung University, 2003</td>
</tr>
<tr>
<td>Andrew Wei Cheng</td>
<td>Rochester Hills, MI</td>
<td>B.S., University of Michigan, 2009</td>
</tr>
<tr>
<td>Lishui Cheng</td>
<td>Shanghai, China</td>
<td>B.Eng., Shanghai Jiao Tong University, 2003</td>
</tr>
<tr>
<td>Ying Cheng</td>
<td>Beijing, China</td>
<td>B.Eng., Northeastern University, 2010</td>
</tr>
<tr>
<td>Raymond Cheong</td>
<td>Columbia, MD</td>
<td>B.S., University of Maryland (College Park), 2002</td>
</tr>
<tr>
<td>Yoonju Cho</td>
<td>Seoul, Korea</td>
<td>B.S., Bucknell University, 2005</td>
</tr>
<tr>
<td>Liang-Hui Chu</td>
<td>Taipei, Taiwan</td>
<td>B.S., National Tsing Hua University, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., National Tsing Hua University, 2007</td>
</tr>
<tr>
<td>Lulu Chu</td>
<td>Beijing, China</td>
<td>B.S., University of Virginia, 2009</td>
</tr>
<tr>
<td>Patrick James Conlon</td>
<td>Winter Haven, FL</td>
<td>B.S., University of Florida, 2008</td>
</tr>
<tr>
<td>Jason L. Constantino</td>
<td>New Orleans, LA</td>
<td>B.S., Tulane University, 2006</td>
</tr>
<tr>
<td>Amber Tahnia Ballard</td>
<td>Silver Spring, MD</td>
<td>B.S., University of Maryland (Baltimore County), 2005</td>
</tr>
<tr>
<td>Hao Dong</td>
<td>Shanghai, China</td>
<td>B.Eng., Shanghai Jiao Tong University, 2010</td>
</tr>
<tr>
<td>Natan Simcha Davidovics</td>
<td>Washington, DC</td>
<td>B.S., Rutgers University, 2005</td>
</tr>
<tr>
<td>Heydar Davoudi</td>
<td>Tehran, Iran</td>
<td>B.S., Iran University of Science and Technology - Tehran, 2006</td>
</tr>
<tr>
<td>Ivy Ellen Dick</td>
<td>Piscataway, NJ</td>
<td>B.S., University of North Carolina (Chapel Hill), 1997</td>
</tr>
<tr>
<td>Aigerim Djamanakova</td>
<td>Nutley, NJ</td>
<td>B.S., Yale University, 2007</td>
</tr>
<tr>
<td>David Donald Ellison</td>
<td>Provo, UT</td>
<td>B.S., Brigham Young University, 2004</td>
</tr>
<tr>
<td>Freddy Alexander Espinoza</td>
<td>North Hollywood, CA</td>
<td>B.S., Massachusetts Institute of Technology, 2008</td>
</tr>
<tr>
<td>Hadi Fatemi Shariatpanahi</td>
<td>Tehran, Iran</td>
<td>B.Eng., University of Tehran, 2007</td>
</tr>
<tr>
<td>Lei Feng</td>
<td>Sichuan, China</td>
<td>B.Eng., Tsinghua University, 2005</td>
</tr>
<tr>
<td>Matthew Stephen Fifer</td>
<td>Ashburn, VA</td>
<td>B.S., University of Virginia, 2009</td>
</tr>
<tr>
<td>Darik Wendell Gamble</td>
<td>Waterloo, Canada</td>
<td>B.A.S., University of Waterloo, 2008</td>
</tr>
<tr>
<td>Ambighainath Ganesan</td>
<td>Chennai, India</td>
<td>B.Tech., Indian Institute of Technology (Madras), 2007</td>
</tr>
<tr>
<td>Laura Doyle Gauthier</td>
<td>Reston, VA</td>
<td>B.S., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Mahmoud Ghandi</td>
<td>Tehran, Iran</td>
<td>B.S., Sharif University of Technology, 2003</td>
</tr>
<tr>
<td>Matthew Avery Gibson</td>
<td>Charlottesville, VA</td>
<td>B.S., West Virginia University, 2002</td>
</tr>
<tr>
<td>Kiran Gireesan Vanaja</td>
<td>Bangalore, India</td>
<td>B.Eng., University of Mysore, 1997</td>
</tr>
<tr>
<td>Elliot Howard Greenwald</td>
<td>West Orange, NJ</td>
<td>B.S., University of North Carolina (Chapel Hill), 2008</td>
</tr>
<tr>
<td>Liheng Guo</td>
<td>Exton, PA</td>
<td>B.S.E.E., Duke University, 2008</td>
</tr>
<tr>
<td>Kshitiz Gupta</td>
<td>Mumbai, India</td>
<td>B.Tech., Indian Institute of Technology (Bombay), 2004</td>
</tr>
<tr>
<td>James Christian GWilliam</td>
<td>Taylorsville, UT</td>
<td>B.S., University of Utah, 2007</td>
</tr>
<tr>
<td>Benjamin David Haefele</td>
<td>Monument, CO</td>
<td>B.S., Georgia Institute of Technology, 2006</td>
</tr>
<tr>
<td>Bradley James Harden</td>
<td>Riviera Beach, FL</td>
<td>B.S., University of Houston, 2009</td>
</tr>
<tr>
<td>Sunell Narayan Hosmane</td>
<td>Urbana, IL</td>
<td>B.S., University of Illinois (Urbana-Champaign), 2003</td>
</tr>
<tr>
<td>Iraj Hosseini</td>
<td>Edmonton, Canada</td>
<td>B.Sc., Isfahan University of Technology, 2007</td>
</tr>
<tr>
<td>Yuxuan Hu</td>
<td>Wuhan, Hubei, China</td>
<td>B.S., Duke University, 2008</td>
</tr>
<tr>
<td>Alan Jerry Huang</td>
<td>Austin, TX</td>
<td>B.S., University of Texas (Austin), 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B.S.E.E., University of Texas (Austin), 2006</td>
</tr>
<tr>
<td>Hailiang Huang</td>
<td>Baltimore, MD</td>
<td>B.S., Nanjing University, 2003</td>
</tr>
<tr>
<td>David Mark Huberdeau</td>
<td>Woodbridge, VA</td>
<td>B.S., Johns Hopkins University, 2010</td>
</tr>
<tr>
<td>Ben Pen Jui Hung</td>
<td>El Paso, TX</td>
<td>B.S., Cornell University, 2009</td>
</tr>
<tr>
<td>David William Hunter</td>
<td>Unity, ME</td>
<td>B.S., University of Maine, 2010</td>
</tr>
<tr>
<td>Daphne Lynn Hutton</td>
<td>Lawrenceville, GA</td>
<td>B.S., Georgia Institute of Technology, 2009</td>
</tr>
<tr>
<td>Taeyoung Hwang</td>
<td>Jeonju, Jeollabuk-do, Korea</td>
<td>B.S., Seoul National University, 2006</td>
</tr>
<tr>
<td>John Bassam Issa</td>
<td>Pueblo, CO</td>
<td>B.S., Johns Hopkins University, 2004</td>
</tr>
<tr>
<td>Robert Allan Jacques</td>
<td>Burnaby, Canada</td>
<td>B.S., Johns Hopkins University, 2005</td>
</tr>
<tr>
<td>Gowri Jayaram</td>
<td>Lisle, IL</td>
<td>B.S., Northwestern University, 2007</td>
</tr>
<tr>
<td>Luke Aaron Johnson</td>
<td>St. Louis, MO</td>
<td>B.S., Washington University in St. Louis, 2006</td>
</tr>
<tr>
<td>Name</td>
<td>City</td>
<td>Education Details</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Tara Lynn Johnson</td>
<td>Kingsville, MD</td>
<td>B.Mus, Johns Hopkins University - Peabody Institute, 2002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B.S., Johns Hopkins University, 2002</td>
</tr>
<tr>
<td>Manu Ben Johy</td>
<td>Valley Park, MO</td>
<td>B.S., St. Louis University, 2007</td>
</tr>
<tr>
<td>Kevin Kahn</td>
<td>Suwanee, GA</td>
<td>B.S., University of Maryland (College Park), 2009</td>
</tr>
<tr>
<td>Xiaoxi Kang</td>
<td>Harbin, China</td>
<td>B.S., Beijing University of Aeronautics and Astronautics - Beijing, 2007</td>
</tr>
<tr>
<td>Rahul Karnik</td>
<td>Bensalem, PA</td>
<td>B.S., Davidson College, 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., University of Illinois (Urbana-Champaign), 2003</td>
</tr>
<tr>
<td>Robert Timothy Kazmierski</td>
<td>Durham, NC</td>
<td>B.S., Duke University, 2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matthew Spencer Donald Kerr, Snyder, TX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B.S., Texas Tech University, 2009</td>
</tr>
<tr>
<td>Dewey June Kim</td>
<td>Portland, OR</td>
<td>B.A., Reed College, 2007</td>
</tr>
<tr>
<td>Eugene Kim</td>
<td>Beaverton, OR</td>
<td>B.S., Duke University, 2008</td>
</tr>
<tr>
<td>Jacob Elias Koskimaki</td>
<td>Sandy, UT</td>
<td>B.S., University of Utah, 2006</td>
</tr>
<tr>
<td>Geran Michael Kostecki</td>
<td>Defiance, MO</td>
<td>B.S., Washington University in St. Louis, 2010</td>
</tr>
<tr>
<td>Kellin Daniel Krick</td>
<td>Inver Grove Heights, MN</td>
<td>B.M.E., University of Minnesota (Twin Cities), 2010</td>
</tr>
<tr>
<td>Arnab Kumar Kundu</td>
<td>Kolkata, India</td>
<td>B.Tech., Indian Institute of Technology (Kharagpur), 2007</td>
</tr>
<tr>
<td>Maggie Meei-Fann Kuo</td>
<td>Palo Alto, CA</td>
<td>B.S., University of California (San Diego), 2008</td>
</tr>
<tr>
<td>Nathanael Kuo</td>
<td>Sachse, TX</td>
<td>B.S., University of Illinois (Urbana-Champaign), 2007</td>
</tr>
<tr>
<td>Srawanti Kusuma</td>
<td>Tucker, GA</td>
<td>B.S., Massachusetts Institute of Technology, 2008</td>
</tr>
<tr>
<td>Kwame Sanwu Kutten</td>
<td>Montgomery Village, MD</td>
<td>B.S., Rensselaer Polytechnic Institute, 2009</td>
</tr>
<tr>
<td>Dongwon Lee</td>
<td>Gyeonggi-do, Korea</td>
<td>B.S., Korea Advanced Institute of Science and Technology - Taejon, 2007</td>
</tr>
<tr>
<td>Shin Rong Lee</td>
<td>Sugar Land, TX</td>
<td>B.S., Yale University, 2007</td>
</tr>
<tr>
<td>Nan Li</td>
<td>Baltimore, MD</td>
<td>B.E., Shanghai Jiao Tong University, 2001</td>
</tr>
<tr>
<td>Yue Li</td>
<td>Beijing, China</td>
<td>B.Eng., Tsinghua University, 2002</td>
</tr>
<tr>
<td>Wenxuan Liang</td>
<td>Beijing, China</td>
<td>M.Eng., Tsinghua University, 2005</td>
</tr>
<tr>
<td>Issel Anne Lei Lim</td>
<td>Yorktown, VA</td>
<td>B.S., Massachusetts Institute of Technology, 2005</td>
</tr>
<tr>
<td>Benjamin Chwan Wen Lin</td>
<td>Paramus, NJ</td>
<td>B.S., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Kelvin Jeng-Fang Liu</td>
<td>Arcadia, CA</td>
<td>B.S., University of California (San Diego), 2000</td>
</tr>
<tr>
<td>Jun Ma</td>
<td>Baltimore, MD</td>
<td>B.S., Tsinghua University, 2004</td>
</tr>
<tr>
<td>Katharina Maisel</td>
<td>Troy, MI</td>
<td>B.S., University of Michigan, 2010</td>
</tr>
<tr>
<td>Prashant G. Mali</td>
<td>Mumbai, India</td>
<td>B.Tech., Indian Institute of Technology (Bombay), 2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.Tech., Indian Institute of Technology (Bombay), 2003</td>
</tr>
<tr>
<td>Laura Ann Malone</td>
<td>Cary, NC</td>
<td>B.S., University of North Carolina (Chapel Hill), 2007</td>
</tr>
<tr>
<td>Misti Lane Malone</td>
<td>Starkville, MS</td>
<td>B.S., Mississippi State University, 2002</td>
</tr>
<tr>
<td>Mollie Klare Marko</td>
<td>Roosevelt, NJ</td>
<td>B.S., Rutgers University, 2008</td>
</tr>
<tr>
<td>Jessica Mavadia</td>
<td>Edison, NJ</td>
<td>B.S., New Jersey Institute of Technology, 2010</td>
</tr>
<tr>
<td>Kathleene McDowell</td>
<td>Charlotte, NC</td>
<td>B.S., University of Virginia, 2008</td>
</tr>
<tr>
<td>Brent Matias Millare</td>
<td>Murrieta, CA</td>
<td>B.S., University of California (Riverside), 2008</td>
</tr>
<tr>
<td>Mohsen Mollazadeh</td>
<td>Baltimore, MD</td>
<td>B.Sc., Sharif University of Technology, 2004</td>
</tr>
<tr>
<td>Justin Brandon Francis</td>
<td>Mobile, AL</td>
<td>B.S., Hampton University, 2009</td>
</tr>
<tr>
<td>Divya Devaliah Nalayanda</td>
<td>Baltimore, MD</td>
<td>B.Tech., Osmania University, 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., University of Oklahoma (Norman), 2005</td>
</tr>
<tr>
<td>Tri Minh Ngo</td>
<td>Tucker, GA</td>
<td>B.S., Massachusetts Institute of Technology, 2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.Eng., Massachusetts Institute of Technology, 2007</td>
</tr>
<tr>
<td>Robert William Nickl</td>
<td>Pittsburgh, PA</td>
<td>B.A., University of Pittsburgh, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B.S., University of Pittsburgh, 2006</td>
</tr>
<tr>
<td>Sajendra Nithiananthan</td>
<td>Baltimore, MD</td>
<td>B.Sc., Queen's University (Canada), 2006</td>
</tr>
<tr>
<td>David Paul Noren</td>
<td>North Olmsted, OH</td>
<td>B.S., University of Rochester, 1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., University of Rochester, 1999</td>
</tr>
<tr>
<td>Kevin Casey Olds</td>
<td>Rochester, NH</td>
<td>B.Eng., Thayer School of Engineering, 2008</td>
</tr>
<tr>
<td>Michael Steven Pacella</td>
<td>Berlin, MD</td>
<td>B.S., University of Maryland (Baltimore County), 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JinSeok Park, Daejeon, Korea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B.S., Seoul National University, 2008</td>
</tr>
<tr>
<td>Yongjin Park</td>
<td>Busan, Korea</td>
<td>B.S., Seoul National University, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.S., Carnegie Mellon University, 2008</td>
</tr>
<tr>
<td>Farhad Pashakhanloo</td>
<td>Tehran, Iran</td>
<td>B.S., Case Western Reserve University, 2010</td>
</tr>
<tr>
<td>Jaymin Vijay Patel</td>
<td>Highland Hts., OH</td>
<td>B.S., Pennysylvania State University, 2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Karlo Perica, Montgomery, MD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B.S., Yale University, 2007</td>
</tr>
</tbody>
</table>
Jeffrey Wayne Pompe, Belvidere, IL
B.S., University of Illinois (Urbana-Champaign), 2008
Amir Pourmorteza, Tehran, Iran
B.M.E., University of Tehran, 2008
Christina Lee Randall, Philadelphia, PA
B.S., Drexel University, 2004
Tushar D. Rane, Jalgaon, India
B.Tech., Indian Institute of Technology (Bombay), 2004
Lukas Johannes Rantner, Absam, Austria
B.Sc., University for Health Sciences, Medical Informatics and Technology, 2005
Abhishek Praful Rege, Baltimore, MD
B.Tech., Indian Institute of Technology (Bombay), 2002
Branden Antoine Reid, Baltimore, MD
B.S., Morgan State University, 2006
Evan Douglas Remington, Hinckley, OH
B.S., Case Western Reserve University, 2006
Thomas Reed Reppert, Mechanicsville, VA
B.S., Virginia Polytechnic Institute and State University, 2007
Alexander Jaewoong Rhee, Farmington Hills, MI
B.A.S., University of Toronto, 2005
Tessa-Jonne Felicia Ropp, Albuquerque, NM
B.A., College of the Holy Cross, 1999
M.S., University of Arizona, 2001
Ashley Rachel Rothenberg, Warren, PA
B.S., Massachusetts Institute of Technology, 2005
Sabyasachi Roy, Baltimore, MD
B.Eng., Bangalore University, 2001
M.S., Montana State University, 2004
Kyle Michael Rupp, Rolla, MO
B.S., Purdue University, 2010
Erin K. Salter, Wyoming, OH
B.S., Case Western Reserve University, 2007
Lingjie Sang, Maanshan, China
B.Eng., Peking University, 2008
Ozan Sayin, Ankara, Turkey
B.S., Bilkent University, 2008
Benjamin Samuel Schuster, St. Louis Park, MN
B.S., University of Minnesota (Twin Cities), 2008
Janna Victorovna Serbo, San Diego, CA
B.S., University of California (Berkeley), 2010
Sagar Ramesh Shah, Clemson, SC
B.S., Clemson University, 2006
M.S., Clemson University, 2007
Dong Jin Shin, North Shore, New Zealand
B.S., Duke University, 2010
Ron Boris Shmueli, New York, NY
B.S., Columbia University, 2008
Rishab Ravi Shyam, Mumbai, India
B.S., Purdue University, 2006
Rezina Siddique, Albany, NY
B.S., State University of New York (Albany), 2004
David Simcha, Middlesex, NJ
B.S., Rutgers University, 2007
Jacob Andrew Simson, Muskego, WI
B.S., Massachusetts Institute of Technology, 2008
Christopher Lloyd Smith, Cambridge, MA
B.S., Massachusetts Institute of Technology, 2006
Ryan J. Smith, Niceville, FL
B.S., University of Florida, 2006
Soroosh Soljoo, Tehran, Iran
B.S., Shahed University, 2002
M.S., Amirkabir University of Technology, 2005
Xindong Song, Harbin, China
B.S., Tsinghua University, 2004
Yunke Song, Tokyo, Japan
B.S., Keio University, 2008
Danny Spampinato, Yorba Linda, CA
B.S., University of California (Irvine), 2010
Iossif Alexandrov Strehiu, Baltimore, MD
B.S., Northwestern University, 2005
Yasir Suhail, East Lansign, MI
B.Tech., Indian Institute of Technology (Delhi), 2003
Jung Soo Suk, Baltimore, MD
B.Eng., Korea University (Seoul), 2001
Joel Chaim Sunshine, Potomac, MD
B.S., Brandeis University, 2007
M.S., Brandeis University, 2007
William Tam, Newton, MA
B.S., Johns Hopkins University, 2003
Susan Ann Thompson, College Park, MD
B.S., University of Maryland (College Park), 2006
Shadi Toghi Eshghi, Baltimore, MD
Daniel Jacob Tward, Toronto, Canada
B.S., University of Toronto, 2008
Stephanie Yi Tzeng, Reston, VA
B.S., Yale University, 2009
Shimon Aryeh Unterman, Chicago, IL
B.S., Northwestern University, 2005
Siavash Vaziri, Baltimore, MD
B.S., Johns Hopkins University, 2003
Alejandro Vazquez, Fontana, CA
B.S., Massachusetts Institute of Technology, 2008
Balaji Veeramani, Tempe, AZ
B.Eng., Bharathiar University, 2001
M.S., Arizona State University, 2003
Mark Austin Walker, Concord, MA
B.S., Tufts University, 2010
ChiaoChun Joanne Wang, Cambridge, MA
B.S., Massachusetts Institute of Technology, 2002
Ying-Ying Wang, Baltimore, MD
B.S., Johns Hopkins University, 2007
Heidi Michelle Weeks, Charlotte, NC
B.S., Washington University in St. Louis, 2009
An-Chi Wei, Hsinchu, Taiwan
B.S., National Taiwan University, 2004
Seth Howard Weinberg, Tampa, FL
B.S., Duke University, 2006
John-Michael Eric Williford, Youngstown, OH
B.S., University of Akron, 2010
Aaron Lih Der Wong, Los Angeles, CA
B.S., University of Southern California, 2006
Iwen Wu, San Diego, CA
B.S., University of California (San Diego), 2008

STUDENTS 489
Jiefeng Xi, Baltimore, MD  
B.S., Tsinghua University, 2002  
M.S., Tsinghua University, 2005

Di Xu, Baltimore, MD  
B.S., Tsinghua University, 2008

Ming Yang, State College, PA  
B.Eng., Tsinghua University, 1999  
M.S., Tsinghua University, 2003

Jing Yu, Hefei, China  
B.E., University of Science and Technology of China, 2005

Tao Yu, Guangzhou, China  
B.S., Peking University, 2008

Helena Claire Zec, Mendham, NJ  
B.S., Worcester Polytechnic Institute (Worcester), 2006

Clark Anjie Zhang, Arcadia, CA  
B.S., Harvey Mudd College, 2010

Yajing Zhang, Beijing, China  
B.S., Tsinghua University, 2005

Yi Zhang, Chengdu, China  
B.Eng., Nanyang Technological University, 2007

Claire Yunzhu Zhao, Peterborough, Canada  
B.A.S., University of Waterloo, 2009

Lingyun Zhao, Beijing, China  
B.S., Tsinghua University, 2008  
M.S., Tsinghua University, 2010

Renjun Zhu, Beijing, China  
B.S., Tsinghua University, 2009

**BIOPHYSICS AND BIOPHYSICAL CHEMISTRY**

Sabri Erdemli, Baltimore, MD  
B.S., Middle East Technical University, 2003

**BIOPHYSICS AND BIOPHYSICAL CHEMISTRY**

**Program in Molecular Biophysics**

Gustavo Alexis Afanador-Gonzalez, Baltimore, MD  
B.S., University of Puerto Rico (Mayaguez Campus), 2007

Jackson Buss, Baltimore, MD  
B.S., State University of New York (Buffalo), 2005

Thomas Edgar Cleveland, Baltimore, MD  
B.S., Tulane University, 2007

Carla Coltharp, Baltimore, MD  
B.S., Massachusetts Institute of Technology, 2006

Anthony DiBello, Covington, KY  
B.A., Northern Kentucky University, 2006  
B.S., Northern Kentucky University, 2006

Krisha Chan Duong-Ly, Baltimore, MD  
B.A., Swarthmore College, 2005

Joshua Ivan Friedman, Baltimore, MD  
B.S., Pennsylvania State University, 2005

Zachary Hensel, Baltimore, MD  
B.A., University of Illinois (Urbana-Champaign), 2005  
B.S., University of Illinois (Urbana-Champaign), 2005

Helen Jun, Ellicott City, MD  
B.A., St. Mary’s College of Maryland, 2007

René Phillips Kessler, New York, NY  
M.S., University of Maryland (Baltimore County), 2005

**CELLULAR AND MOLECULAR MEDICINE**

Jennifer Dorothy Albertz, Cincinnati, OH  
B.S., Denison University, 2010

Tracy Gaskin Allen, Randallstown, MD  
B.S., University of Maryland (Baltimore County), 2005

David Michael Alvarado, Towson, MD  
B.S., University of South Florida, 2007

Claudia Regina Avalos, Weston, FL  
B.S., Florida State University, 2010

Joseph James Babcock, Chapel Hill, NC  
B.S., Duke University, 2007

Emily J. Bailey, Baltimore, MD  
B.A., Evergreen State College, 1992  
B.S., Evergreen State College, 1992  
D.V.M., Colorado State University, 2000

Nicholas Anh Be, Grand Rapids, MI  
B.S., Calvin College, 2005

Sarah Evelyn Beck, Howard, MD  
B.S., University of Maryland (College Park), 2002  
D.V.M., Virginia-Maryland Regional College of Veterinary Medicine, 2007

Chelsea Marie Black, Reston, VA  
B.S., Virginia Polytechnic Institute and State University, 2006

Rosalind Bogan, Vernon Center, NY  
B.A., Brown University, 2009

Alexandra Borodovsky, Portland, OR  
B.S., University of Puget Sound, 2008

Robert Walter Buckheit, Myersville, MD  
B.S., Lehigh University, 2009

Michael Anthony Bushey, Utica, NY  
B.S., University of Pittsburgh, 2004

Po Yu Chen, Flushing, NY  
B.S., Pennsylvania State University, 2004

Laurene Cheung, San Jose, CA  
B.A., University of California (Berkeley), 2006

Rocky Cheung, Causeway Bay, Hong Kong  
B.S., University of North Carolina (Chapel Hill), 2006

Soon Weng Cho, La Verne, CA  
B.S., California State Polytechnic University (Pomona), 2008

Bin-Kuan Chou, Kaohsiung City, Taiwan  
B.S., National Taiwan University, 2003
Scott Haihua Chu, Rockville, MD  
B.S.E., Princeton University, 2005
Justin Robert Cidado, Boston, MA  
B.S., Bates College, 2004
Eriko Greene Clements, Bethesda, MD  
B.S., University of Rochester, 2002
Rory Landon Cochrans, San Diego, CA  
B.S., University of California (San Diego), 2007
Timothy Kemp Cooper, Littlestown, PA  
B.S., University of Denver, 1995  
B.S., University of Illinois (Urbana-Champaign), 1997  
D.V.M., University of Illinois (Urbana-Champaign), 1999
Tricia Ruth Gottrell, St. Louis, MO  
B.S., Washington University in St. Louis, 2004
Emily Marie Cousins, Newberry, SC  
B.S., Clemson University, 2008
Matthew Michael Cousins, Newberry, SC  
B.S., Clemson University, 2006  
M.S., Clemson University, 2008
Leigh-Ann Cruz, Bethesda, MD  
B.S., Mount Saint Mary’s College - Los Angeles, 2006
Alicia Dery, Athens, GA  
B.S., University of Georgia, 2009
Kimberly Rae Doering, Severna Park, MD  
B.S., Clemson University, 2005
Akiko Doi, Kyoto City, Japan  
B.S., Bates College, 2007
Jefferson James Doyle, Harpenden, Herts, United Kingdom  
B.A., University of Oxford, 2001  
M.B.B.Ch., University of Cambridge - School of Clinical Medicine - Cambridge, 2004  
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2004
Julia Lynn Drewes, Hockessin, DE  
B.S., Stanford University, 2007
Robert Jamal Drummond, Jacksonville, FL  
B.S., Morehouse College, 2002
Heather Ann Dye, Chesterfield, VA  
B.S., College of William and Mary, 2006
Paul Esteso, Tallahassee, FL  
B.S., Florida State University, 2004
Kelly Ann Foley, Boston, MA  
B.S., Northeastern University, 2008
Allison Elizabeth Galanis, Stoughton, MA  
B.S., Bridgewater College, 2010
Naseema Gangat, Rochester, MN  
M.B.B.S., Aga Khan Medical College - Aga Khan University - Karachi - Pakistan, 2002
Sara Hideko Gilmore, Caldwell, ID  
B.S., University of Idaho, 2007  
M.S., Idaho State University, 2009
Justin Dewa’an Glenn, Philadelphia, PA  
B.A., Vanderbilt University, 2009
Carlos Gomez, Astoria, NY  
B.S., State University of New York (Stony Brook), 2001
Sarah Merin Greenblatt, Chapel Hill, NC  
B.S., University of North Carolina (Chapel Hill), 2006
Inna V. Grishkan, Newton, MA  
B.S., Boston College, 2008
Jessica Guicwa, Buffalo, NY  
B.S., State University of New York (Geneseo), 2007
Annesha Hack, Nutley, NJ  
B.A., Rutgers University, 2005
Diane Heiser, Bayport, NY  
A.B., Princeton University, 2006
William Phillip Hendricks, Phoenix, AZ  
B.A., Grand Canyon University, 2002  
B.S., Arizona State University, 2005
Elisabeth Frances Heuston, Hanover, NH  
A.B., Dartmouth College, 2006
Gary Ping-Hao Ho, Boston, MA  
A.B., Harvard University, 2004
Ya-Chi Ho, Taipei, Taiwan  
M.D., National Cheng Kung University, 2002  
M.S., National Taiwan University, 2007
Danica Paulette Horrell, Stafford, VA  
B.S., Virginia Polytechnic Institute and State University, 2006
Maria Malinda James, Rochester, NY  
B.A., Johns Hopkins University, 2007
Dorhyun Johng, Seoul, Korea  
Tamara Jane Angeles Johnson, Chula Vista, CA  
B.S., California State University (Northridge), 2007
Michelle Lynn Jones, West Lafayette, IN  
B.S., Purdue University, 2005
Namyoung Jung, Anyangsi, Korea  
B.S., Pohang University of Science and Technology, 2007
Geetha Kannan, Rockville, MD  
B.A., Kenyon College, 2007
Laura Bess Kapa, Cedartown, GA  
B.S., University of Georgia, 2004
Ian Mahler Kaplan, Allendale, NJ  
B.S., Brown University, 2002
David Hoontae Kim, San Jose, CA  
B.S., University of California (San Diego), 2006  
KiBem Kim, Baltimore, MD  
B.A., Johns Hopkins University, 2002
Isaac Abraham Kinde, Beaumont, CA  
B.S., University of Maryland (Baltimore County), 2005
Alexis Norris Kirby, York, PA  
B.S., Millersville University, 2007
Kirsten Anne Kulcsar, Fort Collins, CO  
B.S., Colorado State University, 2008
Andre Rashad Kydd, Elkins Park, PA  
B.S., Harvard University, 2004
Katherine LaClair, Kearny, NJ  
B.A., Drew University, 2010
Gregory Michael Laird, Durham, NC  
B.S., Duke University, 2008
Andrew Raymond Larsen, Sudbury, MA  
B.A., Skidmore College, 2009
ChangHee Lee, Seoul, Korea  
B.S., Seoul National University, 2006
Hwajin Lee, Ulsan, Korea  
B.A., Cornell University, 2007
Jihyun Lee, Taejeon, Korea  
B.S., Korea University (Seoul), 2000  
M.S., Korea Advanced Institute of Science and Technology - Taejeon, 2002  

Kenya Taiwan Lemon, Falls Church, VA  
B.S., Albany State University, 2003  

Chi-Ying Lin, Taoyuan County, Taiwan  
B.S., National Taiwan University, 2002  
M.S., National Taiwan University, 2004  

Jimmy Cheng Ho Lin, New Haven, CT  
B.A., Yale University, 2001  

Tiffany Link, Placentia, CA  
B.S., California State University (Long Beach), 2004  

S. Julie-Ann Lloyd, Boston, MA  
S.B., Massachusetts Institute of Technology, 2003  
S.M., Massachusetts Institute of Technology, 2005  

Simon Yat-Ming Long, Baltimore, MD  
B.S., State University of New York (Syracuse), 2001  
V.M.D., University of Pennsylvania School of Veterinary Medicine, 2009  

Brian Luna, Irvine, CA  
B.S., University of California (Irvine), 2008  

Ting Martin Ma, Beijing, China  
B.S., Tsinghua University, 2009  

deMauri Scott Mackie, Los Angeles, CA  
B.A., University of Pennsylvania, 2006  

Micah Joel Maxwell, Reisterstown, MD  
B.A., Harvard University, 2003  

Annemarie McMillan McCarty, Baltimore, MD  
B.S., Miami University, 2007  

Kelli Ammiesha McDowell, Morrisville, NC  
B.S., North Carolina State University, 2006  

Ross Howard McMillan, Tallahassee, FL  
B.S., Morehouse College, 2007  

Kelly Ann Meulendyke, Lexington, KY  
B.S., University of Kentucky, 2004  

Melissa Ruth Miller, Rogue River, OR  
B.S., Seton Hall University, 2007  

Matthew Morgan Moake, Geneva, NY  
B.S., Cornell University, 2004  

Weih Feng Moriarty, Somerville, MA  
B.S., Massachusetts Institute of Technology, 2004  

Adam Landes Moyer, Souderton, PA  
B.A., Pennsylvania State University, 2005  

Youn Na, Seoul, Korea  
B.S., Seoul National University, 2003  
M.S., Seoul National University, 2005  

Archana Jayasurya Nelliot, Henderson, NV  
B.S., University of Nevada, 2006  

Ha Nam Nguyen, San Francisco, CA  
B.S., San Francisco State University, 2002  
M.S., San Francisco State University, 2006  

Nguyen Khoi Nguyen, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2006  

Joyce Oluwayemisi Obidi, Ithaca, NY  
B.S., Cornell College, 2005  

Xiaoou Pan, Baltimore, MD  
A.B., Washington University in St. Louis, 2004  

Sarah Ann Park, Birmingham, AL  
B.S., Duke University, 2002  

Kelly Ann Metcalf Pate, Kingsville, MD  
B.A., Boston University, 2003  

D.V.M., Purdue University, 2007  

Sarah Mills Pedersen, State College, PA  
B.A., Colgate University, 2010  

Vesselin Ruslanov Penchev, Minneapolis, MN  
B.A., Macalester College (St. Paul), 2007  

Tarran Jean Pierfelice, Sterling Heights, MI  
B.S., Florida Institute of Technology, 2004  

John Thomas Poirier, Cleveland, OH  
B.S., Case Western Reserve University, 2006  

Talmesha Annette Richards, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2004  

Jason Michael Rosenzweig, Baltimore, MD  
B.S., Pennsylvania State University, 2000  

Janelle Rowell, Durham, NC  
B.S., North Carolina Central University, 2008  

Julia Nicole Russell, Baltimore, MD  
B.A., College of Notre Dame, 2009  

Helen Sadik, Glen Mills, PA  
B.S., Lebanon American University, 2007  

Maame Efua Sakyiwha Sampah, Lawrenceville, GA  
B.A., Grinnell College, 2007  

Mark Thomas Sausen, Newark, DE  
B.A., University of Delaware, 2009  

Maia Kathryn Schoonmaker, Carbondale, IL  
B.S., University of Illinois (Urbana-Champaign), 2005  

Sherri-Gae O. Scott, Monmouth, IL  
B.A., Monmouth University, 2003  

Meghan J. Seltzer, State College, PA  
B.S., Pennsylvania State University, 2005  

Saurav Rao Seshadri, Baltimore, MD  
B.A., Johns Hopkins University, 2005  

Amy Nicole Sexauer, Wadmalaw Island, SC  
B.A., University of Georgia, 2005  

B.S., University of Georgia, 2005  

Gillian Curtis Shaw, Baltimore, MD  
D.V.M., Michigan State University School of Veterinarian Medicine - E. Lansing, 2007  
M.S., Michigan State University School of Veterinarian Medicine - E. Lansing, 2007  

Jaehoon Shin, Gyeonggi-Do, Korea  
B.S., Seoul National University, 2004  
M.D., Seoul National University, 2008  

Jee Hoon Song, Beverly Hills, CA  
B.S., University of California (Los Angeles), 2007  

Lauren Christina Suarez, Eden Prairie, MN  
B.S., University of Maryland (Baltimore County), 2007  

Han Sun, Baltimore, MD  
B.S., Nanyang Technological University, 2008  

Gregory Lee Szeto, Frederick, MD  
B.S., Carnegie Mellon University, 2004  

Abigail Lynn Davidson Tadenev, Williamstown, MA  
B.A., Williams College, 2003  

Abigail Lynn Davidson Tadenev, Williamstown, MA  
B.A., Williams College, 2003
Carlos Alberto Tristan, Oxnard, CA  
B.S., California State University (Fresno), 2005  
M.S., California State University (Fresno), 2007  
Jonathan Andrew Trow, Shawnee, OK  
B.S., Oklahoma Baptist University, 2003  
Hsing-Chen Tsai, Taipei City, Taiwan  
M.D., National Taiwan University, 1999  
M.S., National Taiwan University, 2004  
William Tsao, East Hanover, NJ  
B.S., Johns Hopkins University, 2006  
Amy Ruth Unterman, Pacific Palisades, CA  
B.A., Princeton University, 2008  
Briana Vecchio, Bridgeport, WV  
B.A., West Virginia University, 2010  
Christa Leanne Wagner, New York, NY  
B.A., Oberlin College, 2008  
Hayley Sierra Wall, Olympia, WA  
B.S., Western Washington University, 2009  
Grace Meng Wang, Hammond, OR  
B.S., University of Oregon (Eugene), 2005  
Steven Wang, Toronto, Canada  
B.A., University of Pennsylvania, 2010  
Erin Elizabeth Watkin, Pasadena, CA  
B.A., Minnesota State University (Moorhead), 2000  
Christopher August Weier, Sterling Heights, MI  
B.S., Johns Hopkins University, 2006  
John Kent Werner Jr., Pittsburgh, PA  
B.S., United States Naval Academy, 2001  
Kathryn Suzanne Winglee, Seattle, WA  
B.S., University of Washington, 2009  
B.S., University of Washington, 2009  
Gai Yan, Baltimore, MD  
B.S., George Washington University, 1999  
Philemon Szu-Wei Yang, Baltimore, MD  
B.S., Johns Hopkins University, 2003  
Yuanfan Zhang, Baltimore, MD  
B.S., Zhejiang University, 2008  

FUNCTIONAL ANATOMY AND EVOLUTION  
Heather Elizabeth Ahrens, Austin, TX  
B.S., Virginia Polytechnic Institute and State University, 2007  
Kirsten Marie Brown, Baton Rouge, LA  
B.A., Louisiana State University (Baton Rouge), 2005  
B.S., Louisiana State University (Baton Rouge), 2005  
Madeleine Blair Chollet, Houston, TX  
B.A., Rice University, 2006  
Evau Michele Garofalo, Washington, DC  
B.A., Tulane University, 2000  
Heather Marie Garvin, Morriston, FL  
B.A., University of Florida, 2005  
B.S., University of Florida, 2005  
M.S., Mercyhurst College, 2007  
Francois David Henry Gould, London, United Kingdom  
B.A., University of Cambridge, 2004  
M.Sc., Imperial College of Science, Technology and Medicine, 2005  
Michael Bruce Habib, Ellicott City, MD  
B.A., University of Virginia, 2002  
M.S., University of Virginia, 2005  

HUMAN GENETICS AND MOLECULAR BIOLOGY PROGRAM  
Foram Naresh Ashar, Dubai, United Arab Emirates  
B.S., University of Georgia, 2010  
Timothy David Babatz, Chicago, IL  
B.S., Wheaton College, 2007  
Elizabeth Eileen Bell, Baltimore, MD  
B.S., University of Notre Dame, 2005  
Joel Samuel Benjamin, Santa Cruz, CA  
B.S., University of California (Santa Barbara), 2010  
Rebecca Deering Brose, Centre Hall, PA  
B.S., Pennsylvania State University, 2000  
Tyesh Nicole Burks, Princess Anne, MD  
B.S., University of Maryland (Eastern Shore), 2006  

HISTORY OF MEDICINE  
Eli Osterweil Anders, Oakland, CA  
A.B., Harvard University, 2008  
Katherine Elizabeth Arner, Boise, ID  
B.A., University of Wisconsin (Madison), 2005  
Lisa Beth Boul, Baltimore, MD  
A.B., Radcliffe College, 1972  
M.P.H., University of Minnesota (Twin Cities), 1994  
Julia Ross Cumminskey, New York, NY  
B.A., Carleton College, 2004  
Sandra Eder, Vienna, Austria  
M.A., Columbia University, 2002  
M.Phil., University of Vienna, 2004  
Seth Stein LeJacq, Ithaca, NY  
A.B., Cornell University, 2008  
Massimo Petrozzi, Rome, Italy  
B.A., Universita Degli Studi di Roma “La Sapienza”, 2002  
Alicia Pugionesi, Havertown, PA  
B.A., University of Pennsylvania, 2009  
Justin Kyle Rivest, Ottawa, Canada  
B.H., Carleton University - Ontario, 2008  
Marion Andrea Schmidt, Freiburg, Germany  
M.A., Albert-Ludwigs-Universitat Freiburg, 2008  

STUDENTS 493
Juan F. Calderon, Santiago, Chile
B.S., Universidad de Chile, 2003

Raghu Ram Chivukula, Wichita, KS
B.A., Johns Hopkins University, 2005

Megan Hussey Cleveland, New Orleans, LA
B.S., Louisiana State University (Baton Rouge), 2007

Ana Elizabeth Cordova, Chelmsford, MA
B.A., Rhodes College, 2006

B.S., Rhodes College, 2006

Nicole Elizabeth Eckart, Walpole, MA
B.S., University of Massachusetts (Amherst), 2010

Sarah Edie, Baltimore, MD
B.A., Wellesley College, 2005

Shannon E. Ellis, Lansdowne, PA
B.S., Kings College, 2010

Matthew William Feldman, Cottam, Canada
B.S., University of Waterloo, 2001

Stefani Chun-Jiang Fontana, Leawood, KS
B.S., University of Kansas, 2007

Veena Pushparaj Gnanakkan, Allston, MA
B.Eng., University of Madras, 2002

M.S., Boston University, 2005

David Uscher Gorkin, New Rochelle, NY
B.A., Boston University, 2004

Eitan Halper-Stromberg, Boca Raton, FL
B.S., University of Maryland (College Park), 2006

Audrey Marie Hendley, North Augusta, SC
B.S., University of South Carolina (Columbia), 2009

Yolanda Mikka Nicola Hillocks, Rochester, NY
B.S., Brooklyn College of the City University of New York, 2004

Tara Colleen Howard, Olney, MD
B.A., University of Maryland (College Park), 2008

B.S., University of Maryland (College Park), 2008

Hongxia Hu, Wuhan, China
B.S., Wuhan University, 2008

Cheng Ran Huang, Los Angeles, CA
B.S., University of California (Los Angeles), 2006

Tai-Chung Huang, Changhua County, Taiwan
M.D., National Taiwan University, 2000

Henry Richard Johnston, Baltimore, MD
B.S., Johns Hopkins University, 2005

Megan Smith Kane, Roanoke, VA
B.S., Virginia Commonwealth University, 2007

Eunchai Kang, Salt Lake City, UT
B.S., Korea Advanced Institute of Science and Technology - Taejon, 2004

Kathleen Christine Kent, Potomac, MD
B.S., Texas A&M University, 2002

Matthew Kevin Knabel, Dunmore, PA
B.A., Johns Hopkins University, 2006

Erika Mijin Kwon, Silver Spring, MD
B.S., George Mason University, 2004

M.S., Johns Hopkins University, 2006

Benjamin Robert Leadem, Flagstaff, AZ
B.S., Northern Arizona University, 2007

Ji Eun Lee, Sparks, MD
B.A., Johns Hopkins University, 2002

Melissa Lee, Scottsdale, GA
B.S., University of Georgia, 2006

Stella Suyong Lee, Iowa City, IA
B.S. , Ewha Women's University - College of Medicine - Seoul - South Korea, 2006

Yun-Sil Lee, Bethesda, MD
D.D.S., Seoul National University, 1999

M.S., Seoul National University, 2002

Yangfan Liu, Shanghai, China
B.S., Fudan University, 2003

Yaping Liu, Beijing, China
B.Eng., Capital University of Medical Sciences - Beijing, 1996

M.S., Peking Union Medical College, 1999

Yunqi Lu, Beijing, China
B.S., Peking University, 2008

Elizabeth Marie MacDonald, Minneapolis, MN
B.S., University of Minnesota (Twin Cities), 2004

Samantha Denise Maragh, Laurel, MD
B.S., Loyola University, 2005

Khadijah Aisha Mitchell, Pittsburgh, PA
B.S., University of Pittsburgh, 2003

M.S., Duquesne University, 2006

Morassa Mouseni, Chicago, IL
B.S., University of California (Irvine), 2002

B.A., University of California (Irvine), 2003

Carolina Maria Montano, Silver Spring, MD
B.S., Brigham Young University, 2005

Khanh-Dung Hoang Nguyen, Baltimore, MD
B.S., Towson University, 2007

Tejasvi Shankar Niranj, Randolph, NJ
B.S., Johns Hopkins University, 2008

Stephen Hance Page, Baltimore, MD
B.Pharm., Towson University, 2005

Kurinji Pandiyan, Chennai, India
B.S., University of Georgia, 2007

Jeena Park, Fullerton, CA
B.S., University of California (Los Angeles), 2007

M.Ed., University of California (Los Angeles), 2008

Erin Michelle Parry, Rockport, MA
B.A., Colby College, 2006

Evanthia E. Pashos, Athens, Greece
B.Pharm., National and Kapodistrian University of Athens, 2004
Jennifer Lynn Poitras, Brighton, MA  
B.S., University of Connecticut, 2006

Renita Cherie Polk, Mitchellville, MD  
B.S., Cedar Crest College, 2008

Megana Krishna Prasad, Los Angeles, CA  
B.S., University of California (Los Angeles), 2005

Anandita Raijurohiti, Ridgewood, NJ  
A.B., Cornell University, 2004

Kalyani Nithya Ramachandran, Chennai, India  
B.Tech., Anna University, 2006

Xylena Reed, Chattaroy, WA  
B.S., University of Washington, 2008

Sarah Marie Richardson, Baltimore, MD  
B.S., University of Maryland (College Park), 2004

Nicholas Jason Roberts, Newport, United Kingdom  
B.A., Trinity College, 2004

Jon Francis Robinson, Gaithersburg, MD  
B.S., Cornell University, 2004

Matoya Andrea Robinson, Oviedo, FL  
B.S., University of Florida, 2006

M.S., University of Florida, 2007

Yang Ao Roby, Beijing, China  
B.Med., China Medical University, 2001

M.S., China Medical University, 2003

Gloria Shin, Baltimore, MD  
B.A., Johns Hopkins University, 2000

Jessica Lindsay Simmers, Salem, VA  
B.S., Roanoke College, 2006

Anna Silva, Naperville, IL  
B.S., Indiana University (Bloomington), 2009

Cory James Smith, Melrose, FL  
B.S., University of Florida, 2008

Nara Lygia De Macena Sobreira, Sao Paulo, Brazil  
M.D., Universidade Federal De Pernambuco, 2003

Ryan Paul Stadel, Baltimore, MD  
B.S., Texas A&M University College of Medicine - College Station, 2004

Eric Lindseys Stevens, Rochester, NY  
B.S., Rochester Institute of Technology, 2008

Zachary Elias Stine, Baltimore, MD  
B.A., Goucher College, 2005

Megan Marie Szymanski, Berryville, VA  
A.B., Cornell University, 2004

Tychelle Naomi Turner, Westphalia, MI  
B.S., Michigan State University, 2008

Wei Wang, Madison, WI  
B.S., Tsinghua University, 2003

Yue Wang, Beijing, China  
B.S., Tsinghua University, 2007

Philip Dane Witmer, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 1996

M.S., University of Maryland (Baltimore County), 1998

Mengchen Ye, Nanjing, China  
B.S., University of Toronto, 2010

Lauren Rachel Zeitels, Warren, NJ  
B.A., University of Pennsylvania, 2006

Mariela Angela Zeledon, Doral, FL  
B.S., Carnegie Mellon University, 2008

IMMUNOLOGY  
(Under the Aegis of the Department of Molecular Biology and Genetics)

Angela Kay Brizendine Alme, Ellicott City, MD  
B.A., Rice University, 1997

B.S., California State University (East Bay), 1998

Mathew M. Augustine, Baltimore, MD  
B.A., Johns Hopkins University, 1998

M.D., Yale University School of Medicine, 2003

Diana Paola Barrantes Gomez, Allentown, PA  
B.S., Pennsylvania State University, 2010

Desiree Elaine Barrett, Owings Mills, MD  
B.A., University of Maryland (Baltimore County), 1996

Jonathon Drew Bennett, Kingsville, MD  
B.A., Wheaton College, 2003

Kelly Patricia Burke, Woodbury, MN  
B.A., Kenyon College, 2006

Christina M. Ceccato, Tucson, AZ  
B.S., University of Arizona, 2008

Waipan Chan, Macau  
B.S., State University of New York (Binghamton), 2007

Yen-Ling Chiu, Towson  
M.D., National Taiwan University, 2001

Christopher Lee Cooper, San Diego, CA  
B.S., San Diego State University, 2002

Nicholas Mason Durham, Lake Oswego, OR  
B.S., Oregon State University, 2005

Dallas Benjamin Flies, Gaithersburg, MD  
B.A., St. Mary's University of Minnesota, 1997

M.S., Mayo Graduate School, 2003

Abby Lorraine Geis, Denver, CO  
B.S., Colorado State University, 2005

Diana Joyce Goode, Gaithersburg, MD  
B.S., University of New Hampshire, 2004

Corinne Hamblet, Baltimore, MD  
B.S., Juniata College, 2007

Emily Beth Heikamp, Metairie, LA  
B.S., Duke University, 2005

M.S.C., Oxford University Medicine School - Oxford, 2007

Bridget Patrice Keenan, Mount Airy, MD  
B.S., Loyola University, 2006

Theodore Sander Kouo, Peoria, IL  
B.A., Northwestern University, 2004

Rebecca Lee Lamason, Elizabethtown, PA  
B.S., Millersville University, 2002

Jessica Bom Lee, University Place, WA  
B.S., University of Washington, 2004

Michal Ariella Levine, New York, NY  
B.A., Barnard College, 2006

Stefanie Michele Lew, Chino Hills, CA  
B.S., University of California (Los Angeles), 2005
Michael Ethan Linde, Los Angeles, CA 2
B.A., Emory University, 1996

Daphne Jane Macapagal, Laurel, MD
B.S., Rutgers University, 1998

Obadiah Johnathan Manley, Pasadena, CA 2
B.S., California Institute of Technology, 1997

Christopher James Nirschl, Herndon, VA
B.S., University of Virginia, 2009

Benjamin Vincent Park, San Diego, CA
B.S., California Institute of Technology, 2007

Rose Parkinson, Folcroft, PA

Tong Tong Zhang, Seattle, WA
B.S., University of Washington, 2006

NEUROSCIENCE

Christopher Michael Ackerman, Washington, DC
B.A., University of Chicago, 1993
M.S., University of Southern California, 2003

Rebecca Ambrose, Pittsboro, NC
B.S., University of North Carolina (Chapel Hill), 2010

Alexandra Marie Amen, Portland, OR
B.A., Haverford College, 2008

Julia Lynn Bachman, St. James, NY
B.A., College of Notre Dame, 2004

Ling Bai, Beijing, China
B.S., Tsinghua University, 2009

Neeraja Manikavalli Balachander, Andhra Pradesh, India
M.B.B.S., Osmania Medical College - Osmania University - Hyderabad - India, 1999

Joseph Lewis Bedont, Jeannette, PA
B.A., University of Rochester, 2009
B.S., University of Rochester, 2009

Matthew C.H. Boersma, Brunswick, ME
A.B., Bowdoin College, 2004

Gabriela Lucila Cantarero, Lincoln, NE
B.S., Northwestern University, 2006

Clinton Lamont Cave, Highlands Ranch, CO
B.A., Yale University, 2007

Jonathan Matthew Chang, Cleveland Heights, OH
B.A., Case Western Reserve University, 2007

Cheng-Hsuan Chiang, Hualien, Taiwan
M.D., National Taiwan University, 2003

Sonia Grace Chin, San Diego, CA
B.S., University of Texas (Austin), 2008

Kavan Terrence Clifford, Atlanta, GA 1,2
B.S., Morehouse College, 2003

Mitchell Darren Datlow, Ventura, CA
B.S., University of California (San Diego), 2007

Lindsay M. De Biase, Alexandria, VA
B.S., Yale University, 2003

Yi Dong, Baltimore, MD
B.S., Nanjing University, 2003

Jeffrey Tevebaugh Ehmsen, Goleta, CA 1
B.S., University of California (Irvine), 2001
M.S., University of Oxford, 2003

Caitlin Conner Engelhard, Crozet, VA 1
B.A., Swarthmore College, 2003

Ting Feng, Shanghai, China
B.S., Shanghai Jiao Tong University, 2007

Elin Jennifer Golden, Baltimore, MD
B.A., Franklin and Marshall College, 2006

Junjie Guo, Beijing, China
B.S., Peking University, 2006

Ting Guo, Beijing, China
B.S., Tsinghua University, 2005

Siyi Huang, Hong Kong
B.S., Hong Kong University of Science and Technology, 2007

Yu-Wen Huang, Taipei, Taiwan
M.D., National Taiwan University, 2002

Chia-chun Hung, Taoyuan County, Taiwan
M.D., Chang Gung University College of Medicine, 2005

Adam Michael Intrator, New York, NY
B.S., Brown University, 2003

Vijay Mohan K Namboodiri, Thrissur, India
B.Tech., Indian Institute of Technology (Bombay), 2008

Tymoteusz Jan Kajstura, Ossining, NY 1
B.A., Oberlin College, 2007

Alya Mallory Katzenelson, Amherst, MA
B.A., Amherst College, 2006

Alecsa Mallory Katzenelson, Amherst, MA
B.A., Amherst College, 2006

Sung Sook Kim, Baltimore, MD
B.S., Seoul National University, 1998
M.S., Seoul National University, 2000

Michael Davin Kornberg, Kissimmee, FL 1,2
B.S., Yale University, 2003
M.S., Yale University, 2003

Eleftheria Koropouli, Megara, Greece
M.D., National and Kapodistrian University of Athens, 2007

Neha Lal, Gurgaon, India
B.S., Bangalore University, 2004

Daniel Allen Lee, Berkeley, CA
B.S., University of California (Berkeley), 2004

Kathryn Michelle Lehigh, Springfield, PA
B.S., Georgetown University, 2009
Lishi Li, Guangzhou, China  
B.S., Peking University, 2007

Chih-Chun Lin, Taipei, Taiwan  
M.D., National Taiwan Normal University, 2004

Chun-Chieh Lin, Tainan City, Taiwan  
M.D., Fujen Catholic University, 2007

Chang Liu, Beijing, China  
B.S., Peking University, 2008

Kai Liu, Beijing, China  
B.S., Peking University, 2005  
B.S., Peking University, 2006

Yin Liu, Beijing, China  
B.S., Peking University, 2006

Ileana Lorenzini, Baltimore, MD  
B.S., University of Puerto Rico (Río Piedras), 2003  
M.S., Johns Hopkins University, 2007

Yuichi Makino, Baltimore, MD  
B.A., University of Tokyo, 2002

Lauren Ashley Makuch, State College, PA  
B.S., Pennsylvania State University, 2005

Anne Baldwin Martin, Tucson, AZ  
B.S., Harvey Mudd College, 1995  
M.A., University of California (Santa Barbara), 2003

Tanya Marie Marton, Encino, CA  
B.S., Yale University, 2008

Robert Gene Mealer, Bozeman, MT  
B.S., Montana State University, 2000

Elizabeth Amanda Newman, White Plains, NY  
B.A., Amherst College, 2009

Delia Silva, Kenilworth, NJ  
B.A., Boston University, 2004

Jessica Irene Tilghman, Baltimore, MD  
B.S., University of Wisconsin (Madison), 2009

Alyssa Maria Ayano Toda, Castro Valley, CA  
B.A., University of California (Berkeley), 2007

Kush Niranjan Patel, Evanston, IL  
B.A., Northwestern University, 2005

Daniel Linh Pham, Torrance, CA  
B.S., University of California (Los Angeles), 2008

Dennis Ashokovich Pradhan, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2000

Emma Beryl Roach, Baltimore, MD  
B.S., Tulane University, 2003

Marianel Rodriguez, Tulsa, OK  
B.S., University of Tulsa, 2005

Matthew Jay Roos, Arlington, VA  
B.S., University of Missouri (Rolla), 1995  
M.S., Purdue University, 1997  
M.S., Duke University, 2002

Claudia Roxana Ruiz, Lakeland, FL  
B.S., Emory University, 2007

Michael Lee Rutlin, New York, NY  
B.S., University of Wisconsin (Whitewater), 1999

Daria Rylkova, Gainesville, FL  
B.S., University of Florida, 2007

Priyanka Sabharwal, Rochester, MN  
M.B.B.S., University of Lucknow - K.G. Medical College - Lucknow - India, 2001

Kurt Andrew Sailor, Baltimore, MD  
B.S., University of Wisconsin (Madison), 1996

Dennis Kumar Sasikumar, Mumbai, India  
M.B.B.S., University of Kerala, 2002

Leslie Anne Scarffe, Pointe Claire, Canada  
B.S., McGill University, 2010

Paul Christopher Scherer, Media, PA  
B.A., University of Pennsylvania, 2008

Karisa Colleen Schreck, Baltimore, MD  
B.S., New Jersey Institute of Technology, 2003

Katherine Cloud Bowman Scott, Charlottesville, VA  
B.A., University of Virginia, 2003

Tanu Sharma, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2009

Thuzar Thein, Taunggyi, Myanmar  
B.A., Amherst College, 2010

Emily Turner Wood, Anacortes, WA  
B.S., Skagit Valley College, 1999  
B.S., University of Washington, 2006

Ziqiang Wei, Beijing, China  
B.S., University of Science and Technology, 2009

Michael Lee Rutlin, New York, NY  
B.S., University of Wisconsin (Whitewater), 1999

Daria Rylkova, Gainesville, FL  
B.S., University of Florida, 2007

Priyanka Sabharwal, Rochester, MN  
M.B.B.S., University of Lucknow - K.G. Medical College - Lucknow - India, 2001

Kurt Andrew Sailor, Baltimore, MD  
B.S., University of Wisconsin (Madison), 1996

Dennis Kumar Sasikumar, Mumbai, India  
M.B.B.S., University of Kerala, 2002

Leslie Anne Scarffe, Pointe Claire, Canada  
B.S., McGill University, 2010

Paul Christopher Scherer, Media, PA  
B.A., University of Pennsylvania, 2008

Karisa Colleen Schreck, Baltimore, MD  
B.S., New Jersey Institute of Technology, 2003

Katherine Cloud Bowman Scott, Charlottesville, VA  
B.A., University of Virginia, 2003

Tanu Sharma, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2009

Thuzar Thein, Taunggyi, Myanmar  
B.A., Amherst College, 2010

Jessica Irene Tilghman, Baltimore, MD  
B.S., University of Wisconsin (Madison), 2009

Alyssa Maria Ayano Toda, Castro Valley, CA  
B.A., University of California (Berkeley), 2007

Natalie Katherine Trzcinski, Endicott, NY  
B.S., Cornell University, 2008

Han Chin Wang, Tainan County, Taiwan  
M.D., National Taiwan University, 2008

Shih-Hsiu Wang, Taipei, Taiwan  
M.D., National Taiwan University, 2003

Ziqiang Wei, Beijing, China  
B.S., Beijing Normal University, 2007

Catherine Jeanne Chalenski Weisz, Baltimore, MD  
B.S., Cornell University, 2001

HaoJui Weng, Taipei, Taiwan  
M.D., National Taiwan University, 2006

Jonathan Roy Williford, Owings Mills, MD  
B.S., Purdue University, 2004

Emily Turner Wood, Anacortes, WA  
B.S., Skagit Valley College, 1999  
B.S., University of Washington, 2006

Jingjing Wu, Hangzhou, China  
B.S., Hong Kong University of Science and Technology, 2009
Xiaojing Wu, Beijing, China  
B.S., Tsinghua University, 2007  
Yen-Ching Wu, Baltimore, MD  
A.B., Bowdoin College, 2001  
Zhuhao Wu, Beijing, China  
B.S., Tsinghua University, 2003  
Zhanlei Ye, Beijing, China  
B.S., Peking University, 2010  
Zhou Yu, Anqing, China  
B.S., Tsinghua University, 2003  
Stephen Paul Zachary, Baltimore, MD  
B.S., University of Science and Technology of China, 2002  
YingXin Zhang, Hangzhou, China  
B.S., University of Science and Technology of China, 2002  

**PATHOLOGY**

Pathobiology  
Koh Meng Aw Yong, Singapore  
B.S., National University of Singapore, 2003  
Michael Ayars, Deerfield, IL  
B.S., Rochester Institute of Technology, 2008  
Kristen Bankert, Glen Rock, PA  
B.S., Cedar Crest College, 2007  
Kathleen Kelly Brennan, Baltimore, MD  
B.S., Towson University, 1999  
D.V.M., North Carolina State University College of Veterinary Medicine, 2003  
Jacqueline Ann Brosnan, Haverhill, MA  
A.B., Bowdoin College, 2008  
Po-Min Chiang, Taipei, Taiwan  
M.D., National Cheng Kung University, 2001  
Yu-Min Chuang, Taipei, Taiwan  
M.D., National Cheng Kung University, 2001  
Briana Danielle Coles, Boise, ID  
B.S., San Jose State University, 2010  
Sarah Elizabeth Croessmann, Rochester, NY  
B.S., University of Virginia, 2009  
Saniya Fayzullina, Millbrae, CA  
B.S., Brandeis University, 2001  
Joseph Paul Garay, Cincinnati, OH  
B.S., Miami University, 2005  
Barry Gertz, Baltimore, MD  
B.S., University of Maryland (College Park), 2000  
Arvin Gouw, San Francisco, CA  
B.A., University of California (Berkeley), 2006  
Annie Lee Hsieh, Hsinchu County, Taiwan  
Dr.Med., Tzu Chi University, 2010  
Tory Patricia Johnson, Crofton, MD  
B.S., Ohio State University, 2001  
Byung-Hak Kang, Seoul, Korea  
D.V.M., Seoul National University, 2007  
Cheryl Mei-Yi Koh, Madison, WI  
B.S., University of Wisconsin (Madison), 2005  
Kihyuck Kwak, Daegu, Korea  
B.S., Sungkyunkwan University, 2006  
Sung Yul Lee, Suwon, Korea  
B.S., Korea University (Seoul), 2004  
M.S., Seoul National University, 2006  
Jessica Marie Louise Lidstrom, Stockholm, Sweden  
B.S., American University, 2004  
M.S., American University, 2005  
Kah Jing Lim, Singapore  
B.S., National University of Singapore, 2006  
Kah Suan Lim, Singapore  
B.S., National University of Singapore, 2006  
Yiting Lim, Johor Bahru, Malaysia  
B.S., National University of Singapore, 2007  
Sophie Zhirong Lin, Singapore  
B.S., National University of Singapore, 2006  
Anne Marie Macgregor, Baltimore, MD  
B.S., University of Maryland (College Park), 2007  
Alvin Patterson Makohon-Moore, East Lansing, MI  
B.S., Michigan State University, 2010  
Laxmi Gurunatham Pellakuru, Ellington, CT  
B.S., Johns Hopkins University, 2008  
Shaaretha Pelly, Singapore  
B.S., National University of Singapore, 2006  
Taylor Louise Reynolds, Raleigh, NC  
B.A., Colorado College, 1993  
D.V.M., Tufts University, 2000  
Samantha Lynn Semenkow, Port Deposit, MD  
B.S., Towson University, 2010  
Allison Catherine Sharrow, Pittsburgh, PA  
B.S., University of Pittsburgh, 2004  
Renata Shraybman, Boca Raton, FL  
B.A., Cornell University, 2008  
Brian Wesley Simons, Baltimore, MD  
B.S., Texas A&M University, 2000  
B.A., Texas A&M University, 2004  
D.V.M., Texas A&M University, 2004  
Shamayra Samantha Smial, Miami, FL  
B.S., Florida Institute of Technology, 2003  
Melek Michelle Erdinc Sunay, Baltimore, MD  
B.S., University of Maryland (College Park), 2006  
Wei Wen Teo, Johor Bahru, Malaysia  
B.S., National University of Singapore, 2002  
Valerie Toodle, Lawton, OK  
B.S., Cameron University, 2006  
Alyssa Lynne Walker, Olney, MD  
B.S., University of Maryland (Baltimore County), 2009  
Joshua Weiyuan Wang, Singapore  
B.S., Imperial College University of London, 2010  
Genevieve Lorraine Weber, Troy, NY  
B.S., Rensselaer Polytechnic Institute, 2005  
Hong Yuen Wong, Singapore  
B.S., National University of Singapore, 2008  
Chao-Yi Wu, Baltimore, MD  
M.D., Chang Gung University College of Medicine, 2004  
Ren-Chin Wu, Taipei, Taiwan  
M.D., Chang Gung University College of Medicine, 2000
Kai Lee Yap, Singapore  
B.S., National University of Singapore, 2006
Jonathan Wei-Che Yu, Pasadena, CA  
B.A., Johns Hopkins University, 1996
Shu-Han Yu, Taipei, Taiwan  
B.S., National Taiwan University, 2007
M.S., National Taiwan University, 2009
Teraneh Zarifar, Baltimore, MD  
B.S., University of California (Riverside), 2008

PHARMACOLOGY AND MOLECULAR SCIENCES
Blake Tolu Aftab, San Francisco, CA  
B.S., University of California (Santa Barbara), 2005
Atinuke Seun Ajiboye, Raleigh, NC  
B.S., Duke University, 2008
Lindsay Brooke Avery, S. Hamilton, MA  
B.S., Syracuse University, 2007
Bradley Powers Barnett, Clifton, VA  
B.A., University of Virginia, 2001
Andrea Lee Benedict, Ypsilanti, MI  
B.S., Eastern Michigan University, 2005
Hyo-Eun Bhang, Seoul, Korea  
B.S., Yonsei University, 2003
Akrita Bhatnagar, Reston, VA  
B.S., George Mason University, 2009
David Bolduc, Marlborough, CT  
B.S., University of Connecticut, 2008
Agedi Nicholson Boto, Baltimore, MD  
B.S., California Institute of Technology, 2002
William Nathaniel Brennen, Newark, DE  
B.A., University of Delaware, 2002
Mark Anthony Castanares, Carson, CA  
B.S., California State University (Domínguez Hills), 2005
Evelyn Eisele, Centennial, CO  
B.S., Wake Forest University, 2009
Moataz M. Gadalla, Ithaca, NY  
A.B., Cornell University, 2007
B.S., Cornell University, 2007
Jian He, Beijing, China  
M.D., Chulalongkorn University, 2000
Meng-Jung Chiang, Taipei, Taiwan  
B.S., National Taiwan University, 2004
M.S., University of Pennsylvania, 2005
Anne Marie Cieniewicz, Leesport, PA  
B.S., West Chester University, 2009
Evelyn Eisele, Centennial, CO  
B.S., Wake Forest University, 2009
Moataz M. Gadalla, Ithaca, NY  
A.B., Cornell University, 2007
B.S., Cornell University, 2007
Johnathan Philip Neiswinger, Hampshire, IL  
B.S., Geneva College, 2007
Yanhui Lu, Columbus, OH  
B.S., Shandong University, 2002
M.S., Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, 2005
Michael Lee Manning, Blacksburg, VA  
B.S., Virginia Polytechnic Institute and State University, 2006
Daniel Roe Marous, Bexley, OH  
B.A., Wittenberg University, 2009
Maria Isabel Martinez Ferrando, Madrid, Spain  
M.Sc., Universidad Politécnica de Madrid, 2003
Po-Yuan Hsiao, Tainan, Taiwan  
B.S., National Taiwan University, 2004
M.S., National Taiwan University, 2009
Christine Ann Jelinek, Baltimore, MD  
B.A., Columbia University, 2005
Darshil Tushar Jhaveri, Mumbai, India  
B.S., University of Illinois (Urbana-Champaign), 2008
Nene Nwocha Kalu, Danbury, CT  
B.S., University of Texas (Arlington), 2006
M.S., University of Texas (Arlington), 2006
Michael Alexander Koldobskiy, Columbia, MO  
B.S., Yale University, 2003
M.S., Yale University, 2003
Meng Li, Beijing, China  
M.D., Peking Union Medical College, 2004
Ying-Chun Lo, Kaoshiung City, Taiwan  
M.D., National Yang-Ming University, 2007
Yung-Sheng Melody Tsui, Cambridge, MA  
B.S., University of Pennsylvania, 2005
Ijeoma Kimberly Uzoma, New Haven, CT  
B.A., Tufts University, 2006
Matthew Scott Vandiver, Johnson City, TN  
B.S., Furman University, 2006
Frank Patrick Vendetti, Pittsburgh, PA  
B.S., University of Pittsburgh, 2004

Minh Quang Vo, Baltimore, MD  
B.A., University of Florida, 2007  
B.S., University of Florida, 2007

David Walker, Sugarloaf, PA  
B.A., University of Pennsylvania, 2008

Qing Wang, Tianjin, China  
B.S., Nankai University, 2007

Minh Quang Vo, Baltimore, MD  
B.A., University of Florida, 2007  
B.S., University of Florida, 2007

David Walker, Sugarloaf, PA  
B.A., University of Pennsylvania, 2008

Qing Wang, Tianjin, China  
B.S., Nankai University, 2007

Marie Ruth Webster, Washington, DC  
B.A., Kalamazoo College, 2003

Brice Alexander Wilson, College Station, TX  
B.S., Texas A&M University, 2004

Crystal Lashae Woodard, Hampton, VA 
B.S., Hampton University, 2005

Nicolas A. Wyhs, Cambridge, MA  
B.S., Massachusetts Institute of Technology, 2005

Sifei Xing, Beijing, China  
B.S., Tsinghua University, 2006

Mingye Feng, Anhui, China  
B.S., University of Science and Technology of China, 2004

Theron Clinton Gilliland Jr., Silver Spring, MD  
B.S., Andrews University, 2002

Lawrence Wilson Gray, Baltimore, MD  
B.S., California State University (Fullerton), 2005

Nesrin Mehmed Hasan, Baltimore, MD  
B.S., Middle East Technical University, 2006

Akunna M. Iheanacho, Baltimore, MD  
B.S., Oakwood College, 2000  
M.S., University of Virginia, 2006

Osi Iyalomhe, Miramar, FL  
B.S., Florida Memorial University, 2005

Di Kang, Berkeley, CA  
B.A., University of California (Berkeley), 2005

Juno Woo Kim, Seoul, Korea  
B.S., Seoul National University, 2010

Ha Won Lee, Seoul, Korea  
B.S., Pohang University of Science and Technology, 2003

Yunjong Lee, Seoul, Korea  
B.S., Seoul National University, 2004

Kathryn Brothers Moore, Evanston, IL 
B.A., Carleton College, 2006

Netty Gondo Santoso, West Lafayette, IN  
B.S., Purdue University, 2005

Marcus Seldin, Huntington Beach, CA  
B.S., University of California (Irvine), 2008

Jie Shi, Singapore  
B.S., National University of Singapore, 2005  
M.S., National University of Singapore, 2008

Deepali Nivas Tukaye, Bangalore Karnataka, India  
M.B.B.S., Rajiv Ghandi University of Health Sciences, 2002

Zhikui Wei, Xining, Qinghai, China  
B.S., Peking University, 2005

Ammang, Beijing, China  
B.S., China Agricultural University, 2004

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

HISTORY OF MEDICINE

Ellen K. Silbergeld, Baltimore, MD  
A.B., Vassar College, 1967

MEDICAL AND BIOLOGICAL ILLUSTRATION

Jodi Elise Chapman, Oviedo, FL  
B.A., Florida State University, 2008

Elizabeth Alexandra Cook, Lake Charles, LA  
B.F.A., Louisiana State University (Baton Rouge), 2008

Bona Kim, Suwon, Korea  
B.S., Seoul National University, 2007

Kaitlin Lindsay, Kearn, NE  
B.A., Iowa State University, 2010

Courtney Arden McKenna, North Wales, PA  
B.F.A., Rhode Island School of Design, 2006

Neil Patrick McMillan, New York, NY  
B.S., Citadel Military College, 2005

Adam Michael Pellerite, Leominster, MA  
B.F.A., Boston University, 2009

Tara Marie Rose, North Attleboro, MA  

Elyssa Lynn Siegel, Reisterstown, MD  
B.A., Arcadia University, 2010

Suzanne Frances Slattery, Philadelphia, PA  
B.F.A., School of Visual Arts, 1992

Bricelyn Hope Straughn, Athens, GA  
B.F.A., University of Georgia, 2007

Eo Van Bemmel Trueblood, Philadelphia, PA  
B.F.A., University of North Carolina (Asheville), 2001

Wenjing Wu, Guangzhou, China  
B.S., Sun Yat-sen University, 2009
CANDIDATES FOR THE DEGREE OF MASTERS OF SCIENCE

HEALTH SCIENCES INFORMATICS

Olayinka Adedayo Ajayi, Bowie, MD
M.B.B.S., University of Ibadan - College of Medicine - Ibadan - Oyo - Nigeria, 1985
M.P.H., Johns Hopkins Bloomberg School of Public Health, 2007

Pammie Renee Crawford, Baltimore, MD
B.A., University of Southern California, 1996
M.P.H., University of Cambridge, 2000
M.S., Harvard University School of Public Health, 2005

Henry Li, Suwanee, GA
B.S., Georgia Institute of Technology, 2009

Yair G. Rajwan, Burke, VA
B.Sc., University of Bridgeport, 1991
M.Sc., George Washington University, 1995
Dr. Sc., George Washington University, 2000

Paulina Sockolow, Cheltenham, PA
B.A., University of Pennsylvania, 1977

Michael Trevor Tien, South Pasadena, CA
M.P.H., University of Southern California, 2008

Wuyang Yang, Beijing, China
M. Med, Captital Medical University, 2010

HEALTH SCIENCES INFORMATICS

Applied Health Sciences Informatics

Nana Kwadwo Boadu, Brooklyn, NY
B.S., Virginia Union University, 2003

Eric Kai Hong Chow, Toronto, Canada
B.A.S., University of Toronto, 2008

Elyse Lasser, Hartford, CT
B.A., Smith College, 2006

Olusesan Ayodeji Makinde, Ibadan, Oyo State, Nigeria
M.B.B.S., University of Ibadan, 2002
M.S., University of Ibadan, 2006

Mwa-Mur Ntayingi, Kinshasa, Congo
B.S., Université de Kinshasha, 2002

Olawande Oladapo Ogunsanya, Chicago, IL
M.B.B.S., University of Ibadan, 2005

Amer Mohammad Mokhles Saati, Marietta, GA
M.D., Damascus University, 2008

1 Combined Degree Program M.D.-Ph.D. or other
2 On Leave of Absence
CANDIDATES FOR THE DEGREES OF DOCTOR OF PHILOSOPHY, MASTERS OF ARTS, AND MASTERS OF SCIENCE
COLLEGES ATTENDED

Aga Khan Medical College - Aga Khan University - Karachi - Pakistan * ........................................... 2
Albany State University .............................................. 1
Albert-Ludwigs-Universitat Freiburg * ...................... 1
American University .......................................................... 2
American University of Beirut * ........................................... 1
Amherst College ................................................................. 4
Amirkabir University of Technology * ................................. 1
Andrews University .............................................................. 1
Anna University * ................................................................. 1
Arcadia University ................................................................. 1
Arizona State University ................................................. 3
Bangalore University * ......................................................... 3
Barnard College ................................................................. 2
Bates College ................................................................. 3
Beijing Normal University * .................................................. 1
Beijing University of Aeronautics and Astronautics - Beijing * ...................................................... 1
Berea College ................................................................. 1
Bharathiar University * ....................................................... 1
Bilkent University * ........................................................... 1
Bombay College of Pharmacy (Mumbai) * ......................... 1
Boston College ................................................................. 4
Boston University ............................................................ 7
Bowdoin College ............................................................... 5
Brandeis University ........................................................... 3
Bridgewater College ......................................................... 1
Brigham Young University ................................................. 3
Brooklyn College of the City University of New York ................................................................. 3
Brown University .............................................................. 4
Bucknell University ............................................................ 2
California Institute of Technology ........................................ 4
California State Polytechnic University (Pomona) ............... 1
California State University (Dominiguez Hills) ................. 2
California State University (East Bay) ............................. 1
California State University (Fresno) .................................. 2
California State University (Fullerton) ............................ 1
California State University (Long Beach) ......................... 1
California State University (Northridge) ......................... 3
Calvin College ................................................................. 1
Cameron University .......................................................... 1
Capital University of Medical Sciences - Beijing * 2
Capital Medical University * ........................................... 1
Carleton College ............................................................... 3
Carleton University - Ontario * ......................................... 1
Carnegie Mellon University ............................................. 4
Case Western Reserve University .................................... 7
Cedar Crest College ............................................................ 2
Chang Gung University College of Medicine * ....... 3
China Agricultural University * ......................................... 1
China Medical University * ............................................... 2
Chulalongkorn University * .............................................. 1
Citadel Military College ..................................................... 1
City College of New York, The .......................................... 1
Claremont McKenna College ........................................... 1
Clarkson University ........................................................... 2
Clemson University .......................................................... 8
Colby College ................................................................. 2
Colgate University ............................................................ 1
College of Notre Dame ...................................................... 2
College of the Holy Cross ................................................... 2
College of William and Mary .......................................... 3
Colorado College ............................................................. 1
Colorado State University .................................................. 3
Columbia University .......................................................... 4
Cornell College ................................................................. 1
Cornell University ............................................................. 14
Damascus University * ....................................................... 1
Dartmouth College ............................................................ 2
Davidson College ............................................................. 2
Denison University .............................................................. 1
Dickinson College ............................................................. 1
Drew University ............................................................... 1
Drexel University ............................................................. 1
Duke University ............................................................... 15
Duquesne University ........................................................ 1
Eastern Michigan University ............................................. 1
Eckerd College ................................................................. 1
Emory University ............................................................. 3
Erskine College ............................................................... 1
Evergreen State College .................................................... 2
Ewha Women’s University - College of Medicine - Seoul - So Korea * .................................................. 1
Florida Atlantic University ............................................. 2
Florida Institute of Technology ........................................... 1
Florida Memorial University ............................................ 1
Florida State University .................................................... 4
Franklin and Marshall College ........................................ 2
Fudan University * ............................................................. 7
Fujen Catholic University * ............................................... 1
Furman University ........................................................... 1
Geneva College ............................................................... 1
George Mason University ................................................. 2
George Washington University ........................................ 5
Georgetown University ...................................................... 4
Georgia Institute of Technology ........................................ 3
Gettysburg College ........................................................... 1
Goteborgs Universitet * ..................................................... 2
Goucher College ............................................................ 2
Grand Canyon University .................................................. 1
Grinnell College ............................................................... 1
Gustavus Adolphus College ............................................. 1
Hampton University .......................................................... 2
Harvard University ............................................................ 6
Harvard University School of Public Health ..................... 2
Harvey Mudd College ....................................................... 2
Haverford College ........................................................... 1
Hong Kong University of Science and Technology * .................. 2
Hope College ................................................................. 1
Howard University ........................................................... 2
Hunter College ............................................................... 1
Idaho State University ....................................................... 1
Imperial College of Science, Technology and Medicine * ................................................................. 1
Imperial College University of London * ......................... 1
Indian Institute of Technology (Bombay) * ....................... 6
Indian Institute of Technology (Delhi) * ......................... 1
Indian Institute of Technology (Kharagpur) * ................... 2
Indian Institute of Technology (Madras) * ....................... 1
Indiana University (Bloomington) ..................................... 1
Iowa State University .......................................................... 1
Iowa State University of Science and Technology ................................................................. 1
Iran University of Science and Technology - Tehran * .......................... 1
Isfahan University of Technology * ..................................... 1
Ithaca College ................................................................. 1

502 STUDENTS
James Madison University ........................................... 1
Johns Hopkins Bloomberg School of Public Health ................. 6
Johns Hopkins University - Peabody Institute ........................ 1
Johns Hopkins University ........................................... 50
Johns Hopkins University School of Medicine ....................... 1
Juniata College .................................................................. 1
Kalamazoo College ......................................................... 1
Keio University * .......................................................... 1
Kent State University ...................................................... 3
Kenyon College ............................................................. 3
Kings College ............................................................... 2
Konkuk University * ..................................................... 1
Korea Advanced Institute of Science and Technology - Taegon * ......................................................... 3
Korea University (Seoul) * .............................................. 7
Lafayette College .......................................................... 1
Lebanese American University * ....................................... 1
Lehigh University ................................................................ 1
Lewis and Clark College ................................................... 1
Louisiana State University (Baton Rouge) .............................. 5
Loyola University ........................................................... 2
Macalester College (St. Paul) ............................................. 1
Massachusetts Institute of Technology .................................. 18
Masters College ............................................................ 1
Mayo Graduate School ..................................................... 1
McGill University * ........................................................ 1
Medical University of Vienna * ......................................... 1
Mercyhurst College ......................................................... 1
Messiah College ............................................................ 1
Miami University .......................................................... 3
Michigan State University ................................................ 3
Michigan State University School of Veterinary Medicine - E. Lansing .................................................. 2
Middle East Technical University * ................................... 3
Millsersville University ...................................................... 2
Minnesota State University (Mankato) ................................ 1
Minnesota State University (Moorhead) .............................. 1
Mississippi State University ............................................. 1
Monmouth University ...................................................... 1
Montana State University ................................................ 2
Montclair State University ................................................ 1
Morehouse College ........................................................ 5
Morgan State University .................................................. 1
Mount Holyoke College ................................................... 1
Mount Saint Mary’s College - Los Angeles ......................... 1
Nanjing University * ...................................................... 3
Nankai University * ....................................................... 2
Nanyang Technological University * .................................. 7
National and Kapodistrian University of Athens * ................ 2
National Cheng Kung University * .................................... 3
National Chiao Tung University * ...................................... 2
National Taiwan Normal University * ................................ 1
National Taiwan University * .......................................... 24
National Tsing Hua University * ....................................... 2
National University of Singapore * .................................. 10
National Yang-Ming University ........................................ 1
New Jersey Institute of Technology .................................... 2
New Mexico State University .......................................... 1
North Carolina Central University ..................................... 1
North Carolina State University ........................................ 2
North Carolina State University College of Veterinary Medicine .................................................. 1
Northeastern University .................................................. 1
Northeastern University .................................................. 2
Northern Arizona University .......................................... 1
Northern Kentucky University ........................................ 2
Northwestern University ............................................... 8
Novosibirsk University * ................................................. 1
Oakwood College .......................................................... 1
Oberlin College ............................................................ 3
Occidental College ......................................................... 1
Ohio State University ...................................................... 9
Oklahoma Baptist University ............................................ 1
Oklahoma State University .............................................. 1
Oregon State University .................................................. 1
Osmania Medical College - Osmania University - Hyderabad - A P - India * .................................................. 1
Osmania University * ...................................................... 1
Oxford University Medicine School - Oxford (917-09 Eff 1/1971) .................................................. 1
Peikong Union Medical College * ..................................... 3
Peking University * ........................................................ 18
Pennsylvania State University .......................................... 16
Pohang University of Science and Technology * ............... 2
Pomona College ........................................................... 1
Princeton University ....................................................... 4
Purdue University .......................................................... 7
Queen’s University (Canada) * ....................................... 1
Quinnipiac College ......................................................... 1
Radboud University Nijmegen .......................................... 1
Randcliffe College ......................................................... 1
Rajiv Ghandi University of Health Sciences * .................... 1
Reed College ................................................................ 2
Rensselaer Polytechnic Institute ....................................... 2
Rhode Island School of Design ........................................ 1
Rhodes College ............................................................ 1
Rice University ............................................................. 2
Ringling College of Art & Design ...................................... 1
Roanoke College .......................................................... 1
Rochester Institute of Technology .................................... 2
Rutgers University ......................................................... 6
Saint John’s University ................................................... 1
Saint Olaf College ........................................................ 1
Salisbury University ....................................................... 1
San Diego State University .............................................. 1
San Francisco State University ....................................... 2
San Jose State University ............................................... 1
School of VISUAL ARTS ................................................ 1
Seoul National University * ............................................ 22
Seton Hall University ...................................................... 1
Shahed University * ...................................................... 1
Shandong University * ................................................... 1
Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences ........................................... 1
Shanghai Jiao Tong University * ..................................... 4
Shanghai Second Medical University * ......................... 2
Sharif University of Technology ....................................... 2
Shippensburg University of Pennsylvania ......................... 1
Sichuan University * ..................................................... 1
Simmons College ........................................................ 1
Skagit Valley College ..................................................... 1
Skidmore College .......................................................... 1
Smith College .............................................................. 1
Sonoma State University ................................................ 1
Sri Venkateswara College * .......................................... 1
St. Louis University ...................................................... 1
St. Mary’s College of Maryland ..................................... 2
St. Mary’s University of Minnesota ................................. 1
Stanford University ....................................................... 5
State University of New York - Upstate Medical University, Clinical Campus at Binghamton .................. 1
State University of New York (Albany) ................................ 2
State University of New York (Binghamton) ....................... 1
State University of New York (Buffalo) ............................ 1
State University of New York (Geneseo) .......................... 2
State University of New York (Oswego) .......................... 1
State University of New York (Stony Brook) ...................... 2
State University of New York (Syracuse) .......................... 1
Stonehill College .......................................................... 1

STUDENTS 503
Washington University in St. Louis ...................... 5
Wellesley College ........................................ 3
West Chester University ................................ 1
West Virginia University ................................. 2
Western Washington University ........................ 1
Wheaton College ........................................... 2
William Smith College ................................... 1
Williams College .......................................... 2
Wittenberg University .................................... 1
Worcester Polytechnic Institute (Worcester) ....... 3
Wuhan University * ........................................ 2
Yale University ............................................ 16
Yale University School of Medicine ................... 1
Yonsei University * ....................................... 4
Zhejiang University * ..................................... 2

* Designates foreign schools.

Inasmuch as a student’s preparation may have been received at more than one institution, this will not check with the total number enrolled. Colleges attended include all students who are Ph.D. or Masters candidates irrespective of current enrollment status.
POSTGRADUATE APPOINTMENTS
CLASS OF 2010

MARK WAYNE BALL
Department of Surgery
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824
*Department of Urology
Johns Hopkins Hospital
Marburg Building, Room 205
600 North Wolfe Street
Baltimore, MD 21287-1824

ANSHUMAN KUMAR BANSAL
Department of Surgery
Stanford University Programs
GME Office HC 435
300 Pasteur Drive
Stanford, CA 94305-5207
*Department of Radiology
UCLA Medical Center
Room 17-320 CHS
10833 Le Conte Avenue
Los Angeles, CA 90095-6932

AARON LEE BERKOWITZ
Department of Medicine/Neurology
Brigham and Women's Hospital
Neville House 316
75 Francis Street
Boston, MA 02115
*Department of Neurology
Massachusetts General Hospital
7 Whittier Place, Suite 108
Charles River Park
Boston, MA 02114

TAL ELIRAM BERKOWITZ
Department of Pediatrics
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

MARK CHRISTOPHER BICKET
Department of Medicine
University of Maryland Medical Center
22 South Green Street
Baltimore, MD 21201
*Department of Anesthesiology
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

ALEXANDER CARL BILLIOUX
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

MATTHEW MIKHAIL BOELIG
Department of Surgery
Hospital of the University of Pennsylvania
Office of Graduate Medical Education
3600 Spruce Street, 1 Maloney
Philadelphia, PA 19104

ANDREW THOMAS BOYD
Department of Medicine
Yale-New Haven Hospital
Tompkins 209
20 York Street
New Haven, CT 06510

LAURA CHRISTINE CAPPELLI
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

ABIGAIL LEIGH YOUNGBERG CARLSON
Department of Medicine
McGill University
James Administration Building, 845
Sherbrooke Street West
Montreal, Quebec H3A 2T5

AUDREY JACQUELINE CHAN
Department of Medicine
Johns Hopkins Bayview Medical Center
Al West
4940 Eastern Avenue, B-1 North
Baltimore, MD 21224
*Department of Dermatology
Baylor College of Medicine - Houston
Room 022-D
One Baylor Plaza
Houston, TX 77030-3498

CATHERINE LEE CHEN
Department of Anesthesiology
UC San Francisco
MU 250 East
500 Parnassus Avenue
San Francisco, CA 94143-0474

STEVEN TZE-FEI CHEN
Department of Medicine/Dermatology
Massachusetts General Hospital
7 Whittier Place, Suite 108
Charles River Park
Boston, MA 02114

ANTHONY CHUNG-KAI CHYOU
Department of Medicine
Hospital of the University of Pennsylvania
Office of Graduate Medical Education
3600 Spruce Street, 1 Maloney
Philadelphia, PA 19104

BENJAMIN ROSS COHEN
Department of Surgery/Urology
Cleveland Clinic Foundation
NA-23
9500 Euclid Avenue
Cleveland, OH 44195-5242
*Department of Urology
Cleveland Clinic Foundation
A-100
9500 Euclid Avenue
Cleveland, OH 44195-5242
GORDON JAMES COHEN  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

FRANK EDWARD CORRIGAN, III  
Department of Medicine  
Emory University School of Medicine  
1648 Pierce Drive, NE  
Suite 327  
Atlanta, GA 30322

JOHN PATRICK COSTELLO  
Department of Surgery  
Georgetown University Hospital  
3800 Reservoir Road, NW  
LL - PHC  
Washington, DC 20007-2113

JENNIFER LYNN CUHRAN  
Department of Medicine  
Johns Hopkins Bayview Medical Center  
AL West  
4940 Eastern Avenue, B-1 North  
Baltimore, MD 21224

KEITH EDWARD CURTIS  
Department of Emergency Medicine  
University of Utah Affil Hospitals  
1-C 412 U Health Science Center  
30 North 1900, East  
Salt Lake City, UT 84132-2114

MATTHEW JOHN CZARNY  
Department of Medicine  
Brigham and Women's Hospital  
Neville House 316  
75 Francis Street  
Boston, MA 02115

GHAZALA AMIRALI DATOO  
Department of Medicine  
Olive View - UCLA Medical Center  
14445 Olive View Drive  
Sylmar, CA 91342  
*Department of Ophthalmology  
Univ of Southern California  
LAC & USC Medical Center  
Doheny Eye Institute  
1450 San Pablo Street  
Los Angeles, CA 90033-1084

YI DENG  
Department of Medicine  
University of Maryland/Mercy Medical Center  
301 Saint Paul Place  
Suite 300-T  
Baltimore, MD 21202-2165  
*Department of Anesthesiology  
Baylor College of Medicine - Houston  
Room 022-D  
One Baylor Plaza  
Houston, TX 77030-3498

PAUL JAMES DOHERTY  
Department of Medicine/Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

PAVLE DOROSLOVACKI  
Department of Medicine  
Washington Hospital Center  
110 Irving Street, NW  
Room POB-121  
Washington, DC 20010  
*Department of Ophthalmology  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

WEI DENISE DUAN-PORTER  
Department of Medicine  
Duke University Medical Center  
M148 Davison Building  
Box 3951  
Durham, NC 27710

FEI JAMIE DY  
Department of Pediatrics  
Massachusetts General Hospital  
7 Whittier Place, Suite 108  
Charles River Park  
Boston, MA 02114

LANA RAE ELPERT  
Department of Medicine  
Johns Hopkins Bayview Medical Center  
AL West  
4940 Eastern Avenue, B-1 North  
Baltimore, MD 21224

ERICA NICOLE ELZEY  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

BRIAN ROBERT ENGLUM  
Department of Surgery  
Duke University Medical Center  
M-148 Davison Building  
Box 3951  
Durham, NC 27710

OLUWATOSIN OYEFOlake FATUSIN  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

FINBAR TIMOTHY FOLEY  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

SHANNON CAROLINE FRASER  
Department of Otolaryngology  
UPMC Graduate Medical Education  
Suite 300, Iroquois Building  
3600 Forbes Avenue  
Pittsburgh, PA 15213
ALODIA ASHENDA GABRE-KIDAN
Department of Surgery
New York Presbyterian Hospital
Columbia Campus
180 Fort Washington Avenue, HP FL-1
New York, NY 10032-3784

COURTNEY RORY GOODWIN
Department of Neurological Surgery
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

LAUREN ELIZABETH GRAHAM
Department of Medicine
Johns Hopkins Bayview Medical Center
AL West
4940 Eastern Avenue, B-1 North
Baltimore, MD 21224

RON GUTMARK
Department of Medicine
Greater Baltimore Medical Center
6701 North Charles Street
Baltimore, MD 21204

TAMIA ALISHA HARRIS
Department of Medicine
University of Maryland/Mercy Medical Center
301 Saint Paul Place
Suite 300-T
Baltimore, MD 21202-2165

ZACHARY RYAN HEALY
Department of Medicine
Duke Univ Medical Center
M-148 Davison Building
Box 3951
Durham, NC 27710

ANDREW HUNTER HUGHES
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

EMILY LOUISE JOHNSON
Department of Medicine/Neurology
Brigham and Women’s Hospital
Neville House 316
75 Francis Street
Boston, MA 02115

JUSTIN MICHAEL JOHNSON
Department of Psychiatry
Massachusetts General Hospital
7 Whittier Place, Suite 108
Charles River Park
Boston, MA 02114

KRISTEN ELAINE JOHNSON
Department of Pediatrics
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

KRISTIN HOI-YAN KAN
Department of Pediatrics
University of Washington Affil Hospitals
Health Sciences Building A300
Box 356340
Seattle, WA 98195-6340

JULIE FRANCES KING
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

PHEBE SILL KO
Department of Medicine
Greater Baltimore Medical Center
6701 North Charles Street
Baltimore, MD 21204

KIMIYOSHI JAMES KOBAYASHI
Department of Medicine
Massachusetts General Hospital
7 Whittier Place, Suite 108
Charles River Park
Boston, MA 02114

BENJAMIN DYLAN KORNFIELD
Department of Pediatrics
Northwestern McGaw/CMH-IL
Children’s Memorial Hospital
Room M-121
2300 Children’s Plaza, #18
Chicago, IL 60614

THOMAS ADAM KOSZTOWSKI
Department of Neurological Surgery
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

JANET LYNN KOWALSKI
Department of Pediatrics
Indiana University School of Medicine
1120 South Drive
Fesler Hall, Room 224
Indianapolis, IN 46202-5114

KARIM SHIRAZ LADHA
Department of Medicine
Brigham and Women’s Hospital
Neville House 316
75 Francis Street
Boston, MA 02115
*Department of Anesthesiology
Massachusetts General Hospital
7 Whittier Place, Suite 108
Charles River Park
Boston, MA 02114

ELIZABETH NGUYEN LE
Department of Medicine
Franklin Square Hospital Center
9000 Franklin Square Drive
Baltimore, MD 21237-3998
*Department of Dermatology
University of Texas Southwestern Medical School
5323 Harry Hines Boulevard
Suite B5, 100
Dallas, TX 75390

MAGGIE RHODES LESLEY
Department of Medicine
Naval Medical Center-San Diego
34800 Bob Wilson Drive
San Diego, CA 92134-5000
*Department of Anesthesiology
Johns Hopkins Hospital Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

EDWARD FELIX LIN
Department of Medicine
Johns Hopkins Hospital Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

JAMIE GAIL LIPMAN
Department of Medicine
The Mount Sinai Hospital
1 Gustave Levy Place
New York, NY 10029-6574

SARAH ELIZABETH LUSK
Department of Family Medicine
UCLA Medical Center
Room 17-320 CHS
10833 Le Conte Avenue
Los Angeles, CA 90095-6932

BRANDON JOSEPH LYNCH
Department of Family/Preventive Medicine
Oregon Health & Science University
3181 SW Sam Jackson Park Road
Portland, OR 97239-3098

CRYSTAL MERCIA MALVOISIN
Department of Pediatrics
Johns Hopkins Hospital Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

DAVID REEVE MARKER
Department of Medicine
Harbor Hospital Center
3001 South Hanover Street
Baltimore, MD 21225-1290

*Department of Radiology
Johns Hopkins Hospital Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

JEREMY ROBIN MCCALLUM
Department of Orthopaedic Surgery
MCHK-DSO
Tripler Army Medical Center
1 Jarrett White Road
Tripler AMC, HI 96859

MATTHEW MISKIMON
Department of Emergency Medicine
New York University School of Medicine
N-10-5 Deans Office
550 First Avenue
New York, NY 10016

SATISH MISRA
Department of Medicine
Johns Hopkins Hospital Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

MONICA NITIN MODI
Department of Obstetrics/Gynecology
Vanderbilt University Medical Center
2601 The Vanderbilt Clinic
Nashville, TN 37232-5283

ELIZABETH LAUREN MUNTER
Department of Obstetrics/Gynecology
Virginia Commonwealth University Health West Hospital, South Wing, 6th Floor
1200 East Broad Street
PO Box 980257
Richmond, VA 23298-0257

KIMANH DUONG NGUYEN
Department of Otolaryngology
UCLA Medical Center
Room 17-320 CHS
10833 Le Conte Avenue
Los Angeles, CA 90095-6932

RITA PHI-THUY TRAN NGUYEN
Department of Medicine
Brigham and Women’s Hospital
Neville House 316
75 Francis Street
Boston, MA 02115

TRANG KIM NGUYEN
Department of Surgery
Cleveland Clinic Foundation
NA-23
9500 Euclid Avenue
Cleveland, OH 44195-5242

JUNAID NIZAMUDDIN
Department of Medicine
Brigham and Women’s Hospital
Neville House 316
75 Francis Street
Boston, MA 02115

DAMARIS DERYU NOU
Department of Medicine
Brigham and Women’s Hospital
Neville House 316
75 Francis Street
Boston, MA 02115

*Department of Anesthesiology
Massachusetts General Hospital
7 Whittier Place, Suite 108
Charles River Park
Boston, MA 02114

POSTGRADUATE APPOINTMENTS  509
ERIC NOU
Department of Medicine
Brigham and Women’s Hospital
Neville House 316
75 Francis Street
Boston, MA 02115

NATHAN COLEMAN NUSSBAUM
Department of Medicine
Hospital of the University of Pennsylvania
Office of Graduate Medical Education
3600 Spruce Street, 1 Maloney
Philadelphia, PA 19104

TERESA MARY KATERI O’HERRON
Department of Psychiatry
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

JAMES BRENDAN O’KEEFE
Department of Medicine
UCLA Medical Center
Room 17-320 CHS
10833 Le Conte Avenue
Los Angeles, CA 90095-6932

MEGHAN ELIZABETH O’NEILL
Department of Pediatrics
Northwestern McGaw/CMH-IL
Children’s Memorial Hospital
Room M-121
2300 Children’s Plaza #18
Chicago, IL 60614

JULIA ELIZABETH OAT-JUDGE
Department of Obstetrics/Gynecology
Brown University
Women & Infants Hosp of Rhode Island
101 Dudley Street
Providence, RI 02905

CHINEDU IFEYINWA ONYEDIKE
Department of Pediatrics/Child Psychiatry
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

RYAN KENNETH OROSCO
Department of Otolaryngology
UC San Diego Medical Center
Mail Code 8829
200 West Arbor Drive
San Diego, CA 92103-8829

KAUSTUBHA DILIP PATIL
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

JOANNA KRISTINE PEARSON
Department of Psychiatry
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

JAVIER PEREZ-RODRIGUEZ
Department of Medicine
Mount Auburn Hospital
330 Mt Auburn Street
Cambridge, MA 02138

*Department of Radiology
Beth Israel Deaconess Medical Center
Dept of Graduate Medical Education
330 Brookline Avenue, ES 217
Boston, MA 02215

ELEANOR LYNNE PITZ
Department of Otolaryngology
Wake Forest University Baptist Medical Center
Medical Center Boulevard
Winston-Salem, NC 27157

DAVID YAO FEI POON
Department of Medicine
Johns Hopkins Bayview Medical Center
AL West
4940 Eastern Avenue, B-1 North
Baltimore, MD 21224

*Department of Ophthalmology
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

SRIVATSAN RAGHAVAN
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

NATHANIEL THOMAS READAL
Department of Surgery
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

*Department of Urology
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

ZACHERY ROGER REICHERT
Department of Medicine
University of Michigan Hospitals
2500 Green Road
Suite 700, Box 0748
Ann Arbor, MI 48105-0748

SUDIP KUMAR SAHA
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

SURAJIT SAHA
Department of Medicine
Johns Hopkins Univ/Sinai Hospital
2401 West Belvedere Avenue
Baltimore, MD 21215-5271

*Department of Ophthalmology
Johns Hopkins Hospital
Administration 324
600 North Wolfe Street
Baltimore, MD 21287-1824

510 POSTGRADUATE APPOINTMENTS
JUSTIN MICHAEL SCHAFFER  
Department of Thoracic Surgery  
Stanford University Programs  
GME Office HC 435  
300 Pasteur Drive  
Stanford, CA 94305-5207

JESSICA NICOLE SCHMIDT  
Department of Emergency Medicine  
Yale-New Haven Hospital  
Tompkins 209  
20 York Street  
New Haven, CT 06510

MELANIE SCHORR  
Department of Medicine  
Brigham and Women's Hospital  
Neville House 316  
75 Francis Street  
Boston, MA 02115

FARZAD SEDAGHAT  
Department of Medicine  
Greater Baltimore Medical Center  
6701 North Charles Street  
Baltimore, MD 21204

*Department of Radiology  
Geisinger Health System  
100 North Academy Avenue  
Danville, PA 17822-1334

CAROLYN MARGARET SENGER  
Department of Medicine  
Univ of Maryland/Mercy Medical Center  
301 Saint Paul Place  
Suite 300-T  
Baltimore, MD 21202-2165

*Department of Anesthesiology  
Beth Israel Deaconess Medical Center  
Dept of Graduate Medical Education  
330 Brookline Avenue, ES 217  
Boston, MA 02215

SHANNON J. C. SHAN  
Department of Medicine  
Johns Hopkins Bayview Medical Center  
AL West  
4940 Eastern Avenue, B-1 North  
Baltimore, MD 21224

*Department of Ophthalmology  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

EUGENIE CHIA-CHING SHIEH  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

SAHAEL STAPLETON  
Department of Medicine  
UC San Francisco  
MU 250, East  
500 Parnassus Avenue  
San Francisco, CA 94143-0474

TOMEKA LYNETTE SUBER  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824

TIMOTHY JAMES SUTTON  
Department of Anesthesiology  
University of Michigan Hospitals  
2500 Green Road  
Suite 700, Box 0748  
Ann Arbor, MI 48105-0748

RAMYA NARASIMHA SWAMY  
Department of Medicine  
University of Maryland Medical Center  
22 South Green Street  
Baltimore, MD 21201

*Department of Ophthalmology  
University of Southern California  
LAC & USC Medical Center  
USC University Hospital  
1450 San Pablo Street  
Los Angeles, CA 90033

SHAN TANG  
Department of Otolaryngology  
NYP Hospital - Columbia & Cornell  
622 West 168th Street  
New York, NY 10032

STEPHANIE KENFACK TANKOU  
Department of Medicine  
MetroHealth Medical Center  
2500 MetroHealth Drive  
Cleveland, OH 44109-1998

*Department of Neurology  
UCLA Medical Center  
Room 17-320 CHS  
10833 Le Conte Avenue  
Los Angeles, CA 90095-6932

JOSHUA TRAY TAYLOR  
Department of Surgery  
Vanderbilt University Medical Center  
2601 The Vanderbilt Clinic  
Nashville, TN 37232-5283

SAVYASACHI CHANDRASHEKHAR THAKKAR  
Department of Orthopaedic Surgery  
Johns Hopkins Hospital  
Administration 324  
600 North Wolfe Street  
Baltimore, MD 21287-1824
<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Institution</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEVERLIE LUI TING</strong></td>
<td>Department of Orthopaedic Surgery</td>
<td>Massachusetts General Hospital</td>
<td>7 Whittier Place, Suite 108 Charles River Park Boston, MA 02114</td>
</tr>
<tr>
<td><strong>MABEL PATRICIA TORIBIO</strong></td>
<td>Department of Medicine</td>
<td>UC San Francisco</td>
<td>MU 250, East 500 Parnassus Avenue San Francisco, CA 94143-0474</td>
</tr>
<tr>
<td><strong>YANA TUROVSKAYA</strong></td>
<td>Department of Pediatrics</td>
<td>University of Minnesota Medical School</td>
<td>Mayo Mail Code 293, B644 Mayo 420 Delaware Street, SE Minneapolis, MN 55455</td>
</tr>
<tr>
<td><strong>MAYA SUBBALAKSHMI VENKATARAMANI</strong></td>
<td>Department of Medicine/Pediatrics</td>
<td>Brigham and Women's Hospital</td>
<td>Neville House 316 75 Francis Street Boston, MA 02115</td>
</tr>
<tr>
<td><strong>KHINH RANH VOONG</strong></td>
<td>Department of Medicine</td>
<td>Johns Hopkins Hospital</td>
<td>Administration 324 600 North Wolfe Street Baltimore, MD 21287-1824</td>
</tr>
<tr>
<td><strong>JINGYA WANG</strong></td>
<td>Department of Medicine/Radiation Oncology</td>
<td>University of Texas MD Anderson Cancer Center</td>
<td>1515 Holcombe Boulevard Box 445 Houston, TX 77030</td>
</tr>
<tr>
<td><strong>TREVOR ROBERT WILLIAMS</strong></td>
<td>Department of Pediatrics</td>
<td>Children's Hospital Boston</td>
<td>300 Longwood Avenue Boston, MA 02115</td>
</tr>
<tr>
<td><strong>SAMANTHA LEIGH WILLIAMSON</strong></td>
<td>Department of Medicine</td>
<td>Kaiser Permanente Med Group-SF Medical Education Office</td>
<td>2425 Geary Boulevard, Mezz Room 160 San Francisco, CA 94115-3395</td>
</tr>
<tr>
<td><strong>FLORENCE JENIFFER WU</strong></td>
<td>Department of Pediatrics</td>
<td>University of Washington Affil Hospitals</td>
<td>Health Sciences Building, A300 Box 356340 Seattle, WA 98195-6340</td>
</tr>
<tr>
<td><strong>MING MING XU</strong></td>
<td>Department of Medicine</td>
<td>University of Michigan Hospitals</td>
<td>2500 Green Road Suite 700, Box 0748 Ann Arbor, MI 48105-0748</td>
</tr>
<tr>
<td><strong>JEAN MING YU</strong></td>
<td>Department of Obstetrics/Gynecology</td>
<td>UC San Francisco</td>
<td>MU 250, East 500 Parnassus Avenue San Francisco, CA 94143-0474</td>
</tr>
<tr>
<td><strong>HASAN AQDAS ZAIDI</strong></td>
<td>Department of Neurological Surgery</td>
<td>Saint Joseph's Hospital &amp; Medical Center</td>
<td>Department of Academic Affairs 350 West Thomas Road Phoenix, AZ 85013</td>
</tr>
<tr>
<td><strong>KEVIN HAITAO ZHAO</strong></td>
<td>Department of Medicine</td>
<td>Johns Hopkins Bayview Medical Center</td>
<td>4940 Eastern Avenue, B-1 North Baltimore, MD 21224</td>
</tr>
</tbody>
</table>

* 2nd Postgraduate Year of Training
** 1st and 2nd Postgraduate Year of Training
† 3rd & 4th Postgraduate Year of Training
Appendix

The original endowment which made possible the opening of the School of Medicine in 1893 was raised largely through the efforts of a group of women who were interested in seeing that adequate facilities should be made available for the instruction of women in medicine. The circumstances attending the acceptance of this fund were as follows:

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

“The committee formed for the purpose of raising a fund to procure the most advanced medical education for women can now place at your disposal the sum of one hundred thousand dollars for the use of your Medical School, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object. We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which affect mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained, we ask you to consider our offer at the earliest possible period.”

NANCY MORRIS DAVIS,
“Chairman of the Baltimore Committee.”

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that $100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.”

“The terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its Medical School shall be opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted in such school upon the same terms as may be prescribed for men.”

“The offer to this University of the particular fund is the free, voluntary act of women residing in this State and in other States, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.”

“The fund so contributed shall be invested and known as ‘The Women’s Medical School Fund,’ and that fund, and all interest to accrue thereon and all additions made thereto for the same purpose, shall remain invested for the purpose of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than $500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University, and fully sufficient as a means of complete medical education. Then, and not until then, will a Medical School be opened by this University, and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.”

“The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.”

“This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there are a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.”

“Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of the School of Medicine, when it is organized; and in making such rules and regulations the terms of this minute shall always be respected and observed.”
Miss Mary Elizabeth Garrett, in order to make up the sum of $500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, contributed to that fund the sum of $306,977, upon the following terms, which were agreed to by the Board of Trustees:

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men to all the prizes, dignities or honors that are awarded by competition, examination, or regarded as rewards of merit.

2. That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University, that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the School those students only who, by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course), as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school of good repute); and that the degree of Doctor of Medicine of the Johns Hopkins University shall be given to no Doctor of Medicine who has not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that he has completed the studies included in the Preliminary Courses, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

The aforegoing provision shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to the school as shall not lower the standard of admission specified in this clause; provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its University Register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admission. (For such requirements always see University Register.)

4. That the terms of this gift and the resolution of October 28, 1890, by which the Trustees accepted the gift of the Women's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School. (See appended resolutions.)

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of $306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the aforegoing terms no university course will be in any way modified by any conditions attached to her gift. These conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University, as formulated and interpreted by the Medical Faculty of the University, February 4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed) MARY E. GARRETT
A course of four years' instruction will be provided leading to the degree of Doctor of Medicine. To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological course which leads to the A.B. degree in the University.

2. Graduates of approved colleges or scientific schools who can furnish evidence: (a) That they have a good reading knowledge of French and German; (b) That they have such knowledge of physics, chemistry and biology as is imparted by the regular minor courses given in these subjects in this University.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, physics, chemistry and biology already indicated.

By approved colleges and scientific schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their intermediate relation to medicine shall be required from students after their entrance to the Medical School.

* * *

WOMEN'S ADVISORY COMMITTEE OF THE JOHNS HOPKINS SCHOOL OF MEDICINE

Dr. Eileen P. G. Vining, Chairman
Mrs. Benjamin M. Baker, Jr.
Dr. Anne B. McKusick

Dr. Laura M. Mumford
Dr. Frances H. Trimble

Their duties are stated in paragraph 5 of the letter printed above.
1) \[ \text{Fraction} = \frac{(A-B)}{(A)(B)} = \frac{[A]_t}{K_a + [A]_t} = 0.91 \]

\[ [A]_t = 0 \]
Alphabetical List of Names
<table>
<thead>
<tr>
<th>Name</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gleich, Natalia Oleg</td>
<td>172, 326</td>
</tr>
<tr>
<td>Glaun, Braeme S</td>
<td>456</td>
</tr>
<tr>
<td>Gladstone, Douglas Edward</td>
<td>229, 267</td>
</tr>
<tr>
<td>Glaun, Braeme S</td>
<td>456</td>
</tr>
<tr>
<td>Gladstone, Douglas Edward</td>
<td>229, 267</td>
</tr>
<tr>
<td>Glaun, Braeme S</td>
<td>456</td>
</tr>
<tr>
<td>Gladstone, Douglas Edward</td>
<td>229, 267</td>
</tr>
<tr>
<td>Glaun, Braeme S</td>
<td>456</td>
</tr>
<tr>
<td>Gladstone, Douglas Edward</td>
<td>229, 267</td>
</tr>
<tr>
<td>Glaun, Braeme S</td>
<td>456</td>
</tr>
<tr>
<td>Gladstone, Douglas Edward</td>
<td>229, 267</td>
</tr>
<tr>
<td>Glaun, Braeme S</td>
<td>456</td>
</tr>
</tbody>
</table>
Grishkan, Inna V
Grigoryev, Dmitry N
Griffiths, Roland R
Griffiths, Robert I
Griffin, M Diane E
Griffin, James Freeland
Greytak, Ryan Michael
Grelotti, David
Gregory, Mary Lee
Gregory, Anthony Charles II
Gregg, Lydia June
Greer, Amy Elizabeth
Greenwald, Elliot Howard
Greenough, William B III
Greene, Rebecca Susan
Greenberg, Sanford D
Green, Rachel
Green, Jordan J
Green, Isabel Christine
Gray, Ryan S
Grason, Warren L
Grazzioli, Alison Victoria
Green, Ariel Ruth
Green, Brian Michael
Green, David
Green, Deanna Mae
Green, Jessica
Green, Israel
Green, Jordan
Green, Melva Isadora
Green, Rachel
Green, Whitney Morgen
Green, William R
Greenbaum, Adena Hope
Greenberg, Keiko Iwahara
Greenberg, Robert S
Greenberg, Sanford
Greenblatt, Sarah Merin
Greene, Peter Schuyler
Greenwell, Edward Howard
Greenwell, Lark Jubilee
Greer, Amy Elizabeth
Greer, Raquel Charles
Gregg, Lydia June
Gregory, Anthony Charles II
Gregory, Mary Lee
Greider, Carol Wilkins
Gross, Richard J
Grossberg, Anna Leah
Groset, Jacques H E
Grossi, Richard A
Grosman, Charles A
Grove, Evan Kandler
Grover, Lorrie L
Groves, Maria E
Grumbein, Francis C
Grundy, Maureen Elise
Grunwald, Michael Richard
Gu, Liang
Gu, Yi
Guaita, Eliseo
Guan, Xiaoyi
Guan, Zufeng
Guevara, Maria
Guggino, Sandra E
Guggino, William B
Guity, Niquisha L
Gujar, Sachin
Gurola, Charles S
Guise, Murielle
Guma, Shannarose
Gummerson, Kenneth S
Gundareddy, Venkat Pradeep
Gunderson, Camille Katherine
Gundy, Rebekah Lynn
Guo, Hong
Guo, Junjie
Guo, Liheng
Guo, Nini
Guo, Ting
Guo, Zhicheng
Guo, Zufang
Gupta, Abhijn
Gupta, Amita
Gupta, Anu
Gupta, Arusha
Gupta, Ashish
Gupta, Gaurav
Gupta, Krutika
Gupta, Mamta
Gupta, Mary
Gupta, Sandeep N
Gupta, Shashank
Gupta, Vikash
Gupta, Yash P
Gurakar, Ahme
Gurbel, Paul A
Gurda, Grzbek
Gurel, Bora
Gurewitsch, Edith Diamant
Gurses, Ayse
Guss, Zachary David
Gustin, John Paul
Gutierrez, Sofia
Gutierrez-Alamillo, Laura
Gutmark, Ron
Guydosh, Nicholas Raymond
Guyer, Bernadine
Guyton, David L
Guzzetta, Angela Anne
Gwilim, Jane
Gwinn, Hilary Eileen
Ha, Christina
Ha, Nguyen H T
Ha, Patrick
Habashi, Jennifer
Habibi, Mehran
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>McCarthy, Melissa Lee</td>
<td>146, 364</td>
</tr>
<tr>
<td>McCarthy, Robert Emmitt III</td>
<td>173, 392</td>
</tr>
<tr>
<td>McCarty, Annemarie McMillian</td>
<td>478, 492</td>
</tr>
<tr>
<td>McCaul, Mary E</td>
<td>170, 271, 343</td>
</tr>
<tr>
<td>McCauley, Jeanne M</td>
<td>419, 392</td>
</tr>
<tr>
<td>Mcclam, Serena Lynn</td>
<td>287, 416</td>
</tr>
<tr>
<td>McCly, Allan R</td>
<td>173, 372</td>
</tr>
<tr>
<td>McCly, Brandt R</td>
<td>355, 372</td>
</tr>
<tr>
<td>McClellan, Deborah A</td>
<td>160, 263, 430</td>
</tr>
<tr>
<td>McClinon, Michael A</td>
<td>303, 364</td>
</tr>
<tr>
<td>McCloskey, Michael</td>
<td>21, 139</td>
</tr>
<tr>
<td>McCle, Erin Ann</td>
<td>463, 475</td>
</tr>
<tr>
<td>McCollum, Michael E</td>
<td>157, 392</td>
</tr>
<tr>
<td>McCollin, William D</td>
<td>17, 417</td>
</tr>
<tr>
<td>McCormack, Meek, Christ 4</td>
<td>173, 392</td>
</tr>
<tr>
<td>McCormack, Sharon</td>
<td>177, 416</td>
</tr>
<tr>
<td>McCoy, Allison Norah</td>
<td>457, 463</td>
</tr>
<tr>
<td>McCrory, Michael G</td>
<td>355, 372</td>
</tr>
<tr>
<td>McCulley, Timothy James</td>
<td>364</td>
</tr>
<tr>
<td>McDermott, Susan Siford</td>
<td>207, 392</td>
</tr>
<tr>
<td>McGavitt, Michael</td>
<td>173, 227, 392</td>
</tr>
<tr>
<td>McDonal, John Wood III</td>
<td>58, 206, 267, 340</td>
</tr>
<tr>
<td>McDonal, Kathleen L</td>
<td>256, 416</td>
</tr>
<tr>
<td>McDonal, Oliver Gene</td>
<td>459</td>
</tr>
<tr>
<td>McDonal Gilmore, Megan Elizabeth</td>
<td>490</td>
</tr>
<tr>
<td>McDonal-Mosley, Raegan</td>
<td>157, 392</td>
</tr>
<tr>
<td>Mcdil, Rebekah S</td>
<td>392</td>
</tr>
<tr>
<td>Mcdil, John F</td>
<td>170, 364</td>
</tr>
<tr>
<td>McEvoy, John William</td>
<td>446</td>
</tr>
<tr>
<td>McFadden, Joseph William</td>
<td>454, 463</td>
</tr>
<tr>
<td>McFarland, Edward W</td>
<td>392</td>
</tr>
<tr>
<td>McFarland, Henry F</td>
<td>207, 392</td>
</tr>
<tr>
<td>McFarland, Susan R</td>
<td>256, 416</td>
</tr>
<tr>
<td>McFarlane, Elizabeth R</td>
<td>256, 416</td>
</tr>
<tr>
<td>Mccaughey, David Mark</td>
<td>445, 457</td>
</tr>
<tr>
<td>Mcgehan, Jane H</td>
<td>330, 331</td>
</tr>
<tr>
<td>Mcciban, Bernard M</td>
<td>304, 392</td>
</tr>
<tr>
<td>Mccin, Brian Michael</td>
<td>254, 392</td>
</tr>
<tr>
<td>Mccins, David Elliot</td>
<td>177, 416</td>
</tr>
<tr>
<td>MccGrain, Gail J</td>
<td>317</td>
</tr>
<tr>
<td>Mccow, Jane E</td>
<td>252, 326, 364</td>
</tr>
<tr>
<td>Mccrath-Morrow, Sharon</td>
<td>252, 364</td>
</tr>
<tr>
<td>Mccreavy, Kai</td>
<td>443</td>
</tr>
<tr>
<td>Mccuire, Courtney Stritar</td>
<td>461</td>
</tr>
<tr>
<td>Mccuire, Marsden</td>
<td>274, 392</td>
</tr>
<tr>
<td>Mccuire, Marea Joyce</td>
<td>173, 319, 320, 324, 392</td>
</tr>
<tr>
<td>Mccargel, Jennifer Lynn</td>
<td>451</td>
</tr>
<tr>
<td>MccHugh, Paul R</td>
<td>271, 325, 344</td>
</tr>
<tr>
<td>Mccnerny, Joseph D</td>
<td>254, 392</td>
</tr>
<tr>
<td>Mccinis, Melvin Gordon</td>
<td>272, 384</td>
</tr>
<tr>
<td>Mccntosh, Karl Winston</td>
<td>275, 416</td>
</tr>
<tr>
<td>MccKenna, Courtney Arden</td>
<td>500</td>
</tr>
<tr>
<td>MccKenzie, Robin</td>
<td>173, 392</td>
</tr>
<tr>
<td>MccKhan, Guy Mead</td>
<td>204, 211, 344</td>
</tr>
<tr>
<td>MccKiben, Rebecca Anne</td>
<td>475</td>
</tr>
<tr>
<td>MccKisty, Robert D</td>
<td>300, 438</td>
</tr>
<tr>
<td>MccKuc, Anne B</td>
<td>173, 392</td>
</tr>
<tr>
<td>MccLan, Rebecca Lynn</td>
<td>475</td>
</tr>
<tr>
<td>MccLean, Rhondaly C</td>
<td>173, 392</td>
</tr>
<tr>
<td>MccLemore, Gabrie Lynn</td>
<td>254, 392</td>
</tr>
<tr>
<td>MccLoughlin, Gregory Stuart</td>
<td>300, 424</td>
</tr>
<tr>
<td>MccMahon, Zuzsanna Hortobagyi</td>
<td>448</td>
</tr>
<tr>
<td>MccMan, Francis Joseph</td>
<td>231, 430</td>
</tr>
<tr>
<td>MccMahon, Michael T</td>
<td>289, 392</td>
</tr>
<tr>
<td>MccMahon, Maira Ann</td>
<td>499</td>
</tr>
<tr>
<td>MccManus, Owen B</td>
<td>231, 430</td>
</tr>
<tr>
<td>MccMichael, Douglas Hale</td>
<td>79, 473</td>
</tr>
<tr>
<td>MccMillan, Julia A</td>
<td>251, 319, 322, 325, 326, 328, 344</td>
</tr>
<tr>
<td>MccMillan, Neil P</td>
<td>173, 392</td>
</tr>
<tr>
<td>MccMillan, Ross Howard</td>
<td>79, 320, 478, 492</td>
</tr>
<tr>
<td>MccNabney, Matthew K</td>
<td>173, 392</td>
</tr>
<tr>
<td>MccNair, Tiffany Arora</td>
<td>445</td>
</tr>
<tr>
<td>MccNally, Melanie</td>
<td>478</td>
</tr>
<tr>
<td>MccNeil, Benjamin Dwight-Clyde</td>
<td>454</td>
</tr>
<tr>
<td>MccNeil, Robert P</td>
<td>439</td>
</tr>
<tr>
<td>MccNut, Todd R</td>
<td>227, 283, 392</td>
</tr>
<tr>
<td>MccQuay, Nathaniel Jr</td>
<td>289, 392</td>
</tr>
<tr>
<td>MccVeigh, Elliott R</td>
<td>130, 288, 319, 320, 344</td>
</tr>
<tr>
<td>Mccleal, Robert Grr</td>
<td>497</td>
</tr>
<tr>
<td>Meany, Danny L</td>
<td>243, 346</td>
</tr>
<tr>
<td>Mears, Simon Cavendish</td>
<td>299, 364</td>
</tr>
<tr>
<td>MccCall, Ronny Grr</td>
<td>497</td>
</tr>
<tr>
<td>Medghalchi, Susan</td>
<td>213, 430</td>
</tr>
<tr>
<td>Meeker, Alan Keith</td>
<td>58, 227, 243, 306, 392</td>
</tr>
<tr>
<td>Meeker, Sonya M</td>
<td>173, 392</td>
</tr>
<tr>
<td>Melfert, Mollie K</td>
<td>127, 213, 320, 392</td>
</tr>
<tr>
<td>Megwalu, Ifeanyichukwu Ifeyinwa</td>
<td>467</td>
</tr>
<tr>
<td>Mehta, Vishal C</td>
<td>448</td>
</tr>
<tr>
<td>Mehri, Masoud Zarezhadeh</td>
<td>448</td>
</tr>
<tr>
<td>Mehta, Shruti</td>
<td>157</td>
</tr>
</tbody>
</table>

546
Siddiqui, Khan M .................................................. 286, 368
Siddiqui, Zishan K .................................................. 178, 420
Siddhaye, Aniket Ram ........................................... 178, 256, 420
Siddhaye, Vankataramana K .................................. 175, 400
Sidrantsy, David .................................................. 220, 241, 301, 305, 332, 348
Sieber, Ann N ...................................................... 299, 400
Sieber, Frederick E ................................................ 122, 368
Siegel, Elyssa Lynn .................................................. 280, 400
Siegel, Everett R .................................................... 274, 400
Siegel, Stephen ...................................................... 178, 420
Siegelman, Stanley S ............................................. 286, 334, 368
Siewersden, Jeffrey H ........................................... 131, 368
Sifakis, Frangiscos .................................................. 151
Sigler, Arnold T ..................................................... 253, 372
Sigman, Laura A ..................................................... 162, 368
Sikka, Gautam ....................................................... 442
Sil, Ugan I ............................................................. 255, 400
Silberman, David .................................................... 131, 420
Silber, Harry Abraham ........................................... 175, 400
Silbergeld, Ellen K .................................................. 500
Silver, Robert E ...................................................... 289, 372
Silthy, Raquel Maria ................................................ 455
Siliciano, Janet M ................................................... 175, 321, 400
Siliciano, Robert Francis ......................................... 50, 168, 201, 321, 322, 325, 348
Silis, Edward M .................................................... 253, 324, 368
Silva, Anna ............................................................. 496
Silva, Delia .............................................................. 497
Silver, Allen E ......................................................... 236, 420
Silver, Kenneth H C ............................................... 267, 368
Silverman, Emily Anne .......................................... 179, 467
Silverman, Kenneth ............................................... 271, 348
Silverman, Michael A ............................................. 146, 420
Silverman, Michael Gordon ..................................... 446
Silverman, Ron ....................................................... 267, 420
Silverman, Wayne ................................................... 272, 327, 368
Silverstein, Arthur M ............................................. 163, 234, 354
Sim, Davis Lok ....................................................... 446
Simari, Patricio Dario .............................................. 464
Simball, Eric ........................................................... 178, 420
Simcha, David ....................................................... 179, 439
Simmons, Jennifer Lindsay ...................................... 495
Simmons, Jon D ...................................................... 467
Simmons, Oliver P ................................................... 400
Simmons-O’Brien, Eva ............................................. 144, 175, 400
Simms, Carrie Leanne ............................................. 453
Simms, Jerry ........................................................... 483
Simon, Gabriel P .................................................... 146, 420
Simon, Olivier Bauer .............................................. 483
Simons, Brian Wesley ............................................. 451, 459, 498
Simons, Kurt A ....................................................... 236, 432
Simonsick, Eleanor Marie ....................................... 170, 368
Simonson, Lisa ....................................................... 175, 400
Simpkins, Christopher Eric ..................................... 289, 251, 348
Simpson, Andrew ................................................... 297, 348
Simpson, Crystal Felicia ............................................ 175, 400
Simpson, Dyanne .................................................... 271, 348
Simpson, Khara Michelle ......................................... 445
Simpson, Sylvia G ................................................... 272, 368
Simpson, Thomas E ................................................ 117, 441
Sims, George A ...................................................... 420
Sims, Joshua .......................................................... 256
Sims, Jacob Andrew ............................................... 489
Simu, Alan ............................................................. 207, 400
Sinclair, Sarah ....................................................... 455
Singer, Andrew Lawrence ....................................... 295, 400
Singer, Harvey S ..................................................... 286, 368
Singer, Michele ....................................................... 256, 420
Singh, Bhairat ......................................................... 178, 420
Singh, Devinder ....................................................... 295, 400
Singh, H Rosy ........................................................ 288, 400
Singh, Namita ......................................................... 447, 456
Singh, Navin .......................................................... 298, 340, 400
Singh, Nishith ........................................................ 456
Singh, Om Vir ........................................................ 256, 436
Singh, Rajendra ..................................................... 317
Singh, Rupinder ...................................................... 447
Singh, Shailendra .................................................... 447
Singh, Sonal Charles ............................................... 175, 400
Singh, Varsha ........................................................ 449
Singh, Vikesh Kumar .............................................. 178, 400
Singh, Aatul Dilip ................................................... 459
Singh, Debasis ......................................................... 459
Singh, Gita ............................................................. 178, 420
Singh, Samir Kumar ............................................... 175, 401
Sinha, Victoria R ..................................................... 275, 432
Sriramalle, Srinivas ................................................. 462
Sisk, Jeanne Marie .................................................. 484
Sisson, Edward A ................................................... 456
Sisson, Stephen D ................................................... 170, 368
Siu, I-Mei ............................................................... 298, 420
Skavakumar, Vithya ................................................. 414
Skaryak, Lynne Ann ............................................... 295, 401
Skelley, Nathan William ........................................... 79, 320, 470
Yoshimura, Kiyoshi .......................................................... 228, 205, 406
Younan, Nancy ................................................................. 276, 422
Young, Barbara ................................................................. 275, 408
Young, Deborah Sue Rohm ............................................. 171, 371
Young, Errol................................................................. 130, 212, 301, 321, 322, 353, 459
Young, Jeffrey Hunter .................................................. 175, 406
Young, Mark Allen .......................................................... 267, 408
You, J.M. Mohsen ............................................................ 276, 422
Youssfi, Morvarid ............................................................. 463
Yousem, David Mark .......................................................... 289, 351
You Tub, Otho Khwaja ....................................................... 446
Yoshii Tamashiro, Cecilia Hiromi ....................................... 447
Yu, Bing ........................................................................ 300, 433
Yu, Cassie Kwun Yun .......................................................... 464
Yu, Fang ........................................................................ 267, 422
Yu, Haoyun .................................................................... 454
Yu, Hao ........................................................................ 267, 422
Yu, Hong ........................................................................ 454
Yu, Huimei ...................................................................... 453
Yu, Huimin ..................................................................... 452, 484
Yu, Jean Ming .................................................................. 512
Yu, Jiasheng ................................................................. 459
Yu, Jianzhong .................................................................. 452
Yu, Jing ........................................................................... 490
Yu, Jinho .......................................................................... 447
Yu, Jinxian ...................................................................... 450
Yu, Jonathan Wei-Chen .................................................... 460, 499
Yu, Jun ............................................................................ 459
Yu, Lan ............................................................................ 464
Yu, Qiu ........................................................................... 179, 433
Yu, Shu-Han .................................................................... 499
Yu, Tao ............................................................................ 490
Yu, Wei ................................................................. 228, 433
Yu, Yang ........................................................................ 228, 433
Yu, Zhou ......................................................................... 498
Yu, Yuanjun .................................................................... 479
Yu, Yuanqiong ................................................................ 453
Yu, Daniel Shih-En ........................................................... 201, 434
Yu, Jie ............................................................................. 208, 434
Yu, Min ........................................................................... 464
Yu, Nance L .................................................................... 472
Yu, Qingyang .................................................................. 470
Yu, Xuan .......................................................................... 179, 434
Yu, Zhou .......................................................................... 466
Yue, David Tuckchow .................................................... 130, 212, 321, 322, 325, 351
Yue, W. Sze Wendy .......................................................... 485
Yuh, David Dahao ............................................................. 296, 371
Yumul, Ily Kristine Tolentino ............................................. 447, 456
Yun, Hyun Don ................................................................ 456
Yun, KI-Jun ...................................................................... 453
Yung, Rex Chin-Wel .......................................................... 175, 228, 406
Yusuff, Shamila ................................................................. 468
Yzer, Natalie Simone ........................................................ 484
Zabel, T Andrew ............................................................... 275, 406
Zabin, Laurie S ................................................................. 158, 441
Zabol, David ................................................................. 470, 479
Zabransky, Daniel James .................................................. 474
Zaca, Domenico ............................................................... 465
Zacharias, Nathaniel Elizabeth ........................................... 167, 406
Zacharias, Nikolas ........................................................... 466
Zachary, Andrea A ............................................................ 168, 351
Zachary, Jimmy M ............................................................. 171, 373
Zachary, Stephen Paul ..................................................... 498
Zachik, Albert Anthony .................................................... 276, 422
Zachos, Nicholas Constantine ............................................ 175, 406
Zack, Donald J ................................................................. 48, 201, 212, 234, 351
Zackowski, Kathleen M .................................................... 208, 267, 406
Zacur, Howard A .............................................................. 156, 324, 351
Zadak, Robert E ............................................................... 299, 408
Zadnik, Patricia Leigh ........................................................ 472
Zaghloil, Norann Amir ..................................................... 295, 437
Zafar, Arshad ................................................................. 228, 406
Zaher, Hani ...................................................................... 452
Zahnner, Matthew Ralph ................................................... 443
Zahnow, Cynthia Ann ...................................................... 228, 406
Zaidi, Asifa K ................................................................. 178, 422
Zaidi, Eram ..................................................................... 466
Zaidi, Hassan Aqdas ........................................................ 512
Zaiman, Ari Lev ................................................................ 406
Zakaria, Khurram Shahzad ............................................... 465
Zakarias, Sammy .............................................................. 178, 422
Zambito, Elisas Thomas .................................................... 446
Zambroano, Andrea Isabella .............................................. 457
Zamoiski, Calman J .......................................................... 317
Zamora, Carlos Armando .................................................. 495
Zampella, John George IV .................................................. 79, 472
Zandi, Peter P ................................................................. 277, 441
Zang, Julie E ................................................................. 444
Zanni, Jennifer M .............................................................. 267, 426
Zanifiar, Tereanah .............................................................. 499
Zarling, Stanley ............................................................... 496
Zarr, Melissa Ann ............................................................ 500
Zarzhevsky, Natalia .......................................................... 466
Zayit-Soudry, Shiri ............................................................. 457
Zec, Helena Claire ............................................................ 490
Zee, David S ................................................................. 205, 212, 234, 301, 351
Zeger, Scott ................................................................. 318, 321, 322, 328
Zeidman, Ameth Bethgal .................................................. 486
Zeidman, Quirra ............................................................. 486
Zeidner, Joshua Franklin ................................................... 446
Zeiger, Martin ................................................................. 225, 293, 323, 326, 351
Zeller, Steven Robert ........................................................ 208
Zeimer, Ran ...................................................................... 234, 354
Zeitels, Lauren Rachel ........................................................ 446
Zeltin, Pamela L ............................................................... 251, 269, 326, 351
Zelaya, Carla ................................................................. 151
Zeledon, Marieta Angela .................................................. 485
Zeiken, Jonathan A ............................................................ 486
Zellars, Richard Cedric ...................................................... 226, 283, 321, 327, 371
Zeller, Karen ................................................................. 179, 434
Zeller, Stephen Robert ..................................................... 228, 433
Zellos, Agalia ................................................................. 255, 406
Zeng, Jing ........................................................................ 464
Zeng, Mingbing ............................................................... 457
Zeng, Yu .......................................................................... 306, 434, 467
Zemlin, Jonathan M .......................................................... 144, 156, 168, 351
Zemlin, Michael E ............................................................ 352
Zerhouni, Elias A .............................................................. 130, 286, 352
Zerhouni, Yasmin ............................................................. 474
Zeytinoğlu, Meltem ........................................................... 451
Zhan, Xiangan .................................................................. 208, 422
Zhang, Cheng ................................................................. 236, 434
Zhang, Clark Mojie ........................................................... 490
Zhang, Dao-Yu ................................................................ 442
Zhang, Dongming ................................................................ 160, 434
Zhang, Feiran ................................................................... 500
Zhang, Hongyan ................................................................ 288, 434
Zhang, Huafeng ................................................................ 228, 434
Zhang, Hui ...................................................................... 243, 406
Zhang, Jennifer Qi ............................................................ 124, 434
Zhang, Jian ....................................................................... 124, 434
Zhang, Jiangyang ............................................................. 289, 406
Zhang, Jiannin ................................................................... 208, 428
Zhang, Jie .......................................................................... 213, 437
Zhang, Jin .......................................................................... 212, 228, 263, 371
Zhang, Jing ........................................................................ 473
Zhang, Kechen .................................................................. 131, 213, 406
Zhang, Li ........................................................................... 228, 434
Zhang, Manling ................................................................ 446
Zhang, Mei ......................................................................... 454
Zhang, Nailing .................................................................. 454
Zhang, Nan ........................................................................ 498
Zhang, Pingbo .................................................................... 483
Zhang, Ping-Wu ............................................................... 208, 434
Zhang, Sean X ................................................................ 243, 406
Zhang, Tianyu .................................................................... 450
Zhang, Tong Tong ............................................................. 496
Zhang, Wencheng ............................................................. 454
Zhang, Yajin ...................................................................... 415
Zhang, Yali ........................................................................ 483
Zhang, Yi ............................................................................ 451, 490
Zhang, Yimeng .................................................................. 498
Zhang, Ying ...................................................................... 181, 441
Zhang, Yingxin ................................................................ 498
Zhang, Yong ....................................................................... 498
Zhang, Yonggang ............................................................... 229, 284, 434
Zhang, Yongqiang ............................................................. 483
Zhang, Yuanfan .................................................................. 493
Zhang, Yuxing .................................................................. 443
Zhang, Zhen ...................................................................... 226, 243, 371
Zhang, Zhongyan ................................................................ 444
Zhang-Howard, Rong ........................................................ 175, 406
Zhang-Howard, Rong ........................................................ 243, 406
Zhang, Claire Yunzhu ........................................................ 490
Zhal, Kevin Hailao ............................................................. 447, 512
Zhan, Lingyu ..................................................................... 223, 293, 323, 354
Zhan, Min ......................................................................... 141, 437
Zhan, Ming ....................................................................... 229, 434
Zhan, Pb ............................................................................ 460
Zhan, Qi ........................................................................... 298, 406
Zhan, Xiuli ........................................................................ 442
Zhan, Yulian ..................................................................... 157, 411
Zhen, Gehua ..................................................................... 181, 411
Zheng, Yonggang .............................................................. 465
Zheng, Ying ..................................................................... 456
Zheng, Yixin ..................................................................... 201, 352
Zheng, Yongsang ............................................................. 462
Zheng, Chui ....................................................................... 453
Zheng, Jun ......................................................................... 445
| Zhong, Xiaogang                                       | 466 |
| Zhong, Xiaoli                                         | 458 |
| Zhong, Xufeng                                         | 457 |
| Zhong, Yi                                             | 459 |
| Zhou, Feng-Quan                                       | 213, 299, 406 |
| Zhou, Jinyuan                                         | 289, 371 |
| Zhou, Lufang                                          | 448 |
| Zhou, Qun                                             | 229, 437 |
| Zhou, Shibin                                          | 226, 371 |
| Zhou, Xin                                             | 462 |
| Zhou, Xun                                             | 478 |
| Zhou, Yanfei                                          | 303, 437 |
| Zhou, Yong-di                                         | 298, 406 |
| Zhou, Yufeng                                          | 447 |
| Zhou, Yuliang                                         | 484 |
| Zhou, Yun                                             | 208, 287, 406, 437 |
| Zhou, Yuqi                                            | 447 |
| Zhu, Gefeng                                           | 228, 434 |
| Zhu, Guangshuo                                        | 448 |
| Zhu, He                                               | 290, 434, 465 |
| Zhu, Heng                                             | 228, 263, 371 |
| Zhu, Jianhong                                          | 124, 434, 442 |
| Zhu, Jing                                              | 453, 464 |
| Zhu, Nan                                               | 470 |
| Zhu, Qingsong                                          | 456 |
| Zhu, Renjun                                            | 490 |
| Zhu, Shanshan                                         | 464 |
| Zhu, Wenlian                                          | 289, 434 |
| Zhu, Xinjun                                           | 449 |
| Zhu, Yao-Yao                                          | 175, 406 |
| Zhu, Yi                                                | 443, 488 |
| Zhu, Yuwen                                            | 456 |
| Zhu, Zhou                                             | 50, 171, 371 |
| Zia, Mohsen                                           | 258, 428 |
| Zia, Wendy Catharina                                   | 124, 208, 298, 406 |
| Ziegler, Roy C                                        | 168, 352 |
| Ziegfeld, Constance                                   | 325 |
| Ziegler, Shira Gillian                                | 477 |
| Ziemann, Susan Jane                                   | 176, 406 |
| Ziemer, Philip D                                      | 168, 328, 354 |
| Zigler, J Samuel Jr                                    | 236, 406 |
| Zikria, Bashir Ahmed                                   | 299, 407 |
| Zikusoka, Michelle Nabulumba                          | 448 |
| Zilbermint, Mihai F                                   | 449 |
| Ziminski, Carol M                                      | 82, 171, 326, 371 |
| Zimmer, Karen Paul                                    | 255, 407 |
| Zimmer-Galler, Ingrid E                               | 235, 371 |
| Zimmerman, Andrew W                                   | 206, 253, 273, 371 |
| Zimmerman, Jack M                                     | 294, 373 |
| Zimmerman, Neal B                                     | 300, 422 |
| Zimmerman, Stefan L                                   | 288, 407 |
| Zimnitzky, Brian Michael                              | 275, 407 |
| Zimowski, Karen Leigha                                | 462 |
| Zinchenko, Michelle Kim                               | 484 |
| Zingarelli, Erin Nicole                                | 477 |
| Zink, M Christine                                     | 59, 199, 242, 319, 323, 326, 352 |
| Zinkham, William H                                    | 223, 252, 325, 354 |
| Zinn, Rebekah Lorah                                   | 321, 455 |
| Zinner, Michael J                                     | 295, 426 |
| Zinreich, Eva S                                      | 284, 407 |
| Zinreich, S James                                     | 289, 301, 352 |
| Zirin, Barry R                                        | 158, 441 |
| Zizak, Mirza                                         | 179, 437 |
| Zivic, Thomas M                                      | 171, 371 |
| Zoid, Camilia Lidia                                  | 454 |
| Zoliars, Eric Stafford                                | 446 |
| Zollinger, Raymond H                                  | 178, 422 |
| Zong, Jianchao                                        | 229, 434 |
| Zorizes, Seth Aaron                                   | 484 |
| Zordan, Rebecca Elizabetha                            | 452 |
| Zorowitz, Richard David                               | 267, 371 |
| Zou, Beiyan                                           | 454 |
| Zou, Chunlin                                          | 179, 435 |
| Zou, Jizhong                                          | 179, 434, 450 |
| Zu, Lingyun                                           | 448 |
| Zuberi, Jamshed A                                     | 295, 422 |
| Zucker, Peter K                                      | 157, 407 |
| Zuckerman, Rhonda L                                   | 124, 158, 407 |
| Zuidema, George                                      | 295, 426 |
| Zukin, Stephen Randolph                               | 272, 290, 362 |
| Zuroweste, Edward Lee                                 | 176, 407 |
| Zweier, Jay L                                        | 168, 286, 352 |