Contents

Foreword 5

Historical Perspectives 7
The University, The School of Medicine

Mission Statement and Education Program Objectives 9

The Johns Hopkins Medical Institutions 11
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, The Johns Hopkins Community Physicians, The Johns Hopkins Bayview Medical Center

Associated Institutions 14
The Kennedy Krieger Institute, Inc., The Good Samaritan Hospital of Maryland, Inc., Sinai Hospital of Baltimore, Other Hospitals

Instruction Leading to the M.D. Degree 17
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., and Transfer Applicants, Early Decision, Deferred Admission, Combined Study-M.D.-Ph.D., Advanced Standing

Grading and Examinations 22
Promotions 22
Grade Appeals Policy 23
Policy on USMLE Requirement 24
Guidelines for Conduct on Teacher/Learner Relationships 24
Procedures Relating to Student Discipline 26
Attendance Policy in the Preclinical Curriculum 27

Core Clerkship Attendance Policy 28
Involuntary Leave of Absence 29
Academic Honesty 30
Honor Code 30
Special Students/Visiting Students 30
Enrollment 30
Interdivisional Studies 31

Graduate Programs 33
Office of Graduate Student Affairs 33
Degree Requirements 33
Departmental Requirements 33
Biochemistry, Cellular and Molecular Biology 33
Biological Chemistry 34
Biomedical Engineering 35
M.S.E. Program in Biomedical Engineering 37
Biophysics/Molecular Biophysics 38
Cell Biology 40
Cellular and Molecular Medicine 40
Functional Anatomy and Evolution 41
History of Science, Medicine, and Technology 42
Human Genetics and Molecular Biology 43
Immunology 46
Medical and Biological Illustration 48
Molecular Genetics 51
Neuroscience 52
Pathobiology 53
Pharmacology and Molecular Sciences 56
Physiology 57
School of Public Health 58
Interdivisional Program: Ph.D./Sc.M./M.H.S. in Clinical Investigation 58
Interdepartmental Councils 60
Graduate Student Honor Code 60
Graduate Student Policy Statements 60
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.
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, Biophysics, Physiology, and the Broadway Research buildings. The Wood Basic Science Building contains 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 seven 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 (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. Welch services are available online and at a number of campus locations. The Lillenfeld Library in the Bloomberg School of Public Health is the primary resource for information in public health, management science and social sciences.

By registering as library users, 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 (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 Welch Now” and “Ask Us”. Interlibrary loan and document delivery services are available online through WelDoc at www.welch.jhu.edu/services/ill.html. The library owns over 400,000 books and journal volumes, and subscribes to approximately over 5,000 online journals. Desktop computers and selected software are available for use in the library.

With an emphasis on providing services at the point of use, a number of “information suites” (http://www.welch.jhu.edu/services/information_suites.html) have been created for Hopkins communities such as in the Population Center (http://poplibrary.jhmi.edu), the basic sciences (http://bsdlibrary.jhmi.edu/), and oncology to provide a range of library services and digital resources. 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 (http://openaccess.jhmi.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, and scientific writing; details as www.welch.jhu.edu/classes/. In addition, discipline focused lecture series are offered for Welch information suite (WIS) communities. Welch co-sponsors associated lecture series in Nursing, Oncology, and Basic Sciences (www.welch.jhu.edu/classes/wls.html).

Other campus service sites in the Welch system are the Adolf Meyer Collection, with a focus on neurology, neurosurgery, anesthesiology, critical care, and psychiatry, and the Nursing Information Resource Center. 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 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, and Johns Hopkins Community Physicians which operates 18 primary care centers. Johns Hopkins Medicine specialty physicians practice at two major suburban sites in Baltimore County: Green Spring Station and White Marsh, as well as in Odenton in Anne Arundel County and Columbia in Howard County. The facilities offer care in a variety of medical and surgical subspecialties. Once within the Johns Hopkins Health System, patients have access to the resources, capabilities and facilities of The Johns Hopkins Hospital.

The Johns Hopkins Hospital

At its founding, the School of Medicine became the first to be intimately allied with both a university and a hospital especially designed as an institutional partner. Today, the Hospital complex is a collection of more than a dozen “mini hospitals” and centers, 51 buildings, 226 separate clinical services and 1049 licensed beds sprawling over half of the 52 acres housing the Johns Hopkins Medical Institutions in East Baltimore.

A $1.2 billion redevelopment project encom-
Patient care facilities include such world renowned specialty centers as the Wilmer Eye Institute, Adolf Meyer Center for Psychiatry and the Neurosciences, Brady Urological Institute, Clayton Heart Center, Meyerhoff Center for Digestive Diseases, the Children’s Center, Oncology Center, Halsted Surgical Service and Osler Medical Service. All inpatient clinical services, including obstetrics and gynecology, pharmacology, emergency medicine, transplant surgery, and diagnostic imaging are located in the Hospital complex. The inpatient and teaching buildings also house administrative offices, several cafeterias and restaurants, a physicians’ dining room, gift shop, lounges, florist, mini-post office and banking services.

All of the Hospital’s buildings and most of the Medical Institutions’, including parking garages, are connected by covered corridors or tunnels.

The Johns Hopkins Community Physicians
Johns Hopkins Community Physicians is a wholly-owned subsidiary of the Johns Hopkins Health System. It provides quality primary and secondary 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 200 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 is a level 3 NCQA Certified Patient Centered Medical Home, 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 active duty and retired military families 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 2008 to June 2009, there were 202,341 emergency and ambulatory visits; 238,170 visits to programs in psychiatry, alcohol and drug abuse; 20,849 admissions to the acute care hospital; and 8,658 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. Most recently, NIDA’s Addiction Research Center and NIA’s Gerontology Research Center moved into 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 improving the lives of children and adolescents with disorders of the brain, spinal cord, and musculoskeletal system by building patient independence and strengthening participation in home, school and community life. Services are provided in inpatient, day treatment, outpatient, community and home-based settings. Furthermore, the Institute focuses upon biomedical and behavioral research, training of healthcare professionals, and lower, middle
and high school programs for children and teens with a wide range of learning, emotional, physical, neurological, and developmental disabilities (including autism).

The major inpatient programs that constitute the 70-bed hospital follow. The Pediatric Rehabilitation Unit (Brain Injury Program and Comprehensive Inpatient Rehabilitation Program) provides services for patients with a wide range of diagnoses or conditions, including traumatic brain and spinal cord injuries, developmental disabilities, recovery from orthopedic surgery and spina bifida. The Neurobehavioral Unit serves children and adolescents with developmental and intellectual disabilities with severe behavior disorders who have highly treatment-resistant problems and require intensive behavioral assessment and treatment services as well as targeted application of behavioral and pharmacological interventions. The Pediatric Feeding Disorders Program offers evaluation and treatment of severe pediatric feeding disorders in children (average age of 36 months) with the most severe, life threatening feeding problems. Ambulatory care services comprise more than 40 specialized clinics.

Whether serving inpatients or outpatients, comprehensive interdisciplinary care features the medical disciplines of pediatrics, neurology, rehabilitation medicine, orthopedic surgery, psychiatry, and neurodevelopmental disabilities as well as 15 clinical disciplines such as nursing, physical therapy, social work, and behavioral psychology.

The International Center for Spinal Cord Injury serves children and adults with spinal cord injury due to a variety of causes. Services extend beyond the immediate acute phase of injury by applying cutting edge treatment that promotes improved health and recovery of function.

Since June 2009, the Center for Genetic Muscle Disorders provides multidisciplinary and individualized care (diagnosis and management) for children and adults with muscular dystrophy and congenital myopathy.

Biomedical, behavioral, and translational research focus on the diagnosis, treatment, and ultimately, prevention and cure of childhood neurological disorders and neurodevelopmental disabilities. Many studies are 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 472 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: Emergent, 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 1,032 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 within the departments of Ophthalmology, Cardiology, Gastroenterology, and Infectious Disease.

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 69) 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, and 4.5-week rotations in Neurology, Psychiatry, and Emergency Medicine. A week of Translational Medicine is required after each 8-week clerkship; and 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 Care and Rehabilitation, 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 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 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 biology, 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 20. 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, NW., Lobby-26, Washington, DC, 20037-1300; telephone: 202-828-0635. The dead-
Course Requirements for Regular M.D. and M.D.-Ph.D. Applicants

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 with 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.
line 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 Admissions 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 continuous 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/clinic 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/ment 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/ment 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/ment 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 schedule Step I and both components of Step II by December 1 of his/her senior year and sit for the examination prior to graduation. Effective with the Class of 2012 students must pass Step I by the end of quarter one, third year, in order to continue in the clinical curriculum.

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 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 merited, they will convene an ad hoc committee to investigate the complaint and will 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 from when they were convened which will include their findings and recommendations for dismissal of the complaint or for disciplinary action(s). The senior Deans will then communicate to the complainant and respondent in writing that a determination has been made. If the committee finds against a post-graduate trainee, the findings will be communicated to the appropriate Department Chair and Program Director and sanctions will be determined and enforced according to the policy on Probation, Suspension, and Termination of Post-Doctoral Fellows published elsewhere which also includes an avenue of appeal.

• 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 unbecoming 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 and final decisions to be administrative.

   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, fami-
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 10-case version of the exam runs from about 7AM to 4PM). Students should expect to attend required basic clerkship educational activities after they have completed the exam.

c. Other Required Coursework
Certain required courses (e.g., Rational Therapeutics) 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 supereede 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 SOM. 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.

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 suitabilit 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 preclinical 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 tutors 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 Graduate 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 and history of science, medicine and technology. The requirements for the various degrees are established by the Graduate 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 year-round 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 Graduate 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 $85 for on-line applications to one graduate program, $100 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, as well as post-Ph.D. and post-M.D. programs. No can-
Candidates are accepted for the M.A. degree. The purpose of these programs is to train highly qualified persons for academic careers in biochemistry, biophysics, cell biology, neuroscience and molecular biology. Strong emphasis is placed on molecular and cellular approaches to fundamental problems in these areas. 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 145 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://biochem.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. Four 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 Graduate 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 Chemistry focuses on teaching a rigorous scientific approach to biomedical research. Research projects in the program focus on the discov-
Plan of Study
A curriculum of formal courses and informal tutorials characterizes the first year.

Current Topics in Biological Chemistry: First-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.

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 pursing 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 Serio (wserio1@jhmi.edu), Program Coordinator.

BIOMEDICAL ENGINEERING

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.

Ph.D. Program in Biomedical Engineering
Fields of Study and Research
The purpose of the Biomedical Engineering Program is to provide the fields of medicine and biology with a group of scientists having advanced training in the engineering sciences, physical sciences and mathematics coupled with a thorough understanding of the basic biological sciences. This is accomplished by a combined curriculum which includes courses in the Schools of Arts and Sciences and Engineering and in the School of Medicine. Students are accepted with a variety of educational backgrounds and research objectives. The primary emphasis of the program is the application of the basic analytical tools of engineering science to fundamental research problems in biology and medicine.

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. However, experiment or theory can be emphasized in the
research as desired by the student. Many research opportunities are available within the department, located in the Schools of Medicine and Engineering, but to keep the available research opportunities broad and varied, students may work in the laboratories of biomedical investigators located throughout the School of Science and Engineering. To emphasize the interdisciplinary nature of the program, it is supervised by a committee composed of faculty members from the School of Science and Engineering.

The Faculty
For a list of faculty and their research interests, see the departmental statement on page 126. In 1999 the Department of Biomedical Engineering became the cornerstone of the Whitaker Biomedical Engineering Institute. The center of gravity of the department remains in the Traylor and Ross Research Buildings on the medical school campus. Clark Hall, on the Homewood campus houses biomedical engineering faculty members both in the Department of Biomedical Engineering and in other engineering departments.

The general facilities of the Whitaker Institute comprise: teaching laboratories including tissue engineering, physiology, biomedical sensors and instrumentation, microfabrication and computing; seminar and conference rooms with state-of-the-art telecommunications and multimedia capabilities; tissue culture facilities; various optical imaging facilities; and electronic and machine shops. These general facilities are all available to graduate students as they may be useful in their research projects.

Each faculty member maintains a well-equipped laboratory for research in his or her field of interest. This equipment is available to students as their interests draw them into active participation in research. The research opportunities and related equipment resources span the range of biomedical engineering from molecular, cell and tissue engineering, to drug and gene delivery, to computational modeling of biological systems, to biomedical imaging, sensors and instrumentation, and to cardiovascular and neural systems analysis. Further, our close interactions with clinical departments allows our students to use some of the most advanced clinical systems, including magnetic resonance imaging, PET scanners, ultrasound systems, orthopaedic testing, robotic surgery systems and intensive care monitoring systems.

The profoundly interdivisional nature of the Whitaker Institute provides students with a wide range of general university facilities. These include the Welch Medical Library at the School of Medicine, the Eisenhour Library on the Homewood Campus, the extensive animal services of the Department of Molecular and Comparative Pathobiology, and the advanced high technology facilities of the Applied Physics Laboratory in Howard County.

Prerequisites
Because many universities do not offer an undergraduate program in biomedical engineering, students planning graduate studies in this field should arrange a schedule to include courses beyond the elementary level in biology, mathematics and the engineering sciences. However, it is recognized that many students discover their interest in biomedical engineering too late in their undergraduate career to complete such a program. Therefore, inquiries are invited from interested students who are prepared in any of the fields of engineering, physical sciences or life sciences.

This program accepts candidates only for the degree of Doctor of Philosophy. At least one semester of organic chemistry, a full year of college-level biology, and mathematics through differential equations are firm prerequisites for the program.

Engineering students interested in Biomedical Engineering but who do not wish so great an emphasis on biological training and experimentation should note that the Departments of Materials Science, Chemical Engineering, and Electrical Engineering have such programs and should consult the appropriate sections of the graduate catalogue. Students from such departments with biomedical research interests are welcome to the seminars, courses, counseling and, when appropriate, the research facilities of the Department of Biomedical Engineering.

Requirements for the Degree of Doctor of Philosophy
There are no formal course requirements; but ordinarily two years of didactic course work are selected devoted to advanced study in engineering science and in biomedical science. Engineering, mathematics and other physical science courses to be taken are arranged between the student and his advisor. Each student is assigned a panel of three advisers during the first two years. No fixed semester hours are required, but at least one engineering or mathematics course of a year’s duration at the 600 level must be taken. Life science course requirements include molecular and cellular biology, anatomy, neuroscience, and physiology. The program is flexible, and alterations in the course program may be made with the approval of
advisors. Summers are spent working in a biomedical laboratory to gain experience and to seek out a suitable thesis research area. In the third year the student should start upon original research leading to the dissertation. In addition to the major research commitment of the third year, the student’s program will normally include at least one advanced course in an engineering subject and one in a field of biology, both related to the student’s research interest. Students must fulfill a modest teaching requirement during one year of their program. The remaining time is spent in thesis research. The program is typically of five to six years extent.

The student must pass a preliminary oral examination which will be a Graduate Board examination. This is generally taken in the third year. The student must then conduct original research, describe it in a dissertation and pass a final oral examination which is essentially a defense of the dissertation. Primarily because of emphasis on original research, a minimum residency of two consecutive academic years is required.

Admission and Financial Aid
Fellowships for tuition and support stipends are available from the general funds of the University, from the National Institutes of Health, and from other sources. Application for admission and fellowships must be made by January 10. Notification of awards is not later than April 1st, and recipients are expected to signify their acceptance within two weeks of acceptance by Johns Hopkins. Requests for applications or information should be addressed to the Office of Graduate Affairs, 700 N. Wolfe St., Hunterian G-1, Baltimore, Maryland 21205.

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 eight years to execute sequentially, the combined program can ordinarily be completed in seven years, with appropriate planning. Good preparation in biology and chemistry as well as mathematics 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 advantages for students interested in clinical research and applications in hospital systems and in the delivering of health care. The catalogue for the School of Medicine should be consulted for admission requirements and procedures.

Courses
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.

M.S.E. PROGRAM IN BIOMEDICAL ENGINEERING
The master’s degree program is designed for students who wish to pursue careers in a variety of settings. Graduates of the program work in the industrial sector, clinical or hospital engineering, and pursue graduate or professional school. The program, which is designed to be completed in two years, consists of core courses, elective courses, and a thesis project.

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 prerequisite engineering courses in order to be able to achieve success in upper level engineering courses.

The M.S.E. program grants partial tuition fellowship awards on the basis of academic merit. Research assistantships are usually advertised by various laboratories in the institution to carry out specific research and development projects. A few named fellowships are also awarded to the top students in the program.

Application for admission must be received by January 10. Requests for applications or information should be addressed to the Director of the Biomedical Engineering Masters Program, 318 Clark Hall, 34th and Charles Streets, Baltimore, MD 21218. Applications can also be downloaded from the University’s admissions homepage (http://www.jhu.edu).

Requirements for the M.S.E. Degree
All students must take a minimum of 24 credits of courses at the 400 level or higher and complete a thesis. Students fulfill the course requirements by taking 580.421-422 Physiological Foundations for Biomedical Engineering and other advanced engineering courses. They fulfill the second requirement in one of two ways: 1) by completing a thesis based on a research problem requiring application of quantitative or applied engineering principles to biomedical problems, or 2) by a clinical engineering internship structured around a practical project in the hospital.
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 40 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 eight, short courses are required:

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)
800.707 Computational Biology and Bioinformatics (offered by the Department of Biophysics and Biophysical Chemistry)

Additional requirements for the Ph.D. degree are as follows:

Examinations: Applicants must pass a qualifying oral examination as prescribed by the Graduate 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 40 faculty, members of 11 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, bio-physical 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.

Funding is provided by an NIH training grant that is restricted to U.S. citizens and permanent residents. Foreign students must have funding from their own governments or a formal agency.

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 Graduate 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, Computation 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 are encouraged to 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 Admissions, Johns Hopkins University, 101 Whitehead Hall, 3400 N. Charles Street, Baltimore, MD 21218. Telephone: 410-516-5197, pmb@jhu.edu. The deadline for receipt of complete applications is January 4, 2010. 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.

Funding for the Program in Molecular Biophysics is provided by a training grant which is restricted to U.S. citizens and permanent residents. Unfortunately, the program cannot consider applications from foreign students unless the student has government aid or funding from a formal agency.

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 33; 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 136.

**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 Graduate 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 Graduate 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. Now, new discoveries in the laboratory can be applied rapidly to the diagnosis, treatment and prevention of disease. This has been made possible by new technology that allows scientists to identify genetic and molecular defects that cause or predispose 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 120 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 Board Record Examination 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), Graduate Immunology (250.703), Topics in Cellular and Molecular Medicine (250.706), Cellular and Molecular Core Discussion (800.703), Cellular and Molecular Basis of Disease (800.709), Graduate Pharmacology (330.707), Fundamental Virology (260.804) or Biochemical/Biophysical Principles (100.710), and Research in Cellular and Molecular Medicine (800.801). Additionally, four electives and an ethics course are also required. Elective courses are available on many topics including 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. These laboratory rotations will be approximately ten weeks long. At the end of the first year, students will select a research advisor from the rotation laboratories and begin original research leading to their doctoral dissertation.

An 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; at the very least, 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 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 Graduate 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.

GRADUATE PROGRAMS 41
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, Behavioral Ecology).

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 gen-
eral 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 University-wide Committee on Human Genetics, under the aegis of 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 four to five 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

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

JOEL BADER
Assistant 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.

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

LINZHAO CHENG
Associate Professor of Gynecology and Obstetrics
Molecular genetics of human stem cells; stem cell-based genetic models for human diseases.

BARTON CHILDS
Professor Emeritus of Pediatrics
Behavioral genetics; genetic analysis of common 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 VAN 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.

GREGORY GERMINO
Adjunct Professor of Medicine
Molecular basis of renal cystic disease; renal tubular morphogenesis

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.

KATHY HUDSON
Associate Professor of Pediatrics
Scientific, legal, ethical, and social factors related to genetic issues.

NICHOLAS KATSANIS
Adjunct Associate Professor of Ophthalmology
Identification of responsible genes and interaction of the protein products to produce pleiotropic pathophysiology.

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

KENNETH KINZLER
Professor of Oncology
Genetic analysis of human cancers.

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

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.

JOSHUA MENDELL
Associate Professor of Pediatrics
Post-translational expression of gene expression.

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.

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

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  
Associate 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.

GEORGE H. THOMAS  
Professor of Pediatrics  
Biochemical and molecular basis of inborn errors of lysosomal enzymes, sialic acid in human disease; chromosome abnormalities.

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 renown 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 courses: 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, genetical 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 germline.)

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 training and research experience 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.

LIEPING CHEN
Professor of Oncology
T cell cosignaling molecules in immune response and cancer 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.

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.

Allan D. Hess
Professor of Oncology
Immunology of bone marrow transplantation and graft vs. host disease.

James E. Hildreth
Adjunct Professor of Pharmacology
Molecular cloning of leukocyte adhesion receptors; characterization of the role of adhesion molecules in the pathogenicity and cell-cell transmission of HIV.

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

Daniel J. Leahy
Professor of Biophysics and Biophysical Chemistry
Three-dimensional structure of proteins involved in cell-cell and cell-matrix interaction and signaling.

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

Li Lin
Adjunct Assistant Professor of Medicine
Biogenesis and assembly of NF-kappaB transcription factors; proteasome-mediated protein degradation.

Charles J. Lowenstein
Adjunct Professor of Medicine
Innate immunity; antiviral role of nitric oxide; endothelial inflammation.

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.

Gary R. Pasternack
Adjunct Associate Professor of Pathology
Lymphocyte nuclear proteins; molecular determinants of prognosis in neoplasia.

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.

HYUN S. SHIN
Professor of Molecular Biology and Genetics
Regulation of the genes activated by lipopolysaccharide in macrophages; detection of T cell receptor interaction with peptide-MHC complex.

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.

TZZY-CHOOU WU
Professor of Pathology

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 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 pass a comprehensive written examination evaluating the student’s knowledge in biochemistry, cellular and molecular biology and immunology. If the student successfully passes this exam, he or she is permitted to take the Graduate Board Oral Examination.

The candidate is 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 predominantly 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.

**250.708 Physical and Biochemical Basis of Immune Activation.** Drs. Desiderio and Sadegh-Nasseri. Jan - May.

A graduate seminar that will examine current topics in immunologic recognition and lymphocyte activation, with an emphasis on molecular interactions. Discussion of each topic, to be led by individual students, will center on two to three critical papers that will be 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 deficiencies 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.

**250.804 Introduction to Immunology Research.** Dr. Soloski.

This is a weekly course that will provide an introduction to the diverse research problems addressed by immunologists. The course will involve presentations by immunology faculty, research conferences, and seminars. This course is only open to Immunology graduate students.

**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. 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 R. BAEZA**

Assistant Professor

**DONALD F. BLISS, II**

Assistant Professor

**JENNIFER E. FAIRMAN**

Assistant Professor

**JUAN R. GARCIA**

Assistant Professor

**KENNETH HEYMAN**

Adjunct Assistant Professor

**DALE R. LEVITZ**

Adjunct Assistant Professor

**MIGUEL ANTONIO SCHOEN**

Assistant Professor

**BRENT R. WHITAKER**

Assistant Professor

**IAN SUK**

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 R. BAEZA**

Assistant Professor

**DONALD F. BLISS, II**

Assistant Professor

**JENNIFER E. FAIRMAN**

Assistant Professor

**JUAN R. GARCIA**

Assistant Professor

**KENNETH HEYMAN**

Adjunct Assistant Professor

**DALE R. LEVITZ**

Adjunct Assistant Professor

**MIGUEL ANTONIO SCHOEN**

Assistant Professor

**BRENT R. WHITAKER**

Assistant Professor

**IAN SUK**

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 R. BAEZA**

Assistant Professor

**DONALD F. BLISS, II**

Assistant Professor

**JENNIFER E. FAIRMAN**

Assistant Professor

**JUAN R. GARCIA**

Assistant Professor

**KENNETH HEYMAN**

Adjunct Assistant Professor

**DALE R. LEVITZ**

Adjunct Assistant Professor

**MIGUEL ANTONIO SCHOEN**

Assistant Professor

**BRENT R. WHITAKER**

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 and a USB flash memory stick.
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 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.

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

GRADUATE PROGRAMS 49
120.716 Medical Sculpture. Materials and techniques used in producing instructive three-dimensional medical sculpture and rehabilitative facial prostheses. Garcia. One quarter.

120.717 Communications Media. Skills laboratory providing hands-on experience in: Photography. Camera and lighting techniques, reproducing art in color and black and white with both analogue and digital media. Hands-on working in a photo lab environment. Barker.


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.


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

120.754 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.

120.801 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.

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.

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 medal 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 Rossetta 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 prokaryotic 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, which is described in detail on page 33. Candidates must meet the course requirements of the interdepartmental program, including elective courses in their special area of interest, and must carry out original research under a departmental preceptor. Inquiries should be directed to the Chairman of Admissions of the Graduate 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 194.

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 203.

**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, Neurological Surgery, 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 203.

**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 Graduate 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 Graduate 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 AMINDER
Professor of Oncology
Lymphoma; viral carcinogenesis.

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

DAVID BERMAN
Associate Professor of Pathology
Tumor biology and development.

WILLIAM BISHAI
Professor of Medicine
Microbiology; mycobacteria.

CAROL L. BUREK
Associate Professor 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
Assistant 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; medulloblastoma.

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

**JAMES ESHLEMAN**  
Associate Professor of Pathology  
Pancreatic cancer; early detection; familial predisposition; novel molecular tools.

**SUSAN ESHLEMAN**  
Professor of Pathology  
Virology; HIV

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

**EDWARD GABRIELSON**  
Professor of Pathology, Pathobiology Co-Director  
Cancer biology; genomics.

**KATHLEEN GABRIELSON**  
Assistant Professor of Molecular and Comparative Pathobiology  
Cancer therapy; signal transduction.

**ROBERT GETZENBERG**  
Professor of Urology  
Cancer biomarkers; proteomic analysis of nuclear structure; field effects in cancer; heat synergism with cancer therapy.

**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.

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

**PETROS KARAKOUSIS**  
Assistant Professor of Medicine  
Mycobacterium tuberculosis persistence and pathogenesis; TB chemotherapy and diagnosis.

**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.

**VASSILIS KOLIATOS**  
Associate Professor of Pathology  
Neuropathology; neurodegenerative disease; stroke.

**FRANCIS KUHAJDA**  
Professor of Pathology  
Cancer-role of fatty acid synthase.

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

**MARIKKI LAIHO**  
Professor of Radiation Oncology  
DNA damage response; cancer biology

**JOHN LATERRA**  
Professor of Neurology  
Neuropathology; CNS neoplasia.

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

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

**ANIRBAN MAITRA**  
Associate 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  
Neuropathology; stroke.
WILLIAM MATSUI  
Associate Professor of Oncology  
Stem cells; leukemia; lymphoma.

ALAN MEEKER  
Assistant Professor of Pathology  
Cancer biology; telomer.

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

AVINDRA 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 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  
Associate Professor of Pathology  
Cancer/virology; HPV in cervical cancer.

NOEL ROSE  
Professor of Pathology; Pathobiology Program Director  
Immunology; autoimmune disease; immunotoxicology.

SCHEHEREZADE SADEGH-NASSERI  
Associate Professor of Pathology  
Immunology.

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.

BARBARA WASOWSKA  
Assistant Professor of Pathology  
Immunopathology; transplantation pathobiology.

PHILIP WONG  
Professor of Pathology  
Neuropathology; neurodegenerative disease.

TZY-LING WU  
Professor of Pathology  
Immunology of cancer; cervical cancer vaccines; HPV.

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 informatics-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 July. 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.
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 251.

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 Graduate 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 success-
fully 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:

- Graduate 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 258.

**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.

Presents principles underlying preclinical and clinical development of new therapeutic drugs and procedures. Describes and evaluates specific examples, and discusses legal and ethical regulations that apply to drug development. Student evaluation based on homework assignments.


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.

PH 390.675 Outcomes and Effectiveness Research. Dr. John Robinson. Fourth term evening course.

Prerequisite: Epidemiology and statistics from the 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.

PH 390.710-711 Biomedical Writing I and II. (2 units each for first and second term) First and second terms. Dr. McClellan. 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 390.721-722 Planning and Funding Clinical Research I and II. Drs Punjabi and Gillison. 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 in clinical research, exemplified by readings from classical papers and contemporary literature. Student evaluation is based on a 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 of research focus, and discussing short- and long-term career goals. Student evaluation based on a precis of proposed research plans.

PH 390.855 Research Forum in Clinical Investigation. Drs. Adkinson and Leitman. Fourth term. 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.

550.711 Clinical Research Methods. Drs. Flexner, Goodman, and Louis. Fourth term. 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 lectures 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 function 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 supplementa-
tion 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.
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 pro-
grams 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 2341 postdoctoral students enrolled, of whom 239 are in the basic medical science departments, 1258 in clinical science departments, 728 are house officers of the Johns Hopkins Hospital and 116 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 hospitalization insurance. It is required that postdoctoral students subscribe to the School of Medicine student insurance plan. Spouses and dependent children may be covered under equivalent insurance but all equivalent insurance plans must be reviewed and approved by the School of Medicine Registrar's Office. Foreign insurance is not accepted. In addition to health insurance, house officers and their families are covered under a separate ambulatory care program. 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.

**Other Benefits**

All house staff and fellows with full time, primary appointments in the School of Medicine are covered under a long-term disability insurance program and a $100,000 term life insurance policy. These benefits are provided without cost to the trainees. In addition,
trainees have the opportunity to purchase a $1,000 monthly supplemental disability benefit at guaranteed rates. 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.

**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 97).

**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 2009-2010 academic year, the following courses will be offered:

**ANESTHESIOLOGY AND CRITICAL CARE MEDICINE**

- Perioperative Management. (Marco Island Marriott Hotel, Marco Island, FL) March 14-17, 2010.
- Neurocritical Care for the Medical and Surgical Intensivist: The Comprehensive Cerebrovascular Center. (Ritz-Carlton, Tysons Corner, VA) March 19-20, 2010.

**GYNECOLOGY AND OBSTETRICS**

- 24th Houston Everett Memorial Course in Urogynecology. March 5-6, 2010.

**MEDICINE**

- Fourth Infectious Diseases Update for the Primary Care Practitioner. October 8-9, 2009.
- GI Evening with the Experts Educational Series. October 14, 2009; March 10, 2010.
- Interstitial Lung Disease: A Multidisciplinary Approach to Diagnosis and Treatment. October 17, 2009.
- 37th Annual Current Topics in Geriatrics. (Sheraton Inner Harbor Hotel, Baltimore, MD) February 4-6, 2010.
- Sixth Annual Advances in the Diagnosis and Treatment of Rheumatic Diseases. (Tremont Grand Conference Center, Baltimore, MD) June 4-5, 2010.

**NEUROLOGY/NEUROSURGERY**

- Second Annual Multidisciplinary Perspectives in Brain Tumor Management. (Hotel Melia, Cancun, Mexico) July 20, 2009.
- 20th Annual Practical Update in Outpatient Neurology. (Asthma & Allergy Center, Bayview Medical Center, Baltimore, MD) October 23, 2009.

ONCOLOGY

OPHTHALMOLOGY

OTOLARYNGOLOGY

PATHOLOGY

PEDIATRICS
Advances in Pediatric Nutrition. (Loews Annapolis Hotel, Annapolis, MD) November 2-3, 2009.

PSYCHIATRY
16th Annual Update on the Treatment of Alzheimer’s Disease and other Related Disorders. April 10, 2010.

RADIOLOGY
26th Annual Computed Body Tomography: The Cutting Edge. (Disney Yacht and Beach Club Hotel, Orlando, FL) February 11-14, 2010.

GENERAL
Course on Research Ethics. August 6, 2009; October 28, 2009; January 13, 2010; March 17, 2010; May 24, 2010.
The Business of Medicine Executive Graduate Certificate Program. Sessions begin in Fall and Spring.
Cardiac CT Practicum. Various dates from July 1, 2009-June 30, 2010.

Johns Hopkins Faculty Development Program: Longitudinal Program in Teaching Skills Parts 1 and 2. September 3, 2009-April 15, 2010.
Johns Hopkins Faculty Development Program: Limited Longitudinal Program in Curriculum Development Parts 1 and 2. October 1, 2009-June 30, 2010.

Regularly Scheduled Conferences. (Johns Hopkins, Johns Hopkins Bayview Medical Center, and Good Samaritan Hospital).
For additional information on Continuing Medical Education activities for 2009-2010 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

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 Regulations 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 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 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 2009-2010 Council is composed of: Mark Bicket and Staish Misra representing the Class of 2010; Nancy Cheng, Yuval Patel, Nathan Skelly, and Ross McMillan representing the Class of 2011; Marisa Mattheys, Craig Monsen, John Nichols, and John Zampella representing the Class of 2012; and Hale McMichael, Jake Ruzevick, Richard Gupta, and Euphemia Mu representing the Class of 2013.

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. Edmond Fomu-nung (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. 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 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 lilts 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 running track, racquetball courts, weight room, exercise areas and locker rooms. An outdoor swimming pool is also available during the summer months, with a paid 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 $475, $515, and $550 per month for single rooms in the West. Rentals for suites in the East Wing range from $560 to $625 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/housing.

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 cam-
pus. 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 Nation-
al 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 depart-
ment to survey current medical and scientific
literature.

The Johns Hopkins Medical and Surgical
Association: H. Franklin Herlong, President;
William A. Crawley, First Vice-President;
Eileen P.G. Vining, Secretary-Treasurer;
Ralph H. Hruban, Associate Secretary-Trea-
surer. The association is composed of gradu-
ates of the School of Medicine, past and pres-
et 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 vari-
ous 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 Doc-
tor'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 intro-
duce 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 constit-
tutes the state medical society. It conducts a
scientific session each year in April and main-
tains a library.

The Baltimore City Medical Society: The
Baltimore City Medical Society is an indepen-
dent society of Baltimore physicians. Located
at 1211 Cathedral Street, Baltimore. Their
meetings are open to medical students.

PUBLICATIONS OF THE
MEDICAL INSTITUTIONS
The Bulletin of the History of Medicine: Gert
H. Brieger, Randall Packard Editors. The
Bulletin is published quarterly by the Institute
of the History of Medicine. It is the organ of
the Institute and of the American Association
for the History of Medicine.

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 activi-
ties 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
these audiences about current news ema-
nating from the School of Medicine and the
Johns Hopkins Hospital. Over 13,000 indi-
viduals receive the publication which has a
world-wide distribution. It is published quar-
terly and is jointly sponsored by the School of
Medicine, the Hospital, and the Medical and
Surgical Association, and is the alumni news-
letter for the School of Medicine.
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 2009 award were Dr. Khalil G. Ghanem of the Department of Medicine and Dr. Jon R. Lorsch of the Department of Biophysics and Biophysical Chemistry.

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 2009 award was Dr. Daniel Munoz 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 2009 recipient was Dr. Roy C. Ziegelstein of the Department of Medicine.

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 2009 awards were: Dr. Janet R. Serwint of the Department of Pediatrics for teaching in the clinical sciences, Dr. Rajini Rao of the Department of Physiology for teaching in the basic sciences, and Dr. Peter Pronovost of the Departments of Anesthesiology, Surgery, and the Division of Health Sciences Informatics 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 2009 recipient was Dr. Sarah L. Clever of the Department of Medicine.

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 2009 recipient was Dr. Rajini Rao of the Department of Physiology.

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 medicine 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 profes-
sor 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. Abelow Professorship [2007]: Drew M. Pardoll, M.D., Ph.D.
Funding provided by the Seraph Foundation (Henry and Linda Spire, 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.

Aetna U.S. Health Care Professorship in Medicine Genetics [1996]: Garry Cutting, M.D.
Funding provided by U.S. Healthcare Corporation.

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.

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.

American Cancer Society Distinguished Research Professor Emeritus of Molecular Biology and Genetics [1980]: Hamilton O. Smith, M.D.
Endowment for this Professorship was provided by the American Cancer Society. Dr. Smith was awarded the Nobel Prize in Physiology and Medicine in 1978, along with Dr. Daniel Nathans of this faculty, for the discovery of restriction enzymes. These enzymes made it possible to break the DNA molecule in predictable ways and study its composition.

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. 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

**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-Iliff 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]: *G. Melville Williams, 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 occupants: 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 Chair in Oncology** [1992]: *Unoccupied.*

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]: *Unoccupied.*

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]: *Roy Chuck, M.D., Ph.D.*

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]: Occupied by 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.

**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]: Paul W. Flint, M.D.
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.

**Walter E. Dandy Professorship in Neurosurgery** [2004]: Rafael J. Tamargo, M.D.
Funds 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 Cardiac Surgery** [1964]: Vincent L. Gott, M.D.
See above.

**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.

**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.

**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.

**G. Edward and G. Britton Durell Professorship in Ophthalmology** [1998]: Gerard A. Lutty, Ph.D.
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.

**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 Preventative Medicine** [2005]: Akef El Maghraby, M.D.
Funding provided by a bequest of Mr. Akef El Maghraby, to establish an endowed professorship in Preventative Medicine.
tive 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 Pediatric Oncology [1993]: Robert J. Arceci M.D., Ph.D.
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 Molecular Medicine [1993]: Andrew P. Feinberg, M.D., M.P.H.
See above.

Established by Robert and Maureen Feduniak to support patient care and research related to amblyopia, strabismus, and eye diseases of children.

Warfield M. Firor Chair in Surgery [1969]: R. Robinson Baker, M.D.
Funding provided by a bequest of Alice Larsen Fink reflecting her “deep regard for Dr. Firor as a fine surgeon, teacher, and humanitarian.” Dr. Warfield M. Firor was a distinguished practicing surgeon in the Department of Surgery. Previous occupants: Drs. John Cameron and R. Robinson Baker

Named for father of experimental ophthalmic pathology.

James F. Fries Professorship in Medicine [2006]: Neil R. Powe, M.D., M.P.H.
Funding provided by James F. Fries, M.D. and Sarah Tilton Fries, M.P.H. to support a faculty member engaged in health outcomes research, clinical epidemiology, and/or health policy research.

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.

William Thomas Gerrard, Mario Anthony Duhon and Jennifer and John Chalsty Professorship in Urology [1998]: William B. Isaacs, Ph.D.
Funding provided by Mr. William Thomas Gerrard and Mr. and Mrs. John Chalsty for the Department of Urology.

James P. Gills Professorship in Ophthalmology [1999]: Neil Bressler, M.D.
Funding by James P. Gills who trained at Johns Hopkins Hospital.

Given Foundation Professorship in Pediatrics [1962]: George J. Dover, M.D.
Funding provided by the Irene Heinz Given and John LaPoute Given Foundation of New York for the purposes of medical research and teaching. Previous occupants: Drs. Robert E. Cooke, John W. Littlefield, and Frank A. Oski.

Morton F. Goldberg Professorship in Ophthalmology [1999]: Ran Zeimer, M.D.
Funding provided by a number of unrestricted bequests to the Wilmer Institute.

Vincent L. Gott, M.D. Professorship [2000]: William Baumgartner, M.D.
Funding provided by various residents, patients and friends of Vincent L. Gott.

Katherine Graham 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.

Burton E. Grossman Professorship in Ophthalmology [1998]: Occupied by 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 Founda-
tion 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.

**Karl H. Hagen Professorship in Ophthalmology** [1998]: *Andrew P. Schachat, M.D.*
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 of the estate of Mr. Edward Bayard Halsted, a retired stockbroker 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. 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 Krieger 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 in 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)
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. III, M.D. Professorship in Ophthalmology  [2007]: Nicholas T. Iliff, M.D.  
Funding for this professorship provided by Dr. Helen Ossofsky-Illiff 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.

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.

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.

Lapidus Professorship in Otolaryngology  [1997]: Unoccupied.  
Funding provided by Linda S. and Julian L. Lapidus.

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 Orthopae-
dic 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]: Unoccupied.
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]: Richard G. Bennett, M.D.
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.

Edythe 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.

David Marine Professorship of Medicine: [1985]: Unoccupied.
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.

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]: Christopher Saudek, M.D.
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. Scandal 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.
aty 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.

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 Harford County, Maryland. Mr. Michael died in 1978. This Professorship was established in memory of Mr. J. Smith Michael.

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 com-
pany 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. Ortt Professorship in Ophthalmology [1989]: Irene E. H. Maumenée, M.D.
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. Weissfeld, 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]: Ruben Adler, M.D.
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 Giardello, 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]: Martin A. Makary, M.D., M.P.H.
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]: Edmund Y. S. Chao, 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 Rigamote, M.D. Funding provided by the Salisbury family.

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.

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.

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 Physical 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]: Unoccupied. 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]: Nancy Hadley Miller, M.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]: 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]: Ethyl W. Jabs, 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.

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 subspeciality of neuro-ophthalmology.

Patrick C. Walsh Professorship in Urology [1998]: Arthur L. Burnett, M.D. Dr. Patrick C. Walsh has been the Director of the Department of Urology since 1974. Funding was provided by an anonymous donor.


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 Wilkins Professorship in Pediatric Endocrinology** [2005]: *Sally Radovich, 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.

**Alan C. Woods Professorship in Ophthalmology** [2002] *Douglas Jabs, M.D.*

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/she 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 coun-
In An anonymous donor has
The family, friends
The Sec
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 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 warmth 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 lectures 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 Lectureship to problems in these fields of medical science.

The Alfred Bialock Lectureship: The Section of Surgical Sciences in 1982 established a commemorative lectureship to honor Dr. Alfred Bialock. 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 lectures are to be selected from scholars distinguished in clinical or scientific aspects of child development or the related medical sciences. The selection of the lecturers will be left to a committee representing the Department of Pediatrics, Physiology, Neurology, and the Behavioral Sciences.

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.

William F. Rienhoff, Jr. Lectureship: In 1971 a grateful patient announced her inten-
tion 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 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 in the field of Pediatrics. 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 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 Biological 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 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 fields 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 inter-
est 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 2008-2009

THE ALFRED BLALOCK LECTURESHP
D. Craig Miller, M.D.
Thelma and Henry Doelger Professor of Cardiovascular Surgery
Stanford University of Medicine
Stanford, California
Valve-Sparing Aortic Root Replacement- Where are We Heading and What About BAV and the Arch?

THE DEAN’S LECTURE SERIES
Lecture I
Jeremy Nathans, M.D., Ph.D.
Professor of Molecular Biology and Genetics, Neuroscience, and Ophthalmology
Johns Hopkins University School of Medicine
The Evolution of Trichromatic Color Vision

Lecture II
Scott Wright, M.D.
Professor of Medicine
Johns Hopkins University School of Medicine
Studying the Right Side of the Triangle: Scholarship in Medical Education

Lecture III
Susan Michaelis, PhD.
Professor of Cell Biology
Johns Hopkins University School of Medicine
From Yeast Cell Biology to the Premature Aging Disorder Hutchinson-Gilford Progeria Syndrome

Lecture IV
Marilyn S. Albert, Ph.D.
Professor of Neurology
Director, Division of Cognitive Neuroscience
Johns Hopkins University School of Medicine
Prodomal Alzheimer’s Disease: Prospects for Early Diagnosis and Treatment

THE DANIEL NATHANS LECTURE
Judith Kimble, Ph.D.
Vilas Professor
HHMI Investigator
Department of Biochemistry
University of Wisconsin-Madison
Molecular Regulation of Self-Renewal and Differentiation: Lessons from the C. elegans Germline

THE WILLIAM M. SHELLEY MEMORIAL LECTURESHP
David E. Elder, M.B.ch.B., F.R.C.P.A.
Professor of Pathology and Laboratory Medicine
Vice Chair for Anatomic Pathology
University of Pennsylvania School of Medicine
Melanoma Progression, Diagnosis and Prognosis

THE WILLIAM SYDNEY THAYER AND SUSAN READ THAYER LECTURESHIP IN CLINICAL MEDICINE
William J. Bremmer, M.D., Ph.D.
The Robert G. Petersdorf Endowed Chair in Medicine
Chair, Department of Medicine
University of Washington School of Medicine
Population Growth, the Environment, and the Prospects for Male Contraceptive Development

THE ALBERT L. LEHNINGER MEMORIAL LECTURE
Ernesto Carafoli, M.D.
Professor and Director of the Venetian Institute in Padua, Italy
The Calcium Signaling Saga in Health and Disease: A Tale for all Seasons
TUITION AND OTHER FEES
Medical students matriculating in September 2009 will be charged tuition at the rate of $39,500 per year. The 2009-2010 tuition for graduate students registered in the School of Medicine is $38,300. 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 registered for clinical or research electives will be assessed a $250 registration fee 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.
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 Students
Part time 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 be covered by hospitalization insurance. It is required that students subscribe through the School of Medicine group plan. Spouses and dependent children must be covered by hospitalization insurance either through the School of Medicine group plan or equivalent coverage. The annual cost to the student is as follows: single-$3,012, husband/wife-$6,720, parent/child-$6,720, family-$8,640. These rates are subject to annual change. All bills are payable in the Office of Financial Affairs.

Dental Insurance
All students are required to subscribe to the Student Dental Insurance Plan. The annual cost to the student is $168.

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 distin-
guished 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 sciences 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 admitted by the director of the division.
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 to 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.

Dr. Harold Harrison's Residency Program in Pediatrics at the Johns Hopkins Hospital and the Francis Scott Key Medical Center, it is intended to give honor to 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 This prize was established in 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 of Medicine 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 2008-2009 academic year were:
The A. McGehee Harvey Research Award.
The 2008-2009 recipient was Akishi Onishi, Ph.D.

The Helen B. Taussig Research Award is awarded for clinical research with active or historical patient involvement. The 2008-2009 recipient was Joelle Hillion, Ph.D.

The Alfred Blalock Research Award The 2008-2009 recipient was Sian Jones, Ph.D.

The W. Barry Wood, Jr. Research Award is awarded for laboratory research with direct clinical relevance. The 2008-2009 recipient was Michael Tri Hoang Do, Ph.D.

The Albert L. Lehninger Research Award is awarded for laboratory research without direct clinical relevance. The 2008-2009 recipient was Ye Yan, Ph.D.

The Daniel Nathans Research Award The 2008-2009 recipient was Kartik Venkatachalam, 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. They are given in recognition of 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 2008-2009 academic year was Michael R. Tadross.

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 2008-2009 academic year was Yu-yi Lin.

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 Cincinnati 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 2008-2009 academic year was Sasrutha Rasika Wickramasinghe.

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 2008-2009 academic year were Andrew Kim, William Hawse, Ning Cheng, and Eric N. Momin.

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 2008-2009 academic year was Ivy E. Dick.

**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 2009 to Christine Ladd-Acosta.

**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 2009 to Yuchen Jiao.

**The Bae Gyu Jung Research Award.**
This award was established by an endowment of 1990 and her family in memory of Marcia Anderson. The income is to provide scholarship aid to medical students with financial need. The recipient for the 2008-2009 academic year was Yun Liu.

**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 in 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 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 a 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 Hopkins 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. Firor 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 Fund** 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 Fund** 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 Fund** 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 financially needy 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 Hospital. Preference in award of the scholarship is given to women interested in pediatrics.

**Louis Hamman Memorial Scholarship** This is an endowed scholarship in memory of the late Dr. Louis Hamman, a graduate of the School of Medicine and for many years a devoted member of the medical faculty. It was established in 1950 through gifts from many of Dr. Hamman’s friends. The income is available for a scholarship for a medical student whose financial need and developmental promise justify such an award.

**Isabella Harrison, M.D. Scholarship Fund for Medical Education** This fund was established in 1999 by Dr. Harrison, a 1938 graduate of the School of Medicine. It is to be awarded to female students interested in surgery.

**Charles L. Hartsock Memorial Scholarship Fund** This scholarship was established in 1961 in memory of Dr. Charles L. Hartsock, Class of 1920, by members of his family and friends to provide aid to needy and worthy medical students.

**Morrison Leroy Haviland Scholarship Fund** Established in 1988 by Dr. James W. Haviland and his brother Morrison C. Haviland in honor of their father, Morrison Leroy Haviland, a member of the Medical School Class of 1902. This income is to be used for needy medical students.

**Dr. George and Catherine Hayes Scholarship Fund** This fund was established in 1994 by Dr. and Mrs. George J. Hayes to provide scholarship assistance to needy medical students.

**Edward C. Held, M.D., Scholarship Fund** This fund was established in 1996 by Mrs. Helen Duryea to provide support to students in the School of Medicine who have demonstrated financial need.

**John Helfman Scholarship Fund** Established as a bequest from the estate of John Helfman to be used for loans or gifts to needy students in the School of Medicine.

**Margaret A. Hicks Medical Research Scholarship Fund** A fund was established in 1972 to be used for scholarships for students who are preparing for work in medical research.

**Frank Norman Hillis, Jr. Memorial Scholarship in Medical Education** This endowment fund was established in 2002 by Panamerican Consulting International, Ltd. This gift is in memory of Frank N. Hillis, Jr. (d ‘99), who was founder of Panamerican Consulting Ltd. Preference is given to students from either Florida or Maryland who wish to specialize in the field of cardiology.

**Dorothy D. Hoelzer Scholarship Fund** This fund was established in 2002 by the estate of Dorothy D. Hoelzer (d ‘02) to be used for scholarships for students who would not be able to attend Johns Hopkins Medical School without financial assistance.

**Jesse W. and Emma Dieringer Hubbard Memorial Scholarship Fund** 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 Last 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 provide 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 financial 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 scholar-
ship 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 endowed 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 McGuade 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 Meinhart Fund An endowed scholarship established by the estate of Rose Meinhart 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 1990 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 endowment 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. Moskowitz, M.D., who was a member of the School of Medicine Class of 1922.

Dr. Donald G. and Barbara Mulder Scholarship Fund In 1995, Dr. and Mrs. Donald Mulder established this endowment fund to provide scholarships for needy medical students.

Leslie E. Myatt, M.D. and Marion D. Myatt Memorial Scholarship Established by the estate of Mrs. Myatt, in memory of her and her spouse, Leslie, School of Medicine Class of 1921.

Jesse Myers Scholarship Fund Established in 1971 in memory of Jesse Myers, who was killed in an automobile accident while he was a First Year student in the School of Medicine. The fund is to be used to assist minority students at the School of Medicine.

James F. Nabwangu, M.D., Scholarship Fund Established in 1996 by James F. Nabwangu, M.D., to fund a scholarship for students at the School of Medicine.

Russell A. Nelson Scholarship Fund This fund was established in 2002 by Russell A. Nelson, Med., 1937, of Naples, Florida and his wife, Ruth J. Nelson, Nurs. 1937, through the Russell A. and Ruth J. Nelson Trust and the Ruth J. Nelson Trust. Dr. Nelson served as a hospital trustee, a faculty member in the Department of Medicine at the School
of Medicine, and as president of the Johns Hopkins Hospital. Dr. And Mrs. Nelson both died in 2001. This fund provides scholarship assistance to deserving medical students in the School of Medicine.

**Nu Sigma Nu Medical Student Scholarship Fund** was established in 1985 at the direction of Dr. William Hillis, an alumnus of the School of Medicine and a former member of our faculty. The income is to be used for scholarships to students in the School of Medicine, and it gives recognition to the past contributions of the Nu Sigma Fraternity to the community of the School of Medicine.

**Peter D. Olch, M.D. Memorial Scholarship Fund** Established in 1995 by Oliver N. Massengale, M.D., this fund is to be used to provide scholarship assistance to medical students with demonstrated financial need.

**Dr. E. Paul O’Sullivan Scholarship Fund** This fund was established in 1993 by 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 students 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 birthday, 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 established 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 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. Penney 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 assistance to medical students with financial need.

**Giacomo and Jan Pirzio-Birol Scholarships** This fund was endowed in 2001 by the estate of Giacomo Pirzio-Birol, Class of 1951, and his wife, Jan M. Pirzio-Birol of Mercer Island, Washington. Prior to his death in 1998, Dr. Pirzio-Birol 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 Fund** 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 alumnus 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 are 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 Fund for Medical Student Aid** This endowment was established with a gift from the estate of Ida F. Schier in memory of her brother, a Baltimore dairymen and national authority on the handling of milk. The income from this fund provides scholarship aid for financially needy medical students.

**Ottilie Schillig Scholarship Fund** The monies for the Schillig Scholarship Fund were dedicated during her lifetime by Ottilie 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 Siemons Scholarship Fund Established by a bequest from Anne G. Siemons 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 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. Warring Memorial Scholarship This fund was established in 1996 from the Gladys C. Warring 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 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.

Wolley 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.

114 TUITION, FEES, FINANCIAL AID, SCHOLARSHIPS AND AWARDS
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.
Departments, Divisions, Institutes, Centers, and Subjects of Instruction

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, Associate Professor of Surgery, Joint Appointment in Medicine

NICHOLAS A. FLAHAHAN
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

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 Neurological Surgery, Professor of Neurology

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 J. PRONOVOIST
Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery, Joint Appointment in Health Sciences Informatics

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

IVOR D. BERKOWITZ
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics

STEVEN P. COHEN, Associate Professor

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, Associate Professor of Pharmacology and Molecular Sciences

JAMES COURTNEY FACKLER, Associate Professor

NAUDER FARADAY
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

1 Corrected to 7/1/09. Primary appointments listed first.
ROMER G. GEOCADIN
Associate Professor of Neurology, Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Neurological Surgery
ALLAN GOTTSCHALK, Associate Professor
ROBERT S. GREENBERG, Associate Professor
ANDREW P. HARRIS
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Gynecology and Obstetrics
EUGENIE S. HEITMILLER
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics
CHARLES W. HOGUE, JR., Associate Professor
KAREN S. LINDEMAN, Associate Professor
GEOFFREY 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 A. 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, Associate Professor of Pathology, Assistant Professor of Pediatrics
EDWARD J. NORRIS, Associate Professor
L. REUVEN PASTERNAK
Adjunct Associate Professor of Anesthesiology and Critical Care Medicine
RICHARD J. RIVERS, Associate Professor
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
J. BRYAN SEXTON, Associate Professor (to 08/28/09)
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 (from 10/01/09), Assistant Professor of Anesthesiology and Critical Care Medicine (to 09/30/09), Assistant Professor of Neurological Surgery, Assistant Professor of Neurology
JUDITH L. STIFF, Associate Professor Emerita
YUAN-XIANG TAO, Associate Professor
PETER B. TERRY
Assistant Professor of Medicine, Assistant Professor of Anesthesiology and Critical Care Medicine
DAVID E. TUNKEL
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics
REBECCA ASLAKSON, Assistant Professor
VIACHASLAU M. BARODKA, Assistant Professor
MELANIA MARIA BEMBEA
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Pediatrics
LAUREN CLAIRE BERKOW
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Otolaryngology-Head and Neck Surgery
MARIA M. BIRZESCU, Assistant Professor
SALLY BITZER, Assistant Professor
RENEE J. BLANDING, Assistant Professor
CRAIG WILLIAM BOWEN, Assistant Professor
KENNETH BRADY
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Pediatrics
MARY BETH BRADY, Assistant Professor
E. DAVID BRAVOS, Assistant Professor
CHRISTOPHER D. BREDER, Assistant Professor
MATTHEW J. BRENNAN, Assistant Professor
JUAN RICARDO CARHUAPOMA
Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery
ZENOBIA A. CASEY, Assistant Professor
KRISTIN CHEUNG, Assistant Professor
PAUL J. CHRISTO, Assistant Professor
ELIZABETH COLANTUONI, Assistant Professor
ROBERT A. CORDES, Assistant Professor
WALTER E. DANDY, JR., Assistant Professor Emeritus
SHARAD M. DESAI, Assistant Professor
R. BLAINE EASLEY
Assistant Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Pediatrics
DAVID THOMAS EFRON
Assistant Professor of Surgery, Assistant Professor of Anesthesiology and Critical Care Medicine
LAWRENCE D. EGBERT, Visiting Assistant Professor
FENG TAO
Assistant Professor of Anesthesiology and Critical Care Medicine (from 09/01/09), Instructor in Anesthesiology and Critical Care Medicine (to 08/31/09)

DAVID A. THOMPSON, Assistant Professor

ROBERT WILLIAM THOMSEN
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

CRIStIANNA VALLERA, Assistant Professor
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 Neurological Surgery, Assistant Professor of Neurology, Assistant Professor of Surgery

KHWAJA JAVAId ZAKRIYA, Assistant Professor

WENDY C. ZIAI
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 SHAQIqE AHMAD, Instructor
HASSAN M. AHMAD, Instructor
ARUN K. BHASIN, Instructor
ALEXIS BILBOW, Instructor (to 07/31/09)
BRIAN M. BLOCK, Instructor
JASENKA BORZAN, Instructor
WANGSEN CAO, Instructor
CALVIN ENG, Instructor (from 08/01/09)
LEO HSIAO, Instructor (to 07/31/09)
ANN E. JONES-COLE, Instructor
MARTHA M. KENNEDY, Instructor
CHARLES M. LEVE, Instructor
XIAOLING LI, Instructor
KIEU X. LUU, Instructor
KATHLEEN GAGE PARR, Instructor
MICHAEL A. PHELPS, Instructor
MARK ROMIG, Instructor
LAKSHMI SANTHANAM, Instructor
RICHARD MORRIS SHAPIRO, Instructor
BAOGEN Y. SU, Instructor (to 08/10/09)
QINGNING SU, Instructor
TINA PHAM TRAN, Instructor
ZENG-JIN YANG, Instructor
ANIL THOMAS ABRAHAM, Assistant
RYAN DAVID KATZ, Assistant
DANIEL JOHN ANGELINI, Research Associate
ANIL BHUNIA, Research Associate
SUYI CAO, Research Associate
FUMIN CHANG, Research Associate

IRINA A. KOLOSOVA, Research Associate
HERMAN E. A. KWANSa, Research Associate
XIAOQUANG LIU, Research Associate
SOFIYAN SALEEM, Research Associate
KAZUYO YAMAqI-KEGAN, Research Associate
EMIL ZEYNAqOL, Research Associate (to 11/09/09)

HOCHqEL KIM, Visiting Scientist (to 07/31/09)

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

MACHIKO SHIRAHATA
Professor of Environmental Health Sciences

The School of Nursing
MARGUERITE KEARNEY
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 3. Advanced Clinical Clerkship in Anesthesiology. Dr. Winters. 2-4 weeks.
This course is intended for medical students who have done four weeks of the basic anesthesia clerkship, and wish to pursue further training in the field of anesthesiology and critical care. Students will participate actively in the pre-operative, intra-operative and post-operative care of critically ill patients. Students may elect to rotate through several areas of our department, or can choose to concentrate their time in one of several subspecialties as outlined below (neuroanesthesia, cardiac anesthesia, pediatric anesthesia, vascular and thoracic anesthesia, acute or chronic pain, etc.) An excellent opportunity to learn advanced physiology and pharmacology, this course is intended for students planning a career in ICU medicine or anesthesiology. Students must have completed the basic anesthesia clerkship plus internal medicine or surgery prior to this elective. Students taking this course are expected to attend all of the didactic sessions and in-depth case discussions of the department. Limited to four students.

E 6. 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 7. Introduction to Pediatric Intensive Care.** Drs. Fackler, Shaffner, Berkowitz, and staff. Four weeks. The course is designed for students planning a career in either pediatrics or a pediatric surgery specialty and 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 completed their pediatric rotation and to be prepared to help contribute to the care of these patients and function in a sub-internship role. Students taking this course are expected to attend all of the didactic sessions and in-depth case discussions of the department. Limited to two students.

**E 8. Grand Rounds.** Staff and visiting professors. Thursday 7:00-8:30 a.m.

Didactic lecture on a topic in anesthesiology or 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 10. 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 11. Clerkship in Anesthesiology.** Dr. Winters. 2, 3, or 4 weeks.

**Prerequisites:** Pharmacology and Physiology. Internal Medicine or Surgery recommended prior to rotation, but not necessary.

This basic clerkship is intended for those students who wish to increase their understanding of physiology and pharmacology in a clinical setting. Topics emphasized during the course include pathophysiology of cardiac and pulmonary disease, pharmacology of vasoactive drugs and anesthetic agents, airway management, and peri-operative management of the critically ill patient. Students will participate actively in the pre-operative evaluation, intra-operative management, and post-operative care of patients undergoing a wide variety of surgeries. A didactic series for students will emphasize the above medical topics. Students are also expected to attend all departmental didactic sessions.

This course is a necessary prerequisite for most of the advanced anesthesiology electives.

**E 12. Advanced Clinical Clerkship in Cardiac Anesthesia.** Drs. Winters, Nyhan and staff. 4-6 weeks; available as arranged; limited to five students.

**Prerequisite:** Basic Clerkship in Anesthesiology.

Students participate with an attending staff anesthesiologist in the discipline relating to evaluation and care of the challenging spectrum of patients presenting for cardiac surgery. Emphasis will be placed on incorporation of physiologic measurement in the decisions of patient care.

**E 13. Preceptorship in Neuroanesthesia.** Dr. Mirski. 4-6 weeks; one student per rotation; available as arranged.

**Prerequisites:** Basic Clerkship in Anesthesiology, plus a strong interest and background in physiologic and pharmacology.

The student will participate in the pre-op evaluation and intraoperative management of patients undergoing neurological or neurosurgical procedures. The student will become familiar with anesthetic and operative effects on cerebral physiology as well as developing expertise in non-invasive and invasive cardiovascular monitoring required for neurosurgical procedures.

**E 14. Introduction to Obstetrical Anesthesia.** Drs. Winters and Harris. Half quarter or full quarter; by special arrangement.

**Prerequisites:** Basic Clerkship in Anesthesiology and Basic Clerkship in Obstetrics.

Strong emphasis is placed on the special pharmacology and physiologic peculiar to pregnancy and labor. Daily clinical activities will consist of the evaluation and implementation of pain relief for parturients in active labor through the use of regional and intravenous anesthetic techniques.

**E 16. Regional Anesthesia Practice.** Dr. Winters and staff. Half quarter; by special arrangement.

**Prerequisite:** Basic Clerkship in Anesthesiology.

Students will have the opportunity to participate in nerve blocks used for surgical procedures and control of cancer pain. Emphasis will be given to minor nerve blocks that might be used in the emergency room or in office practice. The majority of this rotation is conducted at Union Memorial Hospital.

**E 17. Management of Pain and Suffering.** Drs. Winters, Raja, and staff. 4-6 weeks; by special arrangement.

**Prerequisite:** Basic Clerkship in Anesthesiology.

Time will be spent in the operating room and recovery room participating in the management of acute pain. Balanced with this will be time spent on the ward assessing and participating in the management of chronic pain and human suffering.

**E 18. Anesthesiology Research.** Dr. Koehler and staff. Minimum of one full quarter; available all year; as arranged.

**Prerequisites:** Physiology, Pharmacology, and Basic Clerkship in Anesthesiology.

**E 20. Clinical Clerkship in Neurological Critical Care.** Dr. Mirski. One student; 4 weeks.

Exposure to critically ill neurosurgical, neurological and neuromuscular patients is offered. Students will participate in all management aspects for these patients, including intracranial pressure monitoring, advanced electrodiagnostics, ventilatory support, cardiovascular monitoring, infection surveillance, and nutritional management.

**E 22. Advanced Research in Neuro Anesthesia.** Dr. Mirski. Minimum of one full quarter; available all year; as arranged.
Prerequisite: Physiology, Pharmacology, and Basic Clerkship in Anesthesiology.

Time will be spent in the research laboratories of the Department of Anesthesiology and Critical Care Medicine participating on ongoing research projects conducted by members of the neuroanesthesia group. Projects include autoregulation of cerebral blood flow, effects of increased intracranial pressure on brain function and effects of anesthetic agents on cerebral blood flow. The student will be involved in laboratory experiments, data collection and data evaluation. Emphasis will be placed on cerebral physiology and pharmacology as related to patients undergoing anesthesia.

E 28. Preceptorship in Pediatric Anesthesia. Dr. Deborah Schwengel and staff. 4 weeks; available as arranged.

Prerequisites: Basic Clerkship in Anesthesiology and/or Pediatrics

Students participate with attending staff and fellows in pediatric anesthesiology. Students will participate in the preoperative evaluation, intraoperative management and postoperative follow-up of children undergoing surgery. This clerkship is designed for students who plan careers in pediatrics, anesthesiology or pediatric surgery. Emphasis will be placed on the physiologic and psychologic aspects of children undergoing surgery.
Biological Chemistry

GERALD WARREN HART  
DeLamar Professor of Biological Chemistry,  
Director of the Department of Biological Chemistry  

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  

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  

PETER L. PEDERSEN, Professor  

DANIEL M. RABEN  
Professor of Biological Chemistry, Professor of Oncology, Professor of Physiology  

GREGG L. SEMENZA  
C. Michael Armstrong Professor of Pediatrics in Genetic Medicine, Professor of Biological Chemistry, Professor of Medicine, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences  

DAVID R. SHORTLE  
Professor of Biological Chemistry, Professor of Biophysics and Biophysical Chemistry  

BARBARA T. SOLLNER-WEBB, Professor  

JENNIFER EILEEN VAN EYK  
Professor of Medicine, Professor of Biological Chemistry, Professor of Biomedical Engineering  

MICHAEL J. CATERINA  
Associate Professor of Biological Chemistry, Associate Professor of Neuroscience  

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  

AKHILESH PANDEY  
Associate Professor of Biological Chemistry in Genetic Medicine, Associate Professor of Oncology, Associate Professor of Pathology  

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  

MOLLIE K. MEFFERT  
Assistant Professor of Biological Chemistry, Assistant Professor of Neuroscience  

JOEL L. POMERantz, Assistant Professor  

KAREN L. REDDY, Assistant Professor  

BALTAZAR REYNAFARJE, Visiting Assistant Professor  

MICHAEL J. WOLFGANG, Assistant Professor  

NATASHA E. ZACHARA, Assistant Professor  

ROBERT NORMAN COLE, Instructor  

XINYAN WU, Instructor  

SEUNG HUN CHA, Research Associate  

JODIE G. FRANKLIN, Research Associate  

CHUEN-CHUEN JANG, Research Associate  

MICHAEL KOTTGEN, Research Associate (to 08/31/09)  

CHAD 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. COLOMBe  
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**

### Biological Chemistry—First Year

**340.600 Scientific Foundations of Medicine.** Drs. Pedersen, Raben 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-, temperature-, and mechanosensation; roles of transient receptor potential ion channels in immunity.
DR. CRAIG  
Cell adhesion and cytoskeleton.

DR. ENGLUND  
Biochemistry and molecular biology of protozoan parasites.

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. LANE  
Stem cell commitment and differentiation-induced gene expression; hypothalamic control of energy metabolism and obesity.

DR. MEFFERT  
The regulation of neuronal gene expression in health and disease.

DR. MILTVAN  
Mechanism of enzyme action; role of metals in enzymes; nuclear magnetic resonance; solution structures of enzymes and enzyme-substrate complexes.

DR. C. MONTELL  
Molecular genetics of sensory signaling and TRP channels.

DR. D. MONTELL  
Cellular, molecular, and genetic studies of invasive cell behavior.

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

ELLIO T. 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

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
Professor of Medicine, Professor of Biomedical Engineering, Professor of Radiology

JOSHUA MICHAEL HARE
Adjunct Professor of Medicine, Adjunct Professor of Biomedical Engineering

STEVEN S. 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
Andelot Professor of Laryngology and Otology, Professor of Biomedical Engineering, Professor of Neuroscience

ALEKSANDER S. POPEL
Professor of Biomedical Engineering, Professor of Medicine

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. SCHRAMM
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 and Radiological Science, 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
Professor of Biomedical Engineering, Professor of Medicine, Joint Appointment in Health Sciences Informatics

ERIC D. YOUNG
Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery

SCOT C. KUO
Associate Professor of Biomedical Engineering, Associate Professor of Cell Biology

CHARLES C. 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

SCOT C. KUO
Associate Professor of Biomedical Engineering, Associate Professor of Cell Biology

ALBERT C. LARDO
Associate Professor of Medicine, Associate Professor of Biomedical Engineering

XINGDE LI, Associate Professor
Robert E. Miller
Associate Professor of Pathology, Associate Professor of Biomedical Engineering, Joint Appointment in Health Sciences Informatics

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, Professor of Oncology, Associate Professor of Biomedical Engineering, Associate Professor of Gynecology and Obstetrics

Mark J. Shelhamer
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Biomedical Engineering

Jeffrey H. Sweerdsen, Visiting Associate Professor

Joe Alexander, Jr., Adjunct Assistant Professor

Angelo Homayoun All
Assistant Professor of Biomedical Engineering, Research Associate in Neurology

Mohamad E. 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 R. Goldberg
Assistant Professor of Biomedical Engineering, Joint Appointment in Health Sciences Informatics

Warren L. Grayson, Assistant Professor (from 09/01/09)

Jordan J. Green, Assistant Professor

Michael A. Guttmann, Assistant Professor (from 09/01/09)

Daniel A. Herzka, Assistant Professor

David W. Kaczka
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Biomedical Engineering

Akhill Jay Khanna
Assistant Professor of Orthopedic Surgery, Assistant Professor of Biomedical Engineering

Americo Aniello Migliaccio
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery, Adjunct Assistant Professor of Biomedical Engineering

Scott Mitchell Paul, Adjunct Assistant Professor

John Jeremy Rice, Adjunct Assistant Professor

Lew C. Schon
Assistant Professor of Orthopedic Surgery, Assistant Professor of Biomedical Engineering

Thomas B. Woolf
Professor of Physiology, Assistant Professor of Biomedical Engineering, Joint Appointment in Biophysics and Biophysical Chemistry

Youseph Yazdi, Assistant Professor (from 09/01/09)

Kechen Zhang
Assistant Professor of Biomedical Engineering, Assistant Professor of Neuroscience

Poppy A.C. Crum, Research Associate

Xiaofeng Jia
Research Associate in Biomedical Engineering, Research Associate in Physical Medicine and Rehabilitation

Niranjan Pandey, Research Associate

Tuck Wah Soong, Research Associate

Joseph Webster Stayman, Research Associate (from 09/01/09)

Anastasios G. Bezerianos, Visiting Scientist (from 01/04/10)

Yuzhen Cao, Visiting Scientist

Haiyan Ding, Visiting Scientist

Xiaoping Li, Visiting Scientist (to 08/31/09)

Faculty Associated with the Department of Biomedical Engineering Holding a Primary Appointment in:

The G.W.C. Whiting School of Engineering:

Joel S. Bader
Assistant 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 35, and the Graduate Program leading to the M.S.E. in Biomedical Engineering is described on page 37. 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 modelling.

**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 catalogue.

**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.

**DR. BOTTOMLEY**
Magnetic resonance imaging.

**DR. DOUGLAS**
Dynamic fracture mechanics; finite element methods; nonlinear solid mechanics.

**DR. FUCHS**
Biophysics of sensory hair cell; regulation of ion channel expression.

**DR. HALPERIN**
Cardiac function and cardiac assist devices.

**DR. HANES**
Drug delivering.

**DR. KASS**
Cardiac mechanics; ventricular arterial interaction and heart failure.

**DR. KONSTANTOPOULOS**
Tissue engineering.

**DR. KUO**
Mechanics of subcellular force generation.

**DR. MINOR**
Oculomotor control.

**DR. MITZNER**
Biomedical engineering of the lung; 3-D image analysis.

**DR. POPEL**
Physiological flows and molecular transport; microcirculation; cell mechanics.

**DR. PRINCE**
Multi-dimensional signal processing; medical imaging; computational geometry.

**DR. SACHS**
Auditory neurophysiology and psychophysics.

**DR. SCHRAMM**
Neural control of metabolism; autonomic control systems.

**DR. SHADMEHR**
Human motor control and learning in health and disease; functional imaging of the brain; computational and theoretical neuroscience.

**DR. SHELHAMER**
Nonlinear dynamics in the oculomotor system.

**DR. SHOUKAS**
Systems analysis of circulatory systems; systems physiology.

**DR. THAKOR**
Cardiovascular and neurological instrumentation; signal processing; computer applications.

**DR. TUNG**
Cardiac electrophysiology; muscle mechanics.

**DR. WANG**
Neurophysiology of the auditory cortex; neural mechanisms of speech perception and learning; computational neuroscience.

**DR. WINSLOW**
Mathematical modeling of nervous system; computational neuroscience; auditory and visual neurophysiology.

**DR. WOLFF**
Models of membrane proteins.

**DR. YOUNG**
Auditory neurophysiology; neural modeling; sensory processes.

**DR. YUE**
Ionic channel electrophysiology; biophysics; molecular biology.

**Biomedical Engineering in the Real World.** (580.202 School of Engineering) Dr. Popel
A series of weekly lectures to inform students about careers in biomedical engineering and to discuss technological, social ethical, legal, and economic issues relevant to the profession. Topics include: academic careers in biomedical engineering; biomedical engineering in industry (large corporations to sole entrepreneurship); health care delivery; ethical issues; legal issues (patenting, licensing, product liability); standards and government regulations; and economic issues in biomedical engineering industry (start-up companies, global businesses). This course is open to all students.

**Physiological Foundations for Biomedical Engineering.** (580.421-422 School of Engineering) Dr. Yue and Shadmehr.
Recommended corequisites: Signals/Circuits (520.113, 580.274-275 School of Engineering) and 580.423 School of Engineering.

**Prerequisite:** 520.213 (School of Engineering) or 110.302 (Arts & Sciences)
A two semester sequence designed to provide the physiological background necessary for advanced work in biomedical engineering. A quantitative, model-oriented approach to physiological systems is stressed. First term topics include: the cell and its chemistry, transport and the cell membrane, properties of excitable tissue and muscle, the cardiovascular system, the respiratory system and the kidney. Second term: anatomy of the nervous system, structure and function of the auditory and visual systems, motor systems, and the neural and neuroendocrine control of the circulation. Counts as four credits of E and four credits of N for biomedical engineering majors.

**Ionic Channels in Excitable Membranes.** (580.425 School of Engineering) Dr. Yue.

**Prerequisites:** 580.421-422, or equivalent introductory biology.
Ionic channels are key signaling molecules that support electrical communication throughout the body. As such, these channels are a central focus of biomedical engineering as it relates to neuroscience, computational biology, biophysics, and drug discovery. This course introduces the engineering (stochastic and mathematical models) and molecular strategies (cloning and expression) used to understand the function of ionic channels. The course also surveys key papers that paint the current picture of how channels open (gating) and conduct ions (permeation). Biological implications of these properties are emphasized throughout. Finally, the course introduces how optical (fluorescence methods) and electrophysiological methods (patch clamp) now promise to revolutionize understanding of ionic channels. This course can be viewed as a valuable partner of Models of Physiological Processes in the Neuron (580.439).

**Cellular Engineering.** (580.441 School of Engineering) Drs. Konstantopoulos and Yarem.  
**Prerequisite:** 580.221 Molecules and Cells.  
Lectures provide an overview of molecular biology fundamentals, an extensive review on extracellular matrix and basics of receptors, followed by topics on cell-cell and cell-matrix interactions at both the theoretical and experimental levels. Subsequent lectures will cover the effects of physical (shear, stress, strain), chemical (cytokins, growth factors), and electrical stimuli on cell function, emphasizing topics on gene regulation and signal transduction processes. Material on cell-cycle, apoptosis, metabolic engineering, and gene therapy will also be incorporated into the course.

**Tissue Engineering.** (580.442 School of Engineering) Drs. Elisseef and Leong.  
**Prerequisites:** 580.421-422 Physiological Foundations I and II.  
Lectures provide an overview of tissue structure and function, followed by a review of biomaterials (collegen) and cell-biomaterial interactions. Subsequent lectures will cover fundamentals of stem cell biology, and discuss in depth, applications of tissue engineering to specialized tissues and organs, including skin; muscular skeletal system (bone, cartilage, tendon, and ligament); cardiovascular system (vascular grafts, blood substitutions, cardiac patch, and heart valve); nervous system (peripheral and central nervous systems); and liver, pancreas, and kidney.

**Biomechanics of Cells and Organisms.** (580.448 School of Engineering) Dr. Sun.  
**Prerequisites:** 171.101-102; 110.108-109; 110.202.  
Mechanical aspects of the cell are introduced using the concepts in continuum mechanics. We will discuss the role of proteins, membranes, and cytoskeleton in cellular function and how to describe them using simple mathematical models.

**Mechanics of Living Tissues.** (580.450 School of Engineering)  
**Prerequisites:** 110.201 (Arts & Sciences); Strength of Materials 560.206; Continuum Mechanics 530.305 (School of Engineering) or equivalent.  
This course includes the following: review of continuum mechanics for large, finite deformations; an overview of constitutive properties of tissues, including viscoelasticity; methods of mechanically testing tissues; the finite element method as applied to physiological problems; and mechanics of specific tissues and organs: eg. heart, lung, bone.

**Introduction to Orthopaedic Biomechanics.** (580.455 School of Engineering) Dr. Allen.  
**Prerequisites:** 560.201 Statics; 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.

**Physiological Fluid Mechanics.** (580.460 School of Engineering) Dr. Popel.  
**Prerequisite:** Differential Equations (110.302, Arts and Sciences).  
Basic concepts and problems of fluid and solid mechanics and rheology are introduced and applied to the analysis of blood flow in the macro- and microcirculation. Analysis of mathematical models is combined with discussions of physiological mechanisms.

**Biological Transport.** (580.461 School of Engineering) Drs. Leong and Popel  
**Prerequisite:** School of Arts and Sciences 110.302.  
Basic principles and mechanisms of mass transport in multicompartment systems with application to physiological phenomena. Examples of physiological mass and heat transfer. Mathematical models of pharmacokinetics and membrane transport. Students will carry out a modeling project of biological transport systems.

**Advanced Topics in Computer Vision.** (580.464 School of Engineering) Dr. Vidal.  
**Prerequisites:** 110.202 and 600.461, or instructor’s permission.  
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 sementation, nonrigid motion analysis); recognition of visual dynamics (dynamic textures, face and hand gestures, human gaits, crowd motion analysis); as well as geometrical and statistical methods for clustering and unsupervised learning, such as K-means, Expectation Maximization, and Generalized Principal Component Analysis. Applications in robotics and biomedical imaging are also included.

**Biomedical Sensors.** (580.470 School of Engineering) Dr. Thakor.  
**Prerequisites:** Signals/Circuits (520.113, 580.274-275 School of Engineering) and electronics lab (e.g. 520.125-28 or 520.145-148 School of Engineering; may be taken concurrently)  
A survey of electronic sensors of physiological signals. The physics of transduction and characteristics of dynamic range, linearity, hysteresis and frequency response will be discussed. Topics include conventional methods to measure blood pressure and flow, temperature, respiration, muscle contrac-
tion, electrical signals from excitable tissues, as well as novel techniques used in research. Biological transducers which operate in the human body will be discussed as time permits. Properties of transducers will be explored in laboratory sessions.

Principles of the Design of Biomedical Instrumentation. (580.471 School of Engineering) Dr. Thakor.

Prerequisites: 520.326 or 580.470 (School of Engineering).

An intensive lecture and laboratory course covering fundamentals of biomedical measurements and principles of design. Lectures and laboratories initially emphasize systematic design of a complete electrocardiogram acquisition system. Subsequently cardiovascular, neurological, therapeutic and monitoring instrumentation as well as principles of patient safety are discussed. Finally students independently conceive the design of a medical device and reduce it to practice.

Medical Imaging Systems. (580.472 School of Engineering) Dr. Prince.

Prerequisite: 520.214 School of Engineering (Same as 520.432).

An introduction to the instrumentation and signal processing methods used to produce images in general radiography computed tomography, magnetic resonance imaging, and nuclear medicine.

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, phasesensitive and magnitude detection, and coherence selection using pulsed magnetic field gradients.

Micorfabrication Laboratory. (580.495 School of Engineering) Drs. Andreou and Wang.

Prerequisite: Permission of instructor.

This laboratory course introduces the principles used in the construction of microelectronic devices, sensors, and micromechanical structures. Students will work in the laboratory on the fabrication and testing of a device. Accompanying lecture material covers basic processing steps, design and analysis CAD tools, and national foundry services.

Topics in Biomedical Engineering. (580.603-604 School of Engineering) Staff.

A series of informal seminars in which faculty of the department discuss research interests; emphasis is on discussion between faculty and students. The purpose is to introduce graduate students to research opportunities. Open to doctoral students in Biomedical Engineering; others by permission. Both semesters at the School of Medicine.

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).

Structure and Function of the Auditory and Vestibular System. (580.625-26 School of Engineering) Hearing Science Center staff.

Prerequisites: 580.421-422 School of Engineering; Differential Equations (110.302 Arts & Sciences); and Signals and Systems (520.214 School of Engineering).

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.


Prerequisite: 580.421-422 Physiological Foundations 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, psychophysical, computational, and imaging techniques. Students are expected to give presentations and participate in discussions.

Theoretical Neuroscience. (580.630 School of Engineering) Drs. Wang and Young. Spring semester.

Prerequisites: Introduction to Neuroscience (580.422 or equivalent), Probability (550.420 or equivalent), and Signals and Systems (520.214 or equivalent).
Theoretical methods for analyzing information encoding and functional representations in neural systems. Topics include: 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: Physiological Foundations 110.201; 110.302.
This course introduces the human motor control system using tools from control theory and robotics. Topics include: mechanics of multi-joint limbs; dynamics of muscles and spinal control structures; introduction to kinematics and biological motion planning; time delays and predictive control; neural correlates of control in the brain; motor disorders; and learning and adaptive control in humans.

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.
This course reviews theoretical concepts and experimental approaches used to characterize the electrical properties of cardiac muscle. 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, 110.302 (Arts & Sciences), or 550.291, 520.213, 520.219, 520.214, 580.421 (School of Engineering) or equivalent.
Corequisite: 580.634 (School of Engineering).
This course reviews theoretical concepts and experimental approaches used to characterize the electrical properties of cardiac muscle. Topics include: biophysical aspects of cardiac cell membranes and gap junctions; volume conductor models of single cells; continuous and discontinuous bidomain models of tissue voltage clamp techniques; optical indicators of transmembrane potential; and mechano-electrical coupling.

This is an advanced course on the latest research accomplishments on cellular and tissue engineering from three different interdisciplinary perspectives: a) it summarizes the theoretical/experimental tools to investigate adhesion mechanisms and differentiated functions of cells attached on surfaces; b) it examines the signal transduction and regulation of metabolic activity in mammalian cells due to physical (mechanical) forces; c) it highlights the mechanisms of cell motility and morphogenesis of anchored cells, and the mechanical properties of circulating cells.

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 students will develop a neuron model using data from the literature.

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.

Models of the Cardiac Myocyte. (580.682 School of Engineering) Dr. Winslow
Prerequisites: 580.421-22;110.302 or 550.291; 600.109 or 500.200; Senior standing.
The cardiac myocyte is one of the most extensively studied cells in biology. As such, it serves as a critically important example of how to develop quantitative, dynamic computational models of cell function. This course will present a comprehensive review of all aspects of modeling of the cardiac myocyte. The course will also cover emerging areas of modeling activity including a) mapping and modeling of signal transduction pathways in the cardiac myocyte; b) mechanisms by which such pathways modulate cell function.

Experimental Foundations for Neural Models. (580.684 School of Engineering) Dr. Sachs and Staff.
Prerequisites: An introductory course on the nervous system; permission of instructor.
This course familiarizes students with the experimental tools that are used to provide the biological data base for neural models. Projects are designed to teach single unit recording in sensory nerve; characterization of complex receptive fields; cellular or synaptic potential measurement; evoked potential techniques; psychophysical measurement of sensory or motor function.
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.

Foundations of Computational Biology II. (580.688 School of Engineering) Dr. Bader.
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 a language of choice, and students will have access to a Linux cluster as a computational resource.

This course uses statistical mechanics and information theory to develop probabilistic models for biological data, with a primary focus on sequence data and graphical models. Topics will include: probability theory; score matrices; hidden Markov models; suffix trees; phylogenetic inference; random graph theory; and network inference.

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) Drs. Shadmehr and Diedrichsen.
Prerequisites: 550.291 or equivalent linear algebra; probability theory.

This course will introduce major ideas in computational learning, with an emphasis on its connections with biological learning. The focus is on the probabilistic foundations of learning theory. We will discuss topics in regression, Bayesian learning, classification, reinforcement learning, and active learning. However, this is not a machine learning course. Rather, our aim is to use mathematical results to model adaptation and formation of memory in the central nervous system, including problems in perception, sensori-motor adaptation, generalization, selection of action, consolidation, and addiction.

Neuroengineering. (580.702 School of Engineering) Dr. Thakor.
Neuroengineering represents the application of engineering principles to develop systems for neurological research and clinical applications. This involves 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. The course will review and research the state-of-the-art in selected fields and support research and development projects by students in these topics.

Medical Microsystems. (580.725 School of Engineering) Drs. Andreas and Thakor.
Prerequisites: 580.471 or 580.495.

Topics include: fundamental and advanced fabrication processes for integrating diverse materials (including silicon) into microstructures and microdevices; micropatterning, moulding, sensing, and actuation technologies; research concepts and applications of microsystems at the molecular, cellular, and medical systems level. Applications such as DNA microarrays, drug and gene delivery, microsensors, and actuators for research, microstructures for implants and microdevices for prostheses.

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.

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.
REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year

100.600 Scientific Foundations of Medicine. Dr. 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.

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 and mechanism of proteins involved in redox or phosphoryl transfer reactions, such as peptidyl amiding monoxygenase.

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.

DR. LEAHY
Three-dimensional structure of proteins involved in cell-cell and cell-matrix interaction and signaling.

DR. LORSCH
Mechanisms of eukaryotic translation.

DR. WADE
Directing signal recognition and signal control in biological switches; mechanisms in multidrug resistance functions.

DR. WOLBERGER
Structural studies of sirtuins and linkage-specific polyubiquitin assembly and recognition.
DR. XIAO

Dynamics of gene regulation and cell division using single-molecule fluorescence microscopy and live-cell analysis.

340.806 Research Projects in Biochemistry, Biophysics and Molecular Biology. (Jointly with Departments of Biological Chemistry and Molecular Biology and Genetics. See Biological Chemistry for course description.)

100.804 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.

100.712 Lab: Computer Modeling of Biological Macromolecules. Drs. Blanchet and Amzel. Three hours per week; second semester; limited enrollment.
The laboratory course will familiarize students with practical aspects of molecular modeling. It teaches the necessary tools to create and manipulate computer generated models of biological-interest molecules. Techniques such as homology modeling of proteins, docking of drugs in proteins, and other applications will be introduced. A lecture course can be taken simultaneously (100.705).

100.706 Fundamentals of Protein Crystallography. Dr. Wolberger. Fourth quarter; two 75 minute lectures per week. Next offered 2010. Alternating years with Advanced Topics in Protein Crystallography (100.707).
Prerequisites: Calculus and elementary physics, or consent of instructor.
This is an introductory course, designed to present the core knowledge of protein crystallography necessary to function in the laboratory and to read the literature. The course will follow the text by author Jan Drenth and will require written homework.

100.708/AS:250.685 Proteins and Nucleic Acids. 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 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.

100.707 Advanced Topics in Protein Crystallography. Dr. Leahy. Course offered at the School of Medicine. Alternating years with Fundamentals of Protein Crystallography (100.706). One meeting per week, fourth quarter. Next offered 2011.
Prerequisites: Elementary crystallography.
In a journal club format this course examines standard advanced topics in crystallography as well as aspects of the current literature. Topics may include: refinement, approaches to the phase problem, fourier transform methods, etc.

The structure and properties of biological macromolecules will be presented. Experimental and computational methods used to study macromolecular structure including X-ray crystallography, magnetic resonance, spectroscopy, microscopy, and mass spectrometry will also be covered.

100.710 Biochemical and Biophysical Principles. Drs. Amzel, Lorsch, Shortle, Xiao, and Wade. First quarter; four and a half hours per week. M/W/F, 9-10:30.
The physical and chemical principles underlying biological processes are presented and discussed. Topics include thermodynamics, chemical equilibria, chemical and enzymatic kinetics, electrochemistry, physical chemistry of solutions, and structure and properties of water. Elementary concepts of statistical thermodynamics will be introduced as a way of correlating macroscopic and microscopic properties.

100.711 Structure Determination. Dr. Leahy and faculty. Fourth quarter; three hours per week. Alternating days, 9-10:30.
This course will cover macromolecular structure determination by x-ray crystallography and nuclear magnetic resonance (NMR). The lectures will build upon 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 determination, and the application of these methods to addressing various questions in protein structure and function.

800.707 Bioinformatics. Dr. Pevsner. Second quarter; one and a half hours per week. M, 9-10:30.
This course is a survey of quantitative methods in modern biology and the computational concepts that are developing to analyze large data sets. Topics range from a review of statistics to problems in sequence analysis to the modeling of complex systems. The goal of the course is to familiarize students with the concepts of computational biology rather than to achieve a deep understanding of any one topic.

**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, Professor of Oncology, Professor of Pathology, Joint Appointment in Molecular Biology and Genetics

ANN L. COX HUBBARD
Professor of Cell Biology, Professor of Physiology, Joint Appointment in Medicine

ROBERT E. JENSEN, Professor
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 Anesthesiology and Critical Care Medicine, Associate Professor of Biomedical Engineering, Associate Professor of Cell Biology, Associate Professor of Pediatrics

JOY T. YANG, Associate Professor
SHUKTI CHAKRAVARTI
Associate Professor of Medicine, Associate Professor of Ophthalmology, Assistant Professor of Cell Biology

ANDREW J. EWALD
Assistant Professor of Cell Biology, Assistant Professor of Oncology

MIHO IIJIMA, Assistant Professor
TAKANARI INOUE, Assistant Professor
PERE PUIGSERVER, Visiting Assistant Professor
HIROMI SESAKI, Assistant Professor
LELITA TALAMANTEZ BRAITERMAN, Research Associate

MARGARET DE CUEVAS, Research Associate
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

FACULTY ASSOCIATED WITH THE DEPARTMENT OF CELL BIOLOGY HOLDING A PRIMARY APPOINTMENT IN:

The Bloomberg School of Public Health:
MICHAEL JOSEPH MATUNIS
Associate Professor of Biochemistry and Molecular Biology

REQUIRED COURSE WORK FOR M.D. PROGRAM

First Year

100.600 Scientific Foundations of Medicine. (Departments of Physiology and Cell Biology) 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.

360.600 Organ Systems. (Departments of Physiology and Cell Biology) Drs. Guggino, Dintzis and associates. Fourth quarter; eight weeks

The course provides a basic understanding of the many different aspects of the internal structure and function of the body. It aims to present a comprehensive survey of the complex interrelationships that exist between the structure and function of cells, tissues, and organs. The course is an integrative one, bringing together the disciplines of physiology and organ histology, with the various organ systems of the human body, and their interactions, being discussed and studied in sequence. The student is encouraged to synthesize all that is learned about cells, tissues and organs into a working knowledge of mammalian physiology. The course includes lectures, journal clubs, discussion groups, and both physiological and virtual microscopic laboratories. It is a required course for first year medical students and is open to graduate students.

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 Molecules and Cells. 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. Dr. Espenshade and staff.

**ME110.800 Advanced Work and Research.**

By arrangement with the staff.

Opportunities for training in cell 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**
Chemotaxtractant directed cell migration; signal transduction.

**DR. DINTZIS**
Experimental immunology; differentiation signals.

**DR. EWALD**
Cellular regulation of cholesterol homeostasis and adaptation to hypoxia.

**DR. HUBBARD**
Pathways and mechanisms of protein trafficking in polarized epithelia; Wilson and Menkes Diseases; copper ATPases.

**DR. IIJIMA**
Lipid signaling in chemotaxis.

**DR. INOUE**
Directed cell migration; tumor metastasis; primary cilia; synthetic chemical biology; technology development.

**DR. JENSEN**
Mitochondrial assembly, dynamics, and function in yeast; trypansomes 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; epigenetics; emerin- and lamin-associated protein complexes; Emery-Dreifuss muscular dystrophy; Barrier to Autointegration Factor (BAF); chromatin.

**DR. YANG**
Cell migration and integrin signaling.

**ME110.722 Principles of Light and Fluorescence Microscopy.** Dr. Kuo. Course offered bi-annually. Next offering TBA.

**Prerequisites:** Students should have completed ME110.807 or have equivalent experience.

This is an advanced course for students wishing to understand state-of-the-art microscopy, perhaps to customize existing instruments. In addition to a more rigorous presentation of the principles of optical image formation for multiple light and fluorescence microscopes, the theory behind “best-practices” in microscopy (Koehler illumination, infinity optics) are actively considered. Not only reviewing the electromagnetic wave nature of light, advanced topics such as Fourier optics, point-spread functions, and spherical aberration will be considered in the context of modern microscopy. The culmination is considering the instrumentation design choices in assembling a multiphoton fluorescence microscope.

**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.
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.
Covers nuclear structure, lamins, nuclear membrane proteins, nuclear pore complexes and nucleocytoplasmic transport mechanisms, actin, subnuclear organelles, chromatin organization, nuclear assembly and disassembly, signaling in the nucleus, evolution of the nucleus, and mechanisms of human "laminopathy" diseases.

**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. Andrew and associates. Fourth quarter; four weeks.
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

EVAN R. FARMER, Professor

GERALD S. LAZARUS
Professor of Dermatology, Professor of Medicine

STEPHEN M. MILNER
Professor of Plastic Surgery, Professor of Dermatology (from 09/01/09), Professor of Pediatrics

WARWICK L. MORISON, Professor

THOMAS T. PROVOST
University Distinguished Service Professor of Dermatology

ERIC CARL VONDERHEID
Professor of Dermatology, Professor of Oncology

RHODA M. ALANI
Associate Professor of Oncology, Associate Professor of Dermatology, Joint Appointment in Molecular Biology and Genetics

PATRICK JOSEPH BYRNE
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Dermatology

JACQUELINE MARIE JUNKINS-HOPKINS
Visiting Associate Professor of Dermatology, Visiting Associate Professor of Pathology

STANFORD I. LAMBERG, Associate Professor

CHRISTOPH ULRICH LEHMANN
Associate Professor of Pediatrics, Associate Professor of Dermatology, Joint Appointment in Health Sciences Informatics

CIRO ROBERTO MARTINS
Associate Professor of Dermatology, Joint Appointment in Medicine

STANLEY J. MILLER
Associate Professor of Dermatology, Associate Professor of Otolaryngology-Head and Neck Surgery

EDWARD A. RATOVITSKI
Associate Professor of Dermatology, Associate Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Medicine, Assistant Professor of Pathology

WILLIAM H. SHARFMAN
Associate Professor of Oncology, Associate Professor of Dermatology

GARY RAY WARNOCK
Associate Professor of Dermatology (to 09/04/09), Assistant Professor of Pathology (to 09/04/09)

ROBERT A. WEISS, Associate Professor

WILLIAM H. WESTRA
Professor of Pathology, Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Dermatology

S. ELIZABETH WHITMORE, Associate Professor
(on leave of absence to 07/06/09)

RACHEL ABUAV, Assistant Professor

JILL ALLBRITTON, Assistant Professor (to 09/29/09)

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 (from 09/08/09)

ISRAEL S. ECKMAN, Assistant Professor

JEANNE STEMAN FINDLAY, Assistant Professor

LUIS ANDRES GARZA, Assistant Professor

ALLAN C. HARRINGTON, Assistant Professor

GINETTE HINDS, Assistant Professor

HOWARD C. HINES, Assistant Professor

REBECCA A. KAZIN, Assistant Professor

MITCHELL KLAPPER, Assistant Professor

JULIE ROBIN LANGE
Associate Professor of Surgery, Associate Professor of Oncology, Associate Professor of Dermatology

NANETTE J. LIEGEOIS-KWON
Assistant Professor of Dermatology (to 09/30/09), Assistant Professor of Oncology, Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Plastic Surgery

LAURA YOUNG MCGIRT, Assistant Professor (from 07/13/09)

JON HAMILTON MEYERLE, Assistant Professor

GIRISH S. MUNAVALLI, Assistant Professor

DIANE JULIE ORLINSKY
Assistant Professor of Dermatology, Assistant Professor of Medicine

MANISHA J. PATEL, Assistant Professor

KATHERINE BROWN PUTTGEN, Assistant Professor

ELISABETH G. RICHARD, Assistant Professor (from 09/21/09)

WALTER L. RUSH, Assistant Professor

MARY SHEU, Assistant Professor

RONALD N. SHORE, Assistant Professor

EVA SIMMONS-O′BRIEN
Assistant Professor of Dermatology, Assistant Professor of Medicine

DAVID H. STEIN, Assistant Professor

RONALD J. SWEREN, Assistant Professor
JANIS MARIE TAUBE  
Assistant Professor of Dermatology (from 08/01/09), Assistant Professor of Pathology (from 08/01/09)  
MARGARET A. WEISS, Assistant Professor  
JIHAD M. ALHARIRI, Instructor  
BENJAMIN D. BERNSTEIN, Instructor  
DAVID A. COWAN, Instructor  
BENJAMIN N. LOCKSHIN, Instructor  
MICHAEL RADOWSKY, Instructor  
HOWARD N. ROBINSON, Instructor  
PAUL A. RUSONIS, Instructor  
DAVID STROBEL, Instructor  
ELIZABETH LYN TANZI, Instructor  
IRVING D. WOLFE, Instructor  
DAKARA RUCKER WRIGHT, Instructor  
YIPING HUANG, Research Associate  

FACULTY ASSOCIATED WITH THE DEPARTMENT OF DERMATOLOGY HOLDING A PRIMARY APPOINTMENT IN:  
The School of Medicine:  
WILLIAM G. MERZ  
Professor of Pathology  
The Bloomberg School of Public Health:  
PIERRE A. COULOMBE  
Professor of Biochemistry and Molecular Biology  

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-Second Year

Pathophysiology of Cutaneous Disease. Dr. Sewon and staff. During the Human Pathophysiology course; a group of lectures dealing specifically with 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. Abuav, Cohen, Kang, Lazarus, Patel and Whitmore. 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. Jakki Junkins-Hopkins. 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. ABUAV  
Medical dermatology; graft vs host disease

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. LAZARUS
General clinical dermatology.

DR. PATEL
Acne; skin disease in solid organ transplant patients.

DR. PUTTGEN
Pediatric dermatology; hemangiomas.

DR. TAUBE
Melanoma; dermatopathology.

DR. WANT
Skin cancer; skin surgery; melanoma.
Emergency Medicine

GABOR D. KELEN
Professor of Emergency Medicine, Director of the Department of Emergency Medicine

J. ALEX HALLER, JR.
Professor Emeritus of Pediatric Surgery, Professor Emeritus of Emergency Medicine, Professor Emeritus of Pediatrics

ARJUN S. CHANMUGAM, 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

EDWARD S. BESSMAN, Assistant Professor

TERESA MARY CARLIN
Assistant Professor of Emergency Medicine, Assistant Professor of Pediatrics

CHRISTINA LYNNE CATLETT, Assistant Professor

ROBIN CUDDY, Assistant Professor

HUGH F. HILL, III, Assistant Professor

PETER M. HILL, Assistant Professor

BEATRICE HOFFMANN, Assistant Professor

WILLIAM T. HOSEK, Assistant Professor

YU-HSIANG HSIEH, Assistant Professor

JENNIFER LEE JENKINS, Assistant Professor

JULIANNA JUNG, Assistant Professor

MARK KING, Assistant Professor

FREDERICK K. KORLEY, Assistant Professor

RICKY C. KUE, Assistant Professor

SCOTT RYAN LEVIN, Assistant Professor

HORACE K. LIANG, Assistant Professor

HUBERT S. MICKEL, Assistant Professor

MICHAEL G. MILLIN, Assistant Professor

JULIUS CUONG PHAM
Assistant Professor of Emergency Medicine, Assistant Professor of Anesthesiology and Critical Care Medicine

LINDA REGAN, Assistant Professor

ANDREW I. STOLBACH, Assistant Professor

NELSON TANG, Assistant Professor

ALEXANDER VU, Assistant Professor

SAMUEL YANG, Assistant Professor

WALTER F. ATHA, Instructor

SHARON P. BORD, Instructor

SEAN BOUVET, Instructor (from 09/01/09)

DAVID A. BRADT, Instructor

EMILIE J.B. CALVELLO, Instructor

JOY ELIZABETH CROOK, Instructor

SAMIT PRAKASH DESAI, Instructor

DREW C. FULLER, Instructor

STEPHEN G. HOLTZCLAW, Instructor

PAUL J. KALOUDIS, Instructor

BUDDY G. KOZEN, JR., Instructor

TINA M. LATIMER, Instructor

MATTHEW JASON LEVY, Instructor

DARREN MAREINISS, Instructor

JUAN A. MORALES-TORRES, Instructor

WILLIAM ELLIS NORTHINGTON, Instructor

MICHAEL PERLINE, Instructor

KIEMANH PHAM, Instructor

RODICA RETEZAR, Instructor (on leave of absence)

MUSTAPHA SAHEED, Instructor

MICHAEL A. SILVERMAN, Instructor

MARY WESTERGAARD, Instructor

DONALD W. ALVES, Assistant

CHARLES ANDREW BERGMAN, Assistant

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 (from 09/01/09)

MICHAEL E. HULL, Assistant

GAIL GLOTFELTY KRAMER, Assistant

HARDIN A. PANTLE
Assistant in Emergency Medicine, Assistant in Pediatrics

SHANNON BANDY PUTMAN, Assistant

ALICE L. WILKENFELD, Assistant

FREDERICK M. BURKLE, JR., Research Associate

JAMES J. SCHEULEN, Research Associate

JUDY B. SHAHAN, Research Associate

MERIDITH HILL THANNER, Research Associate

LING TIAH, Research Associate

FACULTY ASSOCIATED WITH THE DEPARTMENT OF EMERGENCY MEDICINE HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

GIORGIO GIOVANNI GALETTO
Assistant Professor of Medicine

CHARLOTTE A. GAYDOS
Professor of Medicine

KEVIN B. GEROLD
Assistant Professor of Anesthesiology and Critical Care Medicine

DAVID EDWARD NEWMAN-TOKER
Assistant Professor of Neurology

PATRICK TODD TRIPLETT
Assistant Professor of Psychiatry

The Bloomberg School of Public Health:

SUSAN P. BAKER
Professor of Health Policy and Management

LYNN R. GOLDMAN
Professor of Environmental Health Sciences

JONATHAN M. LINKS
Professor of Environmental Health Sciences

ELLEN J. MACKENZIE
Professor of Health Policy and Management
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 for 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. CATLETT
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. HSIEH
Infectious diseases epidemiology in ED settings.

DR. HSU
Disaster preparedness; disaster training; pharmaceutical preparedness.

DR. JENKINS
Epidemiology; disaster medicine.

DR. JUNG
Simulation in medical education

DR. KELEN
Infectious disease; epidemiology and health services research; disaster medicine.

DR. KIRSCH
Disaster management, response, and training; ED management.

DR. LEVIN
Systems engineering in healthcare; healthcare resource utilization; ED crowding and patient outcomes.

DR. F. LEVY
Patient safety; tort reform; bioethics.

DR. MCCARTHY
ED overcrowding; access to care; health-related quality of life outcomes following trauma.

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; learning from medical errors.

DR. REGAN
Medical education; curriculum development, feedback, and evaluation.

DR. ROTHMAN
Complications of drug abuse; health services research; infectious diseases and rapid diagnostics.

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 BEYER
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

HOMAYOON FARZADEGAN
Professor of Epidemiology, School of Public Health

MANNING FEINLEIB
Professor of Epidemiology, School of Public Health

STEPHEN J. GANGE
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

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 and Joint Appointment in the Department of Medicine, School of Medicine

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

BRAD ASTOR
Associate Professor of Epidemiology, School of Public Health

MARGARET DANIELE FALLIN
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

PATTI GRAVITT
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 Functional Anatomy and Evolution, Professor of Otolaryngology-Head and Neck Surgery

JOAN T. RICHTSMEIER, Visiting Professor

KENNETH D. ROSE, Professor

MARK F. TEAFORD, Professor

DAVID B. WEISHAMPEL, Professor

DONNA MAGID
Associate Professor of Radiology and Radiological Science, Associate Professor of Functional Anatomy and Evolution, Joint Appointment in Orthopedic Surgery

VALERIE BURKE DELEON, Assistant Professor

REQUIRED WORK FOR M.D. DEGREE

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.

130.809 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.

GRADUATE PROGRAM—Students are accepted for graduate work leading to the degree of Doctor of Philosophy (see Graduate Programs)
McKusick-Nathans Institute of Genetic Medicine

CORE FACULTY*

DAVID L. VALLE
Professor of Pediatrics in Genetic Medicine, Professor of Ophthalmology, Joint Appointment in Medicine, Joint Appointment in Molecular Biology and Genetics, Henry J. Knott Director of the McKusick/Nathans Center for Medical Genetics

KARIN J. BLAKEMORE
Professor of Gynecology and Obstetrics in Genetic Medicine, Professor of Oncology

ARAVINDA CHAKRAVARTI
Professor of Medicine in Genetic Medicine, Professor of Pediatrics, Joint Appointment in Molecular Biology and Genetics

BARTON CHILDS, Professor Emeritus of Pediatrics

GARRY CUTTING
Aetna U.S. Healthcare Professor of Medical Genetics in the Department of Pediatrics, Professor of Medicine

HARRY C. DIETZ
Victor A. McKusick Professor of Medicine and Genetics in the Department of Pediatrics, Associate Professor of Neurological Surgery, Joint Appointment in Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

ANDREW P. FEINBERG
King Fahd Professor of Molecular Medicine in the Department of Medicine, Professor of Oncology, Joint Appointment in Molecular Biology and Genetics

JOHN D. GEARHART
Adjunct Professor of Gynecology & Obstetrics in Genetic Medicine, Adjunct Professor of Physiology

GAIL GELLER, Professor of Medicine in Genetic Medicine, Professor of Pediatrics

ADA HAMOSH, Professor of Pediatrics in Genetic Medicine

NEIL A. HOLTZMAN, Professor Emeritus of Pediatrics

BARBARA R. MIGEON
Professor of Pediatrics in Genetic Medicine

ROGER H. REEVES, Professor of Physiology in Genetic Medicine

GREGG L. SEMENZA
Professor of Pediatrics in Genetic Medicine, Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Oncology, Professor of Medicine, Professor of Biological Chemistry

KIRBY D. SMITH, Professor of Pediatrics in Genetic Medicine

GEORGE H. THOMAS
Professor of Pediatrics in Genetic Medicine, Professor of Pathology, Joint Appointment in Medicine

DIMITRIOUS AVRAMOPOULOS
Associate Professor of Psychiatry in Genetic Medicine

CORAINE D. BOEHM, Associate Professor of Pediatrics in Genetic Medicine

VIRGINIA L. CORSON
Associate Professor of Gynecology and Obstetrics in Genetic Medicine, Associate Professor of Pediatrics

KATHY LYNN HUDSON, Associate Professor of Pediatrics in Genetic Medicine

NICHOLAS KATSANIS, Adjunct Associate Professor of Ophthalmology in Genetic Medicine, Joint Appointment in Molecular Biology and Genetics

JOSHUA T. MENDELL
Associate Professor of Pediatrics in Genetic Medicine, Joint Appointment in Molecular Biology and Genetics

AKHILESH PANDEY, Associate Professor of Biological Chemistry in Genetic Medicine, Associate Professor of Oncology, Associate Professor of Pathology (on leave of absence)

ALAN F. SCOTT
Associate Professor of Medicine in Genetic Medicine, Associate Professor of Oncology

FORREST SPENCER
Associate Professor of Medicine in Genetic Medicine, Joint Appointment in Molecular Biology and Genetics

GAIL STETTEN
Associate Professor Emerita of Gynecology and Obstetrics, Joint Appointment in Pediatrics

DAN ARKING
Assistant Professor of Medicine in Genetic Medicine

MICHAEL A. BEER
Assistant Professor of Biomedical Engineering in Genetic Medicine, Joint Appointment in Molecular Biology and Genetics

RONALD D. COHN
Assistant Professor of Pediatrics in Genetic Medicine, Assistant Professor of Neurology

JULIE ELIZABETH HOOVER-FONG, Assistant Professor of Pediatrics in Genetic Medicine

ANDREW S. MCCALLION
Assistant Professor of Molecular and Comparative Pathobiology in Genetic Medicine, Research Associate in Medicine

TAO WANG, Assistant Professor of Pediatrics in Genetic Medicine

* Core faculty hold a primary appointment in a School of Medicine department and hold full membership in the Institute.

The Institute of Genetic Medicine is a new organizational structure to consolidate basic and applied research, teaching and patient care in human and medical genetics at Johns Hopkins, and to provide national and inter-
national leadership in genetic medicine. The new field of genetic medicine is concerned not only with the practice of medicine informed by new genetic knowledge but also in considering how an individual’s genome sequence can influence their disease treatment and management. The Institute serves as a focal point for interactions between diverse investigators to promote the application of genetic discoveries to human disease and genetics education to the public. The faculty have considerable strengths and expertise in the areas of genomics, human developmental genetics, biochemical genetics, population genetics and complex disease genetics. One of the aims of the Institute is to catalyze the spread of human genetic perspectives to other related disciplines by collaboration with other departments within Hopkins.

RESEARCH INTERESTS

Research interests represented in the Institute are as follows:

DR. BEER
Computational identification of regulatory networks from microarray expression data and whole genome DNA sequence; experimental validation of regulatory pathways in C. elegans.

DR. BOEHM
DNA-based diagnosis of genetic disorders.

DR. CHAKRAVARTI
Complex disease; genomics; computational biology.

DR. COHN
Pathogenesis of muscle disorders; clinical genetics.

DR. CUTTING
Inherited sinopulmonary diseases (cystic fibrosis, chronic rhinosinusitis, asthma)

DR. DIETZ
Pathogenetic mechanisms in Marfan syndrome; nonsense-mediated mRNA decay.

DR. HAMOSH
Clinical implications of human genome project; inborn errors of metabolism.

DR. HOOVER-FONG
Skeletal dysplasias.

DR. KATSANIS
Oligogenic disorders, Bardet-Biedl syndrome; retinal degeneration.

DR. MCCALLION
Functional comparative genomic approaches to complex genetic disease.

DR. MIGEON
X chromosome inactivation; genomic imprinting.

DR. PANDEY
Signal transduction; proteomics; bioinformatics.

DR. SCOTT
Genetic/genomic technology; SNP association studies for complex traits.

DR. SEMENZA
Hypoxia-inducible factor 1 in cancer and cardiovascular disease.

DR. WANG
X linked mental retardation; inborn errors of metabolism.

DR. VALLE
Clinical, biochemical and molecular bases of disease, model systems, evolution, genomics and principles of disease.

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

ROBERT E. BRISTOW
Professor of Gynecology and Obstetrics, 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
C. Michael Armstrong Professor of Gynecology, Adjunct Professor of Physiology

GEORGE R. HUGGINS, Professor Emeritus

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

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-CHOU 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 Gynecology and Obstetrics

DEBORAH K. ARMSTRONG
Associate Professor of Oncology, Associate Professor of Gynecology and Obstetrics

THEODORE A. BARAMKI
Associate Professor of Gynecology and Obstetrics, Joint Appointment in Pediatrics

JESSICA L. BIENSTOCK, Associate Professor

LINZHAO CHENG
Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology, Assistant Professor of Medicine

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 GUREWITSC
Associate Professor of Gynecology and Obstetrics, Associate Professor of Biomedical Engineering

VICTORIA L. HANDA, Associate Professor

ANDREW P. HARRIS
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Gynecology and Obstetrics

HENDREE EVELYN JONES
Associate Professor of Behavioral Biology in the Department of Psychiatry, Associate Professor of Gynecology and Obstetrics

SUHEIL JAMIL MUASHER, Associate Professor

WANDA NICHOLSON, Associate Professor

J. COURTLAND ROBINSON, Associate Professor Emeritus

RICHARD B. S. RODEN
Associate Professor of Pathology, Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology

ANNE M. ROMPALO
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, Professor of Oncology, Associate Professor of Biomedical Engineering, Associate Professor of Gynecology and Obstetrics

DAVID B. SCHWARTZ, Visiting Associate Professor

SAMUEL SMITH, Associate Professor

GAIL STETTEN
Associate Professor Emerita of Gynecology and Obstetrics

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

CLIFFORD R. WHEELESS, JR., Associate Professor Emeritus

YULIAN ZHAO, Associate Professor

ABIMBOLA J. AINA, Assistant Professor

JANYNE ALTHAUS, Assistant Professor
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. This clinical experience consists of a subinternship in Reproductive Endocrinology. 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 including assisted reproductive technology services such as IVF.

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; hematopoiesis. DR. CORNELISON Gynecologic oncology. MS. CORSON Prenatal genetics.
E 4. Subinternship in Gynecology and Obstetrics. Dr. Hueppchen. Specific times during the year; four to six weeks.

Prerequisite: Completion of the Ob/Gyn Basic 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.

E 5. Subinternship in Gynecologic Oncology. Dr. Bristow. Specific times during the year; three, four or nine weeks.

Prerequisite: Completion of the Ob/Gyn Basic Clerkship and an interview.

The student will function as a house officer at the first year level. Responsibilities include, for assigned patients: complete admission workup, history, and physical examination, and with the attending physician, develop a plan of patient care. The student will also be involved in the patient’s surgery, radiation and/or chemotherapy treatments.

E 6. Subinternship in HIV Infection in Women. Dr. Anderson. Specific times during the year; three or four weeks.

Prerequisite: Completion of Ob/Gyn Basic Clerkship and an interview.

Students will participate in the obstetric and gynecology care of HIV-positive women. A research component is encouraged.

E 7. Subinternship in Obstetrics and Gynecology-Bayview. Dr. Argani. Various times during the year; three, four, or six weeks.

Prerequisite: Completion of Ob/Gyn Basic Clerkship.

This clinical experience consists of a subinternship in General Obstetrics and Gynecology. The student will function as an intern with responsibility for both inpatient and outpatient care. The emphasis will be on management of common Ob/Gyn problems.

E 8. Subinternship in Obstetrics. Dr. Hueppchen. Specific times during the year; three, four, or six weeks.

Prerequisite: Completion of Ob/Gyn Basic Clerkship and an interview.

This clinical experience consists of a subinternship in obstetrics. 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, labor and delivery. This subinternship can be combined with the Gynecology Subinternship.
Health Sciences Informatics

NANCY K. RODERER
Associate Professor of Health Sciences Informatics, Associate Professor of Medicine, Acting Director of the Division of Health Sciences Informatics

LEE ALAN FLEISHER
Adjunct Professor of Health Sciences Informatics

NINA W. MATHESON
Professor Emerita of Medical Information

WILLIAM A. YASNOFF, Adjunct Professor

HAROLD P. LEHMANN
Associate Professor of Health Sciences Informatics, Associate Professor of Pediatrics

ALLEN YIYEN TIEN, Adjunct Associate Professor

ALAN COLTRI, 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

EDWARD B. BUNKER, Research Associate

NKOSI C. DAMBITA, Research Associate

SCOTT FINLEY, Research Associate

GEORGE R. 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

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 Institu-
tions. 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

**DR. SHATZER**
Medical education.

**MR. ZHANG**
UMLS applications in institutional repositories.

**600.701 Health Sciences Informatics Data, Information, Knowledge.** Ms. Roderer. Second quarter.

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).

**600.807 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

GERTRUDE BRIEGER  
Distinguished Service Professor Emeritus in the Department of History of Medicine

ELIZABETH FEE, Professor

MARY E. FISSELL, Professor

ROBERT H. KARSON, Willis K. Shepard Professor of History of Science*

SHARON ELIZABETH KINGSLAND, Professor*

STUART W. LESLIE, 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 (on leave of absence to 08/31/09)

CHRISTINE A. RUGGERE, Lecturer

NANCY MCCALL, Research Associate

YUEHTSEN JULIETTE CHUNG, Visiting Scientist

PETeR KEATING, Visiting Scientist (from 01/01/10)

---

**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 School of Arts and Sciences:

RICHARD A. MACKSEY  
Professor, Humanities Center

---

* Faculty, School of Arts and Sciences.

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. Marks.**

**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.** Drs. Marta Hanson and Harry Marks.

**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. Mary 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. Daniel 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. Marks, 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 America. 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. Nathaniel 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. Drs. Todes and Hanson. Spring.
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.

150.808 History of Epidemiology. Dr. Marks. Fourth quarter.
Will examine epidemiological concepts and methods in the 19th and 20th centuries, emphasizing the links between epidemiology, medical theory, and public health practice. Readings consist of classic (and not-so-classic) epidemiological studies, ranging from Snow on Cholera to John Paul on Rheumatic Fever.

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).
<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYRON L. WEISFELDT</td>
<td>William Osler Professor of Medicine, Director of the Department of Medicine</td>
</tr>
<tr>
<td>DARRELL R. ABERNETHY</td>
<td>Professor of Medicine, Professor of Pharmacology and Molecular Sciences</td>
</tr>
<tr>
<td>STEPHEN C. ACHUFF</td>
<td>Professor</td>
</tr>
<tr>
<td>N. FRANKLIN ADKINSON, JR.</td>
<td>Professor</td>
</tr>
<tr>
<td>RICHARD F. AMBINDER</td>
<td>James B. Murphy Professor of Oncology, Professor of Medicine, Professor of Pathology, Professor of Pharmacology and Molecular Sciences</td>
</tr>
<tr>
<td>REUBIN ANDRES</td>
<td>Professor</td>
</tr>
<tr>
<td>LAWRENCE J. APPEL</td>
<td>Professor</td>
</tr>
<tr>
<td>KAMAL F. BADR</td>
<td>Adjunct Professor</td>
</tr>
<tr>
<td>LEE RANDOL BARKER</td>
<td>Professor</td>
</tr>
<tr>
<td>JOHN G. BARTLETT</td>
<td>Stanhope Bayne-Jones Professor of Medicine</td>
</tr>
<tr>
<td>ERIC B. BASS</td>
<td>Professor</td>
</tr>
<tr>
<td>JOAN M. BATHON</td>
<td>Professor</td>
</tr>
<tr>
<td>THEODORE M. BAYLESS</td>
<td>Sherlock Hibbs Professor of Inflammatory Bowel Disease in the Department of Medicine</td>
</tr>
<tr>
<td>STEPHEN B. BAYLIN</td>
<td>Virginia and Daniel K. Ludwig Professor of Cancer Research in the Department of Medicine, Professor of Medicine</td>
</tr>
<tr>
<td>DIANE M. BECKER</td>
<td>Professor</td>
</tr>
<tr>
<td>LEWIS C. BECKER</td>
<td>Robert L. Levy Professor of Cardiology in the Department of Medicine, Joint Appointment in Radiology</td>
</tr>
<tr>
<td>WILLIAM R. BELL</td>
<td>Edythe Harris Lucas and Clara Lucas Lynn Professor Emeritus of Hematology in the Department of Medicine</td>
</tr>
<tr>
<td>RICHARD G. BENNETT</td>
<td>Professor</td>
</tr>
<tr>
<td>RONALD D. BERGER</td>
<td>Professor of Medicine, Professor of Biomedical Engineering</td>
</tr>
<tr>
<td>RAFAEL BEYAR</td>
<td>Visiting Professor</td>
</tr>
<tr>
<td>WILMA B. BIAS</td>
<td>Professor Emerita</td>
</tr>
<tr>
<td>WILLIAM RAMSES BISHAI</td>
<td>Professor of Medicine, Joint Appointment in Pathology</td>
</tr>
<tr>
<td>MARC R. BLACKMAN</td>
<td>Professor</td>
</tr>
<tr>
<td>DAVID A. BLUEMEKE</td>
<td>Professor of Radiology and Radiological Science, Professor of Medicine</td>
</tr>
<tr>
<td>ROGER S. BLUMENTHAL</td>
<td>Professor</td>
</tr>
<tr>
<td>BRUCE S. BOCHNER</td>
<td>Professor</td>
</tr>
<tr>
<td>ROBERTO BOLLI</td>
<td>Adjunct Professor</td>
</tr>
<tr>
<td>ROBERT C. BOLLINGER, JR.</td>
<td>Professor</td>
</tr>
<tr>
<td>PAUL A. BOTTOMLEY</td>
<td>Russell H. Morgan Professor of Radiology, Professor of Biomedical Engineering, Professor of Medicine</td>
</tr>
<tr>
<td>FREDERICK L. BRANCATI</td>
<td>Samsung Professor of Medicine</td>
</tr>
<tr>
<td>JEFFREY A. BRinker</td>
<td>Professor of Medicine, Joint Appointment in Radiology</td>
</tr>
<tr>
<td>ROBERT A. BRODSKY</td>
<td>Edyth Harris Lucas and Clara Lucas Lynn Professor of Medicine, Professor of Oncology</td>
</tr>
<tr>
<td>ROY G. BROWER</td>
<td>Professor</td>
</tr>
<tr>
<td>JOHN R. BURTON</td>
<td>Mason F. Lord Professor of Geriatric Medicine in the Department of Medicine</td>
</tr>
<tr>
<td>HUGH G. CALKINS</td>
<td>Nicholas J. Fortuin, M.D. Professor of Cardiology in the Department of Medicine, Professor of Pediatrics</td>
</tr>
<tr>
<td>DONALD O. CASTELL</td>
<td>Visiting Professor (from 09/01/09)</td>
</tr>
<tr>
<td>RICHARD E. CHAISSON</td>
<td>Professor</td>
</tr>
<tr>
<td>ARAVINDA CHAKRAVARTI</td>
<td>Professor of Medicine, Professor of Pediatrics, Joint Appointment in Molecular Biology and Genetics</td>
</tr>
<tr>
<td>NISHA CHANDRA</td>
<td>Professor</td>
</tr>
<tr>
<td>PATRICIA CHARACHE</td>
<td>Professor of Pathology, Professor of Medicine, Professor of Oncology</td>
</tr>
<tr>
<td>SAMUEL CHARACHE</td>
<td>Professor Emeritus of Medicine, Professor Emeritus of Pathology</td>
</tr>
<tr>
<td>ARTHUR B. CHAUSMER</td>
<td>Adjunct Professor</td>
</tr>
<tr>
<td>BART CHERNOW</td>
<td>Adjunct Professor</td>
</tr>
<tr>
<td>HORACIO CINGOLANI</td>
<td>Visiting Professor</td>
</tr>
<tr>
<td>NANCY ABBEY COLLOP</td>
<td>Professor of Medicine, Professor of Neurology</td>
</tr>
<tr>
<td>C. LOCKARD CONLEY</td>
<td>University Distinguished Service Professor Emeritus of Medicine</td>
</tr>
<tr>
<td>DAVID S. COOPER</td>
<td>Professor</td>
</tr>
<tr>
<td>LISA COOPER</td>
<td>Professor</td>
</tr>
<tr>
<td>GARRY R. CUTTING</td>
<td>Aetna U.S. Healthcare Professor of Medical Genetics in the Department of Pediatrics, Professor of Medicine</td>
</tr>
<tr>
<td>CHI VAN DANG</td>
<td>Johns Hopkins Family Professor for Oncology Research in the Department of Medicine, Professor of Cell Biology, Professor of Oncology, Professor of Pathology, Joint Appointment in Molecular Biology and Genetics</td>
</tr>
<tr>
<td>ADRIAN S. DOBS</td>
<td>Professor of Medicine, Professor of Oncology</td>
</tr>
<tr>
<td>ROSS C. DONEHOWER</td>
<td>Virginia and Daniel K. Ludwig Professor of Clinical Investigation of Cancer in the Department of Oncology, Professor of Medicine</td>
</tr>
<tr>
<td>MARK DONOWITZ</td>
<td>George LeBof Professor for Research in Digestive Diseases in the Department of Medicine, Professor of Physiology</td>
</tr>
<tr>
<td>JERROLD J. ELLNER</td>
<td>Visiting Professor</td>
</tr>
</tbody>
</table>
MARCIA IRENE FOO CANTO
Associate Professor of Medicine, Associate Professor of Oncology

JOSEPH A. CARRESE, Associate Professor

LIVIA A. CASCIOLA-ROSEN, Associate Professor

VINCENZO CASOLARO
Associate Professor of Medicine (on leave of absence to 07/31/09)

SHUKTI CHAKRAVARTI
Associate Professor of Medicine, Associate Professor of Ophthalmology, Assistant Professor of Cell Biology

CHARLES PATRICK CHAULK, Adjunct Associate Professor

MICHAEL JAMES CHOI, Associate Professor

JEANNE M. CLARK, Associate Professor

JOSEPH COFRANCESCO, JR., Associate Professor

MARY CONCETTA CORRETTI, Associate Professor

SARA COSGROVE
Associate Professor of Medicine (from 10/01/09), Assistant Professor of Medicine (to 09/30/09)

ANDREA L. COX
Associate Professor of Medicine (from 10/01/09), Assistant Professor of Medicine (to 09/30/09), Associate Professor of Oncology (from 10/01/09), Assistant Professor of Oncology (to 09/30/09)

PETER S. CRETCIOS, Associate Professor

MICHAEL T. CROW, Associate Professor

BURTON C. D’LUGOFF, Associate Professor Emeritus

MEL P. DALY, Associate Professor

PETER E. DANS, Associate Professor

GAIL L. DAUMIT
Associate Professor of Medicine, Joint Appointment in Psychiatry

GREGORY B. DIETTE, Associate Professor

HARRY C. DIETZ
Victor A. McKusick Professor of Medicine and Genetics in the Department of Pediatrics, Associate Professor of Medicine, Assistant Professor of Neurological Surgery, Joint Appointment in Molecular Biology and Genetics

SUSAN ELIZABETH DORMAN, Associate Professor

SAMUEL C. DURSO, Associate Professor

JOSEPHINE MARY EGAN, Associate Professor

REBECCA D. ELON, Associate Professor

ERIC ANDREW ENGELS, Associate Professor

EMILY J. ERBEOLDING
Associate Professor of Medicine, Associate Professor of Pediatrics

DAVID J. FELLER-KOPMAN, Visiting Associate Professor

ROBERT P. FERGUSON, Associate Professor

HENRY E. FESSLER, Associate Professor

JOHN H. FETTING, III
Associate Professor of Oncology, Associate Professor of Medicine, Assistant Professor of Psychiatry

DEREK MICHAEL FINE, Associate Professor

MICHAEL I. FINGERHOOD, Associate Professor

TOREN FINKEL, Visiting Associate Professor

KEVIN R. FONTAINE, Associate Professor

CLAIR A. FRANCOMANO
Associate Professor of Medicine, Assistant Professor of Pediatrics

KELLY A. GEBO, Associate Professor

ALLAN CHARLES GELBER, Associate Professor

EBEID REDA GIRGIS, Associate Professor

F. MICHAEL GLOTH, III, Associate Professor

DAVID B.K. GOLDEN, Associate Professor

SHERITA HILL GOLDEN, Associate Professor

SHELTON H. GOTTLIB, Associate Professor

JEREMY DAVID GRADON, Associate Professor

CONSTANCE A. GRIFFIN
Professor of Pathology, Professor of Oncology, Associate Professor of Medicine

LOUISE B. GROCHOW
Associate Professor of Oncology, Associate Professor of Medicine

RICHARD J. GROSS, Associate Professor

SANDRA E. GUGGINO
Associate Professor of Medicine, Associate Professor of Physiology

AHMET GURAKAR, Visiting Associate Professor

PAUL A. GURBEL, Associate Professor

H. FRANKLIN HERLONG, Associate Professor

CHARLES STEVEN HESDORFFER
Associate Professor of Medicine, Associate Professor of Oncology

FELICIA HILL-BRIGGS
Associate Professor of Medicine, Assistant Professor of Physical Medicine and Rehabilitation

MAUREEN RENEE HORTON, Associate Professor

ERIC E. HOWELL, Associate Professor

TAH-HSIUNG HSU, Associate Professor

WALTER C. HUBBARD
Associate Professor of Medicine, Associate Professor of Pharmacology and Molecular Sciences

RICHARD L. HUMPHREY
Associate Professor of Pathology, Associate Professor of Medicine

MEHBOOB ALI HUSSAIN
Associate Professor of Pediatrics, Associate Professor of Biological Chemistry, Associate Professor of Medicine

NOREEN A. HYNES, Associate Professor

SUZANNE M. JAN DE BEUR, Associate Professor

DANIEL PHILIP JUDGE, Associate Professor

MICHAEL H. KELEMEN, Associate Professor

LANDON STUART KING
Associate Professor of Medicine, Associate Professor of Biological Chemistry

EDWARD S. KRAUS, Associate Professor
<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALBERT C. LARDO</td>
<td>Associate Professor of Medicine, Associate Professor of Biomedical Engineering</td>
</tr>
<tr>
<td>BRUCE ALLEN LEFF</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>MARK JAMES LEVIS</td>
<td>Associate Professor of Oncology, Associate Professor of Medicine</td>
</tr>
<tr>
<td>KENNETH B. LEWIS</td>
<td>Associate Professor Emeritus</td>
</tr>
<tr>
<td>MARK CHANG-HWA LIU</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>GREGORY M. LUCAS</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>MAHADEVAPPA MAHESH</td>
<td>Associate Professor of Radiology and Radiological Science, Associate Professor of Medicine</td>
</tr>
<tr>
<td>YUKARI CAROL MANABE</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>JOSEPH E. MARINE</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>BRUCE C. MARSHALL</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>ROBERT E. MASON</td>
<td>Associate Professor Emeritus</td>
</tr>
<tr>
<td>MARY E. MCCAUL</td>
<td>Professor of Behavioral Biology in the Department of Psychiatry, Associate Professor of Medicine</td>
</tr>
<tr>
<td>ANDREA NIKKI MEYERHOFF</td>
<td>Adjunct Associate Professor</td>
</tr>
<tr>
<td>EDGAR RAYMOND MILLER, III</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>REDONDA GAIL MILLER</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>FRANCIS D. MILLIGAN</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>MACK C. MITCHELL, JR.</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>DAVID R. MOLLER</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>W. TABB MOORE</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>MORTON MAIMON MOWER</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>GERARD E. MULLIN</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>LAURA M. MUMFORD</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>ALLEN C. MYERS</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>SALAH M. NASRALLAH</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>PARVIZ NIKOOMANESH</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>RULAN PAREKH</td>
<td>Associate Professor of Medicine</td>
</tr>
<tr>
<td>GARY R. PASTERNACK</td>
<td>Adjunct Associate Professor of Pathology, Adjunct Associate Professor of Medicine</td>
</tr>
<tr>
<td>DAVID B. PEARSE</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>MARGARET B. PENNO</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>BRENT G. PETTY</td>
<td>Associate Professor of Pharmacology and Molecular Sciences</td>
</tr>
<tr>
<td>GARY D. PLOTNICK</td>
<td>Associate Professor of Medicine</td>
</tr>
<tr>
<td>VSEVOLOD Y. POLOTSKY</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>WENDY S. POST</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>NARESH M. PUNJABI</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>JEFFREY J. RADE</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>WILLIAM J. RAVICH</td>
<td>Associate Professor of Medicine</td>
</tr>
<tr>
<td>STUART CAMPBELL RAY</td>
<td>Associate Professor of Medicine, Associate Professor of Oncology, Joint Appointment in Health Sciences Informatics</td>
</tr>
<tr>
<td>JON R. RESAR</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>LINDA M.S. RESAR</td>
<td>Associate Professor of Medicine, Associate Professor of Oncology</td>
</tr>
<tr>
<td>NANCY K. RODERER</td>
<td>Professor of Health Sciences Informatics, Associate Professor of Medicine</td>
</tr>
<tr>
<td>ANNABELLE RODRIGUE-OWENDO</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>ELIZABETH LONDON ROGERS</td>
<td>Adjunct Associate Professor</td>
</tr>
<tr>
<td>SHEILA H. ROMAN</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>STUART DEAN RUSSELL</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>GEORGE H. SACK, JR.</td>
<td>Associate Professor of Medicine, Associate Professor of Biological Chemistry</td>
</tr>
<tr>
<td>SARBJIT SINGH SAINI</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>ROBERTO SALVATORI</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>SCHERER P. SANDERS</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>PAUL J. SCHEEL, JR.</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>D. WILLIAM SCHLOTT</td>
<td>Philip A. Tumulty Associate Professor of Medicine</td>
</tr>
<tr>
<td>JONATHAN SCHNECK</td>
<td>Professor of Pathology, Professor of Oncology, Associate Professor of Medicine</td>
</tr>
<tr>
<td>JOHN THOMAS SCHROEDER</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>ALAN F. SCOTT</td>
<td>Associate Professor of Medicine in Genetic Medicine, Associate Professor of Oncology</td>
</tr>
<tr>
<td>JODI BETH SEGAL</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>ERIC J. SEIFTER</td>
<td>Associate Professor of Medicine, Associate Professor of Oncology</td>
</tr>
<tr>
<td>DEBORAH E. SELLMEYER</td>
<td>Visiting Associate Professor</td>
</tr>
<tr>
<td>JAMES S. K. SHAM</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>LARISSA AKIMI SHIMODA</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>LAWRENCE E. SHULMAN</td>
<td>Associate Professor Emeritus</td>
</tr>
<tr>
<td>ELEANOR MARIE SIMONSICK</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>STEPHEN D. SISSON</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>DAVID A. SPECTOR</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>FORREST SPENCER</td>
<td>Associate Professor in Genetic Medicine of Medicine, Joint Appointment in Molecular Biology and Genetics</td>
</tr>
<tr>
<td>PETER MICHAEL SPOONER</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>CRISTIANA STELLATO</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>MICHAEL BLAKE STREIFF</td>
<td>Associate Professor of Medicine, Instructor in Pathology</td>
</tr>
<tr>
<td>MARK SEBASTIAN SULKOWSKI</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Name</td>
<td>Title and Department</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Jonathan Tzvi Klein</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Lawrence E. Klein</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Amy M. Knight</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>MARIAN KOLLARIK</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Ayman A. Koteish</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Olga N. Kovbasnijuk</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Brian Gustav Kral</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Steven J. KRAVET</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Esther I. Krug</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Anne J. Krush</td>
<td>Assistant Professor Emerita</td>
</tr>
<tr>
<td>John H. Kwon</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Gyanu Lamichhane</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Thomas F. Lansdale, III</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Sophie M. Lanzkron</td>
<td>Assistant Professor of Medicine, Assistant Professor of Oncology</td>
</tr>
<tr>
<td>Bryan Lau</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Mark G. Lazarev</td>
<td>Assistant Professor (from 08/01/09)</td>
</tr>
<tr>
<td>Noah Lechtzin</td>
<td>Assistant Professor of Medicine, Assistant Professor of Neurology</td>
</tr>
<tr>
<td>Linda A. Lee</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Sean Xiao Leng</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Rachel B. Levine</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Stuart M. Levine</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Howard Philip Levy</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Xuhang Li</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Zhiping Li</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Susan Lee Limb</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Li Lin</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>Shari Miura Ling</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Charles F.S. Locke</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>J. Craig Longenecker</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Nancy Ryan Lowitt</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>David H. Madoff</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Jeffrey Lance Magaziner</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Priscilla Magno</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>Andrew L. Mammen</td>
<td>Assistant Professor of Neurology, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>Lisa L. Maragakis</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Spyridon S. Marinopoulos</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Don Richard Martin</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>L. David Martin</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Neil Alexander Martinson</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Andrea Slotkoff Marx</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Stephen C. Mathai</td>
<td>Assistant Professor of Medicine (from 08/01/09), Instructor in Medicine (to 07/31/09)</td>
</tr>
<tr>
<td>Rasika Ann Mathias</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Alan K. Matsumoto</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Susan A. Mayer</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Andrew R. Mayer</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Reza Mazhari</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>Robert Emmett McCarthy</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Jeanne M. McCauley</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Meredith Christine McCormack</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Michael A. McDevitt</td>
<td>Assistant Professor of Medicine, Assistant Professor of Oncology</td>
</tr>
<tr>
<td>John F. McDyer</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Maura J. Mcguire</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Robin McKenzie</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Anne B. Mckusick</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Rhondalyn C. Mclean</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Matthew K. McNabney</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Elizabeth Pynadath Menachery</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Christian A. Merlo</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>James H. Mersey</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>John O. Meyerhoff</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Theresa M. Michele</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Erin Donnelly Michos</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Julie Marie Miller</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Alison Rae Moliterno</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Anna T. Monias</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Yuriko Mori</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>James O. Mudd</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Donna I. Myers</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Samer S. Najjar</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Saman Nazarian</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Dale M. Needham</td>
<td>Assistant Professor of Medicine, Assistant Professor of Physical Medicine and Rehabilitation</td>
</tr>
<tr>
<td>Dionissios Neoftyos</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Enid R. Neptune</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Dale M. Netski</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>Mary M. Newman</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Geoffrey C. Nguyen</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>Jack E. Niissim</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Emmanuel Nchinda Nsah</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Eric Nuermberger</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Naomi P. O’Grady</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Esther S. Oh</td>
<td>Assistant Professor of Medicine, Instructor in Pathology, Joint Appointment in Psychiatry</td>
</tr>
<tr>
<td>Patrick I. Okolo, III</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Yngvild Olsen</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Patrick Onyang</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Diane Julie Orlinsky</td>
<td>Assistant Professor of Dermatology, Assistant Professor of Medicine</td>
</tr>
<tr>
<td>Kathleen R. Page</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Nazareno Paolocci</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Anand K. Parekh</td>
<td>Adjunct Assistant Professor</td>
</tr>
<tr>
<td>Eunmi Park</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Catherine Passaretti</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Susheel P. Patil</td>
<td>Assistant Professor</td>
</tr>
</tbody>
</table>
FENG WU, Research Associate
MINGHUI Xiang, Research Associate
HUIQING XIAO, Research Associate
XIAO PING YANG, Research Associate
XIAO-RU YANG, Research Associate
XIAOJU YANG, Research Associate
QILU YU, Research Associate
ASIFA K. ZAIDI, Research Associate
KAREN I. ZELLER, Research Associate
MANUEL H. AGUIAR-OLIVEIRA, Visiting Scientist
KEITH WARREN CRAWFORD, Visiting Scientist
WILLIAM DAVID HANKINS, Visiting Scientist
YONG SIK KIM, Visiting Scientist
ARSENI MARKOV, Visiting Scientist
DE-GUANG MU, Visiting Scientist
REBECCA OSTHUS, Visiting Scientist
CHANG-SHIN PARK, Visiting Scientist (to 08/31/09)
YOON-MEAN PARK, Visiting Scientist
NICOLA SCICHILONE, Visiting Scientist
SA SHI, Visiting Scientist
LU XIA, Visiting Scientist
XU YAO, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF MEDICINE HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

ALLISON LORNA AGWU
Assistant Professor of Pediatrics

JEAN R. ANDERSON
Professor of Gynecology and Obstetrics

FRANK MICHAEL BENGE
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

SHENGAN 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
Instructor in 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. RABINS
Professor of Psychiatry

RICHARD E. ROTHMAN
Associate Professor of Emergency Medicine

HYUN S. SHIN
Professor of Molecular Biology and Genetics

PHILIP JOEL SPEVAK
Associate Professor of Pediatrics

GEORGE H. THOMAS
Professor of Pediatrics in Genetic Medicine

ANNIE UMBRICH
Assistant Professor of Psychiatry

DAMION D. 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

KAREN JANET BANDEEN-ROCHE
Professor of Health Policy and Management

BRAD C. ASTOR
Assistant Professor of Epidemiology

KAREN BANDEEN-ROCHE
Professor of Biostatistics

SHYAM SUNDAR BISWAL
Associate 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. BREYSSE
Professor of Environmental Health Sciences

DONALD SCOTT BURKE
Professor of International Health

GILBERT M. BURNHAM
Professor of International Health

DAVID DUPUY CELENTANO
Professor of Epidemiology
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 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

The curriculum is limited to students of the second year and is offered throughout the first three quarters. Prerequisite for admission is thorough training in the sciences fundamental to medicine. The course is divided into three parts, which present and coordinate the basic information and techniques of clinical medicine. The aims are (a) to bridge the gap between the basic sciences and clinical medicine by emphasizing the pathophysiologic basis for clinical manifestations and quantitative measurements in clinical medicine, (b) to introduce the student to patterns in the natural history of major groups of disease entities, and (c) to train the student in the techniques required for examination of the patient. The work is arranged as follows:


Quarters 1-3; second year.

An interdepartmental course designed to introduce students to clinical medicine through the application of information from the basic sciences to the solution of clinical problems and for the elucidation of pathologic and biochemical mechanisms in health and disease. The course covers the major disease areas by means of whole class lectures and small group discussions led by clinical preceptors and by members of subspecialty groups. This course is closely integrated with Pathology and Pharmacology.

Graduate students may take the lecture portion (250.705) of this course. Enrollment limited.

2. 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 exami-
nations 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, Otolaryngology, and Gynecology.

3. 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.

1. Clinical Clerkship. Dr. Leff and Dr. Cayea.

A nine-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 Medicine B-Second Year or courses completed elsewhere that are considered as equivalent by the director of the Department of Medicine.

CLINICAL WORK AT THE JOHNS HOPKINS HOSPITAL, Dr. Leff and staff; CLINICAL WORK AT JOHNS HOPKINS BAYVIEW MEDICAL CENTER, Dr. Hellmann and staff; and CLINICAL WORK AT SINAI HOSPITAL, Dr. Gambert.

Students serve full time as clinical clerks for 4 1/2 weeks on the medical service of The Johns Hopkins Hospital and 4 1/2 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 and follow their clinical course. Students participate in the visiting physician’s rounds, house staff rounds, and conferences. Students attend a lecture series and special seminars.

2. Ambulatory Clerkship. Dr. Thomas and staff.

A four-week clerkship that can be taken any time from final quarter of the second year through the third quarter of the fourth year.

(a) CLINICAL WORK AT THE JOHNS HOPKINS COMMUNITY PHYSICIANS PRACTICES, Dr. McGuire and staff; CLINICAL WORK AT SINAI HOSPITAL, Dr. King and staff; CLINICAL WORK AT COMMUNITY PRACTICES, Dr. Thomas and staff.

Students spend 50 percent time in community-based practices working one-on-one with faculty evaluating outpatients. Two or three small group sessions per week with hospital-based faculty are used to emphasize clinical skills and problem-solving. Students develop a learning portfolio of their patient logs, training problems with self-assessment, and an evidence-based report.

Medicine—Fourth Year

Rational Therapeutics. Dr. Hendrix, Division of Clinical Pharmacology and other selected clinical faculty. Required of all fourth year medical students when at The Johns Hopkins Hospital. 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 therapeutic 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.

Elective Opportunities
Curricular Consultants: Drs. Thomas and Weiner. 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 Basic 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 inves-
tigations 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.

DEPARTMENTAL COURSES


Prerequisite: Basic Medicine Clerkship.

Students can serve as subinterns on one of the Nelson/Baker Units, 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. Registration is through the Office of the Registrar as a lottery elective.


Prerequisite: Medicine Basic 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.


Prerequisite: Medicine Basic Clerkship.

The student will serve in the role of an intern under the supervision of the assistant residents and attending physician on one of the medical units. The student will admit patients in rotation, make an evaluation of these patients and directly supervise appropriate therapy. Generally, on-call and admission responsibility will be every fifth 24 hours. An average of three patients are admitted each 24 hours. The student will participate fully in the work rounds of the unit as well as in the teaching activities of the department.

E 2. Advanced Clinical Clerkship in Medicine. (Greater Baltimore Medical Center). Dr. Landsdale and staff. Available all year. One-half quarter.

Prerequisite: Medicine Basic 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 2. Advanced Clinical Clerkship in Medicine. (Sinai Hospital). Drs. Chow, Gambert, and staff. Available all year; arrange through Dr. Gambert. One-half or full quarter.

Prerequisite: Medicine Basic 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 Coronary Care Unit, the Emergency Room, or a subspecialty division are available. Teaching is centered on patient care and is supplemented by departmental conferences.

CARDIOVASCULAR DIVISION

DR. TOMASELLI, DIRECTOR
DR. KASPER, CLINICAL DIRECTOR
DR. T. ABRAHAM
Echocardiography.

DR. ACHUFF
Coronary artery disease; transplantation; natural history of ischemic heart disease.

DR. ARNETT
Clinical and invasive cardiology.

DR. AVERSANO
Coronary blood flow

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. CORRETTI
Echocardiography.

DR. CHANDRA*
Cardiopulmonary resuscitation.

DR. GERSTENBLITH
Age changes in cardiac function.

DR. S. H. GOTTLIEB*
Ischemic heart disease, diabetes and heart disease.

DR. HALPERIN
Biomedical engineering and biomechanics, electrophysiology.

DR. HIRSCH*
Clinical cardiology.

DR. JUDGE
Cardiac genetics.

DR. KASPER
Cardiomyopathy; heart transplantation.

DR. KASS
Hemodynamics; left ventricular function.

DR. LIMA
Left ventricular remodeling; mitral valve disease; transesophageal echocardiography; MRI, CT.

DR. LOWENSTEIN
Nitric oxide; regulation of nitric oxide synthases; endothelial cell mediated vasodilation; myocardial transplant rejection.

DR. MARINE*
Electrophysiology.

DR. MAUGHAN
Trinidad and Tobago Cardiology Program.

DR. MAYER*
Echocardiography.

DR. MILLER
Clinical trials in interventional cardiology; acute coronary syndromes.

DR. OUYANG*
Cardiovascular pharmacology.

DR. POST
Echocardiography and hypertension.

DR. RADE
Vascular biology and interventional cardiology.

DR. RESAR
Clinical trials utilizing new devices in interventional cardiology.

DR. RILEY
Clinical cardiology.

DR. RUSSELL
Heart failure.

DR. SCHULMAN
Clinical trials; hypertension.

DR. SHAPIRO
Echocardiography.

DR. SILBER*
Acute coronary care; MRI.

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. 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*
Intracellular pH vascular endothelial cells; endothelial Ca 2+ homestatis; effect of hemodynamic shear stress forces on endothelial cell signaling.

DR. ZIEMAN
Aging and heart disease.

*Johns Hopkins Bayview faculty


Prerequisites: Medicine and Surgery Basic 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 (electrocardiography, exercise testing, nuclear cardiology, and echocardiography), and invasive procedures (angiography, angioplasty, electrophysiological studies).


Prerequisites: Medicine and Surgery Basic 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 Basic 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, angiography, angioplasty; electrophysiologic studies; and hemodynamic monitoring. Prior significant background in cardiac physiology and hemodynamics is recommended.

**E 1. Clinical Clerkship in Coronary Intensive Care.** (St. Agnes Hospital). Dr. R. Bahr. Available all year. One-half or full quarter. Requires permission of Dr. Lange.  
*Prerequisite:* Medicine Basic Clerkship; Year IV students preferred.  
The student works as an integral part of the medical team in the coronary care unit. By working alongside the medical resident, the student gains experience in: cardiopulmonary resuscitation; determining if patients require admission to the coronary care unit; managing the initial intensive care of critically ill patients; and non-invasive and invasive procedures used in diagnosis and hemodynamic and electrophysiologic monitoring. The student is also involved in the rehabilitation phase, in which the patient may require cardiac catheterization or cardiac surgery. The student becomes knowledgeable in the techniques and parameters used to monitor patients in the intensive care setting, and directs their care by close interaction with the nurses, housestaff and attending physicians. The students may write orders provided they are countersigned. There is also a wide range of research opportunities in pathology, clinicopathologic correlations, pacing, clinical trials, and pharmacology. The student has an excellent opportunity to participate in early cardiac care in a community setting with the chest pain emergency room.

*Prerequisites:* Medicine and Surgery Basic Clerkships; Clerkship in Cardiology.  
The student functions as a member of the medical team at the level of an intern, with the close supervision by the senior housestaff, cardiology fellow, and attending physician. Experience is gained in: the evaluation and management of critically ill cardiac patients; 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 3. Preventive Cardiology.** Drs. Blumenthal, Kwiterovich, Lowenstein, and Post. Available Quarter 4 and Summer. Elective requires permission of Dr. Blumenthal. Only one student can be accommodated per quarter.  
*Prerequisites:* Medicine Basic 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 4. Practical Experience in the Physiology of Cardiovascular Disease.** Dr. Lange and staff. Available as arranged through Dr. Lange, one student per year will be supported by the Alan P. Trimkas 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. GOLDEN**  
Diabetes mellitus and lipid disorders.  
**DR. JAN DE BEUR**  
Metabolic bone disorders.  
**DR. LADENSON**  
Thyroid disorders; thyroid hormone therapy; endocrine health economic analysis.
DR. MAMMEN*
Thyroid disorders

DR. M. MILLER*
Thyroid disorders

DR. RODRIGUEZ*
Diabetes, lipid disorders.

DR. SALVATORI
Neuroendocrine and pituitary disorders.

DR. SAUDEK
Diabetes mellitus and islet cell tumors; insulin delivery systems.

DR. SELLMEYER*
Metabolic bone disorders.

DR. WAND
Neuroendocrine and pituitary disease; cellular mechanisms of addiction.

DR. XING
Thyroid cancer; pituitary disorders.

* Bayview faculty

E 1. Consultation Service in Endocrinology.
Director, Dr. Ladenson, Drs. Ball, Brown, Cooper, Dobs, Golden, Jan de Beur, Rodriguez, Salvatori, Saudek, Wand, and Xing. Available all year. One-half or full quarter; 1 or 2 students.

Prerequisite: Any Basic 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, Metabolic Bone Disease, 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 Pathology, 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. DUNBAR
Barrett’s esophagus; GERD, esophagitis; pancreatic disorders.

DR. GIARDIELLO
Colon cancer; polyps and colon cancer risk assessment.

DR. GIDAY
Pancreatic cancer; novel imaging methods and advanced endoscopy including ERCP and EUS.

DR. GOGGINS
Molecular biology of pancreatic cancer.

DR. S. GUGGINO
Physiology and pathophysiology of ion channels; cystic fibrosis.

DR. GURAKAR
Pre- and post-liver transplant; clinical and endoscopic management of liver diseases.

DR. HAMILTON
Acute and chronic viral, alcoholic, nonalcoholic, autoimmune, cholestatic, and drug-induced liver disease.

DR. KALLOO
Therapeutic endoscopy; pancreatitis; sphincter of Oddi motility disorders.

DR. KOTEISH
Liver regeneration with special focus on alcoholic liver disease and the role of hematopoietic stem cells in liver regeneration.

DR. KOVBASNIJUK
Ion transport properties of ionophores in artificial bilayer lipid membranes; analytical and quantitative 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. 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.

Prerequisites: Medicine Basic 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.


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.


Lab and clinical research experiences are available studying gastrointestinal motility and myoelectric activity and associated disorders; treatment of obesity; and use of dietary fat replacers.


Opportunities are available to participate in ongoing laboratory and clinical 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, INTERIM DIRECTOR

DR. ANDERSON
Exercise, physiology, and weight management, obesity in older adults.

DR. ANKROM
Dementia and primary care.

DR. BARRON
Vital-productive aging among older adults.

DR. BELLANTONI
Geriatric medicine; osteoporosis.

DR. BENNETT
Clinical approaches to diarrheal disease and nutrition in institutionalized patients.

DR. L. BOULT
Subacute and chronic care of the elderly; history of medicine.
Dr. Boyd
Clinical investigation.

Dr. Burton
New approaches to treating elderly patients at home; geriatrics education.

Dr. Cayea
Geriatric education.

Dr. Christmas
Osteoporosis and hip fracture; subacute care.

Dr. Cordts
Primary care.

Dr. Crentsil
Geriatric pharmacology.

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 call program for elderly.

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. Martinez
Geriatric research.

Dr. Oh
Biomarkers of Alzheimer's disease.

Dr. Park
Education.

Dr. Simonsick
Epidemiology and preventive gerontology.

Dr. Tan
Geriatric research.

Dr. Varadhan
Biostatistical scientist.

Dr. Walston
Rehabilitation; molecular mechanisms of frailty.

Dr. Weiss
Gait disorders in older adults.

Dr. Xue
Biostatistical methodologies.

Dr. Yasar
Dementia.


Drs. Ankrom, Bellantoni, Bennett, L. Boult, Boyd, Burton, Christmas, Durso, Finucane, Greenough, McNabney, and Walston. Available all year; two students per period. One-half quarter or longer.

Prerequisite: Medicine Basic 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 as a subintern 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.

Teaching Conference: The student will participate in the weekly clinical geriatrics rounds and seminars attended by faculty members, the clinical and research fellows, and the housestaff on geriatric medicine rotation.

Research Seminars: 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.

E 2. Research Elective in Geriatric Medicine and Gerontology.

Drs. Andersen, Beamer, C. Boult, Burton, Fedarko, Greenough, Leff, Leng, Simonsick, Walston and Yasar.

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
Oncogene and cell proliferation.

Dr. Kickler
Immunohematology.

Dr. Lanzkron
Anemias and other bleeding disorders, with emphasis on sickle cell disorders.

Dr. Moliterno
Polycythemia vera.

Dr. Ness
Transfusion practices.

Dr. Spivak
Myeloproliferative disorders.

Dr. Streiff
Hemorrhagic and thrombotic disorders.
E 1. Clinical Clerkship in Hematology. Dr. Streiff (Course Director), Drs. Brodsky, Dang, Kickler, Lanzkron, McDevitt, Moliterno, Ness, Spivak, and Streiff. 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.


Prerequisite: Medicine Basic 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.

E 1. Clinical Clerkship in Hematology and Medical Oncology (Sinai Hospital). Dr. Noga. Available all year. One-half quarter. 

Prerequisite: Medicine Basic Clerkship.
Senior elective in Hematology/Oncology in an academically-oriented community hospital setting. Students will participate on the inpatient consultation service as well as round with faculty on the inpatient Cancer Center. Students will also see patients in attendings’ offices and in the ambulatory chemotherapy setting. Students are encouraged to participate in weekly Tumor Board and weekly conferences.

E 1. Advanced Clinical Clerkship in Hematology-Oncology (Union Memorial Hospital). Drs. Walker and Cooper. Available all year; limited to 2 students per four to six weeks.

Prerequisite: Medicine Basic Clerkship.
This elective exposes the student to hematology and oncology with an emphasis on outpatient activities. Students will learn diagnostic evaluation and management of hematologic and oncologic problems, together with the natural history of these illnesses. Instruction provided on chemotherapeutic agents and their associated indications and toxicities. Students will be involved in patient care and management. No night calls or weekends are expected. Students will also spend a half day a week in the outpatient hospice program, and one half day a week in the outpatient radiotherapy unit. Other activities include: lectures, weekly Journal Club, bi-weekly hematological slide course review, bi-weekly coagulation conference; weekly tumor board presentation and daily outpatient hematology-oncology clinic activity.

ALLERGY AND CLINICAL IMMUNOLOGY DIVISION

DR. BOCHNER, DIRECTOR
DR. ADKINSON*  
Drug hypersensitivity; immunotherapy; childhood asthma.
DR. BARNES*  
Genetics and epidemiology of asthma.
DR. BINGHAM*  
Clinical therapeutics in inflammatory arthritis; urticaria.
DR. BOCHNER*  
Mechanisms of eosinophil and basophil recruitment and survival in allergic inflammation.
DR. CANNING*  
Innervation of the airways.
DR. CASOLARO*  
Molecular mechanisms of gene regulation in the immune system.
DR. CRETICOS*  
Clinical trials in allergic diseases/asthma; immunotherapy; nasal/bronchial provocation to evaluate mechanisms and treatment of allergic disease/asthma.
DR. GAO*  
Molecular genetics of asthma.
DR. GRIGORYEV*  
Genomics of peripheral blood mononuclear cells in lung injury and asthma.
DR. HAMILTON*  
Humoral immune response in allergic disease.
DR. HANSEL*  
Genetic and environmental determinants of obstructive airway disease.
DR. HUANG*  
Molecular and genetic mechanisms of allergic inflammation and asthma.
DR. HUBBARD  
Mass spectroscopy of lipid mediators; core resource for quantitation of mediators, steroids and other compounds of interest to division investigators.
DR. KIM*  
Epithelial cell function and host defense in chronic rhinosinusitis.
DR. KOLLARIK*  
Influence of inflammation on the visceral nervous system.
DR. LIU*  
Mechanisms of allergic inflammation and immune regulation in asthma; clinical trials of new therapies.
DR. MACDONALD*  
IgE heterogeneity; histamine releasing factor (HRF); signal transduction in basophils of HRF-responders.
DR. MACGLASHAN*  
Mechanism of signal transduction.
DR. MYERS*  
Airway inflammation and neurobiology.
DR. OH*  
Negative regulators in allergic airway inflammation.
DR. SAINI*  
Mast cell and basophil biology in allergic disease.
DR. SCHROEDER*
Innate vs. adaptive immunity in regulating cellular responses.

DR. STELLATO*
Expression of chemokines and chemokine receptor in respiratory epithelium; post-transcriptional regulation of chemokine gene regulation.

DR. UNDEM*
Nerve inflammation interactions.

DR. VONAKIS*
Signal transduction in mast cells and basophils.

DR. ZHENG*
Transgenic mouse models of asthma and emphysema.

DR. ZHU*
Transgenic mouse models of asthma.

* Bayview faculty

**E 1. Clerkship in Allergy and Clinical Immunology.** Dr. Creticos. Available all year. Minimum of one-half quarter.

**Prerequisite:** Medicine Basic 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 4. Practicum in Clinical Immunology.** Drs. Bochner, Saini, and staff. Available all year. One-half quarter or longer.

**Prerequisite:** Second Year status.

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. BALAGOPAL**
HIV and HEP.C pathogenesis.

**DR. BARTLETT**
Anaerobic infections; antibiotic-associated diarrhea and colitis; HIV/AIDS.

**DR. BISHAI**
Tuberculosis.

**DR. BLANKSON**
Tuberculosis.

**DR. BOLLINGER**
Host defense in HIV; tropical infections.

**DR. CHAISSON**
Mycobacteria; HIV/AIDS.

**DR. CHARACHE**
Bacterial-host interactions in human disease; antibiotic chemotherapy.

**DR. CHEEVER**
Health research services.

**DR. COSGROVE**
Infection control and antibiotic control.

**DR. COX**
Hepatitis immune regulation.

**DR. DORMAN**
TB and atypical mycobacteria.

**DR. ERBOLDING**
Sexually transmitted diseases; HIV/AIDS.

**DR. FLEXNER**
AIDS; Clinical pharmacology.

**DR. GALLANT**
Epidemiology of HIV.

**DR. GAYDOS**
Chlamydia pneumoniae and STDs.

**DR. GEBO**
HCV and HIV databases.

**DR. GRIFFIN**
Pathogenesis of viral infections of the central nervous system.

**DR. GROSSET**
TB.

**DR. GUPTA**
HIV and co-morbidities management research.

**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.

**DR. MCKENZIE**
Travel medicine.

**DR. NEOFYTOS**
Transplant.

**DR. NUERMBERGER**
TB and pneumonia.

**DR. PAGE**
International and immigrant health.

**DR. PERL**
Hospital infection control.

**DR. PHAM**
Pharmacology.

**DR. QUINN**
Sexually transmitted disease; chlamydia; AIDS.

**DR. RAY**
HIV; sequence analysis.

**DR. ROMPOLO**
Sexually transmitted diseases.

**DR. R. SACK**
Infections in travel.

**DR. D. SACK**
Pathogenesis of diarrheal diseases; bacterial physiology; infections in travelers.

**DR. SEARS**
Mechanisms of diarrhea.

**DR. SILICIANO**
Immunology.

**DR. SINHA**
International HIV.

**DR. SUBRAMANIAN**
Transplant.
DR. SULKOWSKI
Hepatitis.
DR. THIO
Hepatitis.
DR. THOMAS
Hepatitis.
DR. ZENILMAN*
Sexually transmitted diseases.

* Bayview faculty

E 1. Clinical Clerkship in Infectious Diseases.
Drs. Bartlett, Chaisson, P. Charache, Francis, D. Griffin, Harrison, Horn, P. Murphy, Quinn, and Mann. Available all year. One-half quarter or longer; limited to 4 students per half quarter. Lottery elective.

Prerequisite: Medicine Basic 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 3. Tropical Medicine and International Health.

Prerequisite: Arrange with Dr. Karp.

A combined lecture/seminar introduction to the major pathogens of the developing world. The transmission, pathogenesis and control of parasites will be the primary focus but selected viral, bacterial and fungal agents of particular importance in the tropics will also be covered. Seminars and case presentations will touch upon nutrition and some of the socio-economic aspects of health care delivery as well as the approach to clinical problem solving in the tropics. Laboratory sessions will introduce students to the microscopic diagnosis of parasitic diseases.

E 2. Subinternship in Infectious Diseases-AIDS Service.
Drs. Bartlett, Gallant, Quinn and Sears. Available all year.

Prerequisite: Medicine Basic 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

Substance use disorders and posttraumatic stress; physical, sexual, and/or emotional abuse and substance use disorders in women; screening and brief interventions for substance misues.

DR. AMER
Vascular disease; atherosclerosis and inflammatory biomarkers.

DR. ANGELL
Consultations in internal medicine, Johns Hopkins Medicine International.

DR. APPEL
Randomized trials of cardiovascular prevention; lifestyle interventions; non-pharmacologic treatment of high blood pressure; nutrition; chronic kidney disease.

DR. ASHAR
Preventive medicine and alternative medicine.

DR. BASS
Evidence-based medicine; literature synthesis; technology assessment; medical editing; 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
Primary care; epidemiology; patient-doctor communication; medication adherence; philosophy of medicine; cultural competence; translation and medicine.

DR. BERKENBLIT
Improving resident training in HIV outpatient care; design and evaluation of an internet-based curriculum.

DR. BOULWARE
Clinical epidemiology of renal disease and transplantation; cost-effectiveness.

DR. BRANCATI
Epidemiology and prevention of type 2 diabetes and related conditions; randomized controlled trials; health disparities; diabetes care improvement.

DR. BROTMAN
Hospital medicine; perioperative medicine; hemostasis and thrombosis; the physiological stress response.

DR. BROWN
Obesity.

DR. CHANDER
Clinical epidemiology of HIV/AIDS and hepatitis C.
DR. CHARLES-GREER  
Health disparities in chronic kidney disease; patient education.

DR. CLARK  
Epidemiology and treatment of obesity; clinical epidemiology of fatty liver disease.

DR. CLEVER  
Patient-physician communication; medical education.

DR. CODORI  
Rapid HIV testing in emergency departments; MRSA prevalence in emergency departments; depression in medical students.

DR. COFRANESCO  
General internal medicine; medical education; HIV care. HAART, HIV wasting and lipodystrophy.

DR. COOPER  
Physician-patient communication; health disparities; primary care quality improvement.

DR. DAUMIT  
Clinical epidemiology of mental disorders in primary care; CVD prevention in schizophrenia.

DR. FELDMAN  
Resident education; evidence-based medicine; consult medicine.

DR. FINKELSTEIN  
Health informatics; telemedicine; primary and secondary prevention; disease management; health outcomes research.

DR. FITZGERALD  
Primary care; physician leadership.

DR. FLYNN  
Ambulatory medical education; rheumatic disease; executive health.

DR. FORD  
Primary care research; epidemiology and treatment of depression; internet health applications; physician health.

DR. GELLER  
Informed consent; communication and decision-making; genetics; medical education; complementary and alternative medicine.

DR. GIBBS  
Diversity in health.

DR. GORDON  
Women's health; medical education; role of diet and exercise in wellness and chronic illness prevention.

DR. GOYAL  
Effects of meditation on chronic pain and symptoms; stress and overall health; low-cost means to improve health in rural India; ethics.

DR. HERZKE  
Resident and student education; infectious diseases, notably infection control; quality improvement.

DR. HILL-BRIGGS  
Chronic disease self-management; disability; quality of life; minority health.

DR. HUGHES  
Clinical bioethics, research ethics; palliative care; philosophy of medicine; ambulatory care.

DR. HUIZINGA  
Clinical epidemiology of obesity and related conditions.

MS. JENCKES  
Bioterrorism; HIV/AIDS; behavioral interventions; qualitative research methods.

DR. LEVINE  
Community-based prevention of cardiovascular disease; behavioral aspects of prevention.

DR. LEVY  
General internal medicine; genetics.

DR. MARINOPoulos  
Evidence-based medicine; university health; health care administration.

DR. MARUTHUR  
Internal medicine; primary care; preventive medicine.

DR. MATHIAS  
Genetics of asthma, allergy, and cardiovascular disease.

DR. E. MILLER  
Hypertension; clinical trials; non-pharmacologic therapies; antioxidants.

DR. R. MILLER  
Women's health; medical education.

DR. R. MOORE  
Pharmacoepidemiology; outcomes research in HIV treatment; epidemiology of substance abuse and alcoholism.

MS. MOY  
Cardiovascular disease and community based CVD prevention.

DR. ODUYEBO  
Gastroenterology.

DR. PEARS  
Women's health.

DR. PRAKASA  
Cardiovascular medicine and women's health; genetics and echocardiography in arrhythmogenic right ventricular dysplasia.

DR. PROKOPOWICZ  
General internal medicine; medical informatics; hypertension.

DR. QAYYUM  
Systematic reviews; meta-analysis.

DR. RANASINGHE  
Internal and preventive medicine; chronic disease epidemiology.

DR. ROBINSON  
Evidence-based health care; health informatics.

DR. ROWLAND-SEYMOUR  
Ambulatory care; prevention; and integrative medicine.

DR. SCHLOTT  
Consultations in internal medicine.

DR. SEGAL  
Clinical epidemiology of thrombosis and blood disorders.

DR. SHIHAB  
Cardiovascular disease prevention and epidemiology; chronic disease in developing countries.

DR. SHOCHET  
Patient-physician communication and skills assessment; patient-centered and relationship-centered care; behavior change and psychosocial issues in primary care; innovations in medical education; medical professionalism.

DR. SIDDIOUI  
Clinical reasoning; preoperative medicine; international medicine.

DR. SINGH  
Pharmacoepidemiology; drug safety; comparative effectiveness; health equity.

DR. SISSON  
Ambulatory care; community outreach.
DR. SNYDER
Patient-reported outcomes assessment; quality of medical care; cancer; using patient-completed questionnaires in routine clinical practice.

DR. STEIN
Medical care of cancer patients; diabetes mellitus; obesity.

DR. STEWART
Medical education; preventive medicine; health outcomes.

DR. SUGARMAN
Philosophical and empirical research in biomedical ethics.

MS. SWARTZ
Project management; multi-center randomized controlled trials.

DR. THOMAS
Ambulatory care, prevention; rheumatic diseases.

DR. VAIYDA
Mechanisms of vascular dysfunction; assessment of cardiovascular risk factors.

DR. WANG
Longitudinal data analysis; statistical and epidemiologic methods.

MS. YANEK
Cardiovascular disease in families and risk factor modification.

DR. YEH
Epidemiology; diabetes; obesity; cancer; lung function.

DR. J. H. YOUNG
Genetic epidemiology; novel risk factors for CVD, hypertension, and insulin resistance.

DR. ZIKUSOKA
Genetics; cardiomyopathy.

E 1. Internal Medicine Consultation Service. Dr. Feldman and staff. Available all year; one-half or full quarter.

Prerequisites: Medicine Basic Clerkship; arrange for heart disease risk, hypertension, hyper.

This elective is designed to introduce the medical students to the principles and practice of preventive medicine in the clinical as well as the community setting. The students and key faculty will be based in the Welch Center for Prevention, Epidemiology and Clinical Research. Didactic sessions and self-learning modules will be available on such topics as management of hypertension, dietary counseling, exercise and health, smoking cessation, cancer screening, prevention in pediatrics, injury control, and early detection and treatment of substance abuse and psychiatric disorders. Outpatient clinical opportunities include the hypertension clinic, and inpatient clinical opportunities include Preventive Cardiology consults. As an introduction to the specialty of preventive medicine, students may elect to participate in the activities of the Preventive Medicine Residency positions in local, state and federal health departments. Students are expected to complete a project and present results to the Welch Center Faculty at the completion of the elective.


Prerequisite: Basic Medicine Clerkship.

Students can serve as subinterns on one of the Nelson/Baker Units, 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. Registration is through the Office of the Registrar as a lottery elective.

E 2. Advanced Clinical Clerkship in Internal Medicine. (Good Samaritan Hospital Internal Medicine Service) Dr. Rogers and staff.

Prerequisite: Medicine Basic 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.

E 4. Community Chronic Disease Prevention in Urban Minority Populations. Dr. Becker and staff. Available all year; one half or full quarter (three week elective also available).

Prerequisite: None; first year students are welcome; experience tailored to the students level of prior experience.

Students participate in all aspects of a community program which provides screening and counseling for heart disease risk, hypertension, hyper-
lipidemia, smoking, diabetes, breast and cervical cancer, and visual anomalies in a variety of community sites in East Baltimore. Particular emphasis is placed on identification of high risk status, risk factor measurement and case management in high risk populations. An opportunity is also available to conduct independent precepted research.

Precepted clinical experiences include Lipid Research Clinic, Hypertension Clinic, Smoking Cessation Clinic, and Preventive Cardiology Clinic. Facilitated Access Clinics consist of Johns Hopkins Clinics where high risk individuals identified at community screenings enter the medical care system through a community-based center and receive diagnostic and follow-up care directed by medical students, house staff, and fellows under the preceptorship of preventive medicine experts. Students may also assist in the operations of three satellite prevention centers in East Baltimore neighborhoods.


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.

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. FEROLI
Hospital pharmacy.

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; chemoprophylaxis 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.

MS. ROCCO
Quality assurance and regulatory affairs.

DR. SCOCCA
Molecular studies of African trypanosomes.

DR. SHAPIRO
Antiparasitic chemotherapy.

Rational Therapeutics. Dr. Petty and other select-ed 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 from 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 Basic 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 two half-days 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 Pharmacist and Drug Information Center staff in responding to questions and issues arising within the hospital.

**RENAI DIVISION**

**DR. SCHEEL, DIRECTOR**

**DR. ANDERSON**

Chronic kidney disease.

**DR. ATTA**

Metabolic bone disease.

**DR. BRIEFEL**

Chronic kidney disease.

**DR. M. J. CHOI**

Glomerular diseases; nephrolithiasis.

**DR. FINE**

 Lupus; renal disease; glomerular disease.

**DR. GERMINO**

Autosomal dominant polycystic kidney disease.

**DR. GIMENEZ**

Calcium metabolism in renal disease; renal replacement therapy.

**DR. KRAUS**

Transplantation.

**DR. MYERS**

Diabetes and kidney disease.

**DR. RABB**

Transplantation.

**DR. SCHEEL**

Renal vascular disease.

**DR. SPECTOR**

Renal physiology; peritoneal dialysis.

**DR. UGARTE**

Transplantation.

**DR. WATNICK**

Hereditary kidney disease.

**DR. ZACHARY**

Hemodialysis.

* Bayview faculty

**E 1. Clinical Clerkship in Nephrology.**
Drs. Atta, Choi, Fine, Estrella, Germino, Myers, Scheel, Spector, and Watnick. Available all year; two students. One-half or full quarter. Lottery; 2-month drop notice required.

*Prerequisite:* Medicine Basic 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. BECKER**

Acute lung injury; lung transplantation.

**DR. BOYLE**

Adult cystic fibrosis, gene therapy; clinical cystic fibrosis research.

**DR. BROWER**

Critical care; adult respiratory distress syndrome.

**DR. COLLOP**

Sleep disorders; pulmonary and critical care medicine.

**DR. CROW**

Molecular biology.

**DR. DANOFF**

Transcription genes, neuronal development, BAP135 protein.

**DR. DIETTE**

Asthma outcomes; quality of care, quality improvement.

**DR. FESSLER**

Cardiopulmonary interaction; intensive care.

**DR. GIRGIS**

Pulmonary hypertension, scleroderma, Raynaud's phenomenon, lung transplant.

**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
Biology of water channels and water transport, medical education.

DR. LECHTZIN
Adult cystic fibrosis; amyotrophic lateral sclerosis and motor neuron disease.

DR. LIU*
Studies of asthma pathogenesis and therapy.

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. 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. 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. 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. SYLVESTER
Pulmonary vascular biology; medical intensive care.

DR. WISE*
Cardiopulmonary physiology; autoimmune pulmonary disease; chronic obstructive pulmonary disease.

DR. YUNG
Diagnosis of and therapy for early and advanced cancer; aerosolized cytokines.

* 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 Basic 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 1. Clinical Clerkship in Pulmonary Medicine. (Johns Hopkins Bayview Medical Center) Drs. Terry and staff. Available all year. One-half quarter or longer by arrangement.

Prerequisite: Medicine Basic 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. BATHON, DEPUTY DIRECTOR
DR. WIGLEY, ASSOCIATE DIRECTOR
DR. BAER
Evaluation and management of Sjogren’s syndrome; metabolic myopathies and gout.

DR. BATHON*
Mechanics of inflammation and therapeutics in rheumatoid arthritis.

DR. BINGHAM
Clinical therapeutics of rheumatoid arthritis and osteoarthritis; oral health in rheumatic diseases; RA & OA clinical trial design.

DR. BIRNBAUM
Neurological manifestations of systemic rheumatic diseases.

DR. BOIN*
Translational research in scleroderma and related disorders.

DR. CHRISTOPHER-STINE*
Epidemiology and therapy of inflammatory myositis.

DR. GELBER*
Epidemiology of osteoarthritis and rheumatic disorders.

DR. GILES*
Cardiovascular morbidity and body composition in rheumatoid arthritis.

DR. GRADER-BECK
Translational research in systemic autoimmunity.

DR. HAHQUE
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.

DR. WIGLEY*
Raynaud’s phenomenon; scleroderma and related disorders.

DR. ZIMINSKI
Clinical and immunologic features of systemic inflammatory diseases (vasculitis, SLE); undifferentiated connective tissue disease.

* 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 Basic 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 Basic 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 intercurrent 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. Patients 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 Basic 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.
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.

680.700 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

JEFF 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

STEPHENV. DESIDERIO, Professor

RACHEL GREEN
Professor of Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

THOMAS J. KELLY, JR., Professor (on leave of absence)

DOUGLAS ELLIOTT KOSHLAND, Adjunct Professor

SE-JIN LEE, Professor

JEREMY NATHANS
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Ophthalmology, Investigator of the Howard Hughes Medical Institute

DUOJIA PAN
Professor of Molecular Biology and Genetics, Professor of Oncology

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

BRENDAN P. CORMACK, Associate Professor

PAUL H. HARDY, JR.
Associate Professor Emeritus of Microbiology

ELIZABETH H. CHEN, Assistant Professor

SINISA URBAN, 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

WENLIAN XU, Research Associate (to 07/12/09)

DANIEL S. YUAN, Research Associate

YU-YI LIN, Visiting Scientist (from 10/16/09)

DAVID GORDON LONGSTAFF, Visiting Scientist

FACULTY ASSOCIATED WITH THE DEPARTMENT OF MOLECULAR BIOLOGY AND GENETICS HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:

RHODA M. ALANI
Associate Professor of Oncology

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

Molecular Biology and Genetics—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—Cumulative 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.


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 course 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. SHIN  
Molecular biology of macrophage activation by endotoxin.
DR. URBAN
Proteolysis in membrane bilayers; cell signaling and malaria invasion.

Prerequisite: Basic knowledge of molecular and cellular biology.
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-Naseri. First quarter, T., Th., 9:00-10:30 a.m. Third and fourth quarters.
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-Nasseri. 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

MARILYN S. ALBERT
Professor of Neurology, Professor of
Neuroscience, Professor of Psychiatry

GREGORY KENT BERGHEY, 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 (on
leave of absence to 10/31/09), Professor of
Neurology (on leave of absence to 10/31/09),
Professor of Plastic Surgery (on leave of
absence to 10/31/09)

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, Professor of Neurology, Professor
of Pathology, Joint Appointment in Molecular
Biology and Genetics

NANCY ABBEY COLLOP
Professor of Medicine, Professor of Neurology

DAVID R. CORNBLATH
Professor of Neurology, Professor of
Neurological Surgery

TED 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. GRIFFIN
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

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

JOHN J. LATERRA
Professor of Neurology, Professor of
Neuroscience, Professor of Oncology

RONALD P. LESSER
Professor of Neurology, Professor of
Neurological Surgery

RUSSELL L. MARGOLIS
Professor of Psychiatry, Professor of Neurology

GUY MEAD MCKHANN
Professor of Neurology, Professor of
Neuroscience

NEIL R. MILLER
Frank B. Walsh Professor of Neuro-
ophthalmology in the Department of
Ophthalmology, Professor of Neurological
Surgery, Professor of Neurology

MAREK A. Z. MIRSKI
Professor of Anesthesiology and Critical Care
Medicine, Professor of Neurological Surgery,
Professor of Neurology

MARK E. MOLLIVER
Professor Emeritus of Neuroscience, Professor
Emeritus of Neurology

HAMILTON MOSES, III, Adjunct Professor

SARKKUBAI 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

DONALD L. PRICE
Professor of Pathology, Professor of Neurology,
Professor of Neuroscience

SRINIVASA NAGA RAJA
Professor of Anesthesiology and Critical Care
Medicine, Professor of Neurology

GEORGE A. RICAURTE, Professor

GABRIELE V. RONNETT
Professor of Neuroscience, 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

NITISH V. THAKOR
Professor of Biomedical Engineering, Professor of Neurology

GEORGE R. UHL
Adjunct Professor of Neurology (from 10/01/09), Adjunct Associate Professor of Neurology (to 09/30/09), Adjunct Associate Professor of Neuroscience (from 10/01/09), Adjunct Associate Professor of Neurology (to 09/30/09)

JOHN A. ULATOWSKI
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery, Professor of Neurology

EILEEN P.G. VINING
Lederer Professor of Pediatric Epilepsy in the Department of Neurology, Professor of Pediatrics

PAUL A. 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

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

NICHOLAS ROGER GAIANO
Associate Professor of Neurology, Associate Professor of Neuroscience, Associate Professor of Oncology

PAUL F. WORLEY
Professor of Neuroscience, Professor of Neurology

ROBERT D. GERWIN, Associate Professor

GEOFFREY SHIU FEI LING
Adjunct Associate Professor of Neurology, Adjunct Associate Professor of Anesthesiology and Critical Care Medicine

RAFAEL H. LLINAS, Associate Professor

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

NITISH V. THAKOR
Professor of Biomedical Engineering, Professor of Neurology

GEORGE R. UHL
Adjunct Professor of Neurology (from 10/01/09), Adjunct Associate Professor of Neurology (to 09/30/09), Adjunct Associate Professor of Neuroscience (from 10/01/09), Adjunct Associate Professor of Neurology (to 09/30/09)

JOHN A. ULATOWSKI
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery, Professor of Neurology

EILEEN P.G. VINING
Lederer Professor of Pediatric Epilepsy in the Department of Neurology, Professor of Pediatrics

PAUL A. 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

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

NICHOLAS ROGER GAIANO
Associate Professor of Neurology, Associate Professor of Neuroscience, Associate Professor of Oncology

PAUL F. WORLEY
Professor of Neuroscience, Professor of Neurology

ROBERT D. GERWIN, Associate Professor

GEOFFREY SHIU FEI LING
Adjunct Associate Professor of Neurology, Adjunct Associate Professor of Anesthesiology and Critical Care Medicine

RAFAEL H. LLINAS, Associate Professor
ZOLTAN MARI, Assistant Professor
SUSAN SIFFORD MCDERMOTT, Assistant Professor
HENRY F. MCFARLAND, Assistant Professor
ABHAY MOGHEKAR, Assistant Professor
BRIAN E. MONDELL, Assistant Professor
BRETICH MICHAEL MORRISON, Assistant Professor
BETH BRIANNA MURINSON, Assistant Professor
DAVID EDWARD NEWMAN-TOKER
Assistant Professor of Neurology, Assistant Professor of Otolaryngology-Head and Neck Surgery, Joint Appointment in Emergency Medicine, Joint Appointment in Health Sciences Informatics, Joint Appointment in Ophthalmology
THIEN T. NGUYEN, Assistant Professor
PAUL NYQUIST
Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine
HANS ADRIAN PUTTGEN
Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine
BRUCE A. RABIN, Assistant Professor
DANIEL SALO REICH
Adjunct Assistant Professor of Neurology, Assistant Professor of Radiology
MARCIA RIBEIRO, Assistant Professor
EVA KATHARINA RITZL, Assistant Professor
JASON D. ROSENBERG, Assistant Professor
JAMES RUBENSTEIN
Assistant Professor of Neurology, Instructor in Pediatrics
JEFFREY A. RUMBAUGH, Assistant Professor (to 10/31/09)
RACHEL MARIE E. SALAS
Assistant Professor of Neurology, Assistant Professor of Medicine
JOSEPH MARK SAVITT, Assistant Professor
ALENA V. SAVONENKO
Assistant Professor of Pathology, Assistant Professor of Neurology
PETER SCHILDER, Assistant Professor Emeritus
FRANK F. SCHUSTER, Assistant Professor Emeritus
JEHUDA P. SEPKUTY, Adjunct Assistant Professor
VICTOR L. SEREBRUYAN, Adjunct Assistant Professor
MICHAEL JOSEPH SHAMBLOTT, Assistant Professor
SUSAN J. SHAW, Adjunct Assistant Professor
ALON SINAI, Adjunct Assistant Professor
CONSTANCE L. SMITH-HICKS, Assistant Professor
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
STEVEN JEFFREY STEINBERG, Assistant Professor
ROBERT DAVID STEVENS
Associate Professor of Anesthesiology and Critical Care Medicine, Joint Appointment in Neurology
MONIQUE F. STINS, Assistant Professor
CHARLOTTE J. SUMNER, Assistant Professor
TAKASHI TSUKAMOTO, Assistant Professor
VICTOR C. URRUTIA, Assistant Professor
ARUN VENKATESAN, Assistant Professor
BRADFORD D. WINTERS
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery
MARK N. WU
Assistant Professor of Neurology (from 08/01/09), Assistant Professor of Medicine (from 08/01/09)
SARAH H. YING
Assistant Professor of Neurology, Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery
MERRILL ANSHER, Instructor
RICHARD BABKES, Instructor
DANIEL BECKER, Instructor
AMANDA M. BROWN, Instructor
JOSHUA BENJAMIN EWEN, Instructor
JEROLD H. FLEISHMAN, Instructor
ABRAHAM ALLAN GENUT, Instructor
BRAEME S. GLAUN, Instructor
ADRIAN J. GOLDSZMIDT, Instructor
HILARY EILEEN GWYNN, Instructor
ANDRES HURTADO, Instructor
DEEPAM MENON, Instructor
JOHN NOLAN RATCHFORD, Instructor
NICOLINE SCHIESS, Instructor
SHULI XIA, Instructor
ANGELO HOMAYOUN ALL
Assistant Professor of Biomedical Engineering, Research Associate in Neurology
RICHARD P. ALLEN, Research Associate
VEERA VENKATA RATNAM BANDARU, Research Associate
LENDA BEZMAN, Research Associate
MARTA BOSCH-MARCE, Research Associate
LYNN ANNE BRISTOL, Research Associate
NEUROLOGY

WEIRAN CHEN, Research Associate
GIGI JASMINE EBENEZER, Research Associate
MOHAMED H. FARAH, Research Associate
ANNE E. GOCKE, Research Associate
SERGIO J. GUTIERREZ, Research Associate
LINA HU, Research Associate
MELINA VIOLA JONES, Research Associate
RICHARD OWEN JONES, Research Associate
SHILPA D. KADAM, Research Associate
HAN SEOK KO, Research Associate
CHITRA KRISHNAN, Research Associate
BACHCHU LAL, Research Associate
GUANHAN LI, Research Associate (from 09/26/09)
WENXUE LI, Research Associate
YUN LI, Research Associate
ZHAO BO LI, Research Associate
YIDENG LIANG, Research Associate
YANG LU, Research Associate
CHERIE L. MARVEL, Research Associate
RUIFA MI, Research Associate
ANN B. MOSER, Research Associate
BAOHAN PAN, Research Associate
ZHENGTONG PEI, Research Associate
MASAYUKI SASAKI, Research Associate
PAMELA TALALAY, Research Associate Emerita
KYRANA TSAPKINI, Research Associate (from 08/01/09)
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
SUMMER ACEVEDO, Visiting Scientist
GREGORY F. BURTON, Visiting Scientist (to 08/31/09)
SEUNG HAN LEE, Visiting Scientist
JOSE W. RODRIGUEZ, Visiting Scientist
CHANGQING SHI, Visiting Scientist
PIOTR SUFFCYNSKI, Visiting Scientist

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).

Neurology—Second Year


This block integrates clinical neurology content with the fundamentals of neuropathology, neuropathophysiology, neuropharmacology, and basic mechanisms of neurological disease.

Basic Neurology Clerkship—Second, Third or Fourth Year

1. Neurology Clerkship. Director: Dr. Newman-Toker. 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.

Elective Opportunities—Curricular Consultant: Dr. Newman-Toker. Elective courses must be approved by the preceptor and the student’s faculty advisor; any member of the department may act as preceptor.

Neurology Electives

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. David Newman-Toker, 4-6 weeks, offered year round. Coordinator: Nancy Woodey (nlippi1@jhmi.edu, 410-955-0623)

Prerequisite: Basic Clerkships in Medicine and Neurology.

A clinical subinternship is offered on the adult neurology inpatient and services at The Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center. Neurology subinterns must devote a minimum of four weeks to inpatient neurology during the subinternship.

Nervous System and Special Senses—First Year

1. Neurology. Director: Dr. Newman-Toker. Faculty from multiple departments. Offered fourth quarter (final 7 weeks).
E 2. Advanced Neurology Clerkship. Director: Dr. David Newman-Toker, 4-6 weeks, offered year round. Coordinator: Nancy Woodey (nlippi1@jhmi.edu, 410-955-0623).

Prerequisite: Basic Clerkship in Neurology.

Students may choose to focus on inpatient or outpatient adult neurology and may tailor their experience to their educational needs in consultation with the course director.

E 3. Advanced Pediatric Neurology Clerkship. Director: Dr. 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 4. 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.

E 5. Neuro Critical Care Elective. 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 6. Research.

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. J. GRIFFIN
Disease of peripheral nerve.

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. MURINSON
Pain; medical education; neuropathy; stiff-person syndrome.

DR. NATH
Immune disorders and infections of the nervous system.

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.
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 in the Department of Psychiatry, Professor of Neuroscience

PETER A. CAMPOCHIARO
George S. and Dolores D. Eccles Professor of Ophthalmology, Professor of Neuroscience

TED 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 in the Department of Psychiatry, Professor of Neuroscience

STEWARD H.C. HENDRY, Professor

STEVEN S. HSIAO
Professor of Neuroscience, Professor of Biomedical Engineering

RICHARD T. JOHNSON
University Distinguished Service Professor of Neurology, Professor of Neuroscience

ALEX LEO KOLODKIN
Professor of Neuroscience, Joint Appointment in Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

JOHN J. LATERRA
Professor of Neurology, Professor of Neuroscience, Professor of Oncology

MIN LI
Professor of Neuroscience, Professor of Physiology

DAVID J. LINDEN, Professor

LEE J. MARTIN
Professor of Pathology, Professor of Neuroscience

MARK P. MATTSON, Professor

GUY MEAD MCKHANN
Professor of Neurology, Professor of Neuroscience

LLOYD B. MINOR
Andelot Professor of Laryngology and Otology, 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

VERNON B. MOUNTCASTLE
University Professor Emeritus of Neuroscience

AVINDRA NATH
Professor of Neurology, Professor of Neuroscience

JEREMY NATHANS
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Ophthalmology

DONALD L. PRICE
Professor of Pathology, Professor of Neurology, Professor 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 V. RONNETT
Professor of Neuroscience, 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

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

RONALD L. SCHNAAR
Professor of Pharmacology and Molecular Sciences, Professor of Neuroscience

LAWRENCE P. SCHRAMM
Professor of Biomedical Engineering, Professor of Neuroscience
Kechen Zhang
Assistant Professor of Biomedical Engineering, Assistant Professor of Neuroscience

Feng-Quan Zhou
Assistant Professor of Orthopaedic Surgery, Assistant Professor of Neuroscience

Anutosh Chakraborty
Instructor in Neuroscience (from 09/01/09), Research Associate in Neuroscience (to 08/31/09)

Roxanne K. Barrow, Research Associate

Marlin H. Dehoff, Research Associate

Takashi Hayashi, Research Associate (to 08/31/09)

Lynda D. Hester, Research Associate

Jiahua Hu, Research Associate

Zhi Li, Research Associate

Da-Ting Lin, Research Associate

Dong-Gen Luo, Research Associate

Kenji Mandai, Research Associate

Jung Hoon Shin, Research Associate (to 09/30/09)

Adele M. Snowman, Research Associate

Gareth Michael Thomas, Research Associate

Bo Xiao, Research Associate

Desheng Xu, Research Associate

Jia Xu, Research Associate

Ann M. Ferry, Visiting Scientist

Masahiro Fukaya, Visiting Scientist

Eun-Kyoung Kim, Visiting Scientist

Juno Kim, Visiting Scientist

Cheil Moon, Visiting Scientist

Haiyan Sun, Visiting Scientist

Gihan I. Tennekoon, Visiting Scientist

Elizabeth Tran, Visiting Scientist

Jie Zhang, Visiting Scientist

Faculty Associated with the Department of Neuroscience Holding a Primary Appointment in:

The School of Medicine:
John E. Desmond
Associate Professor of Neurology

Frederick A. Lenz
A. Earl Walker Professor of Functional Neurosurgery

Alfredo Quinones-Hinojosa
Associate Professor of Neurological Surgery

The Bloomberg School of Public Health:
Jiou Wang
Assistant Professor of Biochemistry and Molecular Biology

The School of Arts and Sciences:
Gregory F. Ball
Professor of Psychology

Susan Courtney
Assistant Professor of Psychology

Howard Elliott Egeth
Professor of Psychology

Eric Fortune
Assistant Professor of Psychology

Michela Gallagher
Professor of Psychology

Samer S. Hattar
Assistant Professor of Biology

Peter C. Holland
Professor of Psychology

Reiji Kuruvilla
Assistant Professor of Biology

Barbara Landau
Dick and Lydia Todd Faculty Development Professor of Cognitive Science

Michael McCloskey
Professor of Cognitive Science

Brenda Rapp
Professor of Cognitive Science

Amy Lynne Shelton
Assistant Professor of Cognitive Science

Veit Stuphorn
Assistant Professor of Psychological and Brain Studies

Steven Yantis
Professor of Psychology

The Department of Neuroscience investigates the nervous system using a variety of approaches, including molecular biological, 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*
Synaptic 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. CAMPOCHIARO
Molecular aspects of retinal repair and regeneration.

DR. CATERINA
Molecular mechanisms of thermosensation and nociception.

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. DESMOND
Cognitive neuroscience: cerebro-cerebellar circuits in learning and memory.

DR. DOETZLHOFER
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
Preception 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. GRIFFIN
Cellular neurobiology of the peripheral nervous system.

DR. GRIFFITHS
Behavioral pharmacology of drugs of abuse.

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. KOLODKIN*
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. 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. PEYNSER*
Molecular basis of neurological disorders.

DR. PLETNIKOV
Gene-environment interactions in neurodevelopmental disorders.

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
Behavioral neuroscience and its clinical applications.

DR. RONNETT*
Mechanisms of signal transduction and neurogenesis in the olfactory system.

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. SNYDER* 
Neurotransmitters, second messengers and drug action in the nervous system.

DR. SOCKANATHAN*
Cell fate specification in the central nervous system.

DR. SONG
Mechanisms of regulating adult neural stem cells of mammalian CNS.

DR. STUPHORN
Neurophysiological mechanisms of decision making and self-control.

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. 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 imaging (PT/SPECT/MR) of neuroreceptor systems in animal models and humans; methods development; applications to animals and humans; drug action studied by brain imaging.

DR. P. WONG*
Molecular mechanism and experimental therapeutic of neurodegenerative diseases.

DR. WORLEY*
Molecular mechanisms of neuronal plasticity.

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.
ME440.810 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) development and structure of the nervous system, (2) cellular neurophysiology, (3) neural signaling and coding, and (4) audition, vocalization, and language. Lectures will be presented by faculty in the Neuroscience, Neurology, Biomedical Engineering, Psychology, and Cognitive Science departments. The course will also include discussion sections based on current literature and several neurotechniques sessions designed to familiarize students with current experimental approaches in cellular, systems, and molecular neuroscience. This course is required of all students in the Neuroscience Training Program. Students outside the program may take this course independent of Neuroscience and Cognition II.

ME440.812 Neuroscience and Cognition II. Dr. Bastian. Third and fourth quarters yearly.
Prerequisites: Basic Cell and Molecular Biology (may be taken concurrently) or permission from course directors.
This is the second 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.

ME440.702 Cellular Substrates of Learning and Memory. Dr. Linden. Third quarter; bi-yearly.
Prerequisite: Consent of course director.
The search for the engram has proved to be one of the most fascinating and frustrating problems in contemporary biology. In this course we shall attempt to gain an understanding of the current state of the struggle through reading and discussion of original source materials from the literature. We shall examine attempts to find biochemical, electrophysiological and morphological changes in neural tissue during and following learning tasks, and attempts to interfere with or enhance learning and memory through genetic, electrophysiologic and pharmacologic manipulation. In addition, electrophysiological model systems of information storage such as long-term potentiation and long-term depression will be considered. Examples shall be taken from both the vertebrate and invertebrate literature. Prior coursework in electrophysiology is strongly recommended (Neuroscience and Cognition I is sufficient).

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 to be covered include neural induction, cell differentiation, neurotrophic factors and their mechanism of action, mechanisms of axonal growth and guidance, target recognition and synapse formation, and the basis of synaptic specificity. Students must have completed Neuroscience Cognition I and II.

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.

208 NEUROSCIENCE
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, TNFα death programs, ER stress response and developmental programmed cell death.

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 draw 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 identify important gaps in our current knowledge about these important cells.


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.

ME440.803 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 II 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 embryonic 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, electroretinography, 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
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, Director of the Department of Oncology

RICHARD F. 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 and Radiological Science, Professor of Oncology

STEPHENV. BAYLIN
Virginia and Daniel K. Ludwig Professor of Cancer Research in the Department of Oncology, Professor of Medicine

ZAVER M. BHUJWALLA
Professor of Radiology and Radiological Science, Professor of Oncology

KARIN J. BLAKEMORE
Professor of Gynecology and Obstetrics in Genetic Medicine, Professor of Oncology

JEF D. BOEKE
Professor of Molecular Biology and Genetics, Professor of Oncology

MICHAEL J. BOROWITZ
Professor of Pathology, Professor of Oncology

HENRY BREM
Harvey Cushing Professor of Neurosurgery, Professor of Oncology, Joint Appointment in Ophthalmology

ROBERT E. BRISTOW
Professor of Gynecology and Obstetrics, Professor of Oncology

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 CALIFANO, III
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology

JOHN L. CAMERON
University Distinguished Service Professor Alfred Blalock 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 Spiro, RN Professor of Pediatric Neurosurgery, Professor of Oncology, Professor of Pediatrics, Professor of Plastic 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

PATRICIA CHARACHE
Professor of Pathology, Professor of Medicine, Professor of Oncology

LIEPING CHEN
Professor of Oncology, Professor of Dermatology

MICHAEL A. CHOTI
Jacob C. Handselman 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, Professor of Oncology, Professor of Pathology, Joint Appointment in Molecular Biology and Genetics

NANCY E. DAVIDSON, Adjunct Professor

ANGELO M. DEMARZO
Professor of Pathology, Professor of Oncology, Professor of Urology

211
THEODORE L. DEWEESE  
Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Oncology, Professor of Urology  
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  
GEORGE J. DOVER  
Given Foundation Professor of Pediatrics, Professor of Oncology, Joint Appointment in Medicine  
MARIO A. EISENBERGER  
R. Dale Hughes Professor of Oncology, Professor of Urology  
JONATHAN I. EPSTEIN  
Rose-Lee and Keith Reinhard Professor of Urologic Pathology, Professor of Oncology, Professor of Urology  
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  
ANDREW P. FEINBERG  
King Fahd Professor of Molecular Medicine in the Department of Medicine, Professor of Oncology, Joint Appointment in Molecular Biology and Genetics, Joint Appointment in Psychiatry  
ELLIO T. FISCHAN  
Professor of Radiology and Radiological Science, Professor of Oncology  
ARLENE A. FORASTIERE  
Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery, Professor of Radiation Oncology and Molecular Radiation Sciences  
FRANK JOHN FRASSICA  
Professor of Oncology, Professor of Orthopedic Surgery, Professor of Oncology  
ALAN D. FRIEDMAN  
Professor of Oncology, Professor of Pediatrics  
EDWARD W. GABRIELSON  
Professor of Pathology, Professor of Oncology  
WINALD R. GERRITSEN, Adjunct Professor  
JEAN-FRANCOIS H. GECHWIND  
Professor of Radiology and Radiological Science, Professor of Oncology  
ROBERT H. GETZENBERG  
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences  
FRANCIS M. GIARDIELLO  
John G. Rangos Sr. Professor of Adult Medicine in the Department of Medicine, Professor of Oncology, Professor of Pathology  
D. WADE GIBSON  
Professor of Pharmacology and Molecular Sciences, Professor of Oncology  
MICHAEL GOGGINS  
Professor of Pathology, Professor of Medicine, Professor of Oncology  
ZIYA L. GOKASLAN  
Donlin M. Long Professor of Neurosurgery, Professor of Oncology, Professor of Orthopedic Surgery  
STEVEN N. GOODMAN  
Professor of Oncology, Professor of Pediatrics  
STEVEN D. GORE, Professor  
CAROL WIDNEY GREIDER  
Daniel Nathans Professor and Director of the Department of Molecular Biology and Genetics, Professor of Oncology  
CONSTANCE A. GRIFFIN  
Professor of Pathology, Professor of Oncology, Associate Professor of Medicine  
STUART A. GROSSMAN  
Professor of Oncology, Professor of Medicine, Professor of Neurological Surgery  
GARY S. HAYWARD  
Professor of Oncology, Professor of Pathology, Professor of Pharmacology and Molecular Sciences  
S. DIANE HAYWARD  
Professor of Oncology, Professor of Pharmacology and Molecular Sciences, Associate Professor of Neurology  
LEE J. HELMAN  
Professor of Oncology, Professor of Pediatrics  
JAMES GORDON HERMAN, Professor  
ALLAN D. HESS  
Professor of Oncology, Professor of Pathology  
RALPH H. HRUBAN  
Professor of Pathology, Professor of Oncology  
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  
ELIZABETH M. JAFFEE  
Dana and Albert “Cubby” Broccoli Professor of Oncology, Professor of Pathology  
RICHARD J. JONES  
Professor of Oncology, Professor of Medicine  
JUDITH E. KARP  
Professor of Oncology, Professor of Medicine  
SCOTT E. KERN  
Professor of Oncology, Professor of Pathology  
THOMAS S. KICKLER  
Professor of Pathology, Professor of Medicine, Professor of Oncology  
KENNETH W. KINZLER, Professor  
WAYNE M. KOCH  
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology  
FRANCIS P. KUHAJDA  
Professor of Pathology, Professor of Oncology, Joint Appointment in Biological Chemistry
JAMES T. STIVERS  
Professor of Pharmacology and Molecular Sciences, Professor of Oncology

SARASWATI SUKUMAR  
Barbara B. Rubenstein Professor of Oncology, Professor of Pathology

LODE J. SWINNEN, Visiting Professor

SUZANNE LOUISE TOPALIAN  
Professor of Surgery, Professor of Oncology

JEFFREY M. TRENT, Adjunct Professor

PAULUS JOANNES VAN DIEST, Adjunct Professor

PETER C.M. VAN ZIJL  
Professor of Radiology and Radiological Science, Professor of Biophysics and Biophysical Chemistry, Professor of Oncology

HENDRIK M.W. VERHEUL, Adjunct Professor

RAPHAEL P. VISICIDI  
Professor of Pediatrics, Professor of Oncology

GEORGIA B. VOGELSANG, Professor (to 09/30/09)

BERT VOGELSTEIN  
Clayton Professor of Oncology, Professor of Pathology, Joint Appointment in Molecular Biology and Genetics, Investigator of the Howard Hughes Medical Institute

ERIC CARL VONDERHEID  
Professor of Dermatology, Professor of Oncology

T. PHILLIP WAALKES, Professor Emeritus

RICHARD L. WAHL  
Henry N. Wagner Jr., M.D. Professor of Nuclear Medicine in the Department of Radiology, Professor of Oncology

KRISTIN L. WEBER  
Virginia M. and William Percy Professor of Orthopaedic Surgery, Professor of Oncology

WILLIAM H. WESTRA  
Professor of Pathology, Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Dermatology

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

TZYY-CHOU WU  
Professor of Pathology, Professor of Gynecology and Obstetrics, Professor of Oncology

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

WILLIAM H. ZINKHAM  
Distinguished Service Professor Emeritus of Pediatrics and Oncology

RHODA M. ALANI  
Associate Professor of Oncology, Associate Professor of Dermatology, Joint Appointment in Molecular Biology and Genetics

DEBORAH K. ARMSTRONG  
Associate Professor of Oncology, Associate Professor of Gynecology and Obstetrics

DMITRI ARTEMJOV  
Associate Professor of Radiology and Radiological Science, Associate Professor of Oncology

DOUGLAS W. BALL  
Associate Professor of Medicine, Associate Professor of Oncology

ATUL BEDI  
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Oncology

DAVID M. BERMAN  
Associate Professor of Pathology, Associate Professor of Oncology, Assistant Professor of Urology

IVAN BORRELLO, Associate Professor

HAYDEN GRANT BRAINE  
Associate Professor Emeritus of Oncology, Associate Professor Emeritus of Medicine

MALCOLM VERNON BROCK  
Associate Professor of Surgery, Associate 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 Gynecology and Obstetrics, Associate Professor of Oncology, Assistant Professor of Medicine

KENNETH J. COHEN  
Associate Professor of Oncology, Associate Professor of Pediatrics

ANDREA L. COX  
Associate Professor of Medicine (from 10/01/09), Assistant Professor of Medicine (to 09/30/09), Associate Professor of Oncology (from 10/01/09), Assistant Professor of Oncology (to 09/30/09)

BARTHA J. CRAIN  
Associate Professor of Pathology, Associate Professor of Neurology, Associate Professor of Oncology

SAMUEL RAY DENMEADE  
Associate Professor of Oncology, Associate Professor of Pharmacology and Molecular Sciences, Associate Professor of Urology

PRAHAND DESAI  
Associate Professor of Oncology (from 10/01/09), Assistant Professor of Oncology (to 09/30/09)

CHARLES G. DRAKE  
Associate Professor of Oncology, Assistant Professor of Urology
MARK DOUGLAS DUNCAN  
Associate Professor of Surgery, Associate Professor of Oncology  

CHARLES G. EBERHART  
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Ophthalmology  

LEISHA ANN EMENS, Associate Professor  

JAMES R. ESHLEMAN  
Associate Professor of Pathology, Associate Professor of Oncology  

JOHN H. 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  

CHRISTOPHER D. GOCKE  
Associate Professor of Pathology, Associate Professor of Oncology  

LOUISE B. GROCHOW  
Associate Professor of Oncology, Associate Professor of Medicine  

MISOP HAN  
Associate Professor of Urology, Associate Professor of Oncology, Associate Professor of Oncology  

FREDERICK H. HAUSHEER, Adjunct Associate Professor  

RICHARD F. HEITMILLER  
Associate Professor of Surgery, Associate Professor of Oncology  

CHARLES STEVEN HESDORFFER  
Associate Professor of Medicine, Associate Professor of Oncology  

MANUEL HIDALGO, Adjunct Associate Professor  

PENG HUANG, Associate Professor  

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 Surgery, Associate Professor of Oncology  

MICHAEL A. JACOBS  
Associate Professor of Radiology and Radiological Science, Associate Professor of Oncology  

GEORGE ISSA JALLO  
Associate Professor of Neurological Surgery, Associate Professor of Oncology, Associate Professor of Pediatrics  

JIN JEN, Associate Professor  

NAGI F. KHOURI  
Associate Professor of Radiology and Radiological Science, Associate Professor of Oncology  

KAREN E. KING  
Associate Professor of Pathology, 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  

JEANNE KOWALSKI, Associate Professor  

MICHAEL A. KRAUT  
Associate Professor of Radiology and Radiological Science, Associate Professor of Neurological Surgery, Associate Professor of Oncology  

PRAKASH KULKARNI  
Visiting Associate Professor of Urology, Visiting Associate Professor of Oncology  

DANIEL A. LAHERU, Associate Professor  

JULIE ROBIN LANGE  
Associate Professor of Surgery, Associate Professor of Oncology, Assistant Professor of Dermatology  

CHRISTOPH LENGAUER, Adjunct Associate Professor  

MARK JAMES LEVIS  
Associate Professor of Oncology, Associate Professor of Medicine  

VICTOR LEVITSKY, Associate Professor  

LEO LUZNIK, Associate Professor  

ANIRBAN MAITRA  
Associate Professor of Pathology, Associate Professor of Oncology  

WILLIAM H. MATSUI, Associate Professor  

SHANNATH L. MERBS  
Associate Professor of Ophthalmology, Associate Professor of Oncology  

CAROLE B. MILLER, Associate Professor  

KATHLEEN M. MURPHY  
Associate Professor of Pathology (to 12/31/09), Associate Professor of Oncology  

GEORGES JABBOURE NETTO  
Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology  

JOHN NICHOLAS, Associate Professor  

STEPHEN J. NOGA  
Associate Professor of Oncology (to 07/31/09), Associate Professor of Pathology (to 07/31/09)  

MICHAEL F. OCHS  
Associate Professor of Oncology, Joint Appointment in Health Sciences Informatics  

AKHILESH PANDEY  
Associate Professor of Biological Chemistry in Genetic Medicine, Associate Professor of Oncology, Associate Professor of Pathology  

NICKOLAS PAPADOPOULOS, Associate Professor  

BEN HO PARK, Associate Professor
PAUL CELANO
Assistant Professor of Oncology, Assistant Professor of Gynecology and Obstetrics

STEPHEN J. CHANOCK
Assistant Professor of Oncology, Lecturer in Pediatrics

AKHIL CHOPRA, Adjunct 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

MICHAEL A. ERDEK
Assistant Professor of Anesthesiology and Critical Care Medicine, 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

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 L. HANN, Assistant Professor

JOSEPH M. HERMAN
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology, Assistant Professor of Surgery

MOHAMMAD OBAIDUL HOQUE
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology, Assistant Professor of Urology

WEN-SON HSIEH, Assistant Professor

CAROL ANN HUFF
Assistant Professor of Oncology, Assistant Professor of Medicine

CHIEN-FU HUNG
Assistant Professor of Pathology, Assistant Professor of Gynecology and Obstetrics, Assistant Professor of Oncology

SANJAY RAJ JAIN, Adjunct Assistant Professor (from 07/26/09)

YOON-YOUNG JANG, Assistant Professor

ROSALYN ANNE JUERGENS
Assistant Professor of Oncology, Assistant Professor of Medicine (from 08/01/09)

MIHOKO KAI
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

YVETTE K. KASAMON
Assistant Professor of Oncology, Assistant Professor of Medicine

SAEED R. KHAN
Adjunct Assistant Professor of Oncology, Adjunct Assistant Professor of Radiology

YOUNG JUN KIM
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology (from 08/01/09)

ALISON PATRICIA KLEIN
Assistant Professor of Oncology, Assistant Professor of Pathology

SCOTT LEE KOMINSKY
Assistant Professor of Orthopedic Surgery, Assistant Professor of Oncology

JOSEPH M. HERMAN
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

JOSHD A. LAURING, Assistant Professor

DUNG THI LE, Assistant Professor

NANETTE J. LIEGEOIS-KWON
Assistant Professor of Dermatology (to 09/30/09), Assistant Professor of Oncology, Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Plastic Surgery

MICHAEL LIM
Assistant Professor of Neurological Surgery, Assistant Professor of Oncology

DAVID M. LOEB
Assistant Professor of Oncology, Assistant Professor of Pediatrics

GILBERTO DE LIMA LOPES, JR., Assistant Professor

JUN LUO
Assistant Professor of Urology, Assistant Professor of Oncology

SHAWN E. LUPOLD
Assistant Professor of Urology, Assistant Professor of Oncology

CRYSTAL L. MACKALL
Assistant Professor of Oncology, Assistant Professor of Pediatrics

SHANTHI MARUR
Assistant Professor of Oncology (from 09/01/09), Instructor in Oncology (to 08/31/09)

MICHAEL A. MCDEVITT
Assistant Professor of Medicine, Assistant Professor of Oncology

TODD R. MCNUTT
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology

ALAN K. MEEKER
Assistant Professor of Pathology, Assistant Professor of Oncology, Assistant Professor of Urology
AMY LYNNE GOODRICH, Research Associate
YIPING HE, Research Associate
CRAIG M. HOOKER, Research Associate
FRANCK HOUSSEAU, Research Associate
LANQING HUANG, Research Associate
VARALAKSHMI KATURI, Research Associate
SANJAY KHARE, Research Associate (to 10/05/09)
CAROL KOBIRIN, Research Associate
HIROYUKI KONISHI, Research Associate
FERDYNAND J. KOS, Research Associate
M. VICTOR LEMAS, Research Associate
LI LI, Research Associate
GANGLING LIAO, Research Associate
JIANYONG LIU, Research Associate
FARIDEH MAJIDI, Research Associate
TRACY MURRAY-STEWART, Research Associate
SUZANNE AMATO NESBIT, Research Associate
KIMBERLY ANN NOONAN, Research Associate
FAN PAN, Research Associate
KLAUS B. PIONTEK
Research Associate in Oncology (from 09/01/09), Research Associate in Medicine (to 08/31/09)
LU QIN, Research Associate
GORDON R. SANDFORD, Research Associate
VICTORIA J. SINIBALDI, Research Associate
SUROJIT SUR, Research Associate
JANET RUTH WALCZAK, Research Associate
ALLEN B. WILLIAMS, Research Associate
SHENG YAO, Research Associate
XIAOBU YE, Research Associate
RAY-WHAY CHIU YEN, Research Associate
HONG YU, Research Associate
WEI (WAYNE) YU, Research Associate
YANXING YU, Research Associate
HUAFENG ZHANG, Research Associate
YONGGANG ZHANG
Research Associate in Radiation Oncology and Molecular Radiation Sciences, Research Associate in Oncology
MING ZHAO, Research Associate
GEFENG (GLORIA) ZHU, Research Associate
JIANCHAO ZONG, Research Associate
CRAIG A. DIONNE, Visiting Scientist
MASAHIRO FUJIMURO, Visiting Scientist
TAKASHI SATO, Visiting Scientist
QUN ZHOU, Visiting Scientist

FACULTY ASSOCIATED WITH THE ONCOLOGY CENTER HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
PAM M. NESS
Professor of Pathology

The Bloomberg School of Public Health:
TERRI H. BEATY
Professor of Epidemiology

SHYAM S. BISWAL
Associate Professor of Environmental Health Sciences
THOMAS A. BURKE
Professor of Health Policy and Management
SYDNEY MORSS DY
Assistant Professor of Health Policy and Management
JEAN G. FORD
Associate Professor of Epidemiology
PATTI E. GRAVITT
Associate Professor of Epidemiology
JOHN D. GROOPMAN
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
HAN-YAO HUANG
Adjunct Assistant Professor of Epidemiology
HEE-SOON JUON
Associate Professor of Health Behavior and Society
NORMA KANAREK
Associate Professor of Environmental Health Sciences
THOMAS W. KENSLER
Professor of Environmental Health Sciences
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. ROTER
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
MICHAEL A. TRUSH
Professor of Environmental Health Sciences
KALA VISVANATHAN
Associate Professor of Epidemiology
VIRGINIA MARIE WEAVER
Associate Professor of Environmental Health Sciences
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, Civin, 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. David Berman and Patrick Brown (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 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. ARCECI
Molecular and developmental biology; cytokine signaling and chromatin structure; epigenetics, leukemia/histiocytosis.

DR. ARMSTRONG
Gynecologic cancer, breast cancer; high dose therapy.

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. BRODSKY
Experimental hematopoiesis in bone marrow failure disorders.

DR. BROWN
Molecular targeted therapies for childhood leukemias.

DR. BROWNER
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. COFFEY
Cell structure and function.

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. DANG
Molecular biology of oncogenes.

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. GOODMAN
Clinical trials design.

DR. GORE
Epigenetics in cancer therapeutics; drug development in hematologic malignancies; adult leukemia and myelodysplastic syndrome.

DR. GRIFFIN
Solid tumor cytogenetics.

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. 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. KINZLER
Molecular genetics of human cancer.

DR. KLEIN
Genetic epidemiology; pancreatic cancer; cancer epidemiology; statistical genetics

DR. KOWALSKI
Non-parametric analysis of high dimensional data.

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. MATSU:
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. PAPADOPOULOS:
Molecular genetics of human neoplasia.

DR. PARDOLL:
Dedritic 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. PURTELL:
Lung cancer, particularly in the elderly.

DR. RAVI:
Apoptosis; signal transduction.

DR. RUDEK:
Drug development; clinical pharmacology.

DR. RUDIN:
Lung cancer; novel therapeutics; apoptotic regulation.

DR. SHAPIRO:
Geriatric oncology; medical ethics.

DR. SHARFMAN:
Malignant melanoma; general oncology.

DR. SHARKIS:
Regenerative medicine; stem cell biology.

DR. SIDRANSKY:
Molecular genetics of human tumors; head and neck cancers.

DR. SMALL:
Molecular biology of leukemia; development of molecularly targeted therapy for cancer.

DR. SMITH:
Myeloid malignancies (AML, CML, MOS); cancer stem cell biology.

DR. SPIVAK:
Hematology research; erythropoiesis.

DR. STEARNS:
Breast cancer.

DR. SUKUMAR:
Molecular genetics of breast cancer.

DR. SWINNEN:
Lymphoma; viral oncology; neoplasia and immunodeficiency; EBV.

DR. SYMONS:
Immunobiology of bone marrow transplantation.

DR. THORNTON:
Sarcoma (adult); novel therapies.

DR. VELCULESCU:
Molecular genetics of colorectal cancer.

DR. VISVANATHAN:
Breast cancer.

DR. VOGELSTEIN:
Genomic alterations in human cancer.

DR. WHARTENBY:
Immunology and gene therapy.

DR. WOLFE:
Breast cancer; novel therapies.

DR. YEGNASUBRAMANIAN:
Molecular genetics and epigenetics of cancer; DNA methylation.

DR. ZAHNOW:
Molecular biology of mammary gland development and breast cancer.

DR. ZAMBIDIS:
Developmental biology of hematopoietic stem cells; embryonic stem cell biology; leukemia stem cells.

DR. ZENG:
GI cancers (pancreatic; colon, and liver); vaccines and immunotherapy; molecularly targeted therapies.

DR. S. ZHOU:
Combination bacteriolytic therapy for cancer.

E6. Advanced Clinical Study.

A limited number of opportunities are available for advanced study. Students will participate in the evaluation, care and follow-up of selected patients under the guidance of a preceptor and attend ward rounds, case conferences and other related teaching sessions. Students are encouraged to undertake a circumscribed investigative project of their own choosing.

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.
E11. 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 3-4:30 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.
DEBASISH SINHA, Assistant Professor
SHARON D. SOLOMON
Assistant Professor of Ophthalmology,
Occupying the Katherine Graham Professorship
in Ophthalmology
JENNIFER UNJOO SUNG, Assistant Professor
JOHN TILYNN THOMPSON, Assistant Professor
TINGHUAI WU, Assistant Professor (on leave of
absence to 09/14/09)
HOWARD S. C. YING, Assistant Professor
SARAH H. YING
Assistant Professor of Neurology, Assistant
Professor of Ophthalmology
J. SAMUEL ZIGLER, JR., Assistant Professor
SULEIMAN S. ALIBHAI, Instructor
RAYA ARMALY, Instructor
M. BARRY BLUM, Instructor
GARY H. CASSEL, Instructor
LIUDMILA CEBOTARU, Instructor
ALEXANDER CHRISTOFF, Instructor
KAREN DUNLAP, Instructor
IVAN H. GARCIA, Instructor
NADER G. GARY, Instructor
NINA GLASNER, Instructor
JEREMY GOLDMAN, Instructor
LENARD H. HAMMER, Instructor
MARC A. HONIG, Instructor
JOSEPHINE O. IBIRONKE, Instructor (to
09/30/09)
SANJAY RAMKRISHNA KEDHAR, Instructor
BRIAN C. LERNER, Instructor
RENÉE A. LERNER, Instructor
SUDEEP PRAMANIK, Instructor (from 11/01/09)
EVA MARIA RORER, Instructor
JEROME ROSS, Instructor
PATRICIA L. SCHMOKE, Instructor
ALLEN E. SILVER, Instructor
LEE ALISON SNYDER, Instructor
JONATHAN DAVID SOLOMON, Instructor
LEON STRAUSS, Instructor
RICHARD M. SUSEL, Instructor
JEFFREY LAWRENCE WEXLER, Instructor
SARAH ANIS, Assistant
ANNA BORDELON, Assistant
YASSINE J. DAAOUD, Assistant
ROBERT W. DAVIS, Assistant
ADAM D. JACOBOWITZ, Assistant
MUGE R. KESHE, Assistant
BEN J. KIM, Assistant
JOHN J. KOO, Assistant
AISHA ANN MACEDO, Assistant (from 07/06/09)
ALEXIS G. MALIK, Assistant
BRYAN D. PROPES, Assistant
AKRIT SODHI, Assistant
DIVYA SRIKUMARAN, Assistant
KALLIOPE STASI, Assistant (to 07/06/09)
ALLEN FOSTER, Lecturer
CYNTHIA A. BERLINICE, Research Associate
IMRAN A. BHUTO, Research Associate
JAMES T. DEREMEIK, Research Associate
ALING DONG, Research Associate
RAQUEL FORMICA, Research Associate
TIMOTHY P. FRIEL, Research Associate
DUANE R. GERUSCHAT, Research Associate
DAVID GREEN, Research Associate
PAUL N. HOFFMAN, Research Associate
LILI LU, Research Associate
MARY ELLEN PEASE, Research Associate
SYED MAHMOOD SHAH, Research Associate (to
07/15/09)
JIKUI SHEN, Research Associate
KURT A. SIMONS, Research Associate
RUTH ASHERY-PADAN, Visiting Scientist (to
08/01/09)
WALID KHALED BARBOUR, Visiting Scientist
DONALD L. CHAMPAGNE, Visiting Scientist
FACULTY ASSOCIATED WITH THE
DEPARTMENT OF OPHTHALMOLOGY HOLDING
A PRIMARY APPOINTMENT IN:
The School of Medicine:
SETCH BLACKSHAW
Assistant Professor of Neuroscience
HENRY BREM
Harvey Cushing Professor of Neurological
Surgery
NICHOLAS MARSH-ARMSTRONG
Assistant Professor of Neuroscience
DAVID EDWARD NEWMAN-TOKER
Assistant Professor of Neurology
The Bloomberg School of Public Health:
MARIE DIENER-WEST
Professor of Biostatistics
KEVIN D. FRICK
Associate Professor of Health Policy and
Management
JOANNE KATZ
Professor of International Health
JAMES M. TIELSCH
Professor of International Health
KEITH PARKER WEST, JR.
Professor of International Health
ELECTIVE OPPORTUNITIES—Curricular
Consultant: Dr. Bert Jun. Elective courses
must be approved by the preceptor; any mem-
ber of the department can act as preceptor.

Ophthalmology E

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 stu-
dents 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 5. 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.

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, retinectomy 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 will be held if 3 or more students are on the rotation.

E 8. Advanced Work and Research. By arrangement with the staff.
Research interests represented in the Department of Ophthalmology are as follows:
DR. AKPEK
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 prosthesis and vision test development.
DR. EBERHART
Ophthalmic pathology.
DR. GEHLBACH
Gene therapy vector creation and use; animal models of disease involving the retinal and choroids; cell and molecular biology of ocular angiogenesis.
DR. GOLDBERG
Sickle cell eye disease.

DR. GOLDSTEIN
Visual impairment assessment and rehabilitation.

DR. GOTTSCH
Cataract and intraocular lens implantation, contact lenses, ocular immunology, in particular immune aspects of corneal transplant rejection.

DR. GROVER
Vision impairment and rehabilitation.

DR. GUYTON
Ophthalmic instrumentation, especially related to ophthalmic optics and strabismus.

DR. JAMPEL
Glaucoma and glaucoma surgery.

DR. MASSOF
Vision psychophysics and electrophysiology.

DR. MILLER
Clinical neuro-ophthalmology.

DR. PULLACK
Clinical studies in glaucoma.

DR. R. QUIGLEY
Experimental optic nerve studies.

DR. RAMANATHAN
Cataract surgery with intraocular lens implantation and resident education.

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
Cataract and intraocular lens implantation, contact lenses, ocular immunology, in particular immune aspects of corneal transplant rejection.

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 11. Wilmer Retinal Division Weekly Medical/Surgical Teaching Conference. Dr. N. Bressler and staff. Monday; 7:30 a.m. to 8:30 a.m. in Maumenee conference room #501. Available to students taking clinical research elective in Wilmer Retina Division.

Available all year; minimum of 4 weeks.
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.

Cataract and intraocular lens implantation, contact lenses, ocular immunology, in particular immune aspects of corneal transplant rejection. Students interested in these subjects are encouraged to meet with listed faculty to obtain more information about the possibilities for research electives.


Development and testing of ophthalmic instrumentation, especially related to ophthalmic optics and strabismus. To be arranged through Dr. Guyton at 410-955-8314.


Weekly research seminar and supervised research project. Special interest of the faculty include low vision and quantitative measuring of retinal function in common retinal disorders including macular degeneration, diabetic retinopathy, branch and central retinal vein occlusion, and retinitis pigmentosa.

**E 26. Clinical Research in Medical Retinal Disease.** Dr. S. Bressler. One student per 9 weeks.

*Prerequisites:* Ophthalmology Clerkship plus elective, or elective alone.

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.

**E 27. Clinical Research of Macular Diseases.** Dr. N. Bressler. One full quarter; offered all year.

*Prerequisites:* One month Ophthalmology elective.

This elective includes selecting a specific clinical research question, designing a study to answer that question, reviewing pertinent literature, examining study patient’s histories and ocular examinations, refining ophthalmic examination skills and interpretation of imaging studies of the retina, working with a preceptor in his clinical practice.

**E 30. Oculoplastic Surgery.** Drs. Merbs, Grant, and Iliff. Available all year; contact 410-955-1112.

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 library 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 31. 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.
Pathology

JAY BROOKS JACKSON
Baxley Professor of Pathology, Director of the Department of Pathology

RICHARD F. AMBINDER
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

FREDERIC B. ASKIN, Professor

WILLIAM M. BALDWIN, III, Adjunct Professor

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

PATRICIA CHARACHE
Professor of Pathology, Professor of Medicine, Professor of Oncology

SAMUEL CHARACHE
Professor Emeritus of Medicine, Professor Emeritus of Pathology

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, Professor of Neurology, Professor of Pathology, Joint Appointment in Molecular Biology and Genetics

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, Professor of Oncology, Professor of Pathology, Joint Appointment in Molecular Biology and Genetics

ANGELO M. DEMARZO
Professor of Pathology, Professor of Oncology, Professor of Urology

J. STEPHEN DUMLER, Professor

JONATHAN I. EPSSTEIN
Rose-Lee and Keith Reinhard Professor of Urologic Pathology, Professor of Oncology, Professor of Urology

YENER S. EROZAN, Professor

SUSAN H. SHAKIN ESHEMAN, 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 GOGGINS
Professor of Pathology, Professor of Medicine, Professor of Oncology

WILLIAM R. GREEN
Professor Emeritus of Ophthalmology, Professor Emeritus of Pathology

CONSTANCE A. GRIFFIN
Professor of Pathology, Professor of Oncology, Associate Professor of Medicine

JOHN W. GRIFFIN
University Distinguished Professor of Neurology, Professor of Neuroscience, Professor of Pathology

ROBERT G. HAMILTON
Professor of Medicine, Professor of Pathology

ULRIKE M. HAMPER
Professor of Radiology and Radiological Science, 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 H. HRUBAN
Professor of Pathology, Professor of Oncology

GROVER M. HUTCHINS
Professor of Pathology, Joint Appointment in Art as Applied to Medicine

ELIZABETH M. JAFFEE
Dana and Albert “Cubby” Broccoli Professor of Oncology, Professor of Pathology

JONATHAN PETER JAROW
Professor of Urology, Professor of Pathology

WALTER ERWIN KAUFMANN
Professor of Pathology, Professor of Neurology, Professor of Pediatrics, Professor of Psychiatry, Professor of Radiology

SCOTT E. KERN
Professor of Oncology, Professor of Pathology

THOMAS S. KICKLER
Professor of Pathology, Professor of Medicine, Professor of Oncology
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYED ZULFIQAR ALI</td>
<td>Associate Professor of Pathology, Associate Professor of Radiology</td>
</tr>
<tr>
<td>SERENA MARIA BAGNASCO</td>
<td>Associate Professor of Pathology, Associate Professor of Radiology</td>
</tr>
<tr>
<td>NORMAN J. BARKER</td>
<td>Associate Professor of Pathology, Associate Professor of Art as Applied to Medicine</td>
</tr>
<tr>
<td>DAVID M. BERMAN</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Assistant Professor of Urology</td>
</tr>
<tr>
<td>BELUR S. BHAGAVAN</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Assistant Professor of Urology</td>
</tr>
<tr>
<td>CAROL L. BUREK</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Assistant Professor of Urology</td>
</tr>
<tr>
<td>PATRIZIO P. CATUREGLI</td>
<td>Associate Professor of Pathology, Joint Appointment in Medicine</td>
</tr>
<tr>
<td>BARBARA J. CRAIN</td>
<td>Associate Professor of Pathology, Associate Professor of Neurology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>BARBARA DETRICK</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Ophthalmology</td>
</tr>
<tr>
<td>CHARLES G. EBERHART</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Ophthalmology</td>
</tr>
<tr>
<td>JAMES R. ESHLEMAN</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>MOSTAFA M. FRAIG</td>
<td>Visiting Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>PATRICIA J. GEARHART</td>
<td>Adjunct Professor of Medicine, Adjunct Associate Professor of Pathology, Adjunct Associate Professor of Surgery</td>
</tr>
<tr>
<td>CHRISTOPHER D. GOCKE</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>DENNIS JOHN GRAB</td>
<td>Associate Professor of Pathology, Associate Professor of Pediatrics</td>
</tr>
<tr>
<td>LAURA A. GUAY</td>
<td>Associate Professor of Pathology, Associate Professor of Pediatrics</td>
</tr>
<tr>
<td>RICHARD L. HUMPHREY</td>
<td>Associate Professor of Pathology, Associate Professor of Medicine</td>
</tr>
<tr>
<td>CHRISTINE A. IACOBUIZIO-DONAHUE</td>
<td>Associate Professor of Pathology, Associate Professor of Surgery, Associate Professor of Oncology</td>
</tr>
<tr>
<td>JACQUELINE MARIE JUNKINS-HOPKINS</td>
<td>Visiting Associate Professor of Dermatology, Visiting Associate Professor of Pathology</td>
</tr>
<tr>
<td>KAREN E. KING</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>VASSILIS E. KOLIATSOS</td>
<td>Associate Professor of Pathology, Associate Professor of Neurology, Associate Professor of Psychiatry</td>
</tr>
<tr>
<td>MICHAEL K. LEE</td>
<td>Adjunct Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>ANIRBAN MAITRA</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>JOSEPH LEONARD MANKOWSKI</td>
<td>Associate Professor of Molecular and Comparative Pathobiology, Associate Professor of Neurology, Associate Professor of Pathology</td>
</tr>
<tr>
<td>ROBERT E. MILLER</td>
<td>Associate Professor of Pathology, Associate Professor of Biomedical Engineering, Joint Appointment in Health Sciences Informatics</td>
</tr>
<tr>
<td>KATHLEEN M. MURPHY</td>
<td>Associate Professor of Pathology, Joint Professor of Oncology, Associate Professor of Pathology</td>
</tr>
<tr>
<td>GEORGES JABBORUE NETTO</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology</td>
</tr>
<tr>
<td>STEPHEN J. NOGA</td>
<td>Associate Professor of Oncology, Associate Professor of Pathology</td>
</tr>
<tr>
<td>AKHILESH PANDEY</td>
<td>Associate Professor of Biological Chemistry in Genetic Medicine, Associate Professor of Oncology, Associate Professor of Pathology</td>
</tr>
<tr>
<td>GARY R. PASTERNAK</td>
<td>Adjunct Associate Professor of Pathology, Adjunct Associate Professor of Medicine</td>
</tr>
<tr>
<td>TRISH M. PERL</td>
<td>Professor of Medicine, Associate Professor of Pathology</td>
</tr>
<tr>
<td>RICHARD B. S. RODEN</td>
<td>Associate Professor of Pathology, Associate Professor of Gynecology and Obstetrics, Associate Professor of Oncology</td>
</tr>
<tr>
<td>E. RENÉ RODRIGUEZ</td>
<td>Adjunct Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>S. R. K. JABBAR</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology, Associate Professor of Urology</td>
</tr>
<tr>
<td>ALEXANDRA VALSAMAKIS</td>
<td>Associate Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>RUSSELL VANG</td>
<td>Associate Professor of Pathology, Assistant Professor of Gynecology and Obstetrics</td>
</tr>
<tr>
<td>ZHEN ZHANG</td>
<td>Associate Professor of Pathology, Assistant Professor of Oncology</td>
</tr>
<tr>
<td>ROBERT ALBERT ANDERS</td>
<td>Assistant Professor of Pathology, Associate Professor of Oncology</td>
</tr>
<tr>
<td>DENISE A BATISTA</td>
<td>Assistant Professor of Pathology, Assistant Professor of Oncology, Joint Appointment in Health Sciences Informatics</td>
</tr>
<tr>
<td>G. STEVEN BOVA</td>
<td>Assistant Professor of Pathology, Assistant Professor of Oncology, Associate Professor of Urology</td>
</tr>
</tbody>
</table>
REQUIRED COURSE WORK FOR M.D. DEGREE

First Year

Scientific Foundations of Medicine/Introduction to Genes to Society and Pathobiology.

In the final week of Scientific Foundations, students spend two hours a day learning fundamentals of pathology and pathobiology with lecture and virtual microscope.

Second Year

1. Introduction to Pathology. Drs. McCarthy, Steenbergen, and staff. Quarters 1-3.

The introductory course is based upon previous studies in the courses of anatomy, biochemistry, physiology, and cells and tissues and correlates pathology with the on-going instruction in human pathophysiology, pharmacology, and clinical skills. This includes occasional combined sessions with these courses. The first part of the course deals mainly with general pathology, the second part of the course with the pathology of organ systems. The structural, functional and chemical changes occurring in the common diseases of man are discussed on the basis of general principles of the reaction to injury and of prototype disorders.

While the various areas of general and systemic pathology are introduced and critically surveyed in lectures given to the whole class, much of the teaching is carried out in seminar form and in small groups, which throughout the course are guided by permanently assigned instructors. The relationships between morphologic changes, functional alterations and clinical manifestations of disease are stressed, and the application of research to the study of disease is constantly pointed out and illustrated. Small groups focus on both anatomic and clinical laboratory pathology. Special areas of pathology are also introduced.

A large collection of typical examples of diseases represented by preserved specimens with their case records, color photomicrographs and a loan collection of histologic preparations is available to the student for the study of the more common disorders. Online resources are also available, including photomicrographs, lecture notes, and links to resources on the world wide web. Brief mentored experiences in surgical pathology, and either microbiology or transfusion medicine are required. Attendance at one autopsy is also required.

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. Lectures in Pathology for Graduate Students. (300.700) Drs. Jackson, Racusen and staff. This course consists of the lecture portion of Introduction to Pathology (300.600).

E 2. 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. BERMAN
Cancer stem cells; developmental biology of the prostate; urothelial injury repair; bladder cancer; genitourinary pathology.

DR. BHAGAVAN
Adult and pediatric gastrointestinal diseases.

DR. BOITNOTT
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.
DR. BUREK
Clinical immunology; autoimmunity; autoimmune disease.

DR. BURGER
Neuropathology; neuro-oncology.

DR. CARROLL
Diagnostic test development and evaluation for bacterial and fungal 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; molecular diagnosis of human pathogens.

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; cytokine biology in immune diseases; immunology of the eye.

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. ESHELEMAN
Early detection of pancreatic cancer; genes causing familial pancreatic cancer; novel molecular therapeutic and diagnostic tools for cancer.

DR. S. ESHELEMAN
Role of HIV-1 genetic diversity in transmission and drug resistance.

DR. FOWLER
Prevention and treatment of pediatric and HIV infection.

DR. FRAG
Pulmonary pathology, especially interstitial lung disease; diagnostic cytopathology.

DR. GABRIELEN
Molecular pathology of breast cancer and lung cancer.

DR. GOCKE
Molecular diagnostics and hematopathology.

DR. GOOGINS
Pancreatic cancer, particularly early detection; 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. HUTCHINS
Human cardiovascular, pulmonary, and pediatric diseases.

DR. IACOBZIO-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. KUHAJDA
Lipid synthesis and cancer and cancer diagnostics and therapeutics; breast and prostate tumors.

DR. KURMAN
Cervical, ovarian, endometrial, and trophoblastic neoplasia.

DR. LAI
Data mining; statistical modeling; subclinical atherosclerosis; epidemiology of HIV infection; drug abuse; cardiovascular complication of drug abuse and HIV infection; HIV prevention and intervention.

DR. M. LEE
Cytokines; retinal vasculitis; multiple myeloma.

DR. Q. (KAY) LI
Circulating tumor cells and molecular biology of 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  
Pathologic processes that can cause precancerous lesions to progress to invasive tumors; evaluation of tumor cells in metastases after extensive adjuvant therapy; translational use of immunocyto- and histo-chemistry that can be used as a diagnostic, therapeutic, and/or prognostic measure in patient care.

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. 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 therapeutic biomarkers in urologic malignancies.

DR. OELKE  
Human T cell immunology; adoptive T cell transfer; 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  
Memory T cells longevity and survival; mechanisms of T cell tolerance; molecular mechanisms of antigen presentation; structure and function of MHC protein.

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 allograft rejection in human and mouse models, interactions of macrophage complement and Fc receptors with their ligands; endothelial cell injury.
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 3. Autopsy Pathology (The Johns Hopkins Hospital). Dr. Crain. Throughout year except July and August; 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 multiheaded 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 4. 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 6. 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 neuropathology).

E 7. 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 Prosecution (E3), the overall experience will provide a transition to clinical work which incorporates exposure to clinical problems, as well as an opportunity to review the basic medical sciences from a practical patient-oriented point of view.

Students observe and participate in the gross and histologic assessment of gynecologic pathology specimens under the supervision of residents, fellows, and attending physicians.

E 9. 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 10. 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 11. Animal Pathology Laboratory. (680.703) Dr. Zink and staff. All year. (Offered jointly with the Department of Molecular and Comparative Pathobiology.)  
Prerequisites: 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 Baltimore Zoo, and by practicing veterinarians. Complete necropsy and histopathology laboratories are available and pathologists work under close supervision. Rotational assignments may vary according to schedules.

E 13. 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 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, Surgical Pathology, Autopsy Pathology, and follow-up information.

E 16. 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 20. 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 21. 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 22. 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, Wednesdays from 3:30-5:00 p.m. Next offered Spring 2011.

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, isosonids, blood clotting, chemotaxis, and other inflammatory mediators produced by various blood cells.

E 23. 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 2010 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; dysentery, typhoid fever, and cholera; syphilis and gonorrhea; Lyme disease; pneumococcal, staphylococcal, and streptococcal infections; typhus; Rocky Mountain spotted fever; plague, anthrax, brucellosis, and tularemia; tuberculosis; leprosy; infections with anaerobic bacteria; mycosis 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 neoplasia and inflammatory diseases of the gastrointestinal tract.

E 25. 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.

**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 readings develop a well-rounded view of the interrelated elements comprising the immune system. Student evaluation based on a paper.

E 28. **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 on-going research projects in the HIV Specialty Laboratory or the HIV genotyping laboratory. The areas of research include HIV diagnostics, 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 C. ALLEN, Professor

BLANCHE PEARL ALTER, Visiting Professor
ROBERT J. ARCECI  
King Fahd Professor of Pediatric Oncology,  
Professor of Pediatrics
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 Surgery

JAMES F. CASELLA  
Rainey Professor of Pediatric Hematology in the Department of Pediatrics, Professor of Oncology

MICHAEL F. CATALDO  
Professor of Behavioral Biology in the Department of Psychiatry, Professor of Pediatrics

ARAVINDA CHAKRAVARTI  
Professor of Medicine, Professor of Pediatrics,  
Joint Appointment in Molecular Biology and Genetics

SUBROTO B. CHATTERJEE, Professor
TINA LEE CHENG, Professor
BARTON CHILDS, Professor Emeritus
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,  
Associate Professor of Medicine, Assistant Professor of Neurological Surgery,  
Joint Appointment in Molecular Biology and Genetics,  
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

ESTELLE B. GAUDA, Professor
JOHN P. GEARHART  
Professor (Pediatric) of Urology, Professor of Pediatrics

GAIL GELLER  
Professor of Medicine in Genetic Medicine,  
Professor of Pediatrics

GARY W. GOLDSTEIN  
Professor of Neurology, Professor of Pediatrics,  
Director of the Kennedy Krieger Institute

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 W. JABS  
Adjunct Professor of Pediatrics, Adjunct Professor of Medicine, Adjunct Professor of Plastic Surgery

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

RICHARD IAN KELLEY, Professor
KWANG SIK KIM, Professor

PETER O. KWITEROVICH, JR.  
Professor of Pediatrics, Professor of Medicine

BETH L. LAUBE  
Professor of Pediatrics, Joint Appointment in Medicine, Joint Appointment in Radiology
PEDIATRICS—Second Year

1. Introduction to Health and Disease in Infants and Children. (Instruction takes place in the course Introduction to Medicine: Clinical Skills.) Dr. Barone. Groups of students will attend seminars and practical work sessions to consider the following topics:
   (a) Extension of history taking and physical diagnosis. Application of clinical skills to diagnosis of diseases in the pediatric age group.
   (b) Physical diagnosis-newborn.
   (c) Maturation of the cardiorespiratory system physical, radiologic, and laboratory changes with age.
   (d) Techniques for gathering sensitive and confidential information from patients.

PEDIATRICS—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. FIVUSH
Clinical trials in pediatric renal transplantation; humoral immunity/vaccine response in pediatric renal patients (including chronic renal insufficiency, dialysis, and transplant patients).

DR. FROSCH
Psychiatric aspects of acute physical injury in children; pediatric psychopharmacology; pediatric psychiatric genetics.

DR. GEARHART
Cellular function of bladder muscle on children with bladder exstrophy.

DR. HUTTON
Pediatric and HIV infection (including vertical transmission, diagnosis and treatment and psychosocial and ethical issues).

DR. KWIHEROVICH
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. MCGRAET-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. ROBSON
Clinical trials and epidemiology of cystic fibrosis.

DR. ROSENFELD
Clinical epidemiology and clinical trials of common pediatric disorders; chronic fatigue syndrome; hemolytic uremic syndrome.

DR. SERWINT
General pediatrics (including feeding issues; nursing cares, 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. WALKUP
Psychopharmacology of child psychiatric disorders.

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 children 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 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. To be arranged.

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 fac- ulty 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, tapeslide 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 pm; , 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.


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.

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 near-term 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 examination, 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 immunochemistry 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.


**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 HEBAC (Historic East Baltimore Community Action Coalition), Inc. The elective will begin with an orientation session with the faculty; the student will pick one subject area which to develop, the 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. HEBAC, 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 signaling 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 F. AMBINDER
James B. Murphy Professor of Oncology, Professor of Medicine, Professor of Pathology, 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 Pharmacology and Molecular Sciences

ROBERT J. COTTER
Professor of Pharmacology and Molecular Sciences, Professor of Biophysics and Biophysical Chemistry

CHARLES W. FLEXNER
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

ROBERT H. 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, Professor of Pharmacology and Molecular Sciences, Associate Professor of Neurology

CRAIG WALTER HENDRIX
Professor of Medicine, Professor of Pharmacology and Molecular Sciences

JAMES EARL KING HILDRETH
Adjunct Professor of Pharmacology and Molecular Sciences

PAUL S. LIETMAN
Professor of Medicine, Professor of Pediatrics, Professor 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 Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

MARTIN GILBERT POMPER
Professor of Radiology and Radiological Science, Professor of Pharmacology and Molecular Sciences, Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Joint Appointment in Psychiatry

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

SAMUEL RAY DENMEADE
Associate Professor of Oncology, Associate Professor of Pharmacology and Molecular Sciences, Associate Professor of Urology

SYLVAIN DORE
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pharmacology and Molecular Sciences

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 S. WOODS, Adjunct Associate Professor
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


A series of lectures and small group sessions designed to illustrate the principles of drug action and to introduce students to the clinically important classes of drugs. The course presumes familiarity with biochemistry, genetics, microbiology, molecular biology, cellular biology, and pharmacology. The course is integrated into the second year medical curriculum with an introductory section focusing on drug interactions with enzymes and receptors, drug design, drug metabolism, and pharmacokinetics followed by sections with the various classes of drugs considered by organ system in an integrated manner with both pathophysiology and pathology. The small group sessions offer an extended interaction with one faculty member on a topic selected by the student.

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 therapeutic 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, 9:00-10:30 a.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.


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 alternations on viral pathogenesis. Detailed analyses of well-studied human pathogens such as HIV, human papilloma virus, Epstein-Barr virus and influenza virus will be contrasted to newly emerging viruses such as West Nile, Ebola and SARS. Topics covered include mechanisms of replication and assembly, persistence versus apoptosis, immune evasion, host-host transmission, cell transformation, vaccines/therapeutics, and virus evolution. Grades will be determined by short quizzes/problems and a final exam.

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. Dr. Ambinder must approve prospective students. Contact Dr. Ambinder at 5-8839 for meeting place.


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.


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. AMINDER
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. COFFEY  
Nuclear structure and DNA organization in normal and cancer cells.

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. DORE  
Battling neurodegenerative disorders: stroke, Alzheimer, and aging.

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. 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. KENSLE  
Molecular mechanisms of chemical carcinogenesis; Nrf2 signalling; cancer chemoprevention.

DR. KINZLER  
Molecular genetics of cancer; translational cancer research.

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 prodrg 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. PITHA-ROWE  
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
Immunoparasitology; 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.

DR. ZHU
Signal transduction; protein network; host-pathogen interaction; biomarker identification.

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 188 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

BARIKA 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

ARGYE 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

EIICHI SAITO, Adjunct Professor

JAY R. SHAPIRO, Professor

AMY J. BASTIAN
Associate Professor of Neuroscience, Associate Professor of Physical Medicine and Rehabilitation

PABLO A. CELNICK
Associate Professor of Physical Medicine and Rehabilitation (from 10/01/09), Assistant Professor of Physical Medicine and Rehabilitation (to 09/30/09), Associate Professor of Neurology (from 10/01/09), Assistant Professor of Neurology (to 09/30/09)

JAMES R. CHRISTENSEN
Associate Professor of Physical Medicine and Rehabilitation, Associate Professor of Pediatrics

JAMES A. FAUERBACH
Associate Professor of Medical Psychology in the Department of Psychiatry, Associate Professor of Physical Medicine and Rehabilitation, Joint Appointment in Surgery

JOHN WOOD MCDONALD, III
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

STEPHEN T. WEBER, Associate Professor

RICHARD DAVID ZOROWITZ, Associate Professor

LAURA LEE ADAMS, Assistant Professor

NKIRUKA U. ARENE, Assistant Professor

KATHLEEN D. BRADY, Assistant Professor

MARTIN B. BRODSKY, Assistant Professor

MARY JO FISHBURN, Assistant Professor

JUDITH E. GOLDBIN
Assistant Professor of Ophthalmology, Assistant Professor of Physical Medicine and Rehabilitation

MARLIS GONZALEZ-FERNANDEZ, Assistant Professor

FELICIA HILL-BRIGGS
Associate Professor of Medicine, Assistant Professor of Physical Medicine and Rehabilitation

IANESSA A. HUMBERT, Assistant Professor

AARON N. JUNI, Assistant Professor (from 09/08/09)

KATHLEEN BECHTOLD KORTTE, Assistant Professor

KOICHIRO MATSUO, Adjunct Assistant Professor

JOSEPH C. ORLANDO
Assistant Professor of Plastic Surgery, Assistant Professor of Physical Medicine and Rehabilitation

SARA PALMER, Assistant Professor

CATHY A. PELLETIER, Assistant Professor

JOSEPH P. PILLION, Assistant Professor

CRISTINA L. SADOWSKY, Assistant Professor

CYNTHIA F. SALORIO, Assistant Professor

WILLIAM M. STIERS, Assistant Professor

STACY J. SUSKAUER, Assistant Professor

DONNA CLARK TIPPETT
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Physical Medicine and Rehabilitation

PEGAH TOURADJII, Assistant Professor

MELISSA KATRINA TROVATO, Assistant Professor

JANET E. TURNER, Assistant Professor

MARK ALLEN YOUNG, Assistant Professor

KATHLEEN M. ZACKOWSKI
Assistant Professor of Physical Medicine and Rehabilitation, Assistant Professor of Neurology

ALVIN KANDANNANT ANTONY, Instructor

GLENDALIZ BOSQUES, Instructor

LISA CULP, Instructor

DORIANNE RACHELLE FELDMAN, Instructor (from 10/01/09)

SUSAN E. HOFKAMP, Instructor

MARK STEPHEN HOPKINS, Instructor

LAURA BOYLE JAWEED, Instructor

EDWARD M. LAND, Instructor

ALBERT C. RECIO, Instructor

LAUREN T. SHAPIRO, Instructor

KELLY SHOWALTER, Instructor

LANA WARREN, Instructor

MOHAMMAD H. YAVARI RAD, Instructor

MOLLY E. CAMPION, Assistant
JENNIFER M. ZANNI, Lecturer
XIAOFENG JIA
Research Associate in Biomedical Engineering, Research Associate in Physical Medicine and Rehabilitation
WENDY S. SHORE, Research Associate

FACULTY ASSOCIATED WITH THE DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
ERIC MATTHEW ALDRICH
 Associate Professor of Neurology
DANIELE RIGAMONTI
 Salisbury Family Professor of Neurological Surgery

The Bloomberg School of Public Health:
ELLEN J. MACKENZIE
 Professor of Health Policy and Management

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, HUMBER, 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, electrodagnosis, 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 of Physiology

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, Professor of Physiology, Joint Appointment in Medicine

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 of Physiology in Genetic Medicine

CHARLES M. WIENER
Professor of Medicine, Professor of Physiology

FREDERIC E. WONDISFORD
Professor of Pediatrics, Professor of Physiology, Joint Appointment in Medicine

THOMAS B. WOOLF
Professor of Physiology, Assistant Professor of Biomedical Engineering, Joint Appointment in Biophysics and Biophysical Chemistry

SANDRA E. GUGGINO
Associate Professor of Medicine, Associate Professor of Physiology

JAN H. HOH, Associate Professor

STEVEN MICHAEL CLAYPOOL, Assistant Professor

ANDREW WOLFE
Assistant Professor of Pediatrics, Assistant Professor of Physiology

GUANG WILLIAM WONG, Assistant Professor

JIE CHENG, Research Associate

SHEILA M. CHERRY, Research Associate

LAURA M. KALLAY, Research Associate

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.


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-medi-
ated signaling, small GTPases, lipid molecules, kinases, and phosphatases.

OTHER COURSES AND ELECTIVE OPPORTUNITIES—Elective courses must be approved by the Director of the Cellular and Molecular Physiology Graduate Program.

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; cardiolipin and protein structure/function.
- DR. DAWSON
  Molecular mechanisms of neuronal death and survival.
- DR. DONOWITZ
  Molecular biology and epithelial transport and signal transduction.
- DR. S. GUGGINO
  Physiology and pathophysiology of ion channels in non excitable cells.
- 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 homeostasis 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. WIENER
  Medical education, pulmonary circulation and hypoxia, respiratory muscle function in neuromuscular diseases.
- 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 adeno 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

MARIYLN S. ALBERT
Professor of Neurology, Professor of Neuroscience, Professor of Psychiatry

NANCY A. ATOR
Professor of Behavioral Biology

JAY M. BARABAN
Professor of Neuroscience, Professor of Psychiatry

GEORGE E. BIGELOW
Professor of Behavioral Biology

JOSEPH V. BRADY
Professor of Behavioral Biology, Professor of Neuroscience

JASON BRANDT
Professor of Psychiatry, Professor of Neurology

WILLIAM R. BREAKEY, Professor Emeritus

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 of Behavioral Biology

JOEL ELKES
University Distinguished Service Professor Emeritus of Psychiatry

BERNARD T. ENGEL
Professor of Behavioral Biology

MARSHAL 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

JACK E. HENNINGFIELD
Adjunct Professor of Behavioral Biology

RUDOLF HOEHN-SARIC, Professor Emeritus

STEVEN R. HURSH
Adjunct Professor of Behavioral Biology

KAY REDFIELD JAMISON, Professor

ROLLEY E. JOHNSON, Adjunct Professor

WALTER ERWIN KAUFMANN
Professor of Pathology, Professor of Neurology, Professor of Pediatrics, Professor of Psychiatry, Professor of Radiology

ZAVENTH S. KHACHATURIAN, Adjunct Professor

CONSTANTINE G. LYKETSOS
Elizabeth Plank Althouse Professor of Alzheimer’s Research in Psychiatry and Behavioral Sciences

RUSSELL L. MARGOLIS
Professor of Psychiatry, Professor of Neurology

MICHELE M. M. MAZZOCCH, Professor

UNA DEIRDRE MCCANN, Professor

MARY E. MCCAU
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
Professor of Psychiatry, 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

CHESTER W. SCHMIDT, JR., Professor

KENNETH SILVERMAN, Professor

PHILLIP R. SLAVNEY
Eugene Meyer III Professor Emeritus of Psychiatry

GWENN S. SMITH, Visiting 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 of Behavioral Biology

ERIC C. STRAIN, Professor

GLENN J. TREISMAN
Professor of Psychiatry, Professor of Medicine

BENEDETTO VITIELLO, Adjunct Professor

GARY S. WAND
Alfredo Riviere and Norma Rodriguez de Riviere Professor of Endocrinology in the Department of Medicine, Professor of Psychiatry

THOMAS N. WISE, Professor

STEPHEN R. ZUKIN
Visiting Professor of Psychiatry, Visiting Professor of Radiology and Radiological Science

ANDREW F. ANGELINO, Associate Professor

DIMITRIOS AVRAMOPOULOS, Associate Professor

Professor of Psychiatry in Genetic Medicine
WILLIAM T. HOWARD, Assistant Professor
JEFFREY H. HSU, Assistant Professor
WAYNE E. HUNT, Assistant Professor
HEIDI E. HUTTON, Assistant Professor
JOHN SHEPPARD JEFFREYS, Assistant Professor
MATTHEW W. JOHNSON, Assistant Professor
DEIRDRE M. JOHNSTON, Assistant Professor
SUNGWOO KAHNG, Assistant Professor
THEODORE H. KAISER
Assistant Professor of Psychiatry, Assistant Professor of Pediatrics
BARBARA J. KAMINSKI
Assistant Professor of Behavioral Biology
ATSUSHI KAMIYA, Assistant Professor
ADAM IAN KAPLINSKY, Assistant Professor
ELIZABETH KASTELIC, Assistant Professor
WENDY G. KATES, Assistant Professor
HAYDEN O. KEPLEY, Assistant Professor
THOMAS W. KOENIG, Assistant Professor
NICHOLAS A. KOLCHER, Assistant Professor
PATRICIA F. KURTH, Assistant Professor
MICHAEL J. LABELLARTE, Assistant Professor
JUSTINE JULIA LARSON, Assistant Professor
HOCHANG BENJAMIN LEE, Assistant Professor
MELISSA ANN LEE, Assistant Professor
MICHELLE KIM LEFF, Adjunct Assistant Professor
SUSAN W. LEHMANN, Assistant Professor
GREGORY K. LEHNE
Assistant Professor of Medical Psychology
BERNARD LEBREMAN
Assistant Professor of Medical Psychology
STEVEN E. LINDAUER, Assistant Professor
JOHN TIMOTHY LITTLE, Adjunct Assistant Professor
GORDON S. LIVINGSTON, Assistant Professor
PAULA J. LOCKHART, Assistant Professor
THOMAS LYNCH, Assistant Professor
STEVEN R. MACHLIN, Assistant Professor
GINA M. MAGYAR-RUSSELL, Adjunct Assistant Professor
MOHammad MAISAMI
Assistant Professor of Psychiatry, Assistant Professor of Pediatrics
CHRISTOPHER M. MARANO, Assistant Professor
PAMELA MATHY, Assistant Professor
MARSDEN MCGUIRE, Assistant Professor
MICHELLE M. MIKLE, Assistant Professor
LESLIE R. MILLER, Assistant Professor
MARK MOLLENBURGER, Assistant Professor
CYNTHIA SHELTON MUNRO
Assistant Professor of Medical Psychology
DAVID NEUBAUER, Assistant Professor
KARIN JANE NEUFELD, Assistant Professor
JULIE R. NEWMAN-TOKER, Assistant Professor
FREDERICK NUCIFORA, JR., Assistant Professor
GARY W. NYMAN, Assistant Professor
JULIA T. O'CONNOR
Assistant Professor of Behavioral Biology
THOMAS P. O'TOOLE, Adjunct Assistant Professor
THOMAS J. OGLESBY, Assistant Professor
CHIADU U. ONYIKE, Assistant Professor
CYNTHIA S. OSBORNE, Assistant Professor
THEODOSIA PACLAWSKYJ, Assistant Professor
MARYLAND PAO, Assistant Professor
JENNIFER PAYNE, Assistant Professor
JESSICA M. PEIRCE, Assistant Professor
MICHELLE A. POIRIER, Assistant Professor
GREGORY M. PONTONE, Assistant Professor
MARK J. READER
Assistant Professor of Medical Psychology
SARAH A.J. READING, Assistant Professor
GRAHAM W. REDGRAVE, Assistant Professor
SHAUNA PENCER REINBLATT, Assistant Professor
GINA S. RICHMAN, Assistant Professor
PAUL R. RIVKIN, Assistant Professor
PAUL E. ROBERTS, Assistant Professor
PAUL B. ROSENBERG, Assistant Professor
DAVID M. ROTH
Assistant Professor of Medical Psychology
DOBRILA D. RUDNICKI, Assistant Professor
BETTY JO SALMERON, Adjunct Assistant Professor
JACK F. SAMUELS, Assistant Professor
QUINCY MILES SAMUS, Assistant Professor
CHRISTINE A. SANPERG, Assistant Professor
PATRICIA B. SANTORA, Assistant Professor
CHARLES SAVAGE, Assistant Professor Emeritus
MICHAEL W. SCHLUND, Assistant Professor
ROBERT K. SCHREIER, Assistant Professor
CLARENCE G. SCHULZ, Assistant Professor
THOMAS G. SCHULZE, Adjunct Assistant Professor
JOSEPH M. SCHWARTZ, Assistant Professor
THOMAS W. SEDLAK, JR., Assistant Professor
EVERETT R. SIEGEL, Assistant Professor
BETH S. SLOOMINE
Assistant Professor of Medical Psychology
LEX B. SMITH, Assistant Professor Emeritus
WANLI SMITH, Assistant Professor
CYNTHIA D. STEELE, Assistant Professor
MARTIN IRWIN STEINBERG, Assistant Professor
KENNETH B. STOLLER, Assistant Professor
EDWARD L. SUAREZ-MURIAS, Assistant Professor Emeritus
GEETHA SUBRAMANI, Assistant Professor
KELLIE LOUISE TAMASHIRO, Assistant Professor
CHRISTIANE TELLEFSEN, Assistant Professor
STUART A. TIEGEL, Assistant Professor

PSYCHIATRY AND BEHAVIORAL SCIENCES 263
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/Straus-Strauss-Halbreich 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
- GEORGE W. REBOK, Professor of Mental Health
- ANNE W. RILEY, Professor of Population, Family, and Reproductive Health
- DONALD M. STEINWACHS, Professor of Health Policy and Management
- LAWRENCE S. WISSOW, Professor of Health Behavior and Society
- PETER P. ZANDI, Assistant Professor of Mental Health

The School of Education:
LEON A. ROSENBERG  
Professor of Education  

The G.W.C. Whiting School of Engineering  

PATRICK E. BARTA  
Associate Research Professor of Imaging Science  

The School of Nursing:  
DEBORAH GROSS  
Professor of Nursing  

REQUIRED WORK FOR M.D. DEGREE  

Psychiatry—First Year  

Clinical Foundations of Medicine. Dr. Shochet, Course Director; Dr. MacKinnon, personal/social history taking and mental status examination.  

In this segment of the Clinical Foundations course, students will learn and observe the application of methods of rapport-building, observation, and information-gathering. They will practice the assembly of clinical information into a detailed and organized personal history, and will discuss in a small group setting the mental status of a patient as observed in a live, demonstration interview.  

Genes to Society/Brain, Mind, Behavior. Dr. MacKinnon and staff.  

In this course, students will encounter the higher functions of the brain as they relate to the clinical problems that bring people to psychiatric attention. The course begins with consciousness, altered consciousness, and the pharmacological manipulation of consciousness through anesthesia. The remainder of the course takes students through the three major domains of mental life: cognitive, affective, and executive functioning, with a focus on the systems, disorders, and general modes of treatment of problems with memory, emotion, and behavior. In small groups, students will gain practice with direct interview of psychiatric patients, and will apply the clinical information they gather to case formulation. Thus students will learn to apply clinical reasoning to mental illnesses that combine abnormal brain functioning, maladaptive behavior, trait vulnerabilities, and adverse life experience.  

Psychiatry—Second, Third, or Fourth Year  

Psychiatry Clerkship. Dr. Lehmann (course director), and staff. Given as part of the required Psychiatry/Neurology/Ophthalmology Clerkship. Four quarters and summer.  

The Psychiatry Clerkship is one part of a nine week quarter integrating Psychiatry (four weeks), Neurology (four weeks), and Ophthalmology (four days). 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 third 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 conferences, 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 clinical exposure and practical, care-centered teaching. 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) mastering the mental status exam; 4) learning to formulate cases with sophisticated, broad reasoning about mental life. Teaching builds on the preclinical course in behavioral medicine, neuroscience foundations, 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 affiliated institutions in the Baltimore area. In addition, students may request sponsorship 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 department offers elective seminars and independent 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 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.

**E 6. Forensic Psychiatry.** Drs. Oglesby and Janofsky.

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 psychiatric 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.

**E 11. Geriatric Psychiatry.** Dr. Rabins.

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 13. 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 15. 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.

**E 30. Subinternship in Psychiatry.** Dr. Lehmann.

Subinternship on any of the Meyer Inpatient or Outpatient Psychiatry Units (affective disorders, eating disorders, motivated behavior disorders, neuropsychiatric disorders, short stay, general, geriatric, chronic pain, community psychiatry, or day hospital) may be arranged.

**E 46. Neuropsychology of Drug Abuse.** Dr. Heishman.

Clinical research on the reinforcing and cognitive effects of abused drugs, with a 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 testing, and data interpretation. Research is conducted at National Institute on Drug Abuse located on JH Bayview campus.

**E 49. Human Behavioral Pharmacology of Novel Sedatives and Hallucinogens.** Dr. Griffiths.

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 55. 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.


Offers the opportunity to work with a research group exploring the relationship between a variety
of structural and functional brain diseases, and new quantitative brain imaging methods, including PET, functional and structural MRI, and Diffusion Tensor Imaging (DTI). This elective allows the choice of several projects examining associations between clinical psychiatric, cognitive and risk variables and the quantified brain changes mentioned above. Students with computer programming skills are especially welcome.

**E 59. 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 60. 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, neuregulin, 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 61. 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.

**E 63. Clinical Neuropsychiatry.** Dr. Rabins.

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.

**E 64. Clinical Research in Neuropsychiatric Disorders.** Dr. Ross.

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, neuropathological 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 66. 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.

**E 67. Neuropsychiatry Research.** Dr. Lyketsos.

Students are exposed to the various ongoing neuropsychiatry 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 68. 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 70. Huntington’s Disease Clinic.** Dr. Rosenblatt.

The Baltimore Huntington’s Disease Clinic 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 meetings, 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 72. 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 73. 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).

E 80. Clinical Research in Parkinson’s Disease. Dr. Marsh

Students will be exposed to clinical research methods used in studies on motor, cognitive, and psychiatric aspects of Parkinson’s Disease. Students will assist with subject evaluations and data collection. Independent research projects are possible if there is an interest.


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 83. 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.


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 85. 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.

E86. 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.88. 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 (rTMS) 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.

E.89. Research on Human Prion Diseases. Dr. Brian Appleby.
Clinical research on the epidemiology, diagnosis and treatment of human prion diseases (e.g. Creutzfeldt-Jakob Disease).

E.90. Community Psychiatry. Dr. Bernadette Cullen.
An opportunity to work with clinicians who are treating patients with chronic mental illness. The main area of focus will be the mobile treatment 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. The diagnosis, causes, and treatments for depression and bipolar disorder with emphasis on genes to society.

DR. GRIFFITHS
Animal and 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 58 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://comprojects.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 of Radiation Oncology and Molecular Radiation Sciences

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
Professor of Radiation Oncology and Molecular Radiation 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 Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

MARTIN GILBERT POMPER
Professor of Radiology and Radiological Science, Professor of Pharmacology and Molecular Sciences, Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Joint Appointment in Psychiatry

DANIELE RIGAMONTI
Salisbury Family Professor of Neurological Surgery, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Radiology and Radiological Science, Joint Appointment in Physical Medicine and Rehabilitation

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 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

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

MARTIN GILBERT POMPER
Professor of Radiology and Radiological Science, Professor of Pharmacology and Molecular Sciences, Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Joint Appointment in Psychiatry

DANIELE RIGAMONTI
Salisbury Family Professor of Neurological Surgery, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Radiology and Radiological Science, Joint Appointment in Physical Medicine and Rehabilitation

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 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
RADIATION ONCOLOGY

EVA S. ZINREICH, Assistant Professor
STEPHANIE ALICIA TEREZAKIS, Instructor (from 08/17/09)
ERIK TRYGGESTAD, Instructor
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. DEWEESE
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. 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. 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, Herman, Kleinberg, Song, 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. Frassica. 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.

E5. Introduction to Cancer Research.
Dr. Song.

510.702 Basic Radiologic Physics.
Dr. Song 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. Song 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. Song 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.

E6. 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 multi-disciplinary clinics is the basis of daily teaching and instructions. Treatment under faculty supervision utilizing two simulators, five accelerators and computers is reviewed with students.

E7. 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. Handselman Professor of Abdominal Surgery, Professor of Oncology, Professor of Radiology

HARRIS L. COHEN, Visiting Professor

WILLIAM A. EDELSTEIN, Visiting Professor

DAVID S. FEIGIN, Visiting Professor

ALBERT GJEDDE, Adjunct Professor

HENRY R. HALPERIN
Professor of Medicine, Professor of Biomedical Engineering, Professor of Radiology

THIERRY A.G.M. HUISMAN, Visiting Professor

WALTER ERWIN KAUFMANN
Professor of Pathology, Professor of Neurology, Professor of Pediatrics, Professor of Psychiatry, Professor of Oncology

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, Professor of Radiology, Joint Appointment in Medicine

GEORGE SGOUROS
Professor of Radiology, Professor of Radiation Oncology and Molecular Radiation Sciences

STANLEY S. SIEGELMAN, Professor

FRANK K. WACKER, Visiting Professor

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. ZIEME, Professor

SYED ZULFIQAR ALI
Associate Professor of Pathology, Associate Professor of Radiology

LAURA M. FAYAD
Associate Professor of Radiology (from 10/01/09), Assistant Professor of Radiology (to 09/30/09), Assistant Professor of Orthopedic Surgery

BOB W. GAYLER, Associate Professor

JOSEPH N. GITLIN, Associate Professor

IHAB R. KAMEL, Associate Professor

SATOMI KAWAMOTO, Associate Professor

JOAO A.C. LIMA
Professor of Medicine, Associate Professor of Radiology

CHRISTINE H. LORENZ, Visiting Associate Professor

KATARZYNA J. MACURA
Associate Professor of Radiology, Assistant Professor of Urology

RONNIE CHARLES MEASE, Associate Professor

VENU RAMAN
Associate Professor of Radiology, Associate Professor of Oncology

DAVID J. SCHREITLEN
Associate Professor of Medical Psychology in the Department of Psychiatry, Associate Professor of Radiology

MATHIAS STUHNER
Associate Professor of Radiology (on leave of absence from 08/03/09), Assistant Professor of Medicine (on leave of absence from 08/03/09)

ULRICH V. WILLI, Visiting Associate Professor

JAY L. ZWEIER
Visiting Professor of Medicine, Visiting Associate Professor of Radiology

NAFI AYGUN, Assistant Professor

AVNEESH CHHABRA, Assistant Professor

STEVE YOON-HO CHO, Assistant Professor

BRUCE EUGENE COPELAND, Assistant Professor

ERLINDA F. DELEAN-GASTON, Assistant Professor Emerita

BRADLEY FOERSTER, Assistant Professor

DHEERAJ GANDHI
Assistant Professor of Radiology, Assistant Professor of Neurological Surgery, Assistant Professor of Neurology

CHRISTOS S. GEORGIADES, Assistant Professor

XAVIER GOLAY, Assistant Professor

SACHIN K. GUJAR, Assistant Professor

DIMA HAMMOUD, Assistant Professor

LAWRENCE V. HOFMANN, Assistant Professor

KELVIN K. HONG, Assistant Professor

IZLEM IBZUDAK, Assistant Professor

HEATHER A. JACENE, Assistant Professor

SANJAY JAIN
Assistant Professor of Pediatrics, Assistant Professor of Radiology (from 08/01/09)

PAMELA TECCE JOHNSON, Assistant Professor

YOSHINORI KATO, Assistant Professor

SAEED R. KHAN
Adjunct Assistant Professor of Oncology, Adjunct Assistant Professor of Radiology
JOHN ENG
Associate Professor of Radiology and Radiological Science, Joint Appointment in Health Sciences Informatics

OLGA M.B. GATEWOOD
Associate Professor of Radiology and Radiological Science, Associate Professor of Urology

NAGI F. KHOURI
Associate Professor of Radiology and Radiological Science, Associate Professor of Oncology

DONNA MAGID
Associate Professor of Radiology and Radiological Science, Associate Professor of Functional Anatomy and Evolution, Joint Appointment in Orthopedic Surgery

MAHADEVAPPA MAHESH
Associate Professor of Radiology and Radiological Science, Associate Professor of Medicine

WILLIAM W. SCOTT, JR.
Associate Professor of Radiology and Radiological Science, Joint Appointment in Orthopedic Surgery

ALBERT B. SHACKMAN, Associate Professor

SHEILA SHETH
Associate Professor of Radiology and Radiological Science, Associate Professor of Pathology

EARL P. STEINBERG
Adjunct Professor of Medicine, Adjunct Associate Professor of Radiology and Radiological Science

KO-PEN WANG
Associate Professor of Medicine, Associate Professor of Radiology and Radiological Science

PAUL S. WHEELER, Associate Professor

JANE E. BENSON
Assistant Professor of Radiology and Radiological Science, Joint Appointment in Pediatrics

WENDIE ANDERSON BERG, Assistant Professor

JOAN E. BERKOWITZ, Assistant Professor

MYTHREYI BHARGAVAN, Assistant Professor

RACHEL F. BREM, Assistant Professor

DARRYL J. GARFINKEL, Assistant Professor

HARMINDAR K. GILL, Assistant Professor

NOAH I. LIGHTMAN, Assistant Professor

WALDRON M. SENNOTT, Assistant Professor Emeritus

H. ROSY SINGH, Assistant Professor

THOMAS W. SNIDER, Assistant Professor Emeritus

PHILIPPE ALAIN SOYER, Assistant Professor

MELISSA RIEDY SPEVAK, Assistant Professor

JENS VOGEL-CLAUSSEN
Assistant Professor (on leave of absence from 10/01/09)

ANDREW YANG, Assistant Professor

ATIF ZAHEER, Assistant Professor

W. PERRY ARNOLD, Instructor

SHELDON B. BEARMAN, Instructor

NICHOLAS P. GEORGES, Instructor

ROSEMARIE GREYSON-FLEG, Instructor

DAVID HEATH, Instructor

RICHARD A. MONES, Instructor

A. EVERETTE JAMES, JR., Lecturer

FRANK M. CORL, Research Associate

MELISSA GARLAND, Research Associate

THOMAS KWOK-FAH FOO, Visiting Scientist

SANDEEP N. GUPTA, Visiting Scientist

GLENN SLAVIN, Visiting Scientist

Division of Diagnostic Imaging at Johns Hopkins Bayview

MARK E. BOHLMAN
Associate Professor of Radiology and Radiological Science, Director of the Division of Diagnostic Imaging at Bayview

ERICH K. LANG, Visiting Professor

JOHN D. PETRONIS, Associate Professor

JOHN CAVALUZZI, Assistant Professor

DAVID JON EISNER, Assistant Professor

ROBERT E. ENSOR, Assistant Professor Emeritus

GARY XIN GONG, Assistant Professor

ANTHONY KAM, Assistant Professor

RON KHAZAN, Assistant Professor

YOUNG CHOO KIM, Assistant Professor

DAVID P. SMITH, Assistant Professor

JOEL MARK FRADIN, Assistant

NATHAN R. SKLAR, Assistant

Division of Magnetic Resonance Research

ZAVER M. BHUJWALLA
Professor of Radiology and Radiological Science, Professor of Oncology, Director of the Division of Magnetic Resonance Research

ERGIN ATALAR, Adjunct Professor

PAUL A. BOTTOMLEY
Russell H. Morgan Professor of Radiology, Professor of Biomedical Engineering, Professor of Medicine

ELLIO R. MCVEIGH
Professor of Biomedical Engineering, Bessie Darling Massey Professor of Biomedical Engineering, Professor of Radiology and Radiological Science

SUSUMU MORI
Professor of Radiology and Radiological Science, Professor of Oncology

JEAN-FRANCOIS PAYEN DE LA GARANDERIE, Visiting Professor

PETER C.M. VAN ZIJL
Professor of Radiology and Radiological Science, Professor of Biophysics and Biophysical Chemistry, Professor of Oncology

DMITRI ARTEMOV
Associate Professor of Radiology and Radiological Science, Associate Professor of Oncology

CHRISTIAN J. HEROLD, Associate Professor
Division of Nuclear Medicine

RICHARD L. WAHL
Henry N. Wagner Jr., M.D. Professor of Nuclear Medicine, Professor of Oncology, Director of the Division of Nuclear Medicine

ROBERT F. DANNALS, Professor

JOHN J. FROST, Adjunct Professor

ZSOLT SZABO, Professor

DEAN F. WONG
Professor of Radiology and Radiological Science, Professor of Neuroscience, Joint Appointment in Psychiatry

STEPHEN R. ZUKIN
Visiting Professor of Psychiatry, Visiting Professor of Radiology and Radiological Science

FRANK MICHAEL BENGEL
Associate Professor of Radiology and Radiological Science, Joint Appointment in Medicine

ANDREW G. HORTI, Associate Professor

SAMUEL SOSTRE, Associate Professor

HENRY H. HOLCOMB
Assistant Professor of Psychiatry, Assistant Professor of Radiology and Radiological Science

HIROTO KUWABARA, Assistant Professor

MARTIN ANTHONY LODGE, Assistant Professor

ARMAN RAHMIM, Assistant Professor

K. GEORGE SACHARIAH, Assistant Professor

ETHAN J. SPIEGLER
Assistant Professor of Radiology and Radiological Science, Instructor in Medicine

ELIAS K. SHAYA
Instructor in Radiology and Radiological Science, Instructor in Medicine

ROBERT A. WISE
Professor of Medicine, Instructor in Radiology and Radiological Science

JAMES ROBERT BRASIC, Research Associate

JOHN HILTON, Research Associate

ANIL KUMAR, Research Associate

WILLIAM B. MATHEWS, Research Associate

HAYDEN T. RAVERT, Research Associate

OLIVIER ROUSSET, Research Associate

HONG SONG, Research Associate (from 10/01/09)

KATALINA SZABO, Research Associate

XINGDANG LIU, Visiting Scientist

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
Professor 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 Professor of Engineering Science

JERRY L. PRINCE
Professor of Electrical and Computer Engineering

RUSSELL H. TAYLOR
Professor of Computer Science

REQUIRED WORK

Radiology—Second Year

Radiology. Diagnostic Radiology staff. 300.600 Introduction to Pathology, Pathophysiology, and Pharmacology.

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, 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.

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 to the student. 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.
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, radiotherapy, radiobiology, radiological engineering, radiological physics, and physiological optics. Facilities of Radiologic Animal Research Lab will be available for utilization in selected projects.
Clinical Collaborators

E 4. Physiological Research in Radiology. Dr. Wong and staff. Hours to be arranged.
Current laboratory animal research is largely physiologically oriented, clinically applicable, and directed toward therapeutic applications of vascular radiology. Areas of work include experimental transcatheter 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 Phases I, II, III of clinical investigation.

E 9. Special Studies and Research-Nuclear Medicine. Dr. Wahl. All year.
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 186.851 is covered in breadth through lectures, laboratory exercises, and demonstrations. Affords practice in using radioactive isotopes safely and effectively in thyroid, liver, renal, and cardiolipid 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.

DR. WONG
Neurointerventional Radiology.

DR. WAHL
Nuclear Medicine.

DRS. YOUSEM, BLITZ, & KRAUT
Neuroradiology.

E 28
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, Professor of Plastic Surgery

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
Mark M. Ravitch Professor of Surgery

GERSHON EFRON, Professor

DARIUSH ELAHI
Professor of Surgery, Joint Appointment in Medicine

JOHN W. HARMON, Professor

STEVEN D. LEACH
Paul K. Neumann Professor of Pancreatic Cancer in the Department of Surgery, Professor of Cell Biology, Professor of Oncology

BYUNG-BOONG LEE, Visiting Professor

PAMELA A. LIPSETT
Professor of Surgery, Assistant Professor of Anesthesiology and Critical Care Medicine

ROBERT A. MONTGOMERY
Margery K. and Thomas Pozefsky 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, Professor of Oncology, Associate Professor of Biomedical Engineering, Associate Professor of Gynecology and Obstetrics

MARK A. 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 ZEIHER
Professor of Surgery, Professor of Oncology

MALCOLM VERNON BROCK
Associate Professor of Surgery, Associate Professor of Oncology

KURTIS A. CAMPBELL, Associate Professor

RICHARD A. CURRIE, Associate Professor Emeritus

MUKUND S. DIDOLKAR, Associate Professor

TODD DORMAN
Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery, Joint Appointment in Medicine

MARK DOUGLAS DUNCAN
Associate Professor of Surgery, Associate Professor of Oncology

RONALD H. FISHEIM, Associate Professor Emeritus

RHONDA S. FISHEL, Associate Professor

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

RICHARD F. HEITMILLER
Associate Professor of Surgery, Associate Professor of Oncology

CHRISTINE A. IACOBUSIO-DONAHUE
Associate Professor of Pathology, Associate Professor of Surgery, Associate Professor of Oncology

DARRELL A. JAQUES
Associate Professor Emeritus of Surgery, Associate Professor Emeritus of Plastic Surgery

CALVIN E. JONES, Associate Professor Emeritus

RICHARD F. KIEFFER, JR., Associate Professor Emeritus

JULIE ROBIN LANGE
Associate Professor of Surgery, Associate Professor of Oncology, Assistant Professor of Dermatology

THOMAS H. MAGNUSON, Associate Professor

MARTIN A. MAKARY
Associate Professor of Surgery, Holding the Mark M. Ravitch, M.D. Chair in Surgery

MICHAEL ROBERT MAROHN, Associate Professor

WILLIAM T. MERRITT
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery

STANLEY L. MINKEN, Associate Professor

MARVIN M. NACHLAS, Associate Professor Emeritus
DANIEL NYHAN
Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery

TIMOTHY MICHAEL PAWLIK
Associate Professor of Surgery, Associate Professor of Oncology

BRADLEY J. PHILLIPS, Visiting Associate Professor

PETER J. PRONOVOST
Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Surgery, Joint Appointment in Health Sciences Informatics

JOHN R. SAUNDERS
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Surgery, Assistant Professor of Plastic Surgery

MICHAEL SCHWEITZER, Associate Professor

DORRY L. SEGEV, Associate Professor

THEODORE H. WILSON, JR., Associate Professor Emeritus

JACK M. ZIMMERMAN, Associate Professor Emeritus

NITA AHUJA
Assistant Professor of Surgery, Assistant Professor of Oncology

BOLANLE A. ASIYANBOLA, Assistant Professor

H. VAUGHAN BELCHER, Assistant Professor Emeritus

SEAN MICHAEL BERENHOLTZ
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

JAMES HAMILTON BLACK, III, Assistant Professor

GRANT V. BOCHICCHIO, Adjunct Assistant Professor

JAMES R. BUCK
Assistant Professor of Surgery, Assistant Professor of Pediatrics

ANDREW M. CAMERON, Assistant Professor

STEPHEN MICHAEL CATTANEO, II, Assistant Professor

KATHRYN M. CHU, Assistant Professor

KYO U. CHU, Assistant Professor

NIJAGUNA B. PRASAD, Assistant Professor

BARISH H. EDIL
Assistant Professor of Surgery, Assistant Professor of Oncology

DAVID THOMAS EFRON
Assistant Professor of Surgery, Assistant Professor of Anesthesiology and Critical Care Medicine

NAUDER FARADAY
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

RICHARD L. FEINBERG, Assistant Professor

PAUL D. FREESWICK, Assistant Professor

SUSAN LYN GEARHART
Assistant Professor of Surgery, Assistant Professor of Oncology

THOMAS GENUIT, Assistant Professor

BIDYUT GHOSH, Assistant Professor

B. ROBERT GIBSON, Assistant Professor

GLEN RANDALL GIBSON, Assistant Professor

MARTA MARSH GILSON, Assistant Professor

MEHRAN HABIBI, Assistant Professor

ADIL H. HAIDER
Assistant Professor of Surgery, Assistant Professor of Anesthesiology and Critical Care Medicine

ELLIOTT RICHARD HAUT
Assistant Professor of Surgery, Assistant Professor of Anesthesiology and Critical Care Medicine

JENNIFER A. HELLER, Assistant Professor

JOSEPH M. HERMAN
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences, Assistant Professor of Oncology, Assistant Professor of Surgery

KENZO HIROSE, Assistant Professor

ELMER HOFFMAN, Assistant Professor Emeritus

MATTHEW TIMOTHY HUEMAN, Assistant Professor

LISA K. JACOBS, Assistant Professor

JUAN M. JUANTEGUY, Assistant Professor

PAUL M. LEAND, Assistant Professor Emeritus

ANNE O. LIDOR, Assistant Professor

MAHMOUD B. MALAS, Assistant Professor

ELIZABETH A. MARTINEZ
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

PEDRO ALEJANDRO MENDEZ-TELLEZ
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery

AVEDIS MENESHIAN, Assistant Professor

HIEN TAN NGUYEN, Assistant Professor

MICHAEL JOHN PARSONS, Assistant Professor

HOWARD H. PATT, Assistant Professor Emeritus

DANIEL L. PICARD, Assistant Professor

HAROLD E. RAMSEY
Assistant Professor Emeritus of Surgery, Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery

ROMAN E. RATYCH, Assistant Professor

THOMAS REIFSNYDER, Assistant Professor

WILLIAM F. RIENHOFF, III, Assistant Professor Emeritus

SECTION OF SURGICAL SCIENCES
GLEN STANLEY ROSEBOROUGH, Assistant Professor
ADAM SAPIRSTEIN
Associate Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
STEVEN J. SCHWARTZ
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
JOHN TIMOTHY SHERWOOD, Assistant Professor
LILLIE SHOCKNEY
University Distinguished Service Assistant Professor of Breast Cancer, Assistant Professor of Surgery, Assistant Professor of Gynecology and Obstetrics
ANDREW LAWRENCE SINGER, Assistant Professor
LYNNE ANN SKARYAK, Assistant Professor
KIMBERLY EDEN STEELE, Assistant Professor
KENT A. STEVENS, Assistant Professor
ZHAOLI SUN, Assistant Professor
ANDREW J. SURMAK, Assistant Professor
MARC S. SUSSMAN, Assistant Professor
ROBERT WILLIAM THOMSEN
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Surgery
CHRISTOPHER B. UMBRICHT
Assistant Professor of Surgery, Assistant Professor of Oncology, Assistant Professor of Pathology
DANIEL SCOTT WARREN, Assistant Professor
SHARON LYNN WEINTRAUB, Assistant Professor
ELIZABETH C. WICK, Assistant Professor
BRADFORD D. WINTERS
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Neurological Surgery, Assistant Professor of Neurology, Assistant Professor of Surgery
CHRISTOPHER L. WOLFGANG
Assistant Professor of Surgery, Assistant Professor of Oncology
KIYOSHI YOSHIMURA
Assistant Professor of Surgery, Assistant Professor of Oncology
BRENDAN J. COLLINS, Instructor
NABIL N. DAGHER, Instructor
D.C. WHARTON FINNEY, Instructor Emeritus
NEIL B. FRIEDMAN, Instructor
MARC H. GERTNER, Instructor
SCOTT E. MAIZE, Instructor
CLARO L. PIORODA, Instructor
SUSAN TSAI, Instructor
JAMSHED A. ZUBERI, Instructor
STEVEN CLARK CUNNINGHAM, Assistant
TEJWANT S. DATTA, Assistant
ARAM DEMIRJIAN, Assistant
MARIANNE M. FRANCO, Assistant
NEPHTALI R. GOMEZ, Assistant
NICHOLAS JASZCZAK, Assistant (from 07/13/09)
GEORGE J. KOENIG, JR., Assistant (from 07/13/09)
DAVID C. ALLISON, Lecturer
THOMAS R. GADACZ, Lecturer
HENRY A. PITT, Lecturer
STEVEN A. ROSENBERG, Lecturer
MICHAEL J. ZINNER, Lecturer
GEORGE D. ZUIDEMA, Lecturer Emeritus
SOMMER ELIZABETH GENTRY, Research Associate
LIXIN LIU, Research Associate
UMAIR QAZI, Research Associate
YONGCHUN WANG, Research Associate
LUIS FERNANDO MOREIRA, Visiting Scientist (from 09/01/09)

FACULTY ASSOCIATED WITH THE DEPARTMENT OF SURGERY HOLDING A PRIMARY APPOINTMENT IN:
The School of Medicine
JAMES A. FAUERBACH
Associate Professor of Medical Psychology in the Department of Psychiatry

The Bloomberg School of Public Health
ALBERT W. WU
Professor of Health Policy and Management

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, Interim 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
LEVI 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
DAVID DAIHO YUH, Associate Professor
ASHISH S. SHAH, Assistant Professor

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

J. LAURANCE HILL, Associate Professor

HENRY TIEN LAU, Associate Professor

MITCHELL R. PRICE, Visiting Associate Professor

FIZAN ABDULLAH, Assistant Professor

SAMUEL M. ALAISH, Assistant Professor

ERIC DAVID STRAUCH, Assistant Professor

Division of Plastic, Reconstructive and Maxillofacial Surgery

PAUL N. MANSON
Professor of Plastic Surgery, Director of
the Division of Plastic, Reconstructive, and
Maxillofacial Surgery

ADRIAN BARBUL
Professor of Surgery, Professor of Plastic Surgery

THOMAS M. BRUSHART
Thomas M. Brushart Professor of Hand Surgery in the Department of Orthopedic Surgery (on leave of absence to 10/31/09), Professor of Neurology (on leave of absence to 10/31/09), Professor of Plastic Surgery (on leave of absence to 10/31/09)

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 Surgery

A. LEE DELLO
Professor of Plastic Surgery, Professor of Neurological Surgery

NELSON H. GOLDBERG, Adjunct Professor

JOHN E. HOOPES, Professor Emeritus

NICHOLAS T. ILIFF
Charles E. Iliff, III M.D. Professor of Ophthalmology, Professor of Plastic Surgery

ETHYLIN W. JABS
Adjunct Professor of Pediatrics, Adjunct Professor of Medicine, Adjunct Professor of Plastic Surgery

STEPHEN M. MILNER
Professor of Plastic Surgery, Professor of Dermatology (from 09/01/09), Professor of Pediatrics

CRAG ALAN VANDER KOLK
Professor of Plastic Surgery, Professor of Pediatrics

WILLIAM A. CRAWLEY, Associate Professor

RICHARD W. DABB, Associate Professor

E. GENE DEUNE
Associate Professor of Orthopedic Surgery, Associate Professor of Plastic Surgery

CRAIG R. DUFRESNE, Associate Professor

THOMAS J. GRAHAM, Associate Professor

FREDRIK 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 Surgery

STANLEY A. KLATSKY, Associate Professor

MICHAEL A. MCCCLINTON, Associate Professor

MAURICE Y. NAHABEDIAN, Associate Professor

RICHARD J. REDETT
Associate Professor of Plastic Surgery,
Associate Professor of Pediatrics

EDUARDO D. RODRIGUEZ, Associate Professor

MICHILE ARLENE SHERMAK, Associate Professor

CHI-TSUNG SU, Associate Professor

ANTHONY P. TUFARO
Associate Professor of Plastic Surgery,
Associate Professor of Oncology

JAMES E. VOGEL, Associate Professor

E.F. SHAW WILGIS
Associate Professor Emeritus of Orthopedic Surgery, Associate Professor Emeritus of Plastic Surgery

ELLIOTT M. BERG, Assistant Professor

LAWRENCE D. CHANG, Assistant Professor

MICHAEL R. CHRISTY, Assistant Professor

RAMON DE JESUS, Assistant Professor

W. ANDREW EGLSEDER, JR.
Assistant Professor of Plastic Surgery, Assistant Professor of Orthopedic Surgery

JAIMIE IVAN FLORES, Assistant Professor

BRIAN R. GASTMAN, Assistant Professor

ALEXANDER M. GUBA, Assistant Professor

JAMES PATRICK HIGGINS, Assistant Professor

RANDOLPH MICHAEL HOWES, Adjunct Assistant Professor

MARWAN R. KHALIFEH, Assistant Professor

NANETTE J. LIEGEOS-Kwon
Assistant Professor of Dermatology (to 09/30/09), Assistant Professor of Oncology, Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Plastic Surgery

SCOTT DAVID LIFCHETZ, Assistant Professor

RONALD W. LUETHKE, Assistant Professor

MICHELE ANN MANAHAN, Assistant Professor

BERNARD M. MCGIBBON, Assistant Professor

OSCAR M. RAMIREZ, Assistant Professor

ANNE B. REDFERN, Assistant Professor Emerita

MAURA REINBLATT, Assistant Professor

GEDGE DAVID ROSSON, Assistant Professor

JOHN R. SAUNDERS
Assistant Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Plastic Surgery, Assistant Professor of Physical Medicine and Rehabilitation

RONALD PAUL SILVERMAN, Assistant Professor
NAVIN SINGH
Assistant Professor of Plastic Surgery, Assistant Professor of Gynecology and Obstetrics, Assistant Professor of Neurological Surgery
SHERI SLEZAK, Assistant Professor
ALYSON WELLS
Assistant Professor of Plastic Surgery, Assistant Professor of Otolaryngology-Head and Neck Surgery
HANS R. WILHELMSEN, Assistant Professor
ERIC H. WILLIAMS, Assistant Professor
RAVI KUMAR ALOOR, Instructor
NIA DANIELLE BANKS, Instructor
SYLVAN FELDMAN, Instructor
BEVERLY A. FISCHER, Instructor
RAYMOND J. HARSHBARGER, III, Instructor
MITCHEL A. KANTER, Instructor
WILLIAM R. KANTER, Instructor
ZACHARY MARTIN, Instructor
SARAH A. MESS, Instructor (from 09/01/09)
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
DEVINDER SINGH, Instructor
ARMANDO SOTO, Instructor

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 Spiron, RN Professor of Pediatric Neurosurgery, Professor of Oncology, Professor of Pediatrics, Professor of Plastic Surgery
DAVID R. CORNBLATH
Professor of Neurology, Professor of Neurological Surgery
A. LEE DELLON
Professor of Plastic Surgery, Professor of Neurological Surgery
THOMAS B. DUCKER, Professor Emeritus
ZIYA L. GOKASLAN
Donlin M. Long Professor of Neurosurgery, Professor of Oncology, Professor of Orthopedic Surgery
STUART A. GROSSMAN
Professor of Oncology, Professor of Medicine, Professor of Neurological Surgery

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
FREDERICK A. LENZ
A. Earl Walker Professor of Functional Neurosurgery, Joint Appointment in Neuroscience
RONALD P. LESSER
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 of Neurological Surgery
RICHARD A. MEYER, Professor Emeritus
NEIL R. MILLER
Frank B. Walsh Professor of Neuro-ophthalmology in the Department of Ophthalmology, Professor of Neurological Surgery, Professor of Neurology
MAREK A. Z. MIRSKI
Professor of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery, Professor of Oncology
ERNEST F.L. NIEDERMeyer
Professor Emeritus of Neurological Surgery, Professor Emeritus of Neurology
ALESSANDRO OLIVI
Professor of Neurological Surgery, Professor of Oncology
DANIELE RIGAMONTI
Salisbury Family Professor of Neurological Surgery, Professor of Oncology, Professor of Radiation Oncology and Molecular Radiation Sciences, Professor of Radiology and Radiological Science, Joint Appointment in Physical Medicine and Rehabilitation
GREGORY J. RIGGINS
Irving J. Sherman Research Professor of Neurosurgery, Professor of Oncology
RAFAEL J. TAMARGO
Walter E. Dandy Professor of Neurosurgery, Professor of Otolaryngology-Head and Neck Surgery
GEORGE B. UDVARHELYI, Professor Emeritus
JOHN A. ULATOWSKI
Mark C. Rogers Professor of Anesthesiology and Critical Care Medicine, Professor of Neurological Surgery, Professor of Neurology
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
MICHAEL C. AIN
Associate Professor of Orthopedic Surgery, Associate Professor of Neurological Surgery
NEAL I. ARONSON, Associate Professor Emeritus
ALLAN JOEL BELZBERG, Associate Professor
MICHAEL D. WALKER, Visiting Lecturer
RENYUAN BAI, Research Associate
GILSON BAIA, Research Associate
MARK BODNER, Research Associate
JOEL DANIEL GREENSPAN, Research Associate
MICHAEL GUARNIERI, Research Associate Emeritus
MING-CHANG LI, Visiting Scientist
CAN SOLAKOGLU, Visiting Scientist, Joint Appointment in Biomedical Engineering, Joint Appointment in Neurological Surgery, Joint Appointment in Oncology

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

The Whiting School of Engineering
JUSTIN HANES
Associate Professor of Chemical and Biomolecular Engineering

Orthopaedic Surgery
FRANK JOHN FRASSICA
Robert A. Robinson Professor of Orthopaedic Surgery, Professor of Oncology, Director of the Department of Orthopaedic Surgery

THOMAS M. BRUSHART
Thomas M. Brushart Professor of Hand Surgery in the Department of Orthopedic Surgery (on leave of absence to 10/31/09), Professor of Neurology (on leave of absence to 10/31/09), Professor of Plastic Surgery (on leave of absence to 10/31/09)

ANDREW R. BURGESS, Professor

XU CAO, Visiting Professor

EDMUND Y. S. CHAO, Professor Emeritus

THOMAS LANDES CLEMENS, Visiting Professor

ANDREW JOHN COSGAREA, Professor

ZIYA L. GOKASLAN
Donlin M. Long Professor of Neurosurgery, Professor of Oncology, Professor of Orthopedic Surgery

DAVID S. HUNGERFORD
David Hungerford Professor of Orthopaedic Surgery

EDWARD F. MCCARTHY, JR.
Professor of Pathology, Professor of Orthopedic 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 Orthopedic Surgery

GERHARD SCHMEISSER, Professor Emeritus

PAUL D. SPONSELLER
Lee Riley Professor of Orthopaedic Surgery, Professor of Urology

KRISTIN L. WEBER
Virginia M. and William Percy Professor of Orthopaedic Surgery, Professor of Oncology

MICHAEL C. AIN
Associate Professor of Orthopedic Surgery, Associate Professor of Neurological Surgery

STEPHEN M. BELKOFF, Associate Professor

RONALD P. BYANK, Associate Professor

RANDY F. DAVIS
Associate Professor of Orthopedic Surgery, Associate Professor of Neurological Surgery

E. GENE DEUNE
Associate Professor of Orthopedic Surgery, Associate Professor of Plastic Surgery

CHARLES H. EPPS, JR., Associate Professor Emeritus

CARMELITA G. FRONDOZA, Associate Professor

CARL A. JOHNSON, Associate Professor

JOHN T.H. JOHNSON, Associate Professor Emeritus

LYNNE C. JONES, Associate Professor

DAWN LAPORTE, Associate Professor

ARABELLA I. LEET, Associate Professor

EDMOND J. MCDONNELL, Associate Professor Emeritus

JAMES D. MICHELSON, Associate Professor

JOHN R. MOORE, Associate Professor

STEVE ALAN PETERSEN, Associate Professor

LEE H. RILEY, III
Associate Professor of Orthopedic Surgery, Associate Professor of Neurological Surgery

CHARLES E. SILBERSTEIN, Associate Professor

MEI WAN, Visiting Associate Professor

E.F. SHAW WILGIS
Associate Professor Emeritus of Orthopedic Surgery, Associate Professor Emeritus of Plastic Surgery

KRISTIN R. ARCHER, Adjunct Assistant Professor

ARThUR BAITCh, Assistant Professor Emeritus

FRANK T. BARRANCO, Assistant Professor Emeritus

ERROL L. BENNETT, Assistant Professor

JAMES B. BROOKS, Assistant Professor Emeritus

ROBERT J. BRUMBACK, Assistant Professor

GAYLORD L. CLARK, JR., Assistant Professor Emeritus

DAVID B. COHEN, Assistant Professor

DAVID F. DALURy, Assistant Professor

MARK ADAM DEITCH, Assistant Professor

FRANK R. EBERT, Assistant Professor

W. ANDREW EGLSEDER, JR.
Assistant Professor of Orthopedic Surgery, Assistant Professor of Orthopedic Surgery

JOHN J. ELIAS, Assistant Professor

GURKAN ERKULA, Assistant Professor

JOHN J. FAHEY, Assistant Professor Emeritus
FACULTY ASSOCIATED WITH THE DEPARTMENT OF ORTHOPAEDIC SURGERY HOLDING A PRIMARY APPOINTMENT IN:

The School of Medicine:
DONNA MAGID  
Associate Professor of Radiology and Radiological Science
WILLIAM W. SCOTT, JR.  
Associate Professor of Radiology and Radiological Science

The G.W.C. Whiting School of Engineering
JENNIFER H. ELISSEIFF  
Assistant Professor of Biomedical Engineering

The Applied Physics Laboratory:
MEHRAN ARMAND  
Senior Scientist

Department of Otolaryngology-Head and Neck Surgery
LLOYD B. MINOR  
Andelot Professor of Laryngology and Otology, Professor of Biomedical Engineering, Professor of Neuroscience, Director of the Department of Otolaryngology-Head and Neck Surgery (to 08/31/09)
JOHN K. NIPARKO  
George T. Nager Professor of Otolaryngology/Head and Neck Surgery, Interim Director of the Department of Otolaryngology-Head and Neck Surgery (from 09/01/09)
DANA BOATMAN  
Professor of Neurology, Professor of Otolaryngology-Head and Neck Surgery
JOSEPH CALIFANO, III  
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology
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. GOLSTEIN, Visiting Professor
HASKINS K. KASHIMA, Professor Emeritus
WAYNE M. KOCH  
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology
BERNARD R. MARSH, Professor Emeritus
BRADFORD J. MAY, Professor
GEORGE T. NAGER  
Andelot Professor Emeritus of Laryngology and Otology and University Distinguished Service Professor Emeritus
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
RANDALL R. REED  
Professor of Molecular Biology and Genetics, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery
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
DAVID SIDRANSKY  
Professor of Otolaryngology-Head and Neck Surgery, Professor of Oncology, Professor of Pathology, Professor of Urology
RAFAEL J. TAMARGO  
Walter E. Dandy Professor of Neurosurgery, Professor of Otolaryngology-Head and Neck Surgery
XIAOQIN WANG  
Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery
WILLIAM H. WESTRA  
Professor of Pathology, Professor of Oncology, Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Dermatology
ERIC D. YOUNG  
Professor of Biomedical Engineering, Professor of Neuroscience, Professor of Otolaryngology-Head and Neck Surgery
DAVID S. ZEE  
Professor of Neurology, Professor of Neuroscience, Professor of Ophthalmology, Professor of Otolaryngology-Head and Neck Surgery
S. JAMES ZINREICH  
Professor of Radiology and Radiological Science, Professor of Otolaryngology-Head and Neck Surgery
ATUL BEDI  
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Oncology
NASIR ISLAM BHATTI  
Associate Professor of Otolaryngology-Head and Neck Surgery, Joint Appointment in Anesthesiology and Critical Care Medicine
WILLIAM E. BOLGER, Adjunct Associate Professor
PATRICK JOSEPH BYRNE  
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Dermatology
JOHN P. CAREY, Associate Professor
JERRIE CHERRY, Associate Professor Emeritus
CHARLES C. DELLA SANTINA
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Biomedical Engineering
HOWARD WAYNE FRANCIS, Associate Professor
ELISABETH GLOWATZKI
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Neuroscience
CHRISTINE G. GOURIN, Associate Professor
MICHAEL J. HOLLIDAY
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Neurological Surgery
JAMES H. KELLY
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Neurology
ANDREW PETER LANE, Associate Professor
MAUREEN A. LEFTON-GREIF
Associate Professor of Pediatrics, Associate Professor of Otolaryngology-Head and Neck Surgery
CHARLES J. LIMB, Associate Professor
SANDRA Y. LIN, Associate Professor
LYNETTE J. MARK
Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Otolaryngology-Head and Neck Surgery
STANLEY J. MILLER
Associate Professor of Dermatology, Associate Professor of Otolaryngology-Head and Neck Surgery
IRA D. PAPEL, Associate Professor
LEONARD R. PROCTOR, Associate Professor Emeritus
EDWARD A. RATOVITSKI
Associate Professor of Dermatology, Associate Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Medicine, Assistant Professor of Pathology
WILLIAM J. RAVICH
Associate Professor of Medicine, Associate Professor of Otolaryngology-Head and Neck Surgery
GIUSEPPE SANGUINETI
Associate Professor of Radiation Oncology and Molecular Radiation Sciences, Associate Professor of Oncology, Associate Professor of Otolaryngology-Head and Neck Surgery
JOHN R. SAUNDERS
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Surgery, Assistant Professor of Plastic Surgery
MARK J. SHELHAMER
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Biomedical Engineering
HIROSHI SHIMIZU, Associate Professor (Audiology & Speech) Emeritus
RALPH P. TUFANO, Associate Professor
DAVID E. TUNKEL
Associate Professor of Otolaryngology-Head and Neck Surgery, Associate Professor of Anesthesiology and Critical Care Medicine, Associate Professor of Pediatrics
M. LEE WILLIAMS, Associate Professor Emeritus
NISHANT AGRAWAL
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology
GEORGE C. ALDERMAN, Assistant Professor Emeritus
DWIGHT EDWARD BERGLAS
Associate Professor of Neuroscience, Assistant Professor of Otolaryngology-Head and Neck Surgery
LAUREN CLAIRE BERKOW
Assistant Professor of Anesthesiology and Critical Care Medicine, Assistant Professor of Otolaryngology-Head and Neck Surgery
RAY GERVACIO F. BLANCO, Assistant Professor
DEREK KOFL BOAHENE
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Dermatology
JACK CALVIN BORDERS, JR., Assistant Professor
EMILY FRANCES BOSS, Assistant Professor
J. DENNIS BRANGER, Assistant Professor
RANDOLPH B. CAPONE, Assistant Professor
MICHAEL R. DEANS, Assistant Professor
KARL W. DIEHN, Assistant Professor
MARC G. DUBIN, Assistant Professor
PAUL M. EVITTS, Assistant Professor
CLARENCE W. GEHRIS, JR., Assistant Professor
ANDREW C. GOLDSTONE, Assistant Professor
PATRICK K. HA, Assistant Professor
HARRIET L. HASKINS, Assistant Professor (Audiology & Speech) Emerita
MOHAMMAD OBAIDUL HOQUE
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology, Assistant Professor of Urology
LISA EARNEST ISHIII, Assistant Professor
MASARU ISHIII, Assistant Professor
C. RAMADAS KAMATH, Assistant Professor Emeritus
MATTHEW LEWIS KASHIMA, Assistant Professor
STACEY LYNN ISHMAN
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Pediatrics
JEAN KIM
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Medicine
YOUNG JUN KIM
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology (from 08/01/09)
THEDA C. KONTIS, Assistant Professor
JAMES LAWRENCE, III, Assistant Professor Emeritus
NANETTE J. LIEGEOIS-KWON
Assistant Professor of Dermatology (to 09/30/09), Assistant Professor of Oncology, Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Plastic Surgery
SAMUEL M.M. LUMPKIN, Assistant Professor Emeritus
AMERICO ANIELLO MIGLIACCIO
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery, Adjunct Assistant Professor of Biomedical Engineering
CHULSO MOON, Adjunct Assistant Professor
DAVID EDWARD NEUMAN-TOKER
Assistant Professor of Neurology, Assistant Professor of Otolaryngology-Head and Neck Surgery, Joint Appointment in Emergency Medicine, Joint Appointment in Health Sciences Informatics, Joint Appointment in Ophthalmology
SARA ISABEL PAI
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology (from 08/01/09)
XIAOWU PANG, Adjunct Assistant Professor
CHOON MYONG PARK, Assistant Professor
HAROLD E. RAMSEY
Assistant Professor Emeritus of Surgery, Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery
RAJANI K. RAVI
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Oncology
DOUGLAS DAVID REH, Assistant Professor
JEREMY D. RICHMON, Assistant Professor
MICHAEL C. SCHUBERT, Assistant Professor
MARGARET LEIGH SKINNER, Assistant Professor
DAVID SOLOMON
Assistant Professor of Neurology, Assistant Professor of Otolaryngology-Head and Neck Surgery
SHARMILA SRIreddY, Assistant Professor (Audiology & Speech)
HEATHER MAUREEN STARMER, Assistant Professor (Audiology & Speech)
DONNA CLARK TIPPETT
Assistant Professor of Otolaryngology-Head and Neck Surgery, Assistant Professor of Physical Medicine and Rehabilitation
BARRY TRINK, Assistant Professor
KIM WEBSTER, Assistant Professor (Audiology & Speech)
ALYSON WELLS
Assistant Professor of Plastic Surgery, Assistant Professor of Otolaryngology-Head and Neck Surgery
MARK F. WILLIAMS, Assistant Professor
ADITI CHATTERJEE, Instructor
RAFAEL GUERRERO-PRESTON, Instructor
MYOUNG SOOK KIM, Instructor
SCOTT D. LONDON, Instructor
KAVITA PATTANI, Instructor
MURUGAPPAN RAMANATHAN, JR., Instructor
TAHA Z. SHIPCHANDLER, Instructor
ROSE STAVINOH, Instructor
JOHN K. TAYLOR, III, Instructor
DEBORAH G. BERVINCHAK, Assistant (Audiology & Speech)
STEPHEN BOWDITCH, Assistant
RYAN CARPENTER, Assistant (Audiology & Speech)
COURTNEY L. CARVER, Assistant (Audiology & Speech)
KRISTIN MARIE CEVER, Assistant
JILL E. CHINNICI, Assistant (Audiology & Speech)
RONI E. DINKES, Assistant
HILLARY GANEK, Assistant (from 07/15/09)
JALEH SUE GARMA, Assistant (Audiology & Speech)
KRISTA J. HEINLEN, Assistant (Audiology & Speech)
ANGELA TERESA LATAIe, Assistant (Audiology & Speech)
ANDREa MARLOWE, Assistant (Audiology & Speech)
MARIAH P. MENICHINO, Assistant (Audiology & Speech)
LYNN REENI RIDER, Assistant (Audiology & Speech)
COLLEEN E. RYAN-BANE, Assistant (Audiology & Speech)
ALICIA D. WHITE, Assistant (Audiology & Speech)
MALLene WIGGIN, Assistant (Audiology & Speech)
JENNIFER DOBSON YEagle, Assistant
JULIA N. ERON, Research Associate
HAKIM HIEl, Research Associate
ZUBAIR KHAn, Research Associate
MOHAMED LEHAR, Research Associate
WEILAnG BAI, Visiting Scientist (from 09/01/09)
GYU CHEOL HAN, Visiting Scientist
JONG-LYEL ROH, 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
JAMES M. CHRISTIAN
Assistant Professor of Oral Surgery (from 09/01/09), Visiting Associate Professor of Oral Surgery (to 08/31/09)
WILLIAM M. HENDERSON, Assistant Professor
MICHAEL K. SCHWARTZ, Assistant Professor
SYLVAn M.E. SHANE, Assistant Professor Emeritus
DAVID C. BASTACKY, Instructor
GHASSAn SINADA, Instructor (to 05/16/09)
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 L. 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. CHAN
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 M. DEMARZO
Professor of Pathology, Professor of Oncology, 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

JOHN P. GEARHART
Professor (Pediatric) of Urology, Professor of Pediatrics

ROBERT H. GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

ULRIKE M. HAMPER
Professor of Radiology and Radiological Science, 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

JONATHAN PETER JAROW
Professor of Urology, Professor of Pathology

HYAM I. 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 Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

MARK P. SCHOENBERG
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

ROBERT H. GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

ULRIKE M. HAMPER
Professor of Radiology and Radiological Science, 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

JONATHAN PETER JAROW
Professor of Urology, Professor of Pathology

HYAM I. 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 Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

MARK P. SCHOENBERG
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

ROBERT H. GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

ULRIKE M. HAMPER
Professor of Radiology and Radiological Science, 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

JONATHAN PETER JAROW
Professor of Urology, Professor of Pathology

HYAM I. 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 Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

MARK P. SCHOENBERG
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

ROBERT H. GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

ULRIKE M. HAMPER
Professor of Radiology and Radiological Science, 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

JONATHAN PETER JAROW
Professor of Urology, Professor of Pathology

HYAM I. 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 Radiation Oncology and Molecular Radiation Sciences, Professor of Urology

MARK P. SCHOENBERG
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

ROBERT H. GETZENBERG
Donald S. Coffey Professor of Urology, Professor of Oncology, Professor of Pharmacology and Molecular Sciences

ULRIKE M. HAMPER
Professor of Radiology and Radiological Science, 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

JONATHAN PETER JAROW
Professor of Urology, Professor of Pathology

HYAM I. LEVITSKY
Professor of Oncology, Professor of Medicine, Professor of Urology

JACEK L. MOSTWIN, Professor
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

A nine 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 (trama, 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, Neurosurgery, or Vascular 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. Manson 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. Baumgartner 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.

**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 5. Advanced Clinical Clerkship in Plastic Surgery. Dr. Manson and staff.

Opportunity will be offered to one or two students for externship on the Plastic Surgery Service at the Johns Hopkins Hospital, the Johns Hopkins Bayview Key Medical Center, the Children's Hospital and Center for Reconstructive Surgery or the Maryland Institute for Emergency Medical Services System. Experience with maxillofacial trauma and tumor service, reconstructive surgery with in-patients, out-patients and operating room. Basic techniques of surgical dressing and wound care will be stressed. Special experience is also available on the Burn Unit of The Johns Hopkins Bayview Medical Center. Full time; 4 1/2 or 9 weeks.


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. Anderson 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. Internship in Surgery. Dr. Freischlag and staff.

Qualified students wishing to take an accelerated program may apply for surgical internship during their Fourth Year. Twelve months, with rotations including general surgery, emergency surgery, selected surgical specialties. By arrangement with Dr. Freischlag. Approval of Committee on Student Promotion-Fourth Year is required.


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. DELON
- 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 12. 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.

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. 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. LIM  
Study of motor/sensory systems in human thalamus; brain stimulation and seizure surgery.

Dr. LIM  
Brain tumor therapy; radiosurgery and immunotherapy.

DR. LONG  
Epidemiologic studies in low back pain.

DR. OLIVI  
Studies in brain tumor immunology; novel brain tumor therapies and clinical outcomes.

DR. QUINONES-HINOJOSA  
Brain tumor outcomes; stem cell research.

DR. RIGAMONTI  
Genetics of vascular disease; radiosurgery; hydrocephalus research; dementia.

DR. RIGGINS  
Molecular genetics of brain tumors.

DR. SCIUBBA  
Spinal disorders and spinal tumors.

DR. TAMARGO  
Vasospasm mechanisms and clinical outcomes in vascular disease.

DR. WEINGART  
Brain tumor therapy; Cehiari malformations.

DR. WITHER  
Spine surgery.

DR. WOLINSKY  
Spine surgery and spine cancer.

Department of Orthopaedic Surgery


This elective provides in-depth clinical experience in orthopaedic spine surgery at the Johns Hopkins Hospital. The student 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. 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 32. 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 34. 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 35. Advanced Clinical Clerkship in Adult Orthopaedics at the Union Memorial Hospital.

Experience similar to E34.


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.

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. SPONSELLER
Spinal deformities; pediatric trauma; myelodysplasia.

DR. WEBER
Oncology.

DR. WILCKENS
Sports medicine.

Department of Otolaryngology-Head and Neck Surgery

E 14. Advanced Clinical Clerkship in Otolaryngology. Dr. Sara Pai and staff.

Clerkships 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. BHATTI
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. 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
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. 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. ISHMAN
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. S. LIN
Outcomes in pediatric and adult sinusitis; outcomes in the treatment of allergies.

DR. MAY
Information processing mechanisms in behaving subjects.

DR. NIPARCO
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. 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. RYUGO
Anatomy and physiology of the central auditory nervous system.

DR. SCHUBERT
Describe mechanisms responsible for improving gaze stability during rapid head impulses and to develop new gaze stability strategies for rehabilitation.

DR. SIDRANSKY
The molecular genetic changes that drive the progression of various types of cancer.

DR. TUFANO
Clinical and translational research of thyroid and parathyroid disease process.

DR. TUNKEL
Pediatric airway problems.

DR. YOUNG
Auditory neurophysiology; sensory processes; application of computers in research.

Department of Urology

Drs. Partin, Mostwin and staff.

This elective provides students with the opportunity to pursue a study of urology in-depth, gearing such study to the needs or goal of the individual student. Thus, this experience may be oriented to clinical urology research or a combination of both. 4 1/2 or 9 weeks. Available either at the Johns Hopkins Hospital or at the Johns Hopkins Bayview Medical Center.

Research Interests

DR. ALLAF
Minimally invasive surgery and robotics.

DR. BURNETT
Pelvic neurophysiology; pelvic anatomy; erectile dysfunction; urinary continence; pelvic reconstructive surgery.

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. GEARHART
Endocrine manifestations of ambiguous genitalia; bladder muscle nerve and collagen function in bladder exstrophy; 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.

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; gene-environment interactions.

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
Experimental therapeutics; molecular imaging; gene therapy.

DR. MATHEWS
Minimally invasive pediatric urology; hypospadias; vesico-ureteral reflux; undescended testis.

DR. MATLAGA
Kidney stone disease and surgical treatment.

DR. MOSTWIN
Continent; bladder function; pelvic anatomy; medical ethics.

DR. PARTIN
Prostate cancer; benign prostatic hyperplasia; prostate cancer biomarkers research.

DR. PAVLOVICH
Molecular and genetic analysis of kidney cancer and prostate cancer; laparoscopic urologic oncology.

DR. RODRIGUEZ
Advanced prostate cancer; bladder cancer; kidney cancer; gene therapy; experimental therapeutics.
DR. SCHAEFFER
The biology of urogenital development and injury/repair and the relationship between these processes and cancers of the bladder, prostate, and kidneys.

DR. SCHOENBERG
Molecular biology and early detection of bladder cancer; novel therapeutic strategies for invasive bladder cancer.

DR. STOIANOVICI
Urology robotics; image guided interventions; new technologies.

DR. TROCK
Epidemiology and prevention of prostate and breast cancer; biomarkers for early detection and progression.

DR. VELTRI
Biomarkers for diagnosis and prognosis of urological cancers; quantitation of cell nuclear structure and molecular biomarkers using computer-assisted image analysis; applied proteomics for discovery, identification, and characterization; 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; vesicoureteral reflux; penile and bladder development; ectopic ureters/ureteroceles.
Multi-Department Courses

REQUIRED WORK FOR M.D. DEGREE

First 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 2009-10, 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, medico-legal 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.

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 mentored 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.
# Schedules

(all hours are approximate)

## FIRST YEAR 2009-10 – 8/19/09-6/18/10

<table>
<thead>
<tr>
<th>August</th>
<th>January</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26</td>
<td>27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52</td>
</tr>
<tr>
<td>IS Health Disp</td>
<td>Genes to Society</td>
</tr>
<tr>
<td>Scientific Foundations of Medicine</td>
<td>Immunology 1 (10 days)</td>
</tr>
<tr>
<td>IS Prevention</td>
<td>Micro/ID (20 days)</td>
</tr>
<tr>
<td>Break</td>
<td>Immunology 2 (7 days)</td>
</tr>
<tr>
<td>Clinical Foundations</td>
<td>Longitudinal Clerkship</td>
</tr>
<tr>
<td>Foundations of Public Health</td>
<td>Scholarly Concentration</td>
</tr>
</tbody>
</table>

### Additional Responsibilities:
CPR Training – one four hour session and a one hour simulated session

BMB = Brain, Mind & Behavior  
LC = Longitudinal Clerkship  
NSS = Nervous System & Special Senses  
IS = Intersession  
SC = Scholarly Concentration

## SECOND YEAR 2009-10

### SECOND YEAR First and Second Quarter 8/24/09 – 12/22/09

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-1</td>
<td>Pathology(^1)</td>
<td>Pathology</td>
<td>Pathology</td>
<td>Pathology</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
<td>Pharmacology</td>
<td>Pharmacology</td>
<td>Pharmacology</td>
</tr>
<tr>
<td>1-2</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>2-5</td>
<td>Patient, Physician &amp; Society</td>
<td>Longitudinal Clerkship(^2)</td>
<td>Patient, Physician &amp; Society</td>
<td>Longitudinal Clerkship(^2)</td>
</tr>
</tbody>
</table>

### SECOND YEAR Third Quarter 1/4/10 – 3/12/10

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-1</td>
<td>Pathology</td>
<td>Pathology</td>
<td>Pathology</td>
<td>Pathology</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
<td>Pharmacology</td>
<td>Pharmacology</td>
<td>Pharmacology</td>
</tr>
<tr>
<td>1-2</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>2-5</td>
<td>Patient, Physician &amp; Society</td>
<td>Longitudinal Clerkship(^2)</td>
<td>Patient, Physician &amp; Society</td>
<td>Transition to the Wards(^3)</td>
</tr>
</tbody>
</table>

### SECOND YEAR Fourth Quarter 3/29/10-5/21/10 – Basic Clerkships and/or Electives

5/24/10-5/28/10 – Intersession

---

\(^1\) Integrated instruction in Pathology, Pathophysiology and Pharmacology  
\(^2\) Longitudinal Clerkship – Tuesday & Thursday 2-5:30 p.m.  
\(^3\) Transition to the Wards – 2-6:00 p.m.
### REQUIRED CLERKSHIPS*

#### Medicine Clerkship (nine 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 (nine 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 (six 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 (nine 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/Ophthalmology Clerkship (nine weeks)

- **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>

- **Ophthalmology Portion (1 week)**

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
</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.

#### Dates

**THIRD YEAR**
- First quarter: 8/24/09-10/23/09
- Second quarter: 10/26/09-1/8/10
- Third quarter: 1/11/10-3/12/10
- Fourth quarter: 3/29/10-5/21/10
- Intersession: 5/24/10-5/28/10

**FOURTH YEAR**
- First quarter: 8/24/09-10/23/09
- Second quarter: 10/26/09-1/8/10
- Third quarter: 1/11/10-3/12/10
- Fourth quarter: 3/29/10-5/21/10
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*
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
Christopher Kovalchick
Donald A. Kurz
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
Gail J. McGovern
Peter A. Meyer
Harvey M. Meyerhoff*
Kweisi Mmeme
Charles D. Miller*
Milton H. Miller*
Westley W.O. Moore
Naneen H. Neubohn
David P. Nolan
Ronald M. Nordmann
Ralph S. O’Connor*
Morris W. Offit*
Geraldine A. Peterson, ex officio
Walter D. Pinkard, Jr.
George G. Radcliffe*
Joseph R. Reynolds
Brian C. Rogers
David M. Rubenstein
John F. Ruffle*
Marshal L. Salant
Arthur Sarnoff*
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
Edward G. Uhl*
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

James T. McGill  
Senior Vice President for Finance and Administration

Stephen S. Dunham  
Vice President and General Counsel

Michael Eicher  
Vice President for Development and Alumni Relations

Edward D. Miller  
Vice President and CEO of Johns Hopkins Medicine  
Dean of the Medical Faculty

Thomas S. Lewis  
Vice President for Government and Community Affairs

Charlene Moore Hayes  
Vice President for Human Resources

Michael Strine  
Vice President for Finance and Treasurer

Paula Burger  
Vice Provost

Michela Gallagher  
Vice Provost for Academic Affairs

Edgar E. Roulhac  
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

Ray Gillian  
Vice Provost for Institutional Equity

Jonathan Bagger  
Vice Provost for Graduate and Postdoctoral Programs and Special Projects

Jerome D. Schnydman  
Executive Assistant to the President and Secretary of the Board of Trustees

Yash P. Gupta  
Interim Dean, Carey Business School

Kathryn J. Crecelius  
Chief Investment Officer

Jessica P. Einhorn  
Dean of The Paul H. Nitze School of Advanced International Studies

Michela Gallagher  
Interim Dean of the Krieger School of Arts and Sciences

Mariale Hardiman  
Interim Dean of the School of Education

Nicholas P. Jones  
Dean of the Bloomberg School of Public Health

Michael J. Klag  
Dean of the Whiting School of Engineering

Martha Hill  
Dean of the School of Nursing

Jeffrey Sharkey  
Director of the Peabody Institute

Richard T. Roca  
Director of the Applied Physics Laboratory

Winston Tabb  
Dean of University Libraries, Vice Provost for the Arts, Director of Johns Hopkins University Museums

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  
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

306  ADMINISTRATION
Advisory Board of the Medical Faculty

Ronald J. Daniels
President
Edward D. Miller
Dean of the Medical Faculty
L. Mario Amzel
Dana Andersen
Deborah Armstrong
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
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
Randall M. Packard
Jeffrey B. Palmer
Alan W. Partin
Ronald R. Peterson, ex officio
Nancy Roderer
Gordon F. Tomasselli
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.”
Medical School Council

Deborah Armstrong
Chair
Joseph Herman
Vice-Chair
Mary E. Foy
Secretary
Rachel Abuav
Edward Ahn
Peter Barker
Amy Bastian
Cory Brayton
Karen Carroll
Betty Chou
Roy Chuck
Nathaniel Comfort
David Cooke
David Cromwell
Jennifer Fairman
Derek Fine
Mitchell Goldstein
Rebecca Gottesman
Rachel Green
Lisa Ishii
Daniel Leathy
Steven Mandell
Marisa Matthys

Councils and Standing Committees of the Faculty

ADVISORY BOARD AGENDA COMMITTEE

Lloyd B. Minor, Chair
Julie Freischlag
L. Mario Amzel
Deborah Armstrong
Carole Greider
Sewon Kang
Jonathan S. Lewin
Justin McArthur
Elliot McVeigh
Edward D. Miller
William Nelson
William A. Baumgartner, staff
Janice E. Clemens, 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
Michael Carducci
Danelle Cayea
Sarah Clever
Joseph Cofrancesco
Jorie Colbert
Philip Cole
Ronald Cohn
George Dover

Erika Matunis
Melissa McCarthy
Sharon McGrath-Morrow
Mollie Meffert
Susan Molinaro
Trang Nguyen
Daniel Nyhan
Christian Pavlovich
Sarah Reading
Linda Regan
Jon Resar
Jake Ruzevick
Lawrence Schramm
Lauren Shapiro
James Stivers
John Tis
Anthony Tufaro
Marlene Williams
Christopher Wolfgang
Guang Wong

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.”
James Weiss  
Charles M. Wiener  
Stephen Yang  

COMMITTEE ON ADMISSION  
James L. Weiss, Chair ex officio  
Bimal Ashar  
Gert H. Brieger  
Arthur Burnett  
Andrea M. Corse  
Todd Cox  
Diana Do  
Howard Francis  
Deborah Frassica  
Charlene Gamaldo  
Judi Gieske  
Ziya Gokaslan  
Marlis Gonzalez Fernandez  
Tammy Hadley  
Misop Han  
Christine Hann  
Hermione Hicks  
Peter Hill  
Nancy Hueppchen  
Lisa Ishii  
David Jackson  
Edward K. Kasper  
Van King  
Shari Lawson  
Jackie L. Martin, Jr.  
Spyridon Marinopoulos  
Brian Matlaga  
Mack Mitchell  
Anne Murphy  
Karim Neufeld  
Quan Nguyen  
Eva Ritzl  
J. Courtland Robinson  
Kenneth Stoller  
Michael Trice  
Shelia West  
Stephen Yang  
Sara Ying  
Richard Zellsar  

COMMITTEE ON ADMISSION SCREENING  
James L. Weiss, Chair  
Hoover Adger  
Frederic Askin  
Hermione Hicks  
Lynette Mark  
Jacek Mostwin  
Janet Siliciano  
Peter B. Terry  
David Trabilsy  
Edward Wallach  

COMMITTEE ON STUDENT AWARDS  
Thomas Koenig, Chair  
Robert Siliciano  

COMMITTEE ON THE M.A. AND PH.D. PROGRAMS  
Eric Young, Chair  
Mary E. Foy, Secretary  
Michael Caterina  
Peter Espenshade  

David Ginty  
Jan Hoh  
Steven Hsiao  
Juliette Lecomte  
Gary P. Lees  
Harold Lehmann  
Jun Liu  
Carolyn Machamer  
Peter C. Maloney  
David Nichols  
Rajini Rao  
Kenneth Rose  
Noel Rose  
Reza Shadmehr  
Mark Soloski  
Daniel Todes  
David L. Valle  
David Yue  

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  
Danny Teraguchi  
Glenn Treisman  
James Weiss  
David T. Yue  
Scott Zeger  

INSTITUTIONAL RESEARCH GRANT  
PROJECT COMMITTEE  
Joanne Frantz, Secretary  
S. Diane Hayward  
Nicholas Katsanis  
Alex Kolodkin  
Peter O. Kwiterovich, Jr.  
Paula M. Pitha-Rowe  
Daniel Raben
Randall R. Reed  
Jodi Segal  
Raphael Viscidi  

MEDICAL SCIENTIST TRAINING PROGRAM  
STEERING COMMITTEE  
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 Schnack  
Lawrence P. Schramm  
David Shortle  
Donald Small  
Shanthini Sockanathan  
Danny Teraguchi  
Glenn Treisman  
James Weiss  
David T. Yue  
Scott Zeger  

COMMITTEE ON STUDENT PROMOTION – FIRST YEAR  
Edward D. Miller, Chair  
Thomas Koenig, Secretary  
Jay M. Baraban  
Michael Barone  
Sarah Clever  
Josef Coresh  
Mary E. Foy  
William B. Guggino  
Jon Lorsch  
Dean MacKinnon  
Jacek Mostwin  
Jeremy Nathans  
David Nichols  
Jonathan Schnack  
Robert F. Siliciano  
Mark Teaford  
James Weiss  

COMMITTEE ON STUDENT PROMOTION – SECOND YEAR  
Edward D. Miller, Chair  
David Nichols, Vice Chair  

Thomas Koenig, Secretary  
Michael Barone  
Sarah Clever  
Philip Cole  
Derek Fine  
Mary E. Foy  
Edward McCarthy  
Jacek Mostwin  
Robert Shochet  
Robert Siliciano  
James Weiss  

COMMITTEE ON STUDENT PROMOTION – THIRD AND FOURTH YEARS  
Edward D. Miller, Chair  
David Nichols, Vice Chair  
Thomas Koenig, Secretary  
Michael Barone  
Danelle Cayea  
Michael Clark  
Sarah Clever  
Mary E. Foy  
Nancy Hueppchen  
Albert Jun  
Juliana Jung  
Bruce Leff  
Susan Lehmann  
Jacek Mostwin  
David Newman-Toker  
Brent Petty  
Robert Siliciano  
Patricia Thomas  
James Weiss  
Stephen Yang  

UNIVERSITY HEALTH SERVICES ADVISORY BOARD  
Spyridon Marinopoulos, Chair  
Sandra Angeli  
Stephen Bazzetta  
Joseph Bezek  
Frederick Brancati  
Patricia Brown  
Glory D. Christy  
J. Raymond DePaulo  
James Erickson  
Kevin Fogarty  
Mary E. Foy  
Helene T. Grady  
Richard Grossi  
K. Carol Han  
Thomas Koenig  
Peter Maloney  
Julia McMillan  
Redonda Miller  
David G. Nichols  
Beryl Rosenstein  
Steven J. Thompson  
Michael Ward  
Levi Watkins  
Myron L. Weisfeldt  
Darnell Williams  

COMMITTEE ON OUTSIDE INTERESTS  
Voting Members  
Neil Bressler, Chair  
Jeffrey Rothstein, Co-Chair  
Douglas Clark
Robert Getzenberg
Robert Greenberg
Henry Halperin
Alexander Popel
Mark Riddle
Frederick Savage
David Sidransky
Mark Sulkowski
Brad Undem
Kristin Weber
Non-Voting Members
Mike Amey
Keith Baker
Chi Dang
Christina Doty, Staff
Julie Gottlieb, Secretary
Nicole Leonard
Lizzie Peterson, Staff
Karen Rosen, Staff
Philip Rocca
Barbara Starklauf
STANDING COMMITTEE ON DISCIPLINE
Phillip Slavney, Chair
Sheila Garrity, Staff
Jennifer Pudelko, Staff
Mike Amey
Keith Baker
Chi Dang
Christina Doty, Staff
Julie Gottlieb, Secretary
Nicole Leonard
Lizzie Peterson, Staff
Karen Rosen, Staff
Philip Rocca
Barbara Starklauf
PROFESSORIAL PROMOTIONS COMMITTEE
Jay Brooks Jackson, Chair
Eric Bass
Arthur Burnett
Duke Cameron
Tina Cheng
Jennifer Haythornthwaite
Richard Huganir
Elizabeth Jaffee
Kwang Sik Kim
Peter McDonnell
Lloyd Minor
Ola Selnes
Philip Slavney
Myron Weisfeldt
ASSOCIATE PROFESSOR PROMOTIONS COMMITTEE
Estelle Gauda, Chair
Mark Duncan, Vice Chair
Patrice Becker
Harolyn Belcher
Jessica Bienattock
Malcolm Brock
Charles Della Santina
Susan Dorman
Nauder Faraday
Daniel Judge
Alex Kolodkin
Carlos Pardo-Villamizar
Daniel Raben
Peter Rabins
Matthias Stuber
Kristy Weber
Charles Wiener
ASSOCIATE PROFESSOR REAPPOINTMENT REVIEW COMMITTEE
Neil R. Miller, Chair
Joel Gallant
Peter Kaplan
Wayne Koch
James L. Weiss
Pamela Zeitlin
INSTRUCTOR AND ASSISTANT PROFESSOR REAPPOINTMENT REVIEW COMMITTEE
Leslie Plotnick, Chair
Francis Giardiello
Daniel Hanley
Eugenie Heitmiller
Jon Lorsch
Daniel Raben
Joy Yang
Martha Zeiger
PROFESSORS’ TEACHING AWARD COMMITTEE
Edward D. Miller, Chair
Thomas Koenig
Jon Lorsch
Peter Maloney
David Nichols
Meghan Seltzer
John Ulatowski
Charles Wiener
CLINICIAN SCIENTIST AWARDS SELECTION COMMITTEE
George J. Dover, Chair
Michelle P. Linehan, Secretary
Stephen Baylin
Arthur Burnett
Elia Duh
Nicholas Flavahan
John W. Griffin
Ada Hamosh
Christine Iacobuzio-Donahue
Elizabeth Jaffee
Sewon Kang
Gabe Kelen
William Nelson
John Niparko
Lawrence Nogee
Cynthia Rand
Christopher Ross
Antony Rosen
David Yousem
Martha Zeiger
NUCLEAR MAGNETIC RESONANCE INTERDISCIPLINARY COMMITTEE

Paul Bottomley
Donlin M. Long
Albert S. Mildvan
Godfrey D. Pearson
James L. Weiss

ANIMAL CARE AND USE COMMITTEE

Nancy Almand Ator, Chair
Robert J. Adams
Shyam Biswal
William A. Boyd
Brendan J. Canning
Robert A. Casero
Stephen C. Dahl
Anna P. Durbin
Eric Fortune
David Hutton
Dara Kraitchman
Ellen E. Ladenheim
Gayle G. Page
Diana G. Scarpio
Gregg L. Semenza
Veit Stuphorn
Clarke Tankersley
J. Rudiger Von der Heydt
William Wright

ADVISORY BOARD SUB-COMMITTEE ON DIVERSITY

George Dover, Chair
Rhonice Burnett
Janice Clements
Lisa Cooper
Brian Gibbs
Amy Goodwin
Kenneth Grant
Dahal Haldeman
Janet Harding
Lisa Heiser
Paulette Hynson
Thomas Laveist
Jeff Nelligan
David Nichols
Pamela Paulk
Steven Ragsdale
Daniel Teraguchi
Steve Thompson
Christine White
Beverly White-Seals
Cheri Wilson

ADVISORY COMMITTEE ON CONTINUING EDUCATION

Christoph Lehmann, Chair
Paul Auwaerter
Robert E. Bristow
Leonard DeRogatis
Todd Dorman
Samuel Durso
Frederic Eckhauser
Nauder Faraday
Emily Frosch
Joel Gallant
Theresa Hartsell
Carlita Kearney
Paul Ladenson

ADVISORY COMMITTEE FOR THE OFFICE OF FUNDED PROGRAMS

Neil Bressler, Chair
John Bartlett
Roger Blumenthal
Jeffrey Brinker
Arthur Burnett
Arjun Chanmugam
Michael Clark
Bernard Cohen
Todd Dorman
David Ettinger
Leonard Feldman
Harold Fox
Gary Gerstenblith
Jonathan Jarow
Judith Karp
Linda Lee
Christoph Lehmann
Pamela Lipsett
Maura McGuire
Victor Marrow
David Neubauer
David Nichols
Elizabeth Ratchford
Glenn Treisman
Eileen Vining
Georgia Vogelsang
Robert Wise

MEDICAL ARCHIVES ADVISORY COMMITTEE

Ralph H. Hruban, Chair
Nancy McCall, Secretary
Susan Appling
John L. Cameron
Ritam Chowdhury
Sona Johnston
Sukon Kanchanaraska
Christoph U. Lehmann
Maureen Maguire
Harry M. Marks
Robert E. Miller
Satish Misra
Timothy H. Moran
Randall M. Packard
Edward C. Papenfuse
Mary Plumb
Elizabeth Rodini
Corinne Sandone
Edyth Schoenrich
Dale Smith
Charles M. Wiener

Harold Lehmann
Lisa Lubomski
Susanne Amato Nesbit
David Nichols
Leslie Plotnick
William J. Ravich
Nancy Roderer
Sheila Sheth
Edward M. Sills
Walter J. Stark, Jr.
Paula Teague
Glenn J. Treisman
Paul S. Wheeler
Antonio Wolff
Howard A. Zacur

312 ADMINISTRATION
COMMITTEE ON THE CLAYTON FUND
Edward D. Miller, Chair
Michael B. Amey
R. Robinson Baker
William C. Baker
Mark Donowitz
Ralph H. Hruban
J. Brooks Jackson
Kenneth Kinzler
Bert Vogelstein
Myron Weisfeldt

GRIEVANCE COMMITTEE
Jennifer Haythornthwaite, Chair
Joan Bathon
Janice E. Clements
Stephen V. Desiderio
Barbara Fivush
Angela Guarda
Richard Huganir
Jonathan Lewin
John Mann
Ronald L. Schnaar
Jonathan Schneck

TILGHMAN TRAVELING FELLOWSHIP COMMITTEE
Edward D. Miller, Chair
Michael B. Amey
Janice E. Clements
Chi V. Dang
George J. Dover
Daniel Ford
Myron Weisfeldt

YOUNG INVESTIGATORS’ DAY REVIEW COMMITTEE
Alex Kolodkin, Chair
Shan Sockanathan, Co-Chair
Aimee Real, Secretary
Michael Caterina
Elizabeth Chen
Nancy Craig
Denise Montell
Carlos Pardo-Villamizar
Ben Ho
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

COMMITTEE ON THE BAYNE-JONES LECTURESHIP
Lawrence Lichtenstein, Chair
John G. Bartlett
Stephen V. Desiderio
Philip S. Norman
Myron Weisfeldt

SELECTION COMMITTEE FOR THE BRIN VISITING PROFESSOR
John H. Fetting, III, Chair
Ann Brin
Joseph Brin
Ruth Faden
Peter B. Terry

COMMITTEE ON THE DOHME LECTURESHIP
Philip A. Cole, Chair
Craig A. Townsend
Myron Weisfeldt

COMMITTEE ON THE GILMAN LECTURESHIP
Edward D. Miller, Chair
Gert H. Brieger
Christopher D. Saudek

COMMITTEE ON THE GOULD LECTURESHIP
Elliott K. Fishman
Stanley S. Siegelman
Moody D. Wharam, Jr.

COMMITTEE ON THE HERTER LECTURESHIP
Gerald Hart, Chair
J. Brooks Jackson
Myron Weisfeldt

COMMITTEE ON THE HENRY G. KUNKEL LECTURESHIP
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 LECTURESHIP
Peter L. Pedersen, Chair
Ernesto Carafoli
Gerald Hart
Eugene Kennedy
Daniel Lane
Sriram Subramaniam
Paul Talalay

COMMITTEE ON THE NOVEY LECTURESHIP
Chester W. Schmidt, Jr., Co-Chair
Phillip R. Slavney, Co-Chair
Riva L. Noyev
Myron Weisfeldt

COMMITTEE ON THE SIMPKINS LECTURESHIP
John Griffin, Chair
Joseph V. Brady
John M. Freeman
Gary W. Goldstein
Edward D. Miller

COMMITTEE ON THE THAYER LECTURESHIP
Myron Weisfeldt, Chair
George J. Dover
John Griffin
COMMITTEE ON THE DALE LECTURESHIP
Theresa Shapiro, Chair
Philip A. Cole
Myron Weisfeldt

COMMITTEE ON THE HELEN & HAROLD HARRISON PRIZE FOR EXCELLENCE IN PEDIATRICS
Julia A. McMillan, Chair
Michael Barone
David Cooke
Janet Serwint

COMMITTEE ON THE ALAN COOPERSMITH VISITING PROFESSORSHIP
James F. Casella, Chair
Kristin Arcara
George J. Dover
Donald Small
Megan Tschudy
Alan Wayne

WALTER E. DANDY VISITING PROFESSORSHIP COMMITTEE
John Griffin, Chair
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

WOMEN’S LEADERSHIP COUNCIL
Janice Clements, Chair
Rhoda Alani
Marilyn Albert
Marilee Allen
Jean Anderson
Deborah Armstrong
Nancy Ator
Serena Bagnasco
Kathleen Barnes
Joan Bathon
Diane Becker
Patrice Becker
Harolyn Belcher
Michele Bellantoni
Jessica Bienstock
Karin Blakemore
Mary Blue
Dana Boatman
Corrine Boehm
Susan B. Bressler
Arlene Butz
Marcia Canto
Karen Carroll
Livia Casciola-Rosen
Nisha Chandra
Patricia Charache
Elizabeth Chen

Tina Cheng
Jeanne Clark
Nancy Collop
Lisa Cooper
Mary Corretti
Nancy L. Craig
Susan W. Craig
Valina Dawson
Barbara J. de Lateur
Martha Bridge Denckla
Beth Dochinger
Adrian Dobs
Anne Duggan
Leisha Emens
Emily Erbelding
Susan Eshleman
Mary Fissell
Barbara Fivush
Arlene A. Forastiere
Mary Fowler
Mary E. Foy
Deborah Frassica
Julie Freischlag
Linda P. Fried
Susan Furth
Estelle Gauda
Charlotte Gaydos
Gail Geller
Emily Germain-Lee
Rebecca German
Rachel Green
Carol W. Greider
Constance Griffin
M. Diane E. Griffin
Ada Hamosh
Ulrike Maria Hamper
Barbara Hawkins
Jennifer Haythornthwaite
S. Diane Hayward
Lisa Heiser
Argye Hillis
Karen Horton
Ann L. Hubbard
Ethylin W. Jabs
Elizabeth Jaffee
Bronwyn Jones
Hendree Jones
Dara Kralitchman
Mariikki Laiho
Beth Laube
Linda Lee
Mary Leffell
Karen Lindeman
Pamela Lipsett
Susan MacDonald
Carolyn Machamer
Lynette Mark
Kieren Marr
Laura Marsh
Irene Maumenee
Michele Mazzocco
Una McCann
Melissa McCarthy
Betsy McCaul
Jane McKenzie-White
Susan McTeer
Susan Michaelis
Barbara Migeon
Mariam Mintzer
Sally Mitchell
Elizabeth Montgomery  Jennifer Van Eyk
Denise Montell   Eileen Vining
Anne Murphy   Donna Vogel
Pamela Ouyang  Elizabeth M. Wagner
Trish Perl   Kristi Weber
Paula M. Pitha-Rowe   Elise Weerts
Leslie Plotnick   Sheila West
Gianna Pomata   Katherine Wilson
Wendy Post   Cynthia Wolber
Lorraine Racusen   Kathleen Zackowski
Ranjini Rao   Martha Zeiger
Nancy Roderer   Pamela Zeitlin
Anne Rompalo   Carol Ziminski
Brigitte Ronnett   M. Christine Zink
Gabriele V. Ronnett
Dorothy L. Rosenthal
Corinne Sandone
Cynthia Sears
Janet Servint
Geraldine Seydoux
Theresa A. Shapiro
Julie Simon
Gwenn Smith
Barbara T. Sollner-Webb
Maxine L. Sitzer
Emma Stokes
Saraswati Sukumar
Barbara Todd
Susan Topalian
Connie Trimble

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 Criley (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
Richard Bennett
Erik Brand
Rupali Chadha
Arjun Chanmugan
Colleen Christmas
Ronald Cohn
Paul Colombani
David Cooke
Ross Donehower
James Dunn
David Feigin
Derek Fine
Charles Flexner
Mary E. Foy
Howard Francis
Deborah Frassica
Emily Frosch
Theresa Hartsell

Argye Hillis
George Jallo
Sewon Kang
Dawn LaPorte
Pamela Lipsett
John Lipsey
Samuel Mayer
Edward McCarthy
Edward Miller, ex officio
Redonda Miller
David Nichols
Frank Pidcock
Joanne Pollak
Richard Redett
Ron Rodriguez
John Rybock
Deborah Schwengel
Oscar Serrano
Pam Shafer
Bruce Shapiro
Stanley Siegelman
Stephen Sisson
Christina Twyman
Diane Voss
Charles Wiener
Stephen Yang
Harvey Ziessman

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
Jeffrey Brinker
Julie Lange
Sharon Mitchell
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
Frances Murphy Draper
Linda Gerson
Richard Skolasky, Jr
Sharon Solomon
Glenn Treisman

INSTITUTIONAL REVIEW BOARD V
Joseph Carrese, Chair
George Bigelow, Co-Chair
N. Franklin Adkinson
Nisha Chandra
Henry Choi
Calvin Keene
Tammy Scott
Philip Zieve

INSTITUTIONAL REVIEW BOARD X
Laura Rocco, Chair
Susan Bassett, Co-Chair
Frederic Askin
Gail Daumit
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
Kurlen 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
Richa Gupta
Bettea Hoofnagle
Nancy K. Roderer
Deborah Slinghoff
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

Edward Bernacki, Chair  
Stanley Wadsworth, Secretary

David Baron  
Shelly Baronowski  
Clyde Bernett  
Josh Bord  
James Bukowski  
Perry Cooper  
Stephen Dahl  
Patricia Day  
George Economos  
Jack Grinnalds  
Gary Hayward  
John Highsmith

Frances Humphrey-Carother  
Margi Joshi  
Paula Kent  
Carole Martens  
Barry Meyer  
Jeff Natterman  
Lois Scarborough  
John Schaefer  
Anita Stone  
Peter Tollini  
Scott Zeger  
Becky Vaeth, Recording Secretary

INSTITUTIONAL BIOSAFETY COMMITTEE  
Gary S. Hayward, Chair

Gary S. Hayward, Chair

Robert J. Adams  
Barbara Biedrzycki  
Stephen C. Dahl  
Barry Kobrin  
Elizabeth A. Laffan  
Claudia MacAuley  
Joseph Margolick  
Douglas Norris  
Weiying Pan  
Alan F. Scott

THE JOHNS HOPKINS HEALTH SYSTEM CORPORATION  
The Board of Trustees

C. Michael Armstrong  
Chairman  
A.B. Krongard  
Vice Chairman  
Janie Elizabeth Bailey  
Lenox D. Baker, Jr.

Officers

Edward D. Miller  
Vice Chairman  
Ronald R. Peterson  
President  
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  
The 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
Stephanie L. Reel
  Vice President, Management Systems and Information Systems
Redonda G. Miller
  Vice President, Medical Affairs
G. Daniel Shealer, Jr.
  Vice President, Corporate Compliance and Secretary
Ronald J. Werthman
  Vice President, Finance & Treasurer
Samuel H. Clark, Jr.
  Assistant Secretary
Stuart Erdman
  Assistant Treasurer

ADMIRNISTRATORS, CLINICAL DEPARTMENTS
Marty Bledsoe
  Radiology and Radiological Science
Richard Thomas
  Ophthalmology
Edward B. Chambers
  Pediatrics
Carolyn Ford
  Dermatology
Maryrose Kober Gans
  Urology
John Bezhad
  Physical and Rehabilitation Medicine
Jo Jennings
  Orthopedic Surgery
John Hundt
  Surgery
Howard Gwon
  Psychiatry and Behavioral Sciences
Jane Hill
  Neurosciences

Tony Etzel
  Otolaryngology-Head and Neck Surgery
Diann Snyder
  Gynecology and Obstetrics
Charles Reuland
  Medicine
Jim Creech, Edward Pigo
  Pathology
James Scheulen
  Emergency Medicine
Christina Lundquist
  Anesthesiology and Critical Care Medicine
Terry Langbaum, Sharon Krumm
  Oncology Center
Richard O. Davis
  Ambulatory Services
Kelly Cavallio
  Radiation Oncology

Medical Board of the Johns Hopkins Hospital
George J. Dover, Chairman
Lloyd B. Minor, Vice-Chairman
Pamela B. Shafer, Secretary
William A. Baumgartner
Henry Brem
Paul M. Colombani
Jude Crino
J. Raymond DePaulo, Jr.
Theodore L. Deweese
Harold E. Fox
Frank J. Frassica
Julie A. Freischlag
Karen B. Haller

J. Brooks Jackson
Sewon Kang
Richard Katz
Gabor Kelen
Jonathan S. Lewin
Paul N. Manson
Peter J. McDonnell
Edward D. Miller
William Nelson
Jeffrey B. Palmer
Alan W. Partin
Ronald R. Peterson
Judy A. Reitz
Beryl J. Rosenstein
John D. Rybock  
Christina Twyman  
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  
Wilmot C. Ball, Jr., Vice-Chair  
Charles L. Bauermann  
Lawrence M. Beck  
Jeffrey Donnelly  
Howard Freeland  
Sheldon M. Glusman  
W. Kenneth Gue  
Davis Hahn  
Reverend Lawrence M. Johnson  
Most Reverend Denis J. Madden  
Jayne H. McGeehan  
Allan Noonan  
T. Edgie Russell  
Kenneth A. Samet  
Carl Schindelar  
Reverend P.M. Smith  
James K. Smolev  
John Smyth  
Kenneth L. Thompson  
Jeremy P. Weiner  
Kathleen Whiting

Officers of the Corporation
Anthony Read  
Chairman of the Board  
Lawrence M. Beck  
President

Wilmot C. Ball, Jr.  
Vice Chairman

Administrative Staff
Lawrence M. Beck  
President  
Jeffrey A. Matton  
Senior Vice President and COO  
Shirley Roth  
Vice President for Patient Care Services  
Martin Binstock  
Vice President, Medical Affairs

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
Henry G. Hagan  
Chairman  
Atwood Collins, III  
Vice Chairman  
Sanford M. Baklor  
Robert A. Baruch  
Michael J. Batza, Jr.  
Paul Z. Bodnar  
Robert L. Bogomolny  
Thomas V. Brooks  
Richard W. Cass  
Ulysses Currie  
Judith G. Fader  
Joseph E. Foss  
Gary W. Goldstein  
Dorothy Hamill  
Richard J. Himelfarb  
Harriet C. Legum  
Janet B. Livingston  
Annette Merz  
Howard B. Miller, Esq.  
Fred F. Mirmiran  
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

ADMINISTRATION 319
The Faculty

JULY 1, 2009 to JUNE 30, 2010

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]

Marilee C. Allen, M.D.
Professor of Pediatrics [2002; 1981]

Blanche Pearl Alter, M.D.
Visiting Professor of Pediatrics [1999]

Richard F. 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]

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 and Radiological Science [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]

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.
Professor of Surgery [1995; 1983], Professor of Plastic Surgery [1995; 1993]

Lee Randol Barker, M.D.
Professor of Medicine [1995; 1973]

Peter B. Barker, D.Phil.
Professor of Radiology and Radiological Science [2002; 1997], Professor of Oncology [2005]

John G. Bartlett, M.D.
Stanhope Bayne-Jones Professor of Medicine [1980]

Eric B. Bass, M.D., M.P.H.
Professor of Medicine [2005; 1989]

Joan M. Batson, M.D.
Professor of Medicine [2003; 1986]

William A. Baumgartner, M.D.
Vincent L. Gott, M.D. Professor of Cardiac Surgery [1991; 1982], Director of the Division of Cardiac Surgery [2009, 1993], 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 G. Bennett, M.D.
Professor of Medicine [2001; 1987]
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, M.D., D.Sc.
Visiting Professor of Medicine [2005]

Zaver M. Bhujwalla, Ph.D.
Professor of Radiology and Radiological Science [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]

Karin 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 and Radiological Science [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.
Samsung Professor of Medicine [2003; 1992]

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 Oncology [1993; 1985], Joint Appointment in Ophthalmology [1984], Director of the Department of Neurological Surgery [2000]

Neil M. Bressler, M.D.
James P. Gills Professor of Ophthalmology [1997; 1988]

Susan B. 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 E. Bristow, M.D.
Professor of Gynecology and Obstetrics [2008; 1998], Professor of Oncology [2008; 2003]

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 G. 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. Brushtart, M.D.
Thomas M. Brushtart Professor of Hand Surgery in the Department of Orthopedic Surgery [1997; 1983] (on leave of absence to 10/31/09), Professor of Neurology [1999; 1990] (on leave of absence to 10/31/09), Professor of Plastic Surgery [1998; 1994] (on leave of absence to 10/31/09)

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 Orthopedic Surgery [1997; 1983]

Arthur L. Burnett, II, M.D.
Patrick C. Walsh Professor of Urology [2003; 1994]

John R. Burton, M.D.
Mason F. Lord Professor of Geriatric Medicine in the Department of Medicine [1992; 1972]
Arlene Manns Butz, Sc.D.
Professor of Pediatrics [2007; 1996]

Peter Arthur Calabresi, M.D.
Professor of Neurology [2008; 2003]

Joseph Califano, III, M.D.
Professor of Otolaryngology-Head and Neck Surgery [2007; 2000]; Professor of Oncology [2007; 2001]

Hugh G. Calkins, M.D.

Nicholas J. Fortuin, M.D. Professor of Cardiology in the Department of Medicine [2000; 1992]; Professor of Pediatrics [2000; 1995]

Duke E. Cameron, M.D.
James T. Dresher, Sr. Professor of Cardiac Surgery [2001; 1987]; Professor of Pediatrics [2001; 1994]; Interim Director of the Division of Cardiac Surgery [2009]

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 A. Campochiaro, M.D.
George S. and Dolores D. Eccles Professor of Ophthalmology [1991]; Professor of Neuroscience [1991]

Xu Cao, Ph.D.
Visiting Professor of Orthopaedic Surgery [2009]

Michael A. Carducci, M.D.
AEGON Professor of Prostate Cancer Research in the Department of Oncology [2008; 1995]; Professor of Urology [2008; 1995]

Karen C. Carroll, M.D.
Professor of Pathology [2006; 2002]; Joint Appointment in Medicine [2002]

Benjamin S. Carson, M.D.
Benjamin S. Carson, Sr. M.D. and Dr. Evelyn Spiron, RN Professor of Pediatric Neurosurgery [1999; 1984]; Professor of Oncology [1999; 1985]; Professor of Pediatrics [1999; 1987]; Professor of Plastic 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.
Rainey Professor of Pediatric Hematology in the Department of Pediatrics [1998; 1983]; Professor of Oncology [1998; 1997]

Robert A. Casero, Jr., Ph.D.
Professor of Oncology [1999; 1986]

Donald O. Castell, M.D.
Visiting Professor of Medicine [2009] (from 09/01/09)

Michael F. Cataldo, Ph.D.
Professor of Behavioral Biology in the Department of Psychiatry [1990; 1975]; Professor of Pediatrics [2001; 1975]

Richard E. Chaisson, M.D.
Professor of Medicine [1998; 1988]

Aravinda Chakravarti, Ph.D.
Professor of 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, M.B.B.S.
Professor of Medicine [1996; 1980]

Alex Yung-Chi Chang, M.D.
Professor of Oncology [1999]

Patricia Charache, M.D.
Professor of Pathology [1992; 1973]; Professor of Medicine [1992; 1964]; Professor of Oncology [1996]

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.
Professor of Oncology [2004]; Professor of Dermatology [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.
Jacob C. Handelsman Professor of Abdominal Surgery [2006; 1992]; Professor of Oncology [2006; 2009]; Professor of Radiology [2006; 2009]

Horacio Cingolani, M.D.
Visiting Professor of Medicine [1990]

Curt I. Civin, M.D.
Adjunct Professor of Oncology [2009; 1979]; Adjunct Professor of Pediatrics [2009; 1979]

Douglas Paul Clark, M.D.
Professor of Pathology [2008; 1994]; Professor of Oncology [2008; 2001]

Thomas Landes Clemens, Ph.D.
Visiting Professor of Orthopaedic Surgery [2009]

Janice E. Clements, Ph.D.
Mary Wallace Stanton Professor for Faculty Affairs; University Distinguished Service Professor of Molecular and Comparative Pathobiology [1990; 1988]; Joint Appointment in Molecular Biology and Genetics [1984]; Professor of Neurology [1991; 1978]; Professor of Pathology [1998]; 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], 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 [2003], Visiting Professor of Oncology [2000]

Nancy Abbey Collop, M.D.
Professor of Medicine [2009; 2002], Professor of Neurology [2009; 2008]

Paul M. Colombani, M.D.
Robert Garrett Professor of Pediatric Surgery [1994; 1983], Professor of Oncology [1994; 1986], Professor of Pediatrics [1995; 1984], Director of the Division of Pediatric Surgery [1992]

Carolyn Corlies Compton, M.D., Ph.D.
Adjunct Professor of Pathology [2005]

Edward Jackson Cone, Ph.D.
Adjunct Professor of Psychiatry [2005; 1998]

John Victor Conte, Jr., M.D.
Professor of Cardiac Surgery [2008; 1998]

David S. Cooper, M.D.
Professor of Medicine [1996; 1985]

Lisa Cooper, M.D., M.P.H.
Professor of Medicine [2007; 1994]

Jeffry L. Corden, Ph.D.
Professor of Molecular Biology and Genetics [1998; 1982]

David R. Corbinath, M.D.
Professor of Neurology [1995; 1982], Professor of Neurological Surgery [2007]

Andrew John Cosgarea, M.D.
Professor of Orthopedic 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], Joint Appointment in Molecular Biology and Genetics [1995], Professor of Oncology [1997], Professor of Pathology [1997; 1995], Vice Dean for Research [2000]

Robert F. Dannals, Ph.D.
Professor of Radiology and Radiological Science [1996; 1982]

Nancy E. Davidson, M.D.
Adjunct Professor of Oncology [2009; 1986]

Ted 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; 1984]

Catherine DeAngelis, M.D., M.P.H.
Professor of Pediatrics [1986; 1978] (on leave of absence)

A. Lee Dellon, M.D.
Professor of Plastic Surgery [1994; 1978], Professor of Neurological Surgery [1994; 1984]

Angelo M. 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]

J. Raymond DePaulo, Jr., M.D.
Henry Shipps Professor of Psychiatry [1993; 1977], Director of the Department of Psychiatry and Behavioral Sciences [2002]

Stephen V. Desiderio, M.D., Ph.D.
Professor of Molecular Biology and Genetics [1995; 1984], Director of the Institute for Basic Biomedical Sciences [2003]

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], Joint Appointment in Molecular Biology and Genetics [1994], Assistant Professor of Neurological Surgery [1994]

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 [1999], 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]

J. Stephen Dumler, M.D.  
Professor of Pathology [2003; 1993]

Christopher J. Earley, M.B.B.Ch., Ph.D.  
Professor of Neurology [2008; 1992]

Frederic E. Eckhauser, M.D.  
Mark M. Ravitch Professor of Surgery [2001]

William A. Edelstein, Ph.D.  
Visiting Professor of Radiology [2007]

Gershom Efron, M.B.B.Ch.  
Professor of Surgery [1997; 1977]

Mario A. Eisenberger, M.D.  
R. Dale Hughes Professor of Oncology [1998; 1993], Professor of Urology [1998; 1993]

Dariush Elahi, Ph.D.  
Professor of Surgery [2005], Joint Appointment in Medicine [2007]

Ana Belen Elgoyhen, Ph.D.  
Adjunct Professor of Otolaryngology-Head and Neck Surgery [2009]
Charles W. Flexner, M.D.  
Professor of Medicine [2005; 1989], Professor of Pharmacology and Molecular Sciences [2005; 1989]

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]

Arlene A. Forastiere, M.D.  
Professor of Oncology [1998; 1988], Professor of Otolaryngology-Head and Neck Surgery [1998; 1988], Professor of Radiation Oncology and Molecular Radiation Sciences [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]

Nicholas J. Fortuin, M.D.  
Professor of Medicine [1986; 1971]

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 and Radiological Science [2007; 2002]

Linda P. Fried, M.D., M.P.H.  
Mason F. Lord Professor of Geriatric Medicine in the Department of Medicine [1997; 1985] (on leave of absence to 12/31/09)

Alan D. Friedman, M.D.  
Professor of Oncology [2008; 1989], Professor of Pediatrics [2008; 1991]

David Steven Friedman, M.D., M.P.H., Ph.D.  
Professor of Ophthalmology [2008; 1996]

John J. Frost, M.D., Ph.D.  
Adjunct Professor of Radiology and Radiological Science [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]

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; 1992]

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 [2009; 1981]

John P. Gearhart, M.D.  
Professor (Pediatric) of Urology [1995; 1984], Adjunct Associate Professor of Pathology [2009; 1997], 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. German, 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; 1992], Joint Appointment in Molecular Biology and Genetics [2001]

Winald R. Gerritsen, M.D., Ph.D.  
Adjunct Professor of Oncology [2009]

Gary Gerstenblith, M.D., J.D.  
Professor of Medicine [1992; 1977], Joint Appointment in Radiology [1992]

Jean-Francois H. Geschwind, M.D.  
Professor of Radiology and Radiological Science [2007; 1996], Professor of Oncology [2007; 2001]

Robert H. 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 [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.  
Investigator of the Howard Hughes Medical Institute

Albert Gjedde, M.D., D.Sc.  
Professor of Radiology [2006]

Michael 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 Orthopedic 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 Surgery [2004; 1982]

David S. 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]

Leon Gordis, M.D., D.P.H.
Professor of Pediatrics [1992; 1966]

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; 1976], 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; 1973], 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.
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.
Professor of Pediatrics in Genetic Medicine [2006; 1992]

Ulrike M. Hamper, M.D., M.B.A.
Professor of Radiology and Radiological Science [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]

Daniel F. Hanley, M.D.
Jeffrey and Harriet Legum Professor of Acute Medicine, Professor of Neurology 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]

John W. Harmon, M.D.
Professor of Surgery [1996]

James C. Harris, Jr., M.D.
Professor of Psychiatry [1997; 1976], Professor of Pediatrics [1997; 1976]

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]
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 B. Hellmann, M.D.
Aliki Perrotti Professor of Medicine [1996; 1986], 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; 1992]

Jack E. Henningfield, Ph.D.
Adjunct Professor of Behavioral Biology in the Department of Psychiatry [2002; 1978]

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 King 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]

H. Logan Holtgrewe, M.D.
Professor of Urology [2001; 1988]

Karen Margaret Horton, M.D.
Professor of Radiology and Radiological Science [2008; 1997]

Ralph H. Hruban, M.D.
Professor of Pathology [1999; 1990], Professor of Oncology [1999; 1995]

Steven S. 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]

Thierry A.G.M. Huisman, M.D.
Visiting 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]

Grover M. Hutchins, M.D.
Professor of Pathology [1983; 1966], Joint Appointment in Art as Applied to Medicine [1994]

Nicholas T. Iliff, M.D.
Charles E. Iliff, III M.D. Professor of Ophthalmology [2003; 1978], Professor of Plastic 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 Duohon and Jennifer and John Chalsty Professor of Urology [1998; 1988], Professor of Oncology [1998; 1992]

Ethelyn W. Jabs, M.D.
Adjunct Professor of Pediatrics [2007; 1984], Adjunct Professor of Medicine [2007; 1990], Adjunct Professor of Plastic Surgery [2007; 1993]

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.
Dana and Albert “Cubby” Broccoli Professor of Oncology [2002; 1992], Professor of Pathology [1999]

Kay Redfield Jamison, Ph.D.
Professor of Psychiatry [1993; 1987]

Henry D. Jampel, M.D.
Odd Fellows Professor of Ophthalmology [2003; 1988]

Jonathan Peter Jarow, M.D.
Professor of Urology [2003; 1997], Professor of Pathology [2003; 1997]

Donald R. Jasinski, M.D.
Professor of Medicine [1992; 1985]

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]

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; 1988]

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 and Radiological Science [1991; 1981]

Richard J. Jones, M.D.
Professor of Oncology [1999; 1987], Professor of Medicine [2005]

Anthony N. Kalloo, M.B.B.S.
Moses and Helen Golden Paulson Professor of Medicine [2006; 1988]

Sewon Kang, M.D.
Noxell Professor of Dermatology [2008], Director of the Department of Dermatology [2008]

Peter W. Kaplan, M.B.B.S.
Professor of Neurology [2003; 1987]

Judith E. Karp, M.D.
Professor of Oncology [2002; 1985], Professor of Medicine [2002; 1975]

Edward Kevin Kasper, M.D.
E. Cowles Andrus Professor of Cardiology in the Department of Medicine [2007; 1992]

David A. Kass, M.D.
Abraham and Virginia Weiss Professor of Cardiology in the Department of Medicine [1998; 1986], Professor of Biomedical Engineering [1998; 1992]

Walter Erwin Kaufmann, M.D.
Professor of Pathology [2007; 1994], Professor of Neurology [2007; 1995], Professor of Pediatrics [2007; 1992], Professor of Psychiatry [2007; 1996], Professor of Radiology [2007; 2000]

Gabor D. Kelen, M.D.
Professor of Emergency Medicine [1993; 1984], Director of the Department of Emergency Medicine [1993]

Richard Ian Kelley, M.D., Ph.D.
Professor of Pediatrics [2003; 1988]

Thomas J. Kelly, Jr., M.D., Ph.D.
Professor of Molecular Biology and Genetics [1980; 1972] (on leave of absence), Director of the Department of Molecular Biology and Genetics [2002; 1982]

David E. Kern, M.D., M.P.H.
Professor of Medicine [2007; 2004]

Edward G. Lakatta, M.D.
Professor of Medicine [1987; 1973]

Erich K. Lang, M.D.
Visiting Professor of Radiology and Radiological Science [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; 1985], 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]

Byung-Boong Lee, M.D., Ph.D.  
Visiting Professor of Surgery [1997]

Se-Jin Lee, M.D., Ph.D.  
Professor of Molecular Biology and Genetics [2001; 1991]

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], Joint Appointment in Neuroscience [2007]

Ronald P. Lesser, M.D.  
Professor of Neurology [1993; 1986], Professor of Neurological Surgery [1994; 1987]

Michael A. Levine, M.D.  
Visiting Professor of Pediatrics [2003; 1998]

Hyam I. 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]
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.
Professor of Neuroscience [2003; 2000]
W. Lowell Maughan, M.D.
Professor of Medicine [1995; 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]
Edward F. McCarthy, Jr., M.D.
Professor of Pathology [2000; 1977], Professor of Orthopedic Surgery [2000; 1977]
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 and Radiological Science [2007; 1988], Director of the Department of Biomedical Engineering [2007]
Barry Ross Meisenberg, M.D.
Visiting Professor of Oncology [2008]
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 and Radiological Science [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, M.D., D.Phil.  
Professor of Urology [1996; 1983]

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; 1984]

Avindra Nath, M.D.  
Professor of Neurology [2002], Professor of Neuroscience [2002]

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 [2003; 1992], 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], Director of the Department of Oncology [2008]

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]

David G. Nichols, M.D.  
Mary Wallace Stanton Professor of Education, Professor of Anesthesiology and Critical Care Medicine [1998; 1983], 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 M. Nogee, M.D.  
Professor of Pediatrics [2008; 1992]

Philip S. Norman, M.D.  
Professor of Medicine [1999; 1956]

Daniel Nyhan, M.B.B.S.  
Chairman of the Department of Anesthesiology and Critical Care Medicine [2002; 1985], Associate Professor of Surgery [2001]

Brian O’Rourke, Ph.D.  
Professor of Medicine [2004; 1993]

G. Johan Offerhaus, M.D., M.P.H., Ph.D.  
Visiting Professor of Medicine [1997], Visiting Professor of Pathology [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]

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]

Duojia Pan, Ph.D.  
Professor of Molecular Biology and Genetics [2009; 2004], Professor of Oncology [2009; 2004], Investigator of the Howard Hughes Institute

Drew M. 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.  
Professor of Oncology [2005; 1999] (on leave of absence from 09/01/09), Joint Appointment in Health Sciences Informatics [2006] (on leave of absence from 09/01/09)

Alan W. 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 and Radiological Science [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 [2007; 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 and Radiological Science [2007; 1995], Associate Professor of Oncology [2002], Professor of Pharmacology and Molecular Sciences [2007; 2003], Joint Appointment in Psychiatry [2009], Professor of Radiation Oncology and Molecular Radiation Sciences [2008]

Aleksander S. Popel, Ph.D.
Professor of Biomedical Engineering [1988; 1984], Professor of Medicine [2007]

Neil R. Powe, M.D., M.P.H.
Distinguished Service Professor of Medicine [2009; 1986]

Donald L. Price, M.D.
Professor of Pathology [1978; 1971], Professor of Neurology [1978; 1971], Professor of Neuroscience [1983]

Peter J. 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]

Harry A. 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.
Professor of Psychiatry [1993; 1978], Joint Appointment in Medicine [1993]

Lorraine C. Racusen, M.D.
Professor of Pathology [2001; 1983]

Sally Radovick, M.D.
Lawson Wilkins Professor of Pediatric Endocrinology in the Department of Pediatrics [2005]

Srinivasa 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 in Genetic Medicine [1999; 1985]

Michael X. Repka, M.D.
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 and Radiological Science [1999; 1993]

Gregory J. Riggins, M.D., Ph.D.
Irving J. Sherman Research Professor of Neurosurgery [2008; 2003], Professor of Oncology [2008; 2003]

Nancy K. Roderer, M.L.S.
Professor of Health Sciences Informatics [2009; 2000], Associate Professor of Medicine [2008], Acting Director of the Division of Health Sciences Informatics [2000], Director of the Welch Medical Library [2000]
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Academic Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark Charles Rogers, M.D.</td>
<td>Adjunct Professor of Anesthesiology and Critical Care Medicine [1996]</td>
<td></td>
</tr>
<tr>
<td>Anne M. Rompalo, M.D.</td>
<td>Professor of Medicine [2003; 1987], Associate Professor of Gynecology and Obstetrics [1995; 1993]</td>
<td></td>
</tr>
<tr>
<td>Brigitte Maria Ronnett, M.D.</td>
<td>Professor of Pathology [2007; 1995], Professor of Gynecology and Obstetrics [2007; 1997]</td>
<td></td>
</tr>
<tr>
<td>Gabriele V. Ronnett, M.D., Ph.D.</td>
<td>Professor of Neuroscience [2000; 1989], Professor of Neurology [2000; 1989]</td>
<td></td>
</tr>
<tr>
<td>Kenneth D. Rose, Ph.D.</td>
<td>Professor of Functional Anatomy and Evolution [1990; 1980]</td>
<td></td>
</tr>
<tr>
<td>Antony Rosen, M.B.Ch.B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mary Betty Stevens Professor of Medicine [2002; 1993], Professor of Pathology [2002; 1993]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beryl J. Rosenstein, M.D.</td>
<td>Professor of Pediatrics [1989; 1966]</td>
<td></td>
</tr>
<tr>
<td>Dorothy L. Rosenthal, M.D.</td>
<td>Professor of Pathology [1995], Professor of Gynecology and Obstetrics [1999]</td>
<td></td>
</tr>
<tr>
<td>Christopher A. Ross, M.D., Ph.D.</td>
<td>Professor of Psychiatry [1996; 1987], Professor of Neurology [2003], Professor of Neuroscience [1997; 1989], Professor of Pharmacology and Molecular Sciences [2009]</td>
<td></td>
</tr>
<tr>
<td>Jeffrey D. Rothstein, M.D., Ph.D.</td>
<td>Professor of Neurology [2000; 1989], Professor of Neuroscience [2000; 1997]</td>
<td></td>
</tr>
<tr>
<td>Peter C. Rowe, M.D.</td>
<td>Sunshine Natural Wellbeing Foundation Professor of Chronic Fatigue Syndrome and Related Disorders in the Department of Pediatrics [1999; 1991]</td>
<td></td>
</tr>
<tr>
<td>Haya R. Rubin, M.D., Ph.D.</td>
<td>Adjunct Professor of Medicine [2003; 1990]</td>
<td></td>
</tr>
<tr>
<td>Richard R. Rubin, Ph.D.</td>
<td>Professor of Medicine [2007; 1994], Professor of Pediatrics [2007; 1991]</td>
<td></td>
</tr>
<tr>
<td>Christopher B. Ruff, Ph.D.</td>
<td>Professor of Functional Anatomy and Evolution [1994; 1983], Professor of Orthopedic Surgery [1994; 1983], Director of The Center for Functional Anatomy and Evolution [2001]</td>
<td></td>
</tr>
<tr>
<td>David K. Ryugo, Ph.D.</td>
<td>Professor of Otolaryngology-Head and Neck Surgery [1992; 1987], Professor of Neuroscience [1993; 1987]</td>
<td></td>
</tr>
<tr>
<td>Murray B. Sachs, Ph.D.</td>
<td>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]</td>
<td></td>
</tr>
<tr>
<td>Ned Charlton Sacktor, M.D.</td>
<td>Professor of Neurology [2009; 1994]</td>
<td></td>
</tr>
<tr>
<td>Eiichi Saitoh, M.D.</td>
<td>Adjunct Professor of Physical Medicine and Rehabilitation [2007]</td>
<td></td>
</tr>
<tr>
<td>Jay H. Sanders, M.D.</td>
<td>Adjunct Professor of Medicine [1997]</td>
<td></td>
</tr>
<tr>
<td>Alfred P. Sanfilippo, M.D., Ph.D.</td>
<td>Adjunct Professor of Pathology [2000; 1993], Director of the Department of Pathology [2001; 1993]</td>
<td></td>
</tr>
<tr>
<td>Andrew J. Satin, M.D.</td>
<td>Professor of Gynecology and Obstetrics [2007]</td>
<td></td>
</tr>
<tr>
<td>Christopher D. Saudek, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hugh P. McCormick Family Professor of Endocrinology and Metabolism in the Department of Medicine [1992; 1981]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver D. Schein, M.D., M.P.H.</td>
<td>Burton E. Grossman Professor of Ophthalmology [1998; 1990]</td>
<td></td>
</tr>
<tr>
<td>Chester W. Schmidt, Jr., M.D.</td>
<td>Professor of Psychiatry [1994; 1967]</td>
<td></td>
</tr>
<tr>
<td>Ronald L. Schnaar, Ph.D.</td>
<td>Professor of Pharmacology and Molecular Sciences [1990; 1979], Professor of Neuroscience [1990; 1983]</td>
<td></td>
</tr>
<tr>
<td>Jonathan Schneck, M.D., Ph.D.</td>
<td>Professor of Pathology [2001; 1995], Associate Professor of Medicine [1995; 1989], Professor of Oncology [2002]</td>
<td></td>
</tr>
<tr>
<td>Mark P. Schoenberg, M.D.</td>
<td>Bernard L. Schwartz Distinguished Professor of Urologic Oncology, Professor of Urology [2002; 1994], Professor of Oncology [1998; 1995]</td>
<td></td>
</tr>
<tr>
<td>Lawrence P. Schramm, Ph.D.</td>
<td>Professor of Biomedical Engineering [1988; 1970], Professor of Neuroscience [1988; 1981]</td>
<td></td>
</tr>
<tr>
<td>Richard David Schulick, M.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steven P. Schulman, M.D.</td>
<td>Professor of Medicine [2004; 1988]</td>
<td></td>
</tr>
<tr>
<td>Alan R. Schwartz, M.D.</td>
<td>Professor of Medicine [2001; 1987]</td>
<td></td>
</tr>
<tr>
<td>Kathleen B. Schwarz, M.D.</td>
<td>Professor of Pediatrics [2000; 1987]</td>
<td></td>
</tr>
<tr>
<td>Cynthia Louise Sears, M.D.</td>
<td>Professor of Medicine [2001; 1988], Professor of Oncology [2006]</td>
<td></td>
</tr>
<tr>
<td>Ola A. Selnes, Ph.D.</td>
<td>Professor of Neurology [2004; 1983]</td>
<td></td>
</tr>
</tbody>
</table>
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 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 P. 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]

Je-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 R. 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]
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]

Eric C. Strain, M.D.
Professor of Psychiatry [2000; 1990]

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 and Radiological Science [2005; 1989]

Khalid Fuad Tabbara, M.D.
Adjunct Professor of Ophthalmology [2004]

Paul Talalay, M.D., D.Sc. (Hon. Causa)
John Jacob Abel Distinguished Service Professor of Pharmacology and Experimental Therapeutics [1963], Director of the Department of Pharmacology and Experimental Therapeutics [1975; 1963]

Mark A. 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]

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]

Nitin 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. Tomaselli, 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. Traill, 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.
Walter E. Dandy Professor of Neurosurgery [2004; 1991], Professor of Otolaryngology-Head and Neck Surgery [2004; 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 Associate Professor of Neurology [1988] (to 09/30/09), Adjunct Professor of Neuroscience [2009; 1988] (to 09/30/09), Adjunct Associate Professor of Neuroscience [1988] (to 09/30/09)

John A. Ulatowski, M.D., Ph.D.
Mark C. Rogers Professor of Anesthesiology [2003; 1990], Professor of Neurological Surgery [2003; 1993], Professor of Neurology [2003; 1993], 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.
Professor of Pediatrics in Genetic Medicine [1987; 1975], Joint Appointment in Medicine [1980; 1976], Joint Appointment in Molecular Biology and Genetics [1986], Professor of Ophthalmology [1992], Henry J. Knott Director of the McKusick-Nathans Institute of Genetic Medicine [2007]

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 Biological Chemistry [2007; 2003], Professor of Biomedical Engineering [2007; 2006]
Peter C.M. Van Zijl, Ph.D.
Professor of Radiology and Radiological Science [1997; 1991], Professor of Biophysics and Biophysical Chemistry [1997; 1993], Professor of Oncology [2005]

Craig Alan Vander Kolk, M.D.
Professor of Plastic Surgery [2003; 1987], Professor of Pediatrics [2003; 1987]

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; 1976], Professor of Pediatrics [2002; 1976]

Raphael P. Viscidi, M.D.
Professor of Pediatrics [2005; 1987], Professor of Oncology [2009]

Benedetto Vitiello, M.D.
Adjunct Professor of Psychiatry [2007; 2005]

Georgia B. Vogelsang, M.D.
Professor of Oncology [1998; 1986] (to 09/30/09)

Bert Vogelstein, M.D.
Clayton Professor of Oncology [1989; 1978], Joint Appointment in Molecular Biology and Genetics [1992], Professor of Pathology [1998]

Eric Carl Vonderheid, M.D.
Professor of Dermatology [2002], Professor of Oncology [2002]

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]

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]

Thomas J. Walsh, M.D.
Adjunct Professor of Pathology [2004]

Jeremy D. Walston, M.D.
Professor of Medicine [2009; 1993]

Gary S. Wand, M.D.
Alfredo Riviere and Norma Rodriguez de Riviere Professor of Endocrinology in the Department of Medicine [1999; 1985], Professor of Psychiatry [1999; 1993]

Xiaqin Wang, Ph.D.
Professor of Biomedical Engineering [2005; 1995], Professor of Neuroscience [2005; 1995], Professor of Otolaryngology-Head and Neck Surgery [2005]
Raimond L. Winslow, Ph.D.
Professor of Biomedical Engineering [2000; 1991], Joint Appointment in Health Sciences Informatics [2001]

Robert A. Wise, M.D.
Professor of Medicine [1998; 1980], Instructor in Radiology and Radiological Science [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 and Radiological Science [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 Chun-Ying 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 M. Wright, M.D.
Professor of Medicine [2008; 1997]

Christopher L. Wu, M.D.
Professor of Anesthesiology and Critical Care Medicine [2009; 1999]

Tzuy-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]

Weiyang, Ph.D.
Adjunct Professor of Biophysics and Biophysical Chemistry [2004]

John H. Yardley, M.D.
University Distinguished Service Professor of Pathology [1972; 1954], Baxley Professor of Pathology and Director of the Department of Pathology [1992; 1988]

William A. Yasloff, 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 and Radiological Science [1998]

David T. Yue, M.D., Ph.D.
Professor of Biomedical Engineering [1999; 1988], Professor of Neuroscience [1999; 1997]

Andrea 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; 1988]

Howard Zaczur, M.D., Ph.D.
Theodore and Ingrid Baramski 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]

Ran Zeimer, Ph.D.
Morton F. Goldberg Professor of Ophthalmology [1993]

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 Gynecology and Obstetrics [2001; 1989]

Elia Zehnoun, M.D.
Professor of Radiology [2009], Professor of Biomedical Engineering [2009], Director of the Department of Radiology and Radiological Science [2002; 1996]

Roy C. Ziegelstein, M.D.
Professor of Medicine [2006; 1993]
Harvey A. Ziessman, 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 and Radiological Science [2001; 1983], Professor of Otolaryngology-Head and Neck Surgery [2001; 1985]

Stephen R. Zakin, M.D.  
Visiting Professor of Psychiatry [2000], Visiting Professor of Radiology and Radiological Science [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. Firof 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.  
Professor Emeritus of History of Medicine [2004; 1984], Distinguished Service Professor Emeritus in the Department of History of Medicine, Science and Technology, 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. Bulkeley, M.D.  
Professor Emeritus of Surgery [1988; 1977]

Edmund Y. S. Chao, Ph.D.  
Professor Emeritus of Orthopedic Surgery [1992]

Samuel Charache, M.D.  
Professor Emeritus of Medicine [1995; 1966], Professor Emeritus of Pathology [1981]

Barton Childs, M.D.  
Professor Emeritus of Pediatrics [1981; 1946]

C. Lockard Conley, M.D.  
University Distinguished Service Professor Emeritus of Medicine [1980; 1946]

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]

John M. Freeman, M.D.  

Clara Fronticelli, Ph.D.  
Professor Emerita of Anesthesiology and Critical Care Medicine [2001; 1999]

Vincent L. Gott, M.D.  
Richard Bennett Darnall Professor Emeritus of Cardiac Surgery [2008; 1965]

William R. Green, M.D.  
Professor Emeritus of Ophthalmology [2006; 1968], Professor Emeritus of Pathology [2006; 1968]

J. Alex Haller, Jr., M.D.  

Barbara J. Hawkins, Ph.D.  

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; 1957]

Robert H. Heptinstall, M.D.  
University Distinguished Service Professor Emeritus of Pathology [1967; 1962], 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. Holzman, M.D.  
Professor Emeritus of Pediatrics [1984; 1964]

John E. Hoopes, M.D.  
Professor Emeritus of Plastic 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], Massey Professor of Biomedical Engineering and 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.
Professor Emeritus of Otolaryngology-Head and Neck Surgery [2001; 1970]

M. Daniel Lane, Ph.D.
Professor Emeritus of Biological Chemistry [1969], University Distinguished Service Professor of Biological Chemistry, DeLamar Professor and 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]

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]

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. Causa)
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], 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]

Arnall Patz, M.D.

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]

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 Orthopedic 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 Emeritus in Psychiatry [1980; 1961]

Henry M. Seidel, M.D.
Professor Emeritus of Pediatrics [1996; 1950]

Arthur M. Silverstein, Ph.D.
Odd Fellows Professor Emeritus of Ophthalmic Immunology in the Department of Ophthalmology [1989; 1959], Joint Appointment Emeritus in History of Medicine [1990; 1986]

Philip 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; 1987]

George B. Udvarhelyi, M.D.
Professor Emeritus of Neurological Surgery [1984; 1955]

T. Phillip Waalkes, M.D., Ph.D.
Professor Emeritus of Oncology [1988; 1975]

Jerry A. Winkelstein, M.D.
Professor Emeritus of Pediatrics [1983; 1973], Professor Emeritus of Medicine [1998], Professor Emeritus of Pathology [1998]

Philip D. Zieve, M.D.
Professor Emeritus of Medicine [2008; 1963]

William H. Zinkham, M.D.
Professor Emeritus of Pediatrics [1995; 1954], Professor Emeritus of Oncology [1995; 1975] Distinguished Service Professor Emeritus of Pediatrics and Oncology

ASSOCIATE PROFESSORS

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 and Radiological Science [1988; 1980]

Michael C. Ain, M.D.
Associate Professor of Orthopedic Surgery [2006; 1995], Associate Professor of Neurological Surgery [2006; 2000]

Esen Karamursel Akpek, M.D.
Associate Professor of Ophthalmology [2005; 1999]

Selwa A.F. Al-Hazzaa, M.D.
Adjunct Associate Professor of Ophthalmology [2008; 2003]

Rhoda M. Alani, M.D.
Associate Professor of Oncology [2004; 1999], Associate Professor of Dermatology [2004; 1999], Joint Appointment in Molecular Biology and Genetics [1999]

Eric Matthew Aldrich, M.D., Ph.D.
Associate Professor of Neurology [2008; 1999], Joint Appointment in Physical Medicine and Rehabilitation [2000]

Syed Zulfiquar Ali, M.B.B.S.
Associate Professor of Pathology [2003; 1997], Associate Professor of Radiology [2003; 2002]

Andrew F. Angelino, M.D.
Associate Professor of Psychiatry [2009; 1999]

Aravind Arepally, M.D.
Associate Professor of Radiology and Radiological Science [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 and Radiological Science [2004; 1997], Associate Professor of Oncology [2004]

Bimal H. Ashar, M.D.
Associate Professor of Medicine [2008; 1998]

Mohamed G. Atta, M.B.B.Ch.
Associate Professor of Medicine [2008; 1997]

Paul Gisbert Auwaerter, M.D., M.B.A.
Associate Professor of Medicine [2003; 1996]

Thomas R. Aversano, M.D.
Associate Professor of Medicine [1993; 1985]

Dimitrios 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 Pathology [2004]

Douglas W. Ball, M.D.
Associate Professor of Medicine [2002; 1991], Associate Professor of Oncology [2002; 1991]

Theodore A. Baramki, M.D.
Associate Professor of Gynecology and Obstetrics [1980; 1965], Joint Appointment in Pediatrics [1980; 1969]

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]

Kathleen Carole Barnes, Ph.D.
Associate Professor of Medicine [2002; 1995]

Detlef Bartelt, M.D.
Associate Professor of Radiology and Radiological Science [2007; 2005]

Klemens H. Barth, M.D.
Associate Professor of Radiology and Radiological Science [1980; 1974]

Susan Joan Bartlett, Ph.D.
Adjunct Associate Professor of Medicine [2008; 1997]

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]

Amy J. Bastian, Ph.D.
Associate Professor of Neuroscience [2005; 2001], Associate Professor of Neurology [2005; 2001], Associate Professor of Physical Medicine and Rehabilitation [2005; 2001]

Mary Catherine Beach, M.D., M.P.H.
Associate Professor of Medicine [2008; 2002]
Thomas J. Beck, Sc.D.
Associate Professor of Radiology and Radiological Science [1997; 1994]

Patrice M. Becker, M.D.
Associate Professor of Medicine [2002; 1992]

Atul Bedi, M.B.B.S.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008], Associate Professor of Oncology [2002; 1994]

Ashley Behrens, M.D.
Associate Professor of Ophthalmology [2009; 2003]

Harolyn M. E. Belcher, M.D.
Associate Professor of Pediatrics [2003; 1996]

Stephan M. Belkoff, Ph.D.
Associate Professor of Orthopedic Surgery [2008]

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 and Radiological Science [2005], Joint Appointment in Medicine [2005]

Sean Michael Berenholtz, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2009; 2000], Assistant Professor of Surgery [2001]

Dwight Edward Bergles, Ph.D.
Associate Professor of Neurosciences [2005; 2000], Assistant Professor of Otolaryngology-Head and Neck Surgery [2005]

Ivor D. Berkowitz, M.B.B.Ch.
Associate Professor of Anesthesiology and Critical Care Medicine [1993; 1984], Associate Professor of Pediatrics [1994; 1987]

Fred S. Berlin, M.D., Ph.D.
Associate Professor of Psychiatry [1986; 1978]

David M. Berman, M.D., Ph.D.
Associate Professor of Pathology [2008; 2001], Associate Professor of Oncology [2008; 2004], Assistant Professor of Urology [2003]

Edward J. Bernacki, M.D., M.P.H.
Associate Professor of Medicine [1991]

Belur S. Bhagavan, M.B.B.S.
Associate Professor of Pathology [1983; 1966]

Nasir Islam Bhatti, M.B.B.S.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008; 2000], Joint Appointment in Anesthesiology and Critical Care Medicine [2002]

Sheng Bi, M.D.
Associate Professor of Psychiatry [2009; 2001] (from 10/01/09), Assistant Professor of Psychiatry [2003; 2001] (to 09/30/09)

Jessica L. Bienstock, M.D., M.P.H.
Associate Professor of Gynecology and Obstetrics [2003; 1993]

O. Joseph Bienvenu, M.D.
Associate Professor of Psychiatry [2007; 1999]

Joseph S. Bierman, M.D.
Associate Professor of Psychiatry [1985; 1968]

Mary Elizabeth Blue, Ph.D.
Associate Professor of Neurology [2000; 1989], Associate Professor of Neuroscience [2001]

Corrine D. Boehm, M.S.
Associate Professor of Pediatrics in Genetic Medicine [1998; 1982]

Mark E. Bohlman, M.D.
Associate Professor of Radiology and Radiological Science [1991; 1980]

William E. Bolger, M.D.
Adjunct Associate Professor of Otolaryngology-Head and Neck Surgery [2005]

Karen I. Bolla, Ph.D.
Associate Professor of Neurology [1995; 1985], Joint Appointment in Psychiatry [1987]

Jonathan Benjamin Borak, M.D.
Adjunct Associate Professor of Medicine [2003]

Ivan Borrello, M.D.
Associate Professor of Oncology [2008; 1999]

Leigh Ebony Boulware, M.D., M.P.H.
Associate Professor of Medicine [2008; 2001]

Simeon Antonov Boyadjiev, M.D.
Adjunct Associate Professor of Urology [2007]

George M. Boyer, M.D.
Adjunct Associate Professor of Medicine [2004]

Michael Patrick Boyle, M.D.
Associate Professor of Medicine [2006; 1999]

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, M.D., D.V.M., 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]

Carol L. Burek, Ph.D.
Associate Professor of Pathology [1998; 1994]

David E. Bush, M.D.
Associate Professor of Medicine [2004; 1983]

Ronald P. Byank, M.D.
Associate Professor of Orthopedic Surgery [1995; 1978]
Patrick Joseph Byrne, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2007; 2001], Associate Professor of Dermatology [2008]

Kurtis A. 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]

John P. Carey, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2004; 2000]

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 and Radiological Science [2006]

Livia A. Casciola-Rosen, Ph.D.
Associate Professor of Medicine [2000]

Vincenzo Casolaro, M.D., Ph.D.
Associate Professor of Medicine [2006; 1996] (on leave of absence to 07/31/09)

Michael James Choi, M.D.
Associate Professor of Emergency Medicine [2004; 1992]

Charles Patrick Chaulk, M.D., M.P.H.
Adjunct Associate Professor of Medicine [2007; 1994]

Patrick Joseph Byrne, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2007; 2001], Associate Professor of Dermatology [2008]

Kurtis A. 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]

John P. Carey, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2004; 2000]

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 and Radiological Science [2006]

Livia A. Casciola-Rosen, Ph.D.
Associate Professor of Medicine [2000]

Vincenzo Casolaro, M.D., Ph.D.
Associate Professor of Medicine [2006; 1996] (on leave of absence to 07/31/09)

Michael J. Caterina, M.D., Ph.D.
Associate Professor of Biological Chemistry [2004; 1999], Associate Professor of Neuroscience [2004; 1999]

Patrizio P. Caturegli, M.D.
Associate Professor of Pathology [2007; 1998], Joint Appointment in Medicine [2007]

Pablo A. Celnik, M.D.
Associate Professor of Physical Medicine and Rehabilitation [2009; 2003] (from 10/01/09), Assistant Professor of Physical Medicine and Rehabilitation [2003] (to 09/30/09), Associate Professor of Neurology [2009; 2004] (from 10/01/09), Assistant Professor of Neurology [2004] (to 09/30/09)

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 Gynecology and Obstetrics [2005; 2003], Assistant Professor of Medicine [2005], 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; 1994]

Roy S. Chuck, M.D., Ph.D.
Associate Professor of Ophthalmology [2004] (to 07/31/09), Occupying the Tom Clancy Professorship in Ophthalmology

Jeanne M. 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]

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]

Charles E. Connor, Jr., Ph.D.
Associate Professor of Neuroscience [2002; 1996]

David W. Cooke, M.D.
Associate Professor of Pediatrics [2001; 1993]

Brendan P. Cormack, Ph.D.
Associate Professor of Molecular Biology and Genetics [2004; 1998]

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 Cosgrove, M.D.
Associate Professor of Medicine [2009; 2001] (from 10/01/09), Assistant Professor of Medicine [2003; 2001] (to 09/30/09)
Lino Covi, M.D.
Associate Professor of Psychiatry [1972; 1960]

Andrea L. Cox, M.D., Ph.D.
Associate Professor of Medicine [2009; 2003]
(from 10/01/09), Assistant Professor of Medicine
[2003] (to 09/30/09), Associate Professor of Oncology
[2009; 2004] (from 10/01/09), Assistant Professor of Oncology [2004] (to 09/30/09)

Barbara J. Crain, M.D., Ph.D.
Associate Professor of Pathology [1993],
Associate Professor of Neurology [1993],
Associate Professor of Oncology [1996]

William A. Crawley, M.D., D.D.S.
Associate Professor of Plastic 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]

Michael T. Crow, Ph.D.
Associate Professor of Medicine [2002]

Carmen Cuffari, M.D.
Associate Professor of Pediatrics [2005; 1996]

Laurie E. Cutting, Ph.D.
Associate Professor of Neurology [2006; 1999]

Richard W. Dabb, M.D.
Associate Professor of Plastic Surgery [1999]

Gislin Dagnelie, 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 L. Daumit, M.D.
Associate Professor of Medicine [2006; 1999],
Joint Appointment in Psychiatry [2008]

Christos Davatzikos, Ph.D.
Associate Professor of Radiology and Radiological
Science [2001; 1995]

Randy F. Davis, M.D.
Associate Professor of Orthopedic Surgery
[2003; 1983], Associate Professor of Neurological
Surgery [2003; 1991]

Cecilia T. Davoli, M.D., M.P.H.
Associate Professor of Pediatrics [2008; 1993]

Iser Guillermo DeLeon, Ph.D.
Associate Professor of Psychiatry [2008; 1999]

Charles C. Della Santina, M.D., Ph.D.
Associate Professor of Otolaryngology-Head and
Neck Surgery [2007; 2002], Associate Professor of Biomedical Engineering [2007; 2002]

Samuel Ray Denmeade, M.D.
Associate Professor of Oncology [2004; 1998],
Associate Professor of Pharmacology and Molecular Sciences [2005], Associate Professor of Urology [2008]

Leonard R. Derogatis, Ph.D.
Associate Professor of Psychiatry [2003]

Prashant Desai, Ph.D.
Associate Professor of Oncology [2009; 2003]
(from 10/01/09), Assistant Professor of Oncology [2003] (to 09/30/09)

John E. Desmond, Ph.D.
Associate Professor of Neurology [2005], Joint Appointment in Neuroscience [2007]

Barbara Detrick, Ph.D.
Associate Professor of Pathology [1999]

E. Gene Deune, M.D.
Associate Professor of Orthopedic Surgery [1999],
Associate Professor of Plastic Surgery [2006; 1998]

Cathy W. DiBernardo, R.N.
Associate Professor of Ophthalmology [2004; 2000]

Mukund S. Didolkar, M.B.B.S.
Associate Professor of Surgery [1992]

Gregory B. 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]

Sylvain Dore, Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2004; 2000], Associate Professor of Pharmacology and Molecular Sciences [2009]

Susan Elizabeth Dorman, M.D.
Associate Professor of Medicine [2008; 2001]

Charles G. Drake, M.D., Ph.D.
Associate Professor of Oncology [2008; 2002],
Assistant Professor of Urology [2005]

Craig R. Dufresne, M.D.
Associate Professor of Plastic Surgery [2000; 1985]

Eliia Duh, M.D.
Associate Professor of Ophthalmology [2008; 1999]

Donald Dean Duncan, Ph.D.
Associate Professor of Ophthalmology [1995]

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

Samuel C. Durso, M.D.
Associate Professor of Medicine [2002; 1995]

Charles G. 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]

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 and Radiological Science [2005; 1997], Joint Appointment in Health Sciences Informatics [2001]

Rainer M.E. Engel, M.D.
Associate Professor of Urology [1973; 1970]

Eric Andrew Engels, M.D., M.P.H.
Associate Professor of Medicine [2008; 1998]

Emily J. Erbelding, M.D., M.P.H.
Associate Professor of Medicine [2004; 1996], Associate Professor of Pediatrics [2004; 2000]

James R. Eshleman, M.D., Ph.D.
Associate Professor of Pathology [2002; 1997], Associate Professor of Oncology [2002; 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 M. Fayad, M.D.
Associate Professor of Radiology [2009; 2002] (from 10/01/09), Assistant Professor of Radiology [2002] (to 09/30/09), Assistant Professor of Orthopedic Surgery [2006]

David J. Feller-Kopman, M.D.
Visiting Associate Professor of Medicine [2007]

Robert P. Ferguson, M.D.
Associate Professor of Medicine [1993]

Henry E. Fessler, Jr., Ph.D.
Associate Professor of Psychiatry [2005]

John H. 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]

Rhonda S. Fishel, M.D.
Associate Professor of Surgery [2004; 2000]

Jodi Anne Flaws, Ph.D.
Adjunct Associate Professor of Gynecology and Obstetrics [2002]

Kevin R. Fontaine, Ph.D.
Associate Professor of Medicine [2008; 2001]

Mostafa M. Fraig, M.B.B.Ch.
Associate Professor of Pathology [2007]

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 A. Francomano, M.D.
Associate Professor of Medicine [1992; 1984], Assistant Professor of Pediatrics [1985; 1984]

Deborah Anne Frassica, M.D.
Associate Professor of Radiation Oncology and Molecular Radiation Sciences [2004; 2003], Associate Professor of Oncology [2004; 1995]

Carmelita G. Frondoza, Ph.D.
Associate Professor of Orthopedic Surgery [1999; 1991]

Ephraim J. Fuchs, M.D.
Associate Professor of Oncology [2002; 1994]

Susan Lynn Furth, M.D.
Associate Professor of Pediatrics [2004; 1996]

Nicholas Roger Gaiano, Ph.D.
Associate Professor of Neurology [2007; 2002], Associate Professor of Neuroscience [2007; 2002], Associate Professor of Oncology [2007; 2003]

Philippe Gailloud, M.D.
Associate Professor of Radiology and Radiological Science [2005; 2001], Assistant Professor of Neurological Surgery [2003], Associate Professor of Neurology [2006]
Alejandro Gandsas, M.D.
Associate Professor of Surgery [2004]

Jairo E. Garcia, M.D.
Associate Professor of Gynecology and Obstetrics [1997]

Suzanne Gartner, Ph.D.
Associate Professor of Neurology [1995] (on leave of absence)

Olga M.B. Gatewood, M.D.
Associate Professor of Radiology and Radiological Science [1976], Associate Professor of Urology [1987]

Bob W. Gayler, M.D.
Associate Professor of Radiology [1973; 1970]

Kelly A. 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., M.P.H., Ph.D.
Associate Professor of Medicine [2003; 1994]

Rene R. Genadry, M.D.
Associate Professor of Gynecology and Obstetrics [1986; 1975]

Romer Gryko G. 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]

Emily Germain-Lee, M.D.
Associate Professor of Pediatrics [2003; 1992]

Joan Page Gerring, M.D.
Associate Professor of Psychiatry [2000; 1981], Associate Professor of Pediatrics [2000; 1981]

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]

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]

F. Michael Gloth, III, M.D.
Associate Professor of Medicine [1998; 1990]

Elisabeth Glowatzki, Ph.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008; 2000], Associate Professor of Neuroscience [2009; 2007]

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 Gradon, M.B.B.S.
Associate Professor of Medicine [2000; 1994]

Ernest Marshall Graham, M.D.
Associate Professor of Gynecology and Obstetrics [2005; 1999]

Thomas J. Graham, M.D.
Associate Professor of Plastic 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 B. 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.
Associate Professor of Pathology [2000; 1996], Associate Professor of Pediatrics [2000; 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 [2008; 1997], Associate Professor of Biomedical Engineering [2008; 2005]

Louis P. Hagopian, Ph.D.
Associate Professor of Psychiatry [2003; 1992]
Misop Han, M.D.
Associate Professor of Urology [2009; 2006],
Associate Professor of Oncology [2009],
Associate Professor of Oncology [2009]
Victoria L. Handa, M.D.
Associate Professor of Gynecology and Obstetrics [2004; 2001]
Andrew P. Harris, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1992; 1984], Associate Professor of Gynecology and Obstetrics [1998; 1987]
Norman James Haughey, Ph.D.
Associate Professor of Neurology [2009; 2002]
Frederick H. Hausheer, M.D.
Adjunct Associate Professor of Oncology [1995]
Stephen J. Heishman, Ph.D.
Adjunct Associate Professor of Behavioral Biology in the Department of Psychiatry [2005; 1988]
Eugenie S. Heitmiller, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1993; 1984], Associate Professor of Pediatrics [1994; 1984]
Richard F. Heitmiller, M.D.
Associate Professor of Surgery [1993; 1987],
Associate Professor of Oncology [1995]
H. Franklin Herlong, M.D.
Associate Professor of Medicine [1985; 1979]
Christian J. Herold, M.D.
Associate Professor of Radiology and Radiological Science [1999; 1992]
Charles Steven Hesdorffer, M.B.B.Ch.
Associate Professor of Medicine [2006], Associate Professor of Oncology [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]
Felicia Hill-Briggs, Ph.D.
Assistant Professor of Medicine [2008; 2005],
Assistant Professor of Physical Medicine and Rehabilitation [2001; 1998]
Charles W. Hogue, Jr., M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2007; 2005]
Jan H. Hoh, Ph.D.
Associate Professor of Physiology [2000; 1994]
Ahmet Hoke, M.D., Ph.D.
Associate Professor of Neurology [2005; 1999],
Associate Professor of Neuroscience [2005; 2002]
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 and Radiological Science [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 E. Howell, M.D.
Associate Professor of Medicine [2009; 1999]
Edbert Brian Hsu, M.D.
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]
Walter C. Hubbard, Ph.D.
Associate Professor of Medicine [1982], Associate Professor of Pharmacology and Molecular Sciences [2008]
Kathy Lynn Hudson, Ph.D.
Associate Professor of Pediatrics in Genetic Medicine [2002]
Richard L. Humphrey, M.D.
Associate Professor of Pathology [1983],
Associate Professor of Medicine [1979; 1967]
David L. Huso, D.V.M., Ph.D.
Associate Professor of Molecular and Comparative Pathobiology [2002; 1989], Associate Professor of Oncology [2004]
Mehboob Ali Hussain, M.D.
Associate Professor of Pediatrics [2009; 2005],
Associate Professor of Biological Chemistry [2009], Associate Professor of Medicine [2009; 2006], Associate Professor of Medicine [2009; 2006]
Nancy Hutton, M.D.
Associate Professor of Pediatrics [1998; 1984]
Noreen A. Hynes, M.D., M.P.H.
Associate Professor of Medicine [2008; 1997]
Christine A. Iacobuzio-Donahue, M.D., Ph.D.
Associate Professor of Pathology [2007; 2003],
Associate Professor of Oncology [2007; 2003],
Associate Professor of Surgery [2009]
W. Jackson Iliff, M.D.
Associate Professor of Ophthalmology [1984; 1976]
Michael A. Jacobs, Ph.D.
Associate Professor of Radiology and Radiological Science [2009; 2001], Associate Professor of Oncology [2009; 2005]
George Issa Jallo, M.D.
Associate Professor of Neurological Surgery [2006; 2003], Associate Professor of Oncology [2006; 2003], Associate Professor of Pediatrics [2006; 2003]
Suzanne M. Jan de Beur, M.D.
Associate Professor of Medicine [2008; 1998]
Jeffrey S. 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 A. Johnson, M.D.
Associate Professor of Orthopedic Surgery [1993; 1984]
Hendree Evelyn Jones, Ph.D.
Associate Professor of Behavioral Biology in the Department of Psychiatry [2004; 1998], Associate Professor of Gynecology and Obstetrics [2005]
Kazuko K. Jones, Ph.D.
Associate Professor of Orthopedic 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], Visiting Associate Professor of Pathology [2009]
Ihab R. Kamel, M.D., Ph.D.
Associate Professor of Radiology [2005; 2000]
Michael J. Kaminsky, M.D.
Associate Professor of Psychiatry [1994; 1976]
James H. Kelly, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [1985], Associate Professor of Neurology [1992]
Douglas Anthony Kerr, M.D., Ph.D.
Associate Professor of Neurology [2005; 1999]
Nagi F. Khouri, M.D.
Associate Professor of Radiology and Radiological Science [1990], Associate Professor of Oncology [2004]
Michael Kidof, Ph.D.
Associate Professor of Psychiatry [2000; 1993]
Karen E. King, M.D.
Associate Professor of Pathology [2006; 1996], Associate Professor of Oncology [2006; 1999]
Landon Stuart King, M.D.
Associate Professor of Medicine [2003; 1997], Associate Professor of Biological Chemistry [2003; 1997]
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 Surgery [1996; 1968]
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. Knierim, Ph.D.
Associate Professor of Neuroscience [2009]
David L. Knox, M.D.
Associate Professor of Ophthalmology [1967; 1962]
Vassilis E. Koliatsos, M.D.
Associate Professor of Pathology [1997; 1989], Associate Professor of Neurology [1997; 1991], Associate Professor of Psychiatry [1997]
Jeanne Kowalski, Ph.D.
Associate Professor of Oncology [2008; 2001]
Dara L. Kraitchman, Ph.D., D.V.M.
Associate Professor of Radiology and Radiological Science [2004; 1996]
Edward S. Kraus, M.D.
Associate Professor of Medicine [1993; 2002]
Gregory Lewis Krauss, M.D.
Associate Professor of Neurology [2003; 1991]
Michael A. Kraut, M.D., Ph.D.
Associate Professor of Radiology and Radiological Science [2001; 1991], Associate Professor of Neurological Surgery [2002], Associate Professor of Oncology [2005]
Prakash Kulkarni, Ph.D.  
Visiting Associate Professor of Urology [2007; 20],  
Visiting Associate Professor of Oncology [2009]  
Irene C. Kuo, M.D.  
Associate Professor of Ophthalmology [2008; 2000]  
Scot C. Kuo, Ph.D.  
Visiting Associate Professor of Biomedical Engineering [2001], Associate Professor of Cell Biology [2006]  
Ellen Ladenheim, Ph.D.  
Associate Professor of Psychiatry [1998; 1992]  
Daniel A. Laheru, M.D.  
Associate Professor of Oncology [2008; 2001]  
Alan M. Lake, M.D.  
Associate Professor of Pediatrics [1991; 1979]  
Stanford I. Lamberg, M.D.  
Associate Professor of Dermatology [1973]  
Rebecca Landa, Ph.D.  
Associate Professor of Psychiatry [1995; 1986]  
Andrew Peter 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 LaPorte, M.D.  
Associate Professor of Orthopedic Surgery [2009; 2001]  
Albert C. 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]  
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 Orthopedic Surgery [2007; 2002]  
Bruce Allen Leff, M.D.  
Associate Professor of Medicine [2000; 1994]  
Maureen A. Lefton-Greif, Ph.D.  
Associate Professor of Pediatrics [2007; 1990],  
Associate Professor of Otolaryngology-Head and Neck Surgery [2007]  
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]  
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, M.D., J.D.  
Associate Professor of Emergency Medicine [2009; 2005]  
Xingde Li, Ph.D.  
Associate Professor of Biomedical Engineering [2008]  
Charles J. 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.  
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 R. Lipsey, M.D.  
Associate Professor of Psychiatry [1992; 1982]  
Mark Chang-Hwa Liu, M.D.  
Associate Professor of Medicine [1994; 1985]  
Rafael H. Llinas, M.D.  
Associate Professor of Neurology [2007; 2000]  
Christine H. Lorenz, Ph.D.  
Visiting Associate Professor of Radiology [2005]  
Gregory M. Lucas, M.D., Ph.D.  
Associate Professor of Medicine [2006; 1997]  
Leo Luznik, M.D.  
Associate Professor of Oncology [2008; 2000]  
Dean 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 Magid, M.D.  
Associate Professor of Radiology and Radiological Science [1990; 1983], Associate Professor of Functional Anatomy and Evolution [2009], Joint Appointment in Orthopedic Surgery [1986]  
Thomas H. Magnuson, M.D.  
Associate Professor of Surgery [1998; 1992]
Mahadevappa Mahesh, Ph.D.
Associate Professor of Radiology and Radiological Science [2008; 1996], Associate Professor of Medicine [2008; 2007]

Ernest Mark Mahone, Ph.D.
Associate Professor of Psychiatry [2007; 1997]

Anirban Maitra, M.B.B.S.
Associate Professor of Pathology [2006; 2001], Associate Professor of Oncology [2006; 2003]

Martin A. Makary, M.D., M.P.H.
Associate Professor of Surgery [2007; 2003], Occupying the Mark M. Ravitch, M.D. Chair in Surgery

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; 1998], Associate Professor of Neurology [2007], Associate Professor of Pathology [2005; 1996]

Nicholas J. 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], Occupying the Elizabeth Treide and A. McGehee Harvey Chair in the Department of the History of Medicine

Michael Robert Marohn, D.O.
Associate Professor of Surgery [2003]

Laura Marsh, M.D.
Associate Professor of Psychiatry [1999; 1998], Associate Professor of Neurology [2003]

Bruce C. Marshall, M.D.
Associate Professor of Medicine [2004]

Elizabeth A. Martinez, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2008; 1998], Assistant Professor of Surgery [2001]

Ciro Roberto Martins, M.D.
Associate Professor of Dermatology [2005; 1998], Joint Appointment in Medicine [2000]

Ranjiv Ignatius Mathews, M.D.
Associate Professor of Urology [2004; 2000], Associate Professor of Pediatrics [2004; 2000]

Elizabeth C. Matsui, M.D.
Associate Professor of Pediatrics [2008; 2003]

William H. 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 McCully, Ph.D.
Associate Professor of Ophthalmology [1994]

Melissa Lee McCarthy, Sc.D.
Associate Professor of Emergency Medicine [2005; 1999]

Michael A. McClinton, M.D.
Associate Professor of Plastic Surgery [2006; 1980]

John Wood McDonald, III, M.D., Ph.D.
Associate Professor of Neurology [2004], Associate Professor of Physical Medicine and Rehabilitation [2004]

Jane E. McGowan, M.D.
Visiting Associate Professor of Pediatrics [2006; 2000]

Sharon McGrath-Morrow, M.D.
Associate Professor of Pediatrics [2002; 1992]

Melvin Gordon Mcnlnis, M.D.
Adjunct Associate Professor of Psychiatry [1997; 1993]

Francis J. McMahon, M.D.
Visiting Associate Professor of Psychiatry [1997; 1993]

Ronnie Charles Mease, Ph.D.
Associate Professor of Radiology [2005; 2003]

Joshua T. Mendell, M.D., Ph.D.
Associate Professor of Pediatrics in Genetic Medicine [2009; 2004], Joint Appointment in Molecular Biology and Genetics [2004]

Shannath L. Merbs, M.D., Ph.D.
Associate Professor of Ophthalmology [2005; 1997], Associate Professor of Oncology [2005; 1999]

William T. Merritt, M.D., M.B.A.
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 Orthopedic 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]

Marlene R. Miller, M.D.
Associate Professor of Pediatrics [2004; 1999]

Redonda Gail Miller, M.D., M.B.A.
Associate Professor of Medicine [2006; 1996]

Erika L. Matunis, Ph.D.
Associate Professor of Cell Biology [2008; 2002]
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]
Guo-li Ming, M.D., Ph.D.
Associate Professor of Neurology [2007; 2003],
Associate Professor of Neuroscience [2007; 2003]
Stanley L. Minken, M.D.
Associate Professor of Surgery [1994; 1982]

Miriam Z. Mintzer, Ph.D.
Associate Professor of Psychiatry [2004; 1998]

Mack C. Mitchell, Jr., M.D.
Associate Professor of Medicine [2003]

Peter Joseph Mogayzel, Jr., M.D., Ph.D.
Associate Professor of Pediatrics [2004; 1998]

David R. Moller, M.D.
Associate Professor of Medicine [1997; 1989]

Francis Mark Mondimore, M.D.
Associate Professor of Psychiatry [2009; 1999]

John R. Moore, M.D.
Associate Professor of Orthopedic Surgery [1985; 1980]

W. Tabb Moore, M.D.
Associate Professor of Medicine [1998]

Howard Moses, M.D.
Associate Professor of Neurology [1993; 1966]

Stewart H. Mostofsky, M.D.
Associate Professor of Neurology [2006; 1997],
Joint Appointment in Psychiatry [2005]

Morton Maimon Mower, M.D.
Associate Professor of Gynecology and Obstetrics [2005]

Gerard E. Mullin, M.D., M.S.
Associate Professor of Medicine [2009; 2005]

Laura M. Mumford, M.D.
Associate Professor of Medicine [1992; 1984]

Beatriz Munoz, M.S.
Associate Professor of Ophthalmology [2001; 1987]

Anne M. Murphy, M.D.
Associate Professor of Pediatrics [1994; 1992]

Kathleen M. Murphy, Ph.D.
Associate Professor of Pathology [2008; 2001] (to
12/31/09), Associate Professor of Oncology [2008; 2005] (to 12/31/09)

Allen C. Myers, Ph.D.
Associate Professor of Medicine [1998; 1991]

Maurice Y. Nahabedian, M.D.
Associate Professor of Plastic Surgery [2000; 1996]

Salah M. Nasrallah, M.D.
Associate Professor of Medicine [2005]

Georges Jabboure Netto, M.D.
Associate Professor of Pathology [2005],
Associate Professor of Oncology [2008],
Associate Professor of Urology [2007]

Alicia Neu, M.D.
Associate Professor of Pediatrics [2002; 1994]

Quan Dong Nguyen, M.D.
Associate Professor of Ophthalmology [2008; 2001]

John Nicholas, Ph.D.
Associate Professor of Oncology [1999; 1992]

Wanda Nicholson, M.D., M.P.H.
Associate Professor of Gynecology and Obstetrics
[2008; 1998]

Ernst Niebur, Ph.D.
Associate Professor of Neuroscience [2001; 1995]

Parviz Nikooomansh, M.D.
Associate Professor of Medicine [1994; 1973]

Dolores B. Njoku, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2008; 1994], Assistant Professor of Pathology [2006], Assistant Professor of Pediatrics [2002]

Stephen J. Noga, M.D., Ph.D.
Associate Professor of Oncology [1997; 1991] (to
07/31/09), Associate Professor of Pathology [1997; 1994] (to 07/31/09)

Edward J. Norris, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2001; 1991]

Frances J. Northington, M.D.
Associate Professor of Pediatrics [2000; 1992]

Richard J. O’Brien, M.D., Ph.D.
Associate Professor of Neurology [2000; 1993],
Joint Appointment in Medicine [2006], Associate Professor of Neuroscience [2000; 1999]

Michael F. Ochs, Ph.D.
Associate Professor of Oncology [2006], Joint Appointment in Health Sciences Informatics [2009]

Maria M. Oliva-Hemker, M.D.
Associate Professor of Pediatrics [2003; 1993],
Occupying the Stermer Family Professorship in Pediatric Inflammatory Bowel Disease in the Department of Pediatrics

Nael Fakhry Osman, Ph.D.
Associate Professor of Radiology and Radiological Science [2006; 2000], Joint Appointment in Medicine [2007]

Rick Ostrander, Ed.D.
Associate Professor of Psychiatry [2008; 2003]

Lawrence C. Pakula, M.D.
Associate Professor of Pediatrics [1985; 1963]

Akhilesh Pandey, M.D., Ph.D.
Associate Professor of Biological Chemistry in Genetic Medicine [2006; 2002], Associate Professor of Oncology [2006; 2004], Associate Professor of Pathology [2006]
Nickolas Papadopoulos, Ph.D.
Associate Professor of Oncology [2006; 2005]
Ira D. Papel, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [1999; 1987]
Carlos A. Pardo-Villamizar, M.D.
Associate Professor of Neurology [2007; 1999], Assistant Professor of Pathology [1999]
Rulan Parekh, M.D.
Associate Professor of Medicine [2007; 1999]
Ben Ho Park, M.D., Ph.D.
Associate Professor of Oncology [2008; 2002]
Gary R. 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 and Radiological Science [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 Orthopedic Surgery [2008; 2007]
John D. Petronis, M.D.
Associate Professor of Radiology and Radiological Science [1999; 1985]
Brent G. Petty, M.D.
Associate Professor of Medicine [1989; 1979], Associate Professor of Pharmacology and Molecular Sciences [1999]
Jonathan 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]
Bradley J. Phillips, M.D.
Visiting Associate Professor of Surgery [2008]
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 and Radiological Science [2007]
Mikhail V. Pletnikov, M.D., Ph.D.
Associate Professor of Psychiatry [2008; 1999], 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 J. Polydefkis, M.D.
Associate Professor of Neurology [2007; 2000]
Wendy S. Post, M.D.
Associate Professor of Medicine [2004; 1997]
James B. Potash, M.D., M.P.H.
Associate Professor of Psychiatry [2006; 1998], Occupying the Arlene and Robert Kogod Professorship in Mood Disorders, 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; 1989], 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]
Mitchell R. Price, M.D.
Visiting Associate Professor of Pediatric Surgery [2006]
Annelle B. Primm, M.D., M.P.H.
Associate Professor of Psychiatry [2000; 1985]
Naresh M. Punjabi, M.D., Ph.D.
Associate Professor of Medicine [2005; 1999]
Alfredo Quinones-Hinojosa, M.D.
Associate Professor of Neurological Surgery [2008; 2005], Joint Appointment in Neuroscience [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 A. Rao, 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],  
Joint Appointment in Health Sciences Informatics [2008],  
Associate Professor of Oncology [2005]

Gerald V. Raymond, M.D.  
Associate Professor of Neurology [2002; 1993]

Richard J. Redett, M.D.  
Associate Professor of Plastic 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 [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]

Lee H. Riley, III, M.D.  
Associate Professor of Orthopedic 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] (from 10/01/09),  
Assistant Professor of Neurological Surgery [2000; 1998] (to 09/30/09)

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]

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]

Richard B. S. Roden, Ph.D.  
Associate Professor of Pathology [2003; 1998],  
Associate Professor of Gynecology and Obstetrics [2002],  
Associate Professor of Oncology [2004]

E. Rene Rodriguez, M.D.  
Adjunct Associate Professor of Pathology [2004; 2000] (to 08/05/09)

Eduardo D. Rodriguez, M.D., D.D.S.  
Associate Professor of Plastic 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]

Alan J. Romanoski, M.D.  
Associate Professor of Psychiatry [1993; 1980]

Lewis Hartley Romer, M.D.  
Associate Professor of Anesthesiology and Critical Care Medicine [2005; 2000],  
Associate Professor of Biomedical Engineering [2007],  
Associate Professor of Cell Biology [2007],  
Associate Professor of Pediatrics [2005; 2000]

Adam Rosenblatt, M.D.  
Associate Professor of Psychiatry [2006; 1996]

Saul D. Roskes, M.D.  
Associate Professor of Pediatrics [1984; 1968]

Richard E. Rothman, M.D., Ph.D.  
Associate Professor of Emergency Medicine [2005; 1996],  
Joint Appointment in Medicine [2005]

Charles Michael Rudin, M.D., Ph.D.  
Associate Professor of Oncology [2004]

Stuart Dean Russell, M.D.  
Associate Professor of Medicine [2004]

Jose M. Saavedra, M.D.  
Associate Professor of Pediatrics [1998; 1990]

George H. Sack, Jr., M.D., Ph.D.  
Associate Professor of Medicine [1984; 1976],  
Associate Professor of Biological Chemistry [1984; 1980]

Scherezade Sadegh-Nasseri, Ph.D.  
Associate Professor of Pathology [2000; 19],  
Associate Professor of Biophysics and Biophysical Chemistry [2001; 1996]

Daniel J. Safer, M.D.  
Associate Professor of Psychiatry [1979; 1969],  
Associate Professor of Pediatrics [1986; 1969]

Sarbjit Singh Saini, M.D.  
Associate Professor of Medicine [2007; 1997]

Roberto Salvatori, M.D.  
Associate Professor of Medicine [2005; 1998]

Scherer P. Sanders, Ph.D.  
Associate Professor of Medicine [2000; 1988]

Corinne Sandone, M.A.  
Associate Professor of Art as Applied to Medicine [2007; 1990]

Giuseppe Sanguineti, M.D.  
Associate Professor of Radiation Oncology and Molecular Radiation Sciences [2007],  
Associate Professor of Oncology [2008],  
Associate Professor of Otolaryngology-Head and Neck Surgery [2008]
Adam Sapirstein, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2009; 2002], Assistant Professor of Surgery [2003]

John R. Saunders, M.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2008; 1993], Associate Professor of Surgery [2008; 1990], Assistant Professor of Plastic Surgery [1982]

Akira Sawa, M.D., Ph.D.
Associate Professor of Psychiatry [2006; 1998], Associate Professor of Neuroscience [2006; 1998]

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 [2006; 2000]

Horst K.A. Schirmer, M.D.
Associate Professor of Urology [1966; 1962]

Thomas E. Schlaepfer, M.D.
Associate Professor of Psychiatry [1997; 1994]

D. William Schlott, M.D.
Philip A. Tumulty Associate Professor of Medicine [1993; 1969]

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]

Kenneth C. 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 W. Scott, Jr., M.D.
Associate Professor of Radiology and Radiological Science [1984; 1978], Joint Appointment in Orthopedic Surgery [1986]

Jodi Beth Segal, M.D., M.P.H.
Associate Professor of Medicine [2008; 2000]

Dorry L. Segev, M.D.
Associate Professor of Surgery [2009; 2004]

Eric J. Seifter, M.D.
Associate Professor of Medicine [1995; 1986], Associate Professor of Oncology [1995; 1987]

Deborah E. Sellmeyer, M.D.
Visiting Associate Professor of Medicine [2008]

J. Bryan Sexton, Ph.D.
Associate Professor of Anesthesiology and Critical Care Medicine [2008; 2004] (to 08/28/09)

Albert B. Shackman, M.D.
Associate Professor of Radiology and Radiological Science [1995; 1954]

Donald H. Shafran, Jr., M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1998; 1989], Associate Professor of Pediatrics [2001; 1989]

James S. K. Sham, Ph.D.
Associate Professor of Medicine [2001; 1992]

Hua Shan, M.D., Ph.D.
Associate Professor of Pathology [2009; 1998]

Gary R. Shapiro, M.D.
Visiting Associate Professor of Oncology [2004]

William H. Sharfman, M.D.
Associate Professor of Oncology [2005; 1993], Associate Professor of Dermatology [2005]

Mark J. Shelhamer, Sc.D.
Associate Professor of Otolaryngology-Head and Neck Surgery [2002; 1994], Associate Professor of Biomedical Engineering [2002; 1992]

Michele Arlene Shermak, M.D.
Associate Professor of Plastic Surgery [2006; 2000]

Sheila Sheth, M.D.
Associate Professor of Radiology and Radiological Science [1995; 1986], Associate Professor of Pathology [2004]

Larissa Akimi Shimoda, Ph.D.
Associate Professor of Medicine [2007; 1998]

Frederick E. Sieber, M.D.
Associate Professor of Anesthesiology and Critical Care Medicine [1993; 1985]

Jeffrey H. Siewerdsen, Ph.D.
Visiting Associate Professor of Biomedical Engineering [2009]

Charles E. Silberstein, M.D.
Associate Professor of Orthopedic Surgery [1999; 1967]

Edward M. Silis, M.D.
Associate Professor of Pediatrics [1978; 1969]

Kenneth H. C. Silver, M.D.
Associate Professor of Physical Medicine and Rehabilitation [2004; 1984]

Wayne Silverman, Ph.D.
Visiting Associate Professor of Psychiatry [2006]

Eleanor Marie Simonsick, Ph.D.
Associate Professor of Medicine [2001]

Sylvia G. Simpson, M.D.
Associate Professor of Psychiatry [1993; 1986]

Stephen D. Sisson, M.D.
Associate Professor of Medicine [2005; 1995]

Keith J. Slifer, Ph.D.
Associate Professor of Psychiatry [1999; 1987], Associate Professor of Pediatrics [1999; 1989]
Barbara Slusher, Ph.D.
Visiting Associate Professor of Neurology [2009] (from 09/01/09)
B. Douglas Smith, M.D.
Associate Professor of Oncology [2006; 1998]
Michael T. Smith, Ph.D.
Associate Professor of Psychiatry [2007; 2001]
Samuel Smith, M.D.
Associate Professor of Gynecology and Obstetrics [1996; 1987]
Duane Thomas Smoot, M.D.
Associate Professor of Oncology [2001]
Shanthini Sockanathan, Ph.D.
Associate Professor of Neuroscience [2007; 2002]
Lori J. Sokoll, Ph.D.
Associate Professor of Pathology [2005; 1997],
Associate Professor of Oncology [2005; 2000],
Associate Professor of Urology [2005; 2000]
Hongjun Song, Ph.D.
Associate Professor of Neurology [2007; 2002],
Associate Professor of Neuroscience [2007; 2002]
Samuel Sostre, M.D.
Associate Professor of Radiology and Radiological
Science [1992; 1988]
David A. Spector, M.D.
Associate Professor of Medicine [1983; 1973]
Forrest Spencer, Ph.D.
Associate Professor of Medicine in Genetic
Medicine [2002; 1992], Joint Appointment in
Molecular Biology and Genetics [1992]
Philip Joel Spevak, M.D.
Associate Professor of Pediatrics [1995], Joint
Appointment in Medicine [2001]
Peter Michael Spooner, Ph.D.
Associate Professor of Medicine [2004; 2003]
Peter S. Staats, M.D.
Associate Professor of Anesthesiology and Critical
Care Medicine [1998; 1993]
Vered Stearns, M.D.
Associate Professor of Oncology [2005; 2002]
Joseph P. Steiner, Ph.D.
Associate Professor of Radiology [2009; 2005]
Cristiana Stellato, M.D., Ph.D.
Associate Professor of Medicine [2006; 1997]
Robert David Stevens, M.D.
Associate Professor of Anesthesiology and Critical
Care Medicine [2009; 2003] (from 10/01/09),
Assistant Professor of Anesthesiology and Critical
Care Medicine [2003] (to 09/30/09), Assistant
Professor of Neurological Surgery [2004],
Assistant Professor of Neurology [2004]
Michael Blake Streiff, M.D.
Associate Professor of Medicine [2008; 1997],
Instructor in Pathology [2000]
Matthew Stuber, Ph.D.
Associate Professor of Radiology [2003; 2002]
(on leave of absence from 08/03/09), Assistant
Professor of Medicine [2003] (on leave of absence
from 08/03/09)
Raymond Arthur Sturner, M.D.
Associate Professor of Pediatrics [1996]
Chi-Tsung Su, M.D.
Associate Professor of Plastic Surgery [1980; 1971]
Sriram Subramaniam, Ph.D.
Visiting Associate Professor of Biological
Chemistry [1998; 1991]
Prem Sagar Subramaniam, M.D., Ph.D.
Associate Professor of Ophthalmology [2007]
Ian Suk, B.Sc.
Associate Professor of Neurological Surgery
[2009; 2002], Associate Professor of Art as
Applied to Medicine [2009; 2002]
Mark Sebastian Sulkowski, M.D.
Associate Professor of Medicine [2004; 1998]
Dace S. Svikis, Ph.D.
Associate Professor of Behavioral Biology in the
Department of Psychiatry [1997; 1989]
Karen L. Swartz, M.D.
Associate Professor of Psychiatry [2009; 1997]
(from 10/01/09), Assistant Professor of Psychiatry
[1997] (to 09/30/09)
Yuan-Xiang Tao, Ph.D., M.D.
Associate Professor of Anesthesiology and Critical
Care Medicine [2004; 1999]
David R. Thiemann, M.D.
Associate Professor of Medicine [2006; 1995],
Joint Appointment in Health Sciences Informatics
[2001]
Chloe Lynne Thio, M.D.
Associate Professor of Medicine [2005; 2000]
Patricia A. Thomas, M.D.
Associate Professor of Medicine [2000; 1987],
Associate Dean for Curriculum [2004]
Jennifer Elizabeth Thorne, M.D.
Associate Professor of Ophthalmology [2007; 2000]
Allen Yiyen Tien, M.D.
Adjunct Associate Professor of Health Sciences
Informatics [2005]
Elaine Tierney, M.D.
Associate Professor of Psychiatry [2008; 1995]
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.
Associate Professor of Urology [2001], Associate Professor of Oncology [2001]

Theodore N. Tsangaris, M.D.
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 Surgery [2008; 1998], Associate Professor of Oncology [2008; 2005]

David E. 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]

Alexandra Valsamakis, M.D., Ph.D.
Associate Professor of Pathology [2006; 1998]

Russell Vang, M.D.
Associate Professor of Pathology [2008; 2003], Assistant Professor of Gynecology and Obstetrics [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 Surgery [2006; 1989]

Luca A. Vricella, M.D.
Associate Professor of Cardiac Surgery [2009; 2002], Assistant Professor of Pediatrics [2007]

Kathryn R. 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]

John T. Walkup, M.D.
Associate Professor of Psychiatry [1995; 1988]

Mei Wan, Ph.D.
Visiting Associate Professor of Orthopaedic Surgery [2009]

Ko-Pen Wang, M.D.
Associate Professor of Medicine [1982; 1976], Associate Professor of Radiology and Radiological Science [1998]

Robert F. Ward, M.D.
Associate Professor of Psychiatry [1978; 1965]
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]
Paul Michael Yen, M.D.
Associate Professor of Medicine [2003], Associate
Professor of Pharmacology and Molecular
Sciences [2007]
Deborah Sue Rohm Young, Ph.D.
Visiting Associate Professor of Medicine [2001; 1995]
David Dailo Yuh, M.D.
Associate Professor of Cardiac Surgery [2005; 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]
Yulian Zhao, M.D., Ph.D.
Associate Professor of Gynecology and Obstetrics
[2008; 2001]
Shibin Zhou, M.D., Ph.D.
Associate Professor of Oncology [2008; 1998]
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.
Associate Professor of Neurology [1994],
Associate Professor of Pediatrics [2004],
Associate Professor of Psychiatry [1996]
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]
Hayden Grant Braine, M.D.
Associate Professor Emeritus of Oncology [2006; 1975],
Associate Professor Emeritus of Medicine [2006; 1975]
Robert K. Brawley, M.D.
Associate Professor Emeritus of Cardiac Surgery
[1995; 1969]
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]
Charles H. Epps, Jr., M.D.
Associate Professor Emeritus of Orthopedic
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 Emerita in Pediatrics [2000; 1963]
Jacob C. Handelsman, M.D.
Associate Professor Emeritus of Surgery [1992; 1947]
Frederik C. Hansen, M.D.
Associate Professor Emeritus of Plastic Surgery
[1994; 1960]
Paul H. Hardy, Jr., M.D.
Associate Professor Emeritus of Microbiology in
the Department of Molecular Biology and Geneti
[1981; 1948]
Michael J. C. Im, Ph.D.
Associate Professor Emeritus of Plastic Surgery
[1978; 1970]
Darrell A. Jaques, M.D.
Associate Professor Emeritus of Surgery [1995; 1990], Associate Professor Emeritus of Plastic
Surgery [1995; 1977]
John T.H. Johnson, M.D.
Associate Professor Emeritus of Orthopedic
Surgery [1990; 1950]
Calvin E. Jones, M.D.
Associate Professor Emeritus of Surgery [2002; 1989]
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 in Medicine [1952; 1950]
Edmond J. McDonnell, M.D.
Associate Professor Emeritus of Orthopedic Surgery [1992; 1946]
Marvin M. Nachlas, M.D.
Associate Professor Emeritus of Surgery [1961; 1954]
Lee C. Park, M.D.
Associate Professor Emeritus of Psychiatry [1971; 1955]
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 (Audiology & Speech) Emeritus of Otolaryngology-Head and Neck Surgery [1990; 1963]
Lawrence E. Shulman, M.D., Ph.D.
Associate Professor Emeritus of Medicine [1997; 1950]
Arnold T. Sigler, M.D.
Associate Professor Emeritus of Pediatrics [1973; 1965]
Joseph H. Stephens, M.D.
Associate Professor Emeritus of Psychiatry [2006; 1956]
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; 1955]
Clifford R. Wheless, Jr., M.D.
Associate Professor Emeritus of Gynecology and Obstetrics [2009; 1993]
E.F. Shaw Wilgis, M.D.
Associate Professor Emeritus of Orthopedic Surgery [1983; 1970], Associate Professor Emeritus of Plastic 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]
Fizan Abdullah, M.D., Ph.D.
Assistant Professor of Pediatric Surgery [2005]
Marwan Samir Abougergi, M.D.
Assistant Professor of Medicine [2009; 2007]
Hanaj J. Aboumatar, M.D., M.P.H.
Assistant Professor of Medicine [2008]
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]
Donald A. Abrams, M.D.
Assistant Professor of Ophthalmology [1995]
Lisa S. Abrams, M.D.
Assistant Professor of Ophthalmology [1996; 1995]
Lauren Abramson, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1995; 1992]
Rachel Abuav, M.D.
Assistant Professor of Dermatology [2008; 2007]
Laura Lee Adams, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2008]
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 S. Ahn, M.D.
Assistant Professor of Neurological Surgery [2007]

Nita Ahuja, M.D.
Assistant Professor of Surgery [2003; 2002], Assistant Professor of Oncology [2005]

Abimbola J. Aina, M.D.
Assistant Professor of Gynecology and Obstetrics [2004; 2001]

Susan Aja, Ph.D.
Assistant Professor of Psychiatry [2005; 2002]

Fadi G. Akar, Ph.D.
Assistant Professor of Medicine [2007; 2004]

Samuel M. Alaish, M.D.
Assistant Professor of Pediatric Surgery [2003]

Charles R. 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], Research Associate in Neurology [2008]

Mohamad E. Allaf, M.D.
Assistant Professor of Urology [2006], Assistant Professor of Biomedical Engineering [2007]

Jill Allbritton, M.D.
Assistant Professor of Dermatology [2007; 1998] (to 09/29/09)

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 Rueutliainen Altman, M.D., Ph.D.
Assistant Professor of Gynecology and Obstetrics [1999]

Anika A.H. Alvanzo, M.D., M.S.
Assistant Professor of Medicine [2008]

Adrianna Amari, Ph.D.
Assistant Professor of Psychiatry [2009; 2006]

Jennifer F. Anders, M.D.
Assistant Professor of Pediatrics [2005]

Robert Albert Anders, M.D., Ph.D.
Assistant Professor of Pathology [2005], Assistant Professor of Oncology [2006]

Allan A. Anderson, M.D.
Assistant Professor of Psychiatry [2007]

John E. Anderson, M.D.
Assistant Professor of Medicine [1990; 1980]

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.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]

Brian Stephen Appleby, M.D.
Assistant Professor of Psychiatry [2008]

Armin Arbab-Zadeh, M.D.
Assistant Professor of Medicine [2007; 2006]

Alicia I. Arbaie, M.D., M.P.H.
Assistant Professor of Medicine [2007]

Kristin R. Archer, Ph.D.
Adjunct Assistant Professor of Orthopedic 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 (in Genetic Medicine) of 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 Aslakson, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008]

Saadet Atay-Rosenthal, M.D.
Assistant Professor of Radiology and Radiological Science [2009]

Meredith Atkinson, M.D.
Assistant Professor of Pediatrics [2007]

Karla Jean Au Yeung, M.D.
Assistant Professor of Pediatrics [2008]

Susan Wright Aucott, M.D.
Assistant Professor of Pediatrics [1996]

Martin Auster, M.D.
Assistant Professor of Radiology and Radiological Science [2000; 1983]

Nafi Aygun, M.D.
Assistant Professor of Radiology [2002]

Nilofer S. Azad, M.D.
Assistant Professor of Oncology [2008]
Alex Azar, M.D.
Assistant Professor of Ophthalmology [1998]

Robert L. Babbitt, Ph.D.
Assistant Professor of Psychiatry [1990; 1987]

Oscar R. Baeza, M.D., M.A.
Assistant Professor of Art as Applied to Medicine [2005; 2003]

Megan Bair-Merritt, M.D.
Assistant Professor of Pediatrics [2006]

Romulo F. Baltazar, M.D.
Assistant Professor of Medicine [1995]

Isaac N. Bankman, Ph.D.
Assistant Professor of Biomedical Engineering [1993]

Shannon Rae Barnett, M.D.
Assistant Professor of Psychiatry [2003; 2000]

Viachaslau M. Barodka, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Michael Anthony Barone, M.D.
Assistant Professor of Pediatrics [2001; 1998],
Assistant Dean for Student Affairs [2004]

Lili Ayala Barouch, M.D.
Assistant Professor of Medicine [2003]

Jeremy S. Barron, M.D.
Assistant Professor of Medicine [2004]

Emily Barron-Casella, Ph.D.
Assistant Professor of Pediatrics [1992]

Edward L. Bartlett, Jr., M.D.
Assistant Professor of Pediatrics [1983]

Charles Dennis Barton, Jr., M.D.
Assistant Professor of Psychiatry [1995; 1993]

Alessandro G. Basso, M.D.
Assistant Professor of Urology [1972]

Denise A Batista, Ph.D.
Assistant Professor of Pathology [2006; 2004]

Melissa Q.H. Beck, Ph.D.
Assistant Professor of Psychiatry [2005]

Marshall S. Bedine, M.D.
Assistant Professor of Medicine [1980; 1972]

Michael A. Beer, Ph.D.
Assistant Professor of Biomedical Engineering in Genetic Medicine [2005], Joint Appointment in Molecular Biology and Genetics [2005]

John T. Beetar, Ph.D.
Assistant Professor of Pathology [2006; 2004]

Nicholas J. Belltsos, M.D.
Assistant Professor of Medicine [1981], Lecturer in Pathology [1982]

Peter C Belltsos, M.D.
Assistant Professor of Medicine [1991]

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 Orthopedic Surgery [2002; 2001]

Wendy Lynet Bennett, M.D., M.P.H.
Assistant Professor of Medicine [2009]

Jane E. Benson, M.D.
Assistant Professor of Radiology and Radiological Science [1990], Joint Appointment in Pediatrics [1991]

Elliott M. Berg, M.D.
Assistant Professor of Plastic Surgery [1974]

Wendie Anderson Berg, M.D., Ph.D.
Assistant Professor of Radiology and Radiological Science [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] (from 09/01/09)

Gail Valerie Berkenblit, M.D., Ph.D.
Assistant Professor of Medicine [2001]

Lauren Claire Berkow, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2001; 2000], Assistant Professor of Otolaryngology-Head and Neck Surgery [2006]

Joan E. Berkowitz, M.D.
Assistant Professor of Radiology and Radiological Science [1986; 1983]

Michael T. Bernstein, M.D.
Assistant Professor of Pediatrics [1972; 1971]

Edward S. Bessman, M.D.
Assistant Professor of Emergency Medicine [1995; 1992]

Nikhil Bhagat, M.D.
Assistant Professor of Radiology and Radiological Science [2009] (from 07/22/09)

Mythreyi Bhargavan, Ph.D.
Assistant Professor of Radiology and Radiological Science [2008]

Lavina D. Bharwani, M.D.
Assistant Professor of Oncology [2007]

Niranjan Bhat, M.D.
Assistant Professor of Pediatrics [2009]

Rinky Bhatia, M.D.
Assistant Professor of Medicine [2008]

Lynn M. Billingsley, M.D.
Assistant Professor of Medicine [1998; 1979]

Clifton O. Bingham, III, M.D.
Assistant Professor of Medicine [2005]

Maria M. Birzescu, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

William R. Bitman, D.Mgt.
Assistant Professor of Ophthalmology [2006] (to 11/19/09)
Ava K. Bittner, O.D.
Assistant Professor of Ophthalmology [2007; 2002]

Sally Bitzer, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Betty E. Smith Black, Ph.D.
Assistant Professor of Psychiatry [1997; 1995]

James Hamilton Black, III, M.D.
Assistant Professor of Surgery [2004]

Gabrielle Levine Blackman, M.D.
Assistant Professor of Psychiatry [2001]

Scott M. Blackman, M.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.
Assistant Professor of Anesthesiology and Critical Care Medicine [1995; 1992]

Joel Blankson, M.D., Ph.D.
Assistant Professor of Medicine [2002]

David Mark Blass, M.D.
Assistant Professor of Psychiatry [2002]

Donald F. Bliss, II, M.A.
Assistant Professor of Art as Applied to Medicine [2006]

Ari Meir Blitz, M.D.
Assistant Professor of Radiology and Radiological Science [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]

Ravit Boger, M.D.
Assistant Professor of Pediatrics [2003; 2001]

Michael A. Bogov, 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]

Jack Calvin Borders, Jr., M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2006]

Luciana L. 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 B. Boul, M.D., M.P.H.
Assistant Professor of Medicine [2001]

G. Steven Bova, M.D.
Assistant Professor of Pathology [1994], Joint Appointment in Health Sciences Informatics [2003], Assistant Professor of Oncology [1995], Assistant Professor of Urology [1994; 1991]

Craig William Bowen, Ph.D., M.B.A.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Lynn G. Bowman, M.A.
Assistant Professor of Psychiatry [1999; 1995]

Cynthia Melinda Boyd, M.D.
Assistant Professor of Medicine [2004; 2002]

Carolyn Beth Boylan, M.D.
Assistant Professor of Pediatrics [2006]

Kathleen D. Brady, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2009]

Kenneth Brady, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006], Assistant Professor of Pediatrics [2006]

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]

Sami A. Brahim, M.D.
Assistant Professor of Medicine [1975; 1972]

Julie R. 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]

Peter Braverman, M.D.
Assistant Professor of Medicine [2002]

E. David Bravos, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2008]

Christopher D. Breder, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008]
Rachel F. Brem, M.D.
Assistant Professor of Radiology and Radiological Science [1991; 1989]

Margaret M. Brennan, M.D.
Assistant Professor of Medicine [2008]

Matthew J. Brennan, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1973; 2004]

Martin B. Brodsky, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2008]

Dennis A. Brooks, M.D.
Assistant Professor of Pediatrics [2000; 1988]

Patrick Brown, M.D.
Assistant Professor of Pediatrics [2005; 2004],
Assistant Professor of Pediatrics [2005; 2004]

Todd T. Brown, M.D.
Assistant Professor of Medicine [2004]

Robert J. Brumback, M.D.
Assistant Professor of Orthopedic Surgery [1991; 1987]

Daniel L. Buccino, M.S.W.
Assistant Professor of Psychiatry [2000; 1992]

James R. Buck, M.D.
Assistant Professor of Surgery [1981], Assistant Professor of Pediatrics [1982]

Dejan B. Budimirovic, M.D.
Assistant Professor of Psychiatry [2004]

Luis F. Buenaver, Ph.D.
Assistant Professor of Psychiatry [2008]

Philip C. Buescher, M.D.
Assistant Professor of Medicine [1987]

Janine Elizabeth Bullard, M.D.
Assistant Professor of Pediatrics [2006]

David Gordon Bundy, M.D., M.P.H.
Assistant Professor of Pediatrics [2007]

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 D. Calhoun, Ph.D.
Assistant Professor of Psychiatry [2002]

Preston C. Calvert, M.D.
Assistant Professor of Neurology [1998]

Andrew M. Cameron, M.D., Ph.D.
Assistant Professor of Surgery [2006]

Maria Valeria Canto Soler, Ph.D.
Assistant Professor of Ophthalmology [2006]

Ying Jun Cao, M.B., Ph.D.
Adjunct Assistant Professor of Medicine [2009; 2007]

Randolph B. Capone, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2004]

Nicholas A. Capozzoli, M.D.
Assistant Professor of Neurology [1992]

Juan Ricardo Carhuapoma, M.D.
Assistant Professor of Neurology [2004],
Assistant Professor of Anesthesiology and Critical Care Medicine [2004], Assistant Professor of Neurological Surgery [2004]

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]

Nicola Gerardo Cascella, M.D.
Assistant Professor of Psychiatry [1999]

Zenobia A. Casey, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2003; 2002]

Anthony Charles Castelbuono, M.D.
Assistant Professor of Ophthalmology [2001]

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 and Radiological Science [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]

Matthews Chacko, M.D.
Assistant Professor of Medicine [2007]

Vadappuram P. Chacko, Ph.D.
Assistant Professor of Radiology and Radiological Science [1984]

Raman Chahal, M.B.B.S.
Assistant Professor of Psychiatry [1986; 1980]

Geetanjali Chander, M.D., M.P.H.
Assistant Professor of Medicine [2004]
Lawrence D. Chang, M.D.
Assistant Professor of Plastic Surgery [1996]
Stephen J. Chanock, M.D.
Assistant Professor of Oncology [1998], Lecturer in Pediatrics [1998]
Amina A. Chaudhry, M.D., M.P.H.
Assistant Professor of Medicine [2008; 2007]
Paulo H.M. Chaves, M.D., Ph.D.
Assistant Professor of Medicine [2001]
Aaron Edward Chen, M.D.
Assistant Professor of Pediatrics [2006]
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]
Kristin Cheung, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006; 1997]
Avneesh Chhabra, M.D.
Assistant Professor of Radiology [2009]
Chee Wei Chia, M.D.
Adjunct Assistant Professor of Medicine [2004]
Anna Chien, M.D.
Assistant Professor of Dermatology [2009] (from 09/08/09)
Jeffrey M. Chinsky, M.D., Ph.D.
Assistant Professor of Pediatrics [1995]
Margaret Chisolm, M.D.
Assistant Professor of Psychiatry [2006; 1992]
Steve Yoon-Ho Cho, M.D.
Assistant Professor of Radiology [2007]
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.
Adjunct Assistant Professor of Oncology [2009]
Betty Chou, M.D.
Assistant Professor of Gynecology and Obstetrics [2006; 2003]
Robert Tao-Ping Chow, M.D.
Assistant Professor of Medicine [1992]
James M. Christian, D.D.S., M.B.A.
Assistant Professor of Oral Surgery [2009; 2007] (from 09/01/09), Visiting Associate Professor of Oral Surgery [2007] (to 08/31/09)
Colleen Christmas, M.D.
Assistant Professor of Medicine [2000; 1999]
Paul J. 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 Surgery [2004]
Kathryn M. Chu, M.D.
Assistant Professor of Surgery [2007]
Kyo U. Chu, M.D.
Assistant Professor of Surgery [2004]
Daniela Chihakova, M.D., Ph.D.
Assistant Professor of Pathology [2008; 2006]
Oscar Cingolani, M.D.
Assistant Professor of Medicine [2009]
Gregory O. Clark, M.D.
Assistant Professor of Medicine [2005]
John O’Brien Clarke, III, M.D.
Assistant Professor of Medicine [2007]
William Clarke, Ph.D.
Assistant Professor of Pathology [2003; 2002]
Lora L. Clawson, B.S., M.S.N.
Assistant Professor of Neurology [2006; 1998]
Steven Michael Claypool, Ph.D.
Assistant Professor of Physiology [2008]
Sarah L. Clever, M.D.
Assistant Professor of Medicine [2003], Assistant Dean for Student Affairs [2009]
Arthur E. Cocco, M.D.
Assistant Professor of Medicine [1980; 1965]
Ann-Marie Codori, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1994; 1991]
Alan H. Cohen, M.D.
Adjunct Assistant Professor of Pediatrics [2002]
David B. Cohen, M.D., M.P.H.
Assistant Professor of Orthopedic Surgery [1998; 1995]
Gary Irvin Cohen, M.D.
Assistant Professor of Oncology [2001; 1983]
Ronald J. 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]
Elizabeth Colantuoni, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008]
Karan A. Cole, Sc.D.
Assistant Professor of Medicine [1994; 1987]
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]

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 A. 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 W. Coughlin, Ph.D.
Assistant Professor of Psychiatry [2008; 2004]

David Cowie, M.D.
Assistant Professor of Psychiatry [1979]

Christiane Sylvia Cox, Ph.D.
Assistant Professor of Neurology [1996]

Raymond L. Cox, Jr., M.D.
Assistant Professor of Gynecology and Obstetrics [1998]

Todd Scott Cox, M.D.
Assistant Professor of Psychiatry [1999]

Victor Crentsil, M.D.
Assistant Professor of Medicine [2008; 2004]

Jude P. Crino, M.D.
Assistant Professor of Gynecology and Obstetrics [2000]

Elizabeth A. Cristofalo, M.D.
Assistant Professor of Pediatrics [2006; 2003]

Michael Crocetti, M.D.
Assistant Professor of Pediatrics [1998]

Jennifer L. 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 Cruz-Correa, M.D.
Visiting Assistant Professor of Medicine [2002; 2001]

Robin Cuddy, M.D., M.P.H.
Assistant Professor of Emergency Medicine [2000]

Hengmi Cui, Ph.D.
Assistant Professor of Medicine [2002; 2000]

Salvatore A. D’Anna, M.S.
Assistant Professor of Ophthalmology [1997; 1980]

Alan P. B. Dackiw, M.D., Ph.D.
Assistant Professor of Surgery [2003], Assistant Professor of Oncology [2004]

Gerald J. Dal Pan, M.D.
Assistant Professor of Neurology [1996; 1993]

Darshan Dalal, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2008; 2007]

David F. Dalury, M.D.
Assistant Professor of Orthopedic Surgery [1996; 1992]

Rachel Lynn Damico, M.D., Ph.D.
Assistant Professor of Medicine [2009; 2007]

Stuart R. Dankner, M.D.
Assistant Professor of Ophthalmology [1990]

Sonye Karen Danoff, M.D., Ph.D.
Assistant Professor of Medicine [2005; 2000]

Anil Darbari, M.D.
Assistant Professor of Pediatrics [2001]

Jonathan D. Darer, M.D., M.P.H.
Assistant Professor of Medicine [2002]

Reginald James Davis, M.D.
Assistant Professor of Neurological Surgery [1989]

Ramon De Jesus, M.D.
Assistant Professor of Plastic Surgery [2006; 2003]

Michael R. Deans, Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2008]

Mark Adam Deitch, M.D.
Assistant Professor of Orthopedic Surgery [2001]

Karl Eric DeJonge, M.D.
Assistant Professor of Medicine [1999; 1996]

Valerie Burke DeLeon, Ph.D.
Assistant Professor of Functional Anatomy and Evolution [2006; 2005]

Donald H. Dembo, M.D.
Assistant Professor of Medicine [1992; 19]

Milind Y. Desai, M.B.B.S.
Visiting Assistant Professor of Radiology and Radiological Science [2004]

Niraj M. Desai, M.D.
Assistant Professor of Surgery [2009] (from 09/01/09)

Sanjay Virendra Desai, M.D.
Assistant Professor of Medicine [2007; 2004]

Sharad M. Desai, M.B.B.S.
Assistant Professor of Anesthesiology and Critical Care Medicine [1998]

Cheryl DeScipio, Ph.D.
Assistant Professor of Pathology [2009] (from 09/01/09), Assistant Professor of Gynecology and Obstetrics [2009] (from 09/01/09)

Crystal DeVito, Ph.D.
Assistant Professor of Psychiatry [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 L. 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]
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]
Diana Van Do, M.D.  Assistant Professor of Ophthalmology [2005; 2003]
Danielle J. 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 L. 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]
Jun Dong, M.D., Ph.D.  Adjunct Assistant Professor of Medicine [2007; 2006]
Xinzhong Dong, Ph.D.  Assistant Professor of Neuroscience [2004]
Pamela K. Donohue, M.S.  Assistant Professor of Pediatrics [1996; 1989]
Timothy F. Doran, M.D.  Assistant Professor of Pediatrics [1989; 1985]
Susan dosReis, Ph.D.  Assistant Professor of Psychiatry [2001]
Xavier Dray, Medical Doctoral degree  Adjunct Assistant Professor of Medicine [2009; 2006]
Malcolm S. Druskin, M.D.  Assistant Professor of Medicine [1974]
Wenzhen Duan, M.D., Ph.D.  Assistant Professor of Psychiatry [2006; 2004]
Marc G. Dubin, M.D.  Assistant Professor of Otolaryngology-Head and Neck Surgery [2005]
Robert A. 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]
Kimberly Lynn Duncan, Ph.D.  Visiting Assistant Professor of Surgery [1997]
R. Blaine Easley, M.D.  Assistant Professor of Anesthesiology and Critical Care Medicine [2004], Joint Appointment in Pediatrics [2004]
Frank R. Ebert, M.D.  Assistant Professor of Orthopedic Surgery [2003]
Israel S. Eckman, M.D.  Assistant Professor of Dermatology [2000; 1998]
Richard A. Edden, Ph.D.  Assistant Professor of Radiology and Radiological Science [2009] (from 09/01/09)
Barish H. Edjl, M.D.  Assistant Professor of Surgery [2007; 2006], Assistant Professor of Oncology [2008]
Donald W. Edlow, M.D.  Assistant Professor of Pathology [1976]
Robert R. Edwards, Ph.D.  Adjunct Assistant Professor of Psychiatry [2008; 2004]
David Thomas Efron, M.D.  Assistant Professor of Surgery [2004; 2002], Assistant Professor of Anesthesiology and Critical Care Medicine [2006]
Lawrence D. Egbert, M.D., M.P.H.  Visiting Assistant Professor of Anesthesiology and Critical Care Medicine [2001]
W. Andrew Egliseder, Jr., M.D.  Assistant Professor of Plastic Surgery [1994], Assistant Professor of Orthopedic Surgery [2001]
David Jon Eisner, M.D.  Assistant Professor of Radiology and Radiological Science [1992; 1990]
Harrold T. Elberfeld, M.D.  Assistant Professor of Gynecology and Obstetrics [1975]
Zayd A. Eldadah, M.D., Ph.D.  Adjunct Assistant Professor of Medicine [2004]
Lois J. Eldred, Dr.P.H.  Assistant Professor of Medicine [2007]
John J. Elias, Ph.D.  Assistant Professor of Orthopedic Surgery [2005]
Richard Marcus Ellerkmann, M.D.  Assistant Professor of Gynecology and Obstetrics [2005; 1999]
Richard A. Elliott, M.D.  Assistant Professor of Anesthesiology and Critical Care Medicine [2004]
Michael J. Elman, M.D.  Assistant Professor of Ophthalmology [1954; 1985]
Christopher J. Endres, Ph.D.  Assistant Professor of Radiology and Radiological Science [2003; 1999]
Lilly D. Engineer, Dr.P.H., M.D., M.H.A.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Michael A. Erdek, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2000], Assistant Professor of Oncology [2006]

Gurkan Erkula, M.D.
Assistant Professor of Orthopedic Surgery [2003]

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 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]

Camellus O. Ezeugwu, M.D.
Assistant Professor of Medicine [2000]

Amanda Nickles Fader, M.D.
Assistant Professor of Gynecology and Obstetrics [2008; 2006] (from 09/02/09)

Jeffrey John Fadrowski, M.D.
Assistant Professor of Pediatrics [1992]

Joseph Finkelstein, M.D., Ph.D.
Assistant Professor of Medicine [2008], Joint Appointment in Health Sciences Informatics [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]

Craig Anthony Fletcher, D.V.M., Ph.D.
Assistant Professor of Molecular and Comparative Pathobiology [2006; 2005]

Seyed Ali Fatemi, M.D.
Assistant Professor of Neurology [2008], Assistant Professor of Pediatrics [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, Ph.D., M.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2008], Assistant Professor of Oncology [2008]

Dana H. Frank, M.D.
Assistant Professor of Pediatrics [1987; 1983]

Wayne A. I. Frederick, M.D.
Adjunct Assistant Professor of Oncology [2007]

Paul D. Freeswick, M.D.
Assistant Professor of Surgery [1999]

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 Orthopedic Surgery [1988; 1977]
Jeffrey P. Froehlich, M.D.  
Assistant Professor of Medicine [2009; 2007] (to 08/13/09)  
Emily J. Froesch, M.D.  
Assistant Professor of Psychiatry [1995; 1993]  
Dominque Frueh, Ph.D.  
Assistant Professor of Biophysics and Biophysical Chemistry [2010] (from 02/01/10)  
Ralph J. Fuchs, M.D., Ph.D.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]  
Kathleen Gabrielson, D.V.M., Ph.D.  
Assistant Professor of Molecular and Comparative Pathobiology [2002; 2000]  
Dominique Frueh, Ph.D.  
Assistant Professor of Biophysics and Biophysical Chemistry [2010] (from 02/01/10)  
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]  
Gerard Gallucci, M.D.  
Assistant Professor of Psychiatry [1994; 1988]  
Samuel M. Galvagno, Jr., D.O.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2009] (from 07/14/09)  
Dheeraj Gandhi, M.B.B.S.  
Assistant Professor of Radiology [2008], Assistant Professor of Medicine [2008; 2006]  
P seisong Gao, M.D., Ph.D.  
Assistant Professor of Medicine [2008; 2005]  
Weii Dong Gao, M.D., Ph.D.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]  
Juan R. 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 and Radiological Science [1977]  
Ira M. 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 Neurology [2005]  
Luis Andres Garza, M.D., Ph.D.  
Assistant Professor of Dermatology [2009]  
Brian R. Gastman, M.D.  
Assistant Professor of Plastic Surgery [2006]  
Susan Lyn Gearhart, M.D.  
Assistant Professor of Surgery [2002], Assistant Professor of Oncology [2005]  
Duvuru Geetha, M.D.  
Assistant Professor of Medicine [2002; 1997]  
Clarence W. Gehris, Jr., M.D.  
Assistant Professor of Otolaryngology-Neck Surgery [1976; 1975]  
Fouad E. Gellad, M.D.  
Assistant Professor of Radiology and Radiological Science [1998]  
Thomas Genuit, M.D.  
Assistant Professor of Surgery [2004]  
Richard T. George, M.D.  
Assistant Professor of Medicine [2007]  
Christos S. Georgiades, M.D., Ph.D.  
Assistant Professor of Radiology [2003]  
Kevin B. Gerold, D.O., J.D.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2002], Joint Appointment in Emergency Medicine [2007]  
Khalil G. Ghanem, M.D.  
Assistant Professor of Medicine [2004]  
Biduyt Ghosh, Ph.D.  
Assistant Professor of Surgery [2005; 2001]  
Brian K. Gibbs, Ph.D., M.P.A.  
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]  
Samuel A. Giday, M.D.  
Assistant Professor of Medicine [2007; 2006]  
Assaf A. Gilad, Ph.D.  
Assistant Professor of Radiology and Radiological Science [2007; 2006]  
Jon Tyler Giles, M.D.  
Assistant Professor of Medicine [2006; 2005]  
Harmandar K. Gill, M.D.  
Assistant Professor of Radiology and Radiological Science [2002; 2000]  
Maureen Marie Gilson, Ph.D.  
Assistant Professor of Pediatrics [2001]  
Marta Marsh Gilmore, 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 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. Cloth, M.D.
Assistant Professor of Medicine [1993]

Kristine Glunde, Ph.D.
Assistant Professor of Radiology and Radiological Science [2005; 2004], Instructor in Oncology [2005]

Sheldon M. Glusman, M.D.
Assistant Professor of Pathology [1973]

Fernando S. Goes, M.D.
Assistant Professor of Psychiatry [2008]

Bernadette Cullen Goggins, M.B.B.Ch.
Assistant Professor of Psychiatry [2001] (on leave of absence to 07/06/09)

Xavier Golay, Ph.D.
Assistant Professor of Radiology [2002; 2000]

Harry R. 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 C. 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]

Mitchell Alan Goldstein, M.D.
Assistant Professor of Pediatrics [2006; 1998]

Andrew C. Goldstone, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1996]

Harold M. Goll, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1986; 1985]

Jonathan E. Golub, Ph.D., M.P.H.
Assistant Professor of Medicine [2004; 2002]

Mary L. Gomella, M.D.
Assistant Professor of Pediatrics [2001; 1987]

Gary Xin Gong, M.D., Ph.D.
Assistant Professor of Radiology and Radiological Science [2005; 2004]

Marlis Gonzalez-Fernandez, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2008; 2004]

David W. Goodman, M.D.
Assistant Professor of Psychiatry [1997; 1986]
Pamela Ann Guerrerio, Ph.D., M.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]

Michael A. Guttmann, M.S.E.
Assistant Professor of Biomedical Engineering [2009] (from 09/01/09)

Patrick K. 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 Pediatrics [2003; 2000], Assistant Professor of Medicine [2005]

David N. Hager, M.D., M.P.H.
Assistant Professor of Medicine [2009; 2007]

Adil H. Haider, M.D.
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 K. Halushka, M.D., Ph.D.
Assistant Professor of Pathology [2005; 2004]

Abdel-Rahim A. Hamad, Ph.D., D.V.M.
Assistant Professor of Pathology [2003; 2000], Assistant Professor of Medicine [2005]

James P. 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]

Christine L. 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]

Annette L. Hanson, M.D.
Assistant Professor of Psychiatry [2001]

Marta Hanson, Ph.D.
Assistant Professor of History of Medicine [2004]

Laura A. Hanyok, M.D.
Assistant Professor of Medicine [2008; 2006]

Uzma Jalal Haque, M.D.
Assistant Professor of Medicine [2003]

Joseph B. Harlan, Jr., M.D.
Assistant Professor of Ophthalmology [2001; 1998]

Allan C. Harrington, M.D.
Assistant Professor of Dermatology [2003; 1995]

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]

Elliott Richard Haut, M.D.
Assistant Professor of Surgery [2004], Assistant Professor of Anesthesiology and Critical Care Medicine [2006]

Jennifer L. 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 Hazlett, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1997; 1992]

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 Orthopedic Surgery [1970]

Charles Alan Henrikson, M.D., M.P.H.
Assistant Professor of Medicine [2005]

Joseph M. Herman, M.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2007; 2005], Assistant Professor of Oncology [2007; 2005], Assistant Professor of Surgery [2007]

William Joseph Herring, M.D., Ph.D.
Assistant Professor of Neurology [1999; 1997]

Bruce Hershfield, M.D.
Assistant Professor of Psychiatry [1985; 1980]
Daniel A. Herzka, Ph.D.
Assistant Professor of Biomedical Engineering [2008]

William R. Herzog, Jr., M.D.
Assistant Professor of Medicine [2003]

Kenneth Heyman, M.A.
Adjunct Assistant Professor of Art as Applied to Medicine [2009]

James Patrick Higgins, M.D.
Assistant Professor of Plastic Surgery [2006; 2002]

Hugh F. Hill, III, M.D., J.D.
Assistant Professor of Emergency Medicine [2006; 1997]

Peter M. Hill, M.D.
Assistant Professor of Emergency Medicine [2000; 1998]

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 Y. Hinton, M.D., M.P.H.
Assistant Professor of Orthopedic Surgery [1999]

Kenzo Hirose, M.D.
Assistant Professor of Surgery [2008]

Glenn A. Hirsch, M.D.
Assistant Professor of Medicine [2006; 2004]

Marc J. Hirschbein, M.D.
Assistant Professor of Ophthalmology [2007; 2000]

Ricky Regina Hirschhorn, Ph.D.
Adjunct Assistant Professor of Psychiatry [2004]

Nicola C. Ho, M.D.
Assistant Professor of Pediatrics [2001]

Tony Wei-hsiu Ho, M.D.
Assistant Professor of Neurology [1998; 1997]

Evanne V. Loh Hoehn-Saric, M.D.
Assistant Professor of Psychiatry [1988; 1983]

Robert E. Hoesch, M.D., Ph.D.
Assistant Professor of Neurology [2008]

Beatrice Hoffmann, M.D., Ph.D.
Assistant Professor of Emergency Medicine [2005]

Gerald A. Hofkin, M.D.
Assistant Professor of Medicine [1992; 1991]

Lawrence V. 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 and Radiological Science [1985]

Kathryn W. Holmes, M.D.
Assistant Professor of Pediatrics [2006]

Susan E. Holmes, Ph.D.
Assistant Professor of Psychiatry [2000; 1999]

Peter A. 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.
Assistant Professor of Radiology [2004]

Julie Elizabeth Hoover-Fong, M.D.
Assistant Professor of Pediatrics in Genetic Medicine [2002]

Mohammad Obaidul Hoque, Ph.D., D.D.S.
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 and Radiological Science [2000; 1997]

William T. Hosek, M.D.
Assistant Professor of Emergency Medicine [2005; 2001]

Barbara J. Howard, M.D.
Assistant Professor of Pediatrics [1996]

William T. Howard, M.D.
Assistant Professor of Psychiatry [1999]

Randolph Michael Howes, M.D., Ph.D.
Adjunct Assistant Professor of Plastic Surgery [2004]

Wen-son Hsieh, M.D.
Assistant Professor of Oncology [2001]

Yu-Hsiang Hsieh, Ph.D., M.S.
Assistant Professor of Emergency Medicine [1998]

Jeffrey H. Hsu, M.D.
Assistant Professor of Psychiatry [2002; 1999]

Stephanie C. Hsu, M.D., Ph.D.
Adjunct Assistant Professor of Pediatrics [2004]

Matthew Timothy Hueman, M.D.
Assistant Professor of Surgery [2009; 2007]

Nancy Ann Hueppchen, M.D.
Assistant Professor of Gynecology and Obstetrics [1998; 1996]

Carol Ann Huff, M.D.
Assistant Professor of Oncology [2001], Assistant Professor of Medicine [2005]

Mark Thomas Hughes, M.D.
Assistant Professor of Medicine [1997]

Mary Margaret Huizinga, M.D., M.P.H.
Assistant Professor of Medicine [2008]

Janessa A. Hume, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2008]

Laura K. Hummers, M.D.
Assistant Professor of Medicine [2005; 2003]

Chien-Fu Hung, Ph.D.
Assistant Professor of Pathology [2003; 2000], Assistant Professor of Gynecology and Obstetrics [2009], Assistant Professor of Oncology [2005]
Marc Wilson Hungerford, M.D.
Assistant Professor of Orthopedic Surgery [1998]

Elizabeth Anne Hunt, M.D., M.P.H.
Assistant Professor of Anesthesiology and Critical Care Medicine [2003], Assistant Professor of Pediatrics [2006]

Wayne P. Hunt, Ed.D.
Assistant Professor of Psychiatry [1999; 1992]

David F. Hutcheon, M.D.
Assistant Professor of Medicine [1979; 1977]

Heidi E. Hutton, Ph.D.
Assistant Professor of Psychiatry [1998; 1993]

Paul M. Hwang, M.D., Ph.D.
Assistant Professor of Medicine [2001]

Iredell W. Iglehart, III, M.D.
Assistant Professor of Orthopedic Surgery [1998; 1993]

Miho Iijima, Ph.D.
Assistant Professor of Cell Biology [2006; 2004]

Peter Bela Illei, M.D.
Assistant Professor of Pathology [2005]

Dwight D. Im, M.D.
Assistant Professor of Gynecology and Obstetrics [1995; 1993] (to 08/31/09)

Thomas V. Inglebsky, M.D.
Assistant Professor of Medicine [1999]

Peter C. Innis, M.D.
Assistant Professor of Orthopedic Surgery [1994; 1990]

Takanari Inoue, Ph.D.
Assistant Professor of Cell Biology [2008]

Gillian Raemi Isaac, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

Lisa Earnest Ishii, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2007; 2005]

Masaru Ishii, M.D., Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2002]

Stacey Lynn Ishman, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2006; 2005], 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 G. 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 V. Jackson, Jr., M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2001]

Lisa K. Jacobs, M.D.
Assistant Professor of Surgery [2004]

Michael A. Jacobs, M.D.
Assistant Professor of Orthopedic Surgery [1993]

Sanjay Jain, M.D.
Assistant Professor of Pediatrics [2006; 2005], Assistant Professor of Radiology [2009] (from 08/01/09)

Sanjay Raj Jain, M.B.B.S., Ph.D.
Adjunct Assistant Professor of Oncology [2009] (from 07/26/09)

Julian Jakobovits, M.B.B.S.
Assistant Professor of Medicine [1996; 1991]

Michael J. James, D.O.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008; 2007]

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]

Jacky M. Jennings, Ph.D., M.P.H.
Assistant Professor of Pediatrics [2007; 2006]

Riyaz H. Jinnah, M.B.B.Ch.
Assistant Professor of Orthopedic 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]

Matthew W. Johnson, Ph.D.
Assistant Professor of Psychology [2009; 2007]

Pamela Tecce Johnson, M.D.
Assistant Professor of Radiology [1954]

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 Orthopedic 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. Joufy, Ph.D.
Assistant Professor of Neurology [2008; 2003]

Juan M. Juanteguy, M.D.
Assistant Professor of Surgery [1981; 1980]

Rosalyn Anne Juergens, M.D.
Assistant Professor of Oncology [2007]

Julianna Jung, M.D.
Assistant Professor of Emergency Medicine [2007; 2002]

Aaron N. Juni, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2009] (from 09/08/09)

David W. Kaczka, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004],
Assistant Professor of Biomedical Engineering [2004]

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]

Theodore H. Kaiser, M.D.
Assistant Professor of Psychiatry [1967], Assistant Professor of Pediatrics [1967]

Anthony Kam, M.D., Ph.D.
Assistant Professor of Radiology and Radiological Science [2008]

Barbara J. Kaminski, Ph.D.
Assistant Professor of Behavioral Biology in the Department of Psychiatry [1993; 1992]

Atsushi Kamiya, Ph.D., M.D.
Assistant Professor of Psychiatry [2008; 2007]

Melinda E. Kantor, M.D.
Assistant Professor of Medicine [2009; 2004]

Luke M. Kao, M.D.
Assistant Professor of Neurology [1976; 1975]

Adam Ian Kaplin, M.D., Ph.D.
Assistant Professor of Psychiatry [2001; 2000],
Assistant Professor of Neurology [2006]

Bill G. Kapogiannis, M.D.
Assistant Professor of Pediatrics [2009]

Petros C. Karakousis, M.D.
Assistant Professor of Medicine [2005]

Baktiar O. Karim, D.V.M., Ph.D.
Assistant Professor of Molecular and Comparative Pathobiology [2007; 2006]

Wikrom W. Karnsakul, M.D.
Assistant Professor of Pediatrics [2008]

Yvette L. Kasamon, M.D.
Assistant Professor of Oncology [2005], Assistant Professor of Medicine [2005]

Matthew Lewis Kashima, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2001]

Elizabeth Kastelic, M.D.
Assistant Professor of Psychiatry [2004; 2001]

Wendy G. Kates, Ph.D.
Assistant Professor of Psychiatry [1993; 1990]

Sudhir Kathuria, M.D.
Assistant Professor of Radiology and Radiological Science [2008]

Yoshinori Kato, Ph.D.
Assistant Professor of Radiology [2008; 2006]

Laura S.R. Katta, M.B.B.S.
Assistant Professor of Gynecology and Obstetrics [1979]

Eugene Katz, M.D.
Assistant Professor of Gynecology and Obstetrics [2006]

Rebecca A. Kazin, M.D.
Assistant Professor of Dermatology [2005]

Khaled M. Keaish, M.B.B.Ch.
Assistant Professor of Orthopedic Surgery [2000; 1999]

Jeffrey Renn Keeser, M.D., Ph.D.
Assistant Professor of Pediatrics [2005; 2003]

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 O. 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 C. Keswani, M.B.B.S.
Adjunct Assistant Professor of Neurology [2003]

Marwan R. Khalifeh, M.D.
Assistant Professor of Plastic Surgery [2008; 2006]

Saeed R. Khan, Ph.D.
Adjunct Assistant Professor of Oncology [2008; 1999], Adjunct Assistant Professor of Radiology [2008; 2005]

Akhil Jay Khanna, M.D.
Assistant Professor of Orthopedic Surgery [2004],
Assistant Professor of Biomedical Engineering [2007]

Harpal S. Khanuja, M.D.
Assistant Professor of Orthopedic Surgery [2001; 2000]

Ron Khazan, M.D.
Assistant Professor of Radiology and Radiological Science [1991; 1989] (on leave of absence)
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]

Hyun (Kevin) S. Kim, M.D.
Assistant Professor of Radiology and Radiological Science [2001; 1999]

Jean Kim, M.D., Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1996; 1995], Assistant Professor of Medicine [1996; 1995]

Matthew I. Kim, M.D.
Assistant Professor of Medicine [2003; 2002] (to 10/15/09), Joint Appointment in Health Sciences Informatics [2003] (to 10/15/09)

Young Choo Kim, M.D.
Assistant Professor of Radiology and Radiological Science [1979; 1971]

Young Jun Kim, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2005], Assistant Professor of Oncology [2009] (from 08/01/09)

Mark King, M.D.
Assistant Professor of Emergency Medicine [2000]

Tracy Meicha King, M.D.
Assistant Professor of Pediatrics [2005; 2004]

Arnold S. Kirshenbaum, M.D.
Assistant Professor of Pediatrics [1990]

Flora N. Kisuule, M.D.
Assistant Professor of Medicine [2007; 2004]

Mitchell Klappper, M.D.
Assistant Professor of Dermatology [1992]

Alison Patricia Klein, Ph.D.
Assistant Professor of Oncology [2004], Assistant Professor of Pathology [2004]

Jonathan Tzvi Klein, M.D.
Assistant Professor of Medicine [1994]

Lawrence E. Klein, M.D.
Assistant Professor of Medicine [1981; 1980]

Amy M. Knight, M.D.
Assistant Professor of Medicine [2003; 2000]

Thomas W. Koenig, M.D.
Assistant Professor of Psychiatry [1996; 1994], Associate Dean for Student Affairs [2004]

Richard J. Kolker, M.D.
Assistant Professor of Ophthalmology [1986; 2004]

Marian Kollark, M.D.
Assistant Professor of Medicine [2007; 2004]

Lisa A. Kolp, M.D.
Assistant Professor of Gynecology and Obstetrics [2001; 1999]

Scott Lee Kominsky, Ph.D.
Assistant Professor of Orthopedic Surgery [2003], Assistant Professor of Oncology [2003]

Theda C. Kontis, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1999; 1992]

Frederick K. Korley, M.D.
Assistant Professor of Emergency Medicine [2007]

Kathleen Bechtold Kortte, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2003]

Eric H.W. Kossoff, M.D.
Assistant Professor of Neurology [2002], Assistant Professor of Pediatrics [2002]

Sabine Kost-Byerly, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2001; 2000]

Ayman A. Koteish, M.D.
Assistant Professor of Medicine [2004; 2003]

Olga N. Kovbasnjuk, Ph.D.
Assistant Professor of Medicine [2000; 1999]

Nicholas A. Kozauer, M.D.
Assistant Professor of Psychiatry [2007]

Brian Gustav Kral, M.D., M.P.H.
Assistant Professor of Medicine [2009]

Steven J. Kravet, M.D., M.B.A.
Assistant Professor of Medicine [2001; 1995]

Robert Kimball Kritzler, M.D.
Assistant Professor of Pediatrics [2007]

Alfred Kronthai, M.D.
Assistant Professor of Ophthalmology [1993]

Esther I. Krug, M.D.
Assistant Professor of Medicine [2005]

Pawel Kudela, Ph.D.
Assistant Professor of Neurology [2008; 2003]

Ricky C. Kue, M.D.
Assistant Professor of Emergency Medicine [2008; 2007]

Kanupriya A. Kumar, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009] (from 08/10/09)

Patricia F. Kurtz, Ph.D.
Assistant Professor of Psychiatry [1996; 1993]

Hiroto Kuwabara, M.D., Ph.D.
Assistant Professor of Radiology and Radiological Science [2005; 2003]

John H. Kwon, M.D., Ph.D.
Assistant Professor of Medicine [2004]

Michael J. Labellarte, M.D.
Assistant Professor of Psychiatry [1997; 1996]

Scott E. LaBorwit, M.D.
Assistant Professor of Ophthalmology [1999; 1998]

Aaron LacKamp, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009]

John Gregory Ladas, M.D., Ph.D.
Assistant Professor of Ophthalmology [2001; 2000]

Hong Lai, M.P.H., Ph.D.
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, Ph.D.
Assistant Professor of Psychiatry [2007]

Gregory Latham, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009] (to 08/16/09)

Asad Latif, M.B.B.S.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008] (on leave of absence 08/13/09-08/17/09)

Bryan Lau, Ph.D.
Assistant Professor of Medicine [2006; 2004]

Maren R. Laughlin, Ph.D.
Adjunct Assistant Professor of Radiology and Radiological Science [2008]

Josh David Lauring, M.D., Ph.D.
Assistant Professor of Oncology [2008]

Bennett Lavenstein, M.D.
Assistant Professor of Neurology [1997]

Paul A. 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] (from 08/01/09)

Dung Thi Le, M.D.
Assistant Professor of Oncology [2009; 2007]

William Leahy, M.D.
Assistant Professor of Neurology [1978]

Noah Lechtzin, M.D., M.H.S.
Assistant Professor of Medicine [2001], Assistant Professor of Neurology [2003]

Henry Alexander Leder, M.D.
Assistant Professor of Ophthalmology [2009; 2008]

Benjamin H. Lee, M.D., M.P.H.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Carlton K. K. Lee, Pharm.D., M.P.H.
Assistant Professor of Pediatrics [1995; 1992]

Hochang Benjamin Lee, M.D.
Assistant Professor of Psychiatry [2003]

Jai Sung Lee, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]
Anne O. Lidor, M.D.
Assistant Professor of Surgery [2004; 2003]

Nanette J. Liegeois-Kwon, M.D., Ph.D.
Assistant Professor of Dermatology [2003] (to 09/30/09), Assistant Professor of Oncology [2009], Assistant Professor of Otolaryngology-Head and Neck Surgery [2005], Assistant Professor of Plastic Surgery [2007]

Scott David Lifchez, M.D.
Assistant Professor of Plastic Surgery [2006]

Noah I. Lightman, M.D.
Assistant Professor of Radiology and Radiological Science [1975]

Michael 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]

Li Lin, Ph.D.
Adjunct Assistant Professor of Medicine [2000]

Steven E. Lindauer, Ph.D.
Assistant Professor of Psychiatry [2005]

Nikkea Copeland Linder, Ph.D.
Assistant Professor of Pediatrics [2007]

Shari Miura Ling, M.D.
Assistant Professor of Medicine [1996]

John Timothy Little, M.D.
Adjunct Assistant Professor of Psychiatry [2006; 1999]

Gordon S. Livingston, M.D.
Assistant Professor of Psychiatry [1976; 1974]

Thomas E. Lloyd, M.D., Ph.D.
Assistant Professor of Neurology [2008]

Heather Virginia Lochner, M.D.
Assistant Professor of Orthopaedic Surgery [2009]

Charles F.S. Locke, M.D.
Assistant Professor of Medicine [2000; 1998]

Paula J. Lockhart, M.D.
Assistant Professor of Psychiatry [1995; 1991]

Martin Anthony Lodge, Ph.D.
Assistant Professor of Radiology and Radiological Science [2006]

David M. Loeb, M.D., Ph.D.
Assistant Professor of Oncology [2001; 2000], Assistant Professor of Pediatrics [2001; 2000]

Joseph S. Lombardo, M.S.
Assistant Professor of Health Sciences Informatics [2009]

Andrew London, M.D.
Assistant Professor of Gynecology and Obstetrics [2003; 1978]

J. Craig Longenecker, M.D., M.P.H.
Assistant Professor of Medicine [1999; 1998]

Gilberto de Lima Lopes, Jr., M.D.
Assistant Professor of Oncology [2007]

Tamara Levin Lotan, M.D.
Assistant Professor of Pathology [2008]

Meredith Buonanno Loveless, M.D.
Assistant Professor of Gynecology and Obstetrics [2006; 2004], Assistant Professor of Pediatrics [2006]

Marc Lowen, M.D.
Assistant Professor of Gynecology and Obstetrics [1993; 1983]

Nancy Ryan Lowitt, M.D.
Assistant Professor of Medicine [1997; 1994]

Lisa H. Lubomski, Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005]

Ronald W. Luethke, M.D.
Assistant Professor of Plastic Surgery [1992; 1990]

Andreas R.J. Luft, M.D.
Adjunct Assistant Professor of Neurology [2004]

Jun Luo, Ph.D.
Assistant Professor of Urology [2002], Assistant Professor of Oncology [2007]

Shawn E. Lupold, Ph.D.
Assistant Professor of Urology [2005], Assistant Professor of Oncology [2009]

Thomas Lynch, M.B.B.Ch.
Assistant Professor of Psychiatry [1986; 1962]

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]

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 [2001; 1997]

Priscilla Magno, M.D.
Adjunct Assistant Professor of Medicine [2001; 1997]

Gina M. Magyar-Russell, Ph.D.
Adjunct Assistant Professor of Psychiatry [2009; 2007]

Christine Lan Mai, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009] (from 08/01/09)

Mohammad Maisami, M.D.
Assistant Professor of Psychiatry [1978], Assistant Professor of Pediatrics [1978]

Mahmoud B. Malas, M.D.
Assistant Professor of Surgery [2005]
Andrew L. Mammen, M.D., Ph.D.
Assistant Professor of Neurology [2007], Assistant Professor of Medicine [2009]
Michele Ann Manahan, M.D.
Assistant Professor of Plastic 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]
Mohamed K. Mardini, M.D.
Assistant Professor of Pediatrics [1986]
Zoltan Mari, M.D.
Assistant Professor of Neurology [2006]
Spyridon S. Marinopoulos, M.D., M.B.A.
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]
Shanthi Marur, M.B.B.S.
Assistant Professor of Oncology [2009; 2007] (from 09/01/09), Instructor in Oncology [2007] (to 08/31/09)
Richard P. Marvel, M.D.
Assistant Professor of Urology [2006]
Andrea Slotkoff Marx, M.D.
Assistant Professor of Gynecology and Obstetrics [2004]
Barry S. Marx, M.D.
Assistant Professor of Pediatrics [1998; 1985]
Stephen C. Mathai, M.D., M.H.S.
Assistant Professor of Medicine [2009; 2008] (from 08/01/09), Instructor in Medicine [2008] (to 07/31/09)
Debra JH 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]
Brian Richard Matlaga, M.D.
Assistant Professor of Urology [2006]
Rebecca E. Matsakis, M.D.
Assistant Professor of Pediatrics [1984; 1983]
Alan K. Matsumoto, M.D.
Assistant Professor of Medicine [1993]
Koichiro Matsuo, D.D.S.
Adjunct Assistant Professor of Physical Medicine and Rehabilitation [2008; 2005]
Leslie S. Matthews, M.D.
Assistant Professor of Orthopedic 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]
Andrew R. Mayrer, M.D.
Assistant Professor of Medicine [1984]
Reza Mazhari, Ph.D.
Adjunct Assistant Professor of Medicine [2003; 2002]
Teri 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., M.H.S.
Assistant Professor of Medicine [2009; 2008]
Susan Sifford McDermott, M.D.
Assistant Professor of Neurology [2002]
Michael A. McDevitt, M.D., Ph.D.
Assistant Professor of Medicine [2002], Assistant Professor of Oncology [2006]
John F. McDyer, M.D.
Assistant Professor of Medicine [2000]
Henry F. McFarland, M.D.
Assistant Professor of Neurology [1973]
Bernard M. McGibbon, M.B.B.S.
Assistant Professor of Plastic Surgery [1971]
Brian M. McGinley, M.D.
Assistant Professor of Pediatrics [2006]
Laura Young Mcgirt, M.D.
Assistant Professor of Dermatology [2009] (from 07/13/09)
Marsden McGuire, M.D.
Assistant Professor of Psychiatry [1997; 1993]
Maura J. McGuire, M.D.
Assistant Professor of Medicine [1994; 1989]
Joseph D. McNerney, M.S.
Visiting Assistant Professor of Pediatrics [2000]
Robin McKenzie, M.D.
Assistant Professor of Medicine [1997]
Anne B. McKusick, M.D.
Assistant Professor of Medicine [1969; 1953]
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]

Simon C. Mears, M.D., Ph.D.
Assistant Professor of Orthopedic Surgery [2003]

Alan K. 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]

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]

Christian A. Merlo, M.D., M.P.H.
Assistant Professor of Medicine [2006; 2004]

James H. 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. Frey Meier, 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 M. 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], Adjunct Assistant Professor of Biomedical Engineering [2008; 2006]

Lorraine A. Milio, M.D.
Assistant Professor of Gynecology and Obstetrics [1996]

Julie Marie Miller, M.D.
Assistant Professor of Medicine [1999]

Leslie R. Miller, M.D.
Assistant Professor of Psychiatry [2008]

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 Moghekar, M.B.B.S.
Assistant Professor of Neurology [2008; 2006]

Alison Rae Moliterno, M.D.
Assistant Professor of Medicine [1976]

Mark 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]

Eric T. Moolchand, M.D.
Visiting Assistant Professor of Pediatrics [2001; 2000]

Chulso Moon, M.D., Ph.D.
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery [2008; 2001]

Margaret R. Moon, M.D., M.P.H.
Assistant Professor of Pediatrics [2004]

Graham Mooney, Ph.D.
Assistant Professor of History of Medicine [2006; 2003] (on leave of absence to 08/31/09)
G. William Moore, M.D., Ph.D.
Adjunct Assistant Professor of Pathology [1997]

Athir Morad, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2008]

Basil S. Morgan, M.D.
Assistant Professor of Ophthalmology [1985; 1982]

Yuriko Mori, M.D., Ph.D.
Assistant Professor of Medicine [2006]

Patrice Jean-Luc Morin, 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 Orthopedic Surgery [2004]

Nathan Moskowitz, M.D., Ph.D.
Assistant Professor of Neurological Surgery [1992; 1990]

James O. Mudd, M.D.
Assistant Professor of Medicine [2008]

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]

Beth Brianna Murinson, M.D., Ph.D.
Assistant Professor of Neurology [2002]

Jamie D. Murphy, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2008; 2007]

Michael S. Murphy, M.D.
Assistant Professor of Orthopedic Surgery [2003; 1995]

Donna I. Myers, M.D.
Assistant Professor of Medicine [1980; 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]

Samer S. Najjar, M.D.
Assistant Professor of Medicine [2000]

Jason W. Nascone, M.D.
Assistant Professor of Orthopedic Surgery [2005]

Hind Nassar, M.D.
Assistant Professor of Pathology [2007]

Tariq Ali Nayfleh, Ph.D., M.D.
Assistant Professor of Orthopedic Surgery [2006]

Saman Nazarian, M.D.
Assistant Professor of Medicine [2007]

Donna Maria Neale, M.D.
Assistant Professor of Gynecology and Obstetrics [2005]

Dale M. Needham, M.D., Ph.D.
Assistant Professor of Medicine [2006; 2003], Assistant Professor of Physical Medicine and Rehabilitation [2008]

Kristen L. 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 R. Neptune, M.D.
Assistant Professor of Medicine [2003; 2000]

Dale M. Netski, Ph.D.
Adjunct Assistant Professor of Medicine [2007; 2001]

David Neubauer, M.D.
Assistant Professor of Psychiatry [1986; 1985]

Philip R. Neubauer, M.D.
Assistant Professor of Orthopaedic Surgery [2009; 2008] (from 09/01/09)

Karin Jane Neufeld, M.D., M.P.H.
Assistant Professor of Psychiatry [1996]

Mary M. Newman, M.D.
Assistant Professor of Medicine [1992; 1984]

David Edward Newman-Toker, M.D.
Assistant Professor of Neurology [2002], Joint Appointment in Emergency Medicine [2006], Joint Appointment in Health Sciences Informatics [2002], Joint Appointment in Ophthalmology [2002], Assistant Professor of Otolaryngology-Head and Neck Surgery [2002]

Julie R. Newman-Toker, M.D.
Assistant Professor of Psychiatry [2004]

Geoffrey C. Nguyen, M.D., Ph.D.
Adjunct Assistant Professor of Medicine [2007]

Hien Tan Nguyen, M.D.
Assistant Professor of Surgery [2009; 2008]

Thai Tran Nguyen, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005; 2003]

Theresa T.H. Nguyen, M.D.
Assistant Professor of Pediatrics [2003; 2000]

Thien T. Nguyen, M.D., Ph.D.
Assistant Professor of Neurology [2005]

William A. Niermann, M.D.
Assistant Professor of Pediatrics [1967; 1958]

Jack E. Nissim, M.D.
Assistant Professor of Medicine [1997; 1978]

Hany R. Nosir, M.D.
Adjunct Assistant Professor of Physical Medicine and Rehabilitation [2007]

Emmanuel Nchinda Naah, M.D.
Assistant Professor of Medicine [1998]

Frederick Nuerciala, Jr., D.O., Ph.D.
Assistant Professor of Psychiatry [2008]

Eric Nuermberger, M.D.
Assistant Professor of Medicine [2003; 2000]

Gary W. Nyman, M.D.
Assistant Professor of Psychiatry [1974]
Paul Nyquist, M.D.
Assistant Professor of Neurology [2004], Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Julia T. O'Connor, Ph.D.
Assistant Professor of Behavioral Biology in the Department of Psychiatry [2003; 1995]

Naomi P. O'Grady, M.D.
Assistant Professor of Medicine [2004]

Thomas P. O'Toole, M.D.
Adjunct Assistant Professor of Psychiatry [2003]

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]

Esther S. 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 and Radiological Science [2009; 2008]

Sande 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 Olsen, M.D., M.P.H.
Assistant Professor of Medicine [2004]

Tola Omotosho, M.D.
Assistant Professor of Gynecology and Obstetrics [2009] (from 09/01/09)

Patrick Onyango, Ph.D.
Assistant Professor of Medicine [2004; 2003]

Chiadi U. Onyike, M.D.
Assistant Professor of Psychiatry [2004; 2002]

Joseph C. Orlando, M.D.
Assistant Professor of Plastic 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]

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] (from 08/15/09)

Ronald Ouwerkerk, Ph.D.
Assistant Professor of Radiology and Radiological Science [2003; 1998]

Elba M. Pacheco, M.D.
Assistant Professor of Ophthalmology [1992; 1989]

Theodosia Paclawskyj, Ph.D.
Assistant Professor of Psychiatry [2003; 2001]

Kathleen R. Page, M.D.
Assistant Professor of Medicine [2008; 2006]

Sara Isabel Pai, M.D., Ph.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2007], Assistant Professor of Oncology [2009] (from 08/01/09)

Sara Palmer, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [1999]

Xiaowu Pang, Ph.D.
Adjunct Assistant Professor of Otolaryngology-Head and Neck Surgery [2007]

Louis M. Panililio, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Susan R. Panny, M.D.
Assistant Professor of Pediatrics [1997; 1981]

Maryland Pao, M.D.
Assistant Professor of Psychiatry [1993]

Nazareno Paolocci, M.D., Ph.D.
Assistant Professor of Medicine [2002]

Alexander Papangelou, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2008]

Shruti Makarand Paranjape, M.D.
Assistant Professor of Pediatrics [2005]

Anand K. 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]

Nicole M. Parrish, Ph.D.
Assistant Professor of Pathology [2002; 2001]

Cameron F. Parsa, M.D.
Assistant Professor of Surgery [2004]

Leonard M. Parver, M.D.
Assistant Professor of Ophthalmology [1985]

Catherine Passaretti, M.D.
Assistant Professor of Medicine [2008]

Manisha J. Patel, M.D.
Assistant Professor of Dermatology [2008; 2007]
Arvind P. Pathak, Ph.D.
Assistant Professor of Radiology and Radiological Science [2005; 2004], Assistant Professor of Oncology [2005]

Susheel P. 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 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 Medicine [1997; 1996]

Richard N. Peeler, M.D.
Assistant Professor of Medicine [1977; 1955]

Jessica M. Peirce, Ph.D.
Assistant Professor of Psychiatry [2004; 2000]

Craig Douglas Peacock, Ph.D.
Assistant Professor of Medicine [2008; 2006]

Kimberly S. Peairs, M.D.
Assistant Professor of Medicine [1997; 1996]

Joseph V. Pergolizzi, Jr., M.D.
Adjunct Assistant Professor of Medicine [2000]

Myria Petrov, M.B.B.Ch.
Assistant Professor of Radiology and Radiological Science [2008]

Michelle A. Petrovic, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2007]

Mark F. Peyrot, Ph.D.
Assistant Professor of Medicine [1997; 1988]

Dzung L. Pham, Ph.D.
Assistant Professor of Radiology [2002]

Julius Cuong Pham, M.D.
Assistant Professor of Emergency Medicine [2005], Assistant Professor of Anesthesiology and Critical Care Medicine [2004]

Daniel L. Picard, M.D.
Assistant Professor of Surgery [1994]

Dzung L. Pham, 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]

Christopher Vine Plowe, M.D., M.P.H.
Assistant Professor of Medicine [1995]

Michelle A. Poirier, M.D., Ph.D.
Assistant Professor of Psychiatry [2004; 2001]

Gregory S. Pokrywka, M.D.
Assistant Professor of Medicine [2005]

Albert J. Polito, M.D.
Assistant Professor of Medicine [1997]

Sarah Polk, M.D.
Assistant Professor of Pediatrics [2007]

Andrew N. Pollak, M.D.
Assistant Professor of Orthopedic Surgery [2005; 1996]

Joel L. Pomerantz, Ph.D.
Assistant Professor of Biological Chemistry [2004]

Gregory M. Pontone, M.D.
Assistant Professor of Psychiatry [2008]

James K. Porterfield, M.D.
Assistant Professor of Medicine [1987]

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]

Keith W. Pratz, M.D.
Assistant Professor of Oncology [2009]

Gregory P. 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]

Jiang Qian, Ph.D.
Assistant Professor of Ophthalmology [2003; 2002], Assistant Professor of Oncology [2008]

Sandra D. Quartner, M.D.
Assistant Professor of Gynecology and Obstetrics [1981]

William S. 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]
Shervin 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 G. Radvany, M.D.
Assistant Professor of Radiology [2009]
Arman Rahmim, Ph.D.
Assistant Professor of Radiology and Radiological Science [2005]
Rudrajit M. Rai, M.D.
Assistant Professor of Medicine [2004]
Saras Ramanathan, M.D.
Assistant Professor of Ophthalmology [2003]
Jessica C. Ramella-Roman, Ph.D.
Adjunct Assistant Professor of Medicine [2008]
Oscar M. Ramirez, M.D.
Assistant Professor of Plastic 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]
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 [2008], Assistant Professor of Oncology [2002; 1998]
Mark J. Reader, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1988; 1987]
Sarah A.J. Reading, M.D.
Assistant Professor of Psychiatry [2004; 2002]
Lauri E. Reamer, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004; 2001]
Karen L. Reddy, Ph.D.
Assistant Professor of Biological Chemistry [2009]
Graham W. Redgrave, M.D.
Assistant Professor of Psychiatry [2006; 2003]
Stephanie L. Reel, M.B.A., B.S.
Assistant Professor of Health Sciences Informatics [2003]
Linda 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] (from 08/01/09), Adjunct Assistant Professor of Radiology [2009] (from 08/01/09)
Ruben Reider, M.D.
Assistant Professor of Medicine [2000]
Thomas Reifsnnyder, M.D.
Assistant Professor of Surgery [2006]
Maura Reinblatt, M.D.
Assistant Professor of Plastic Surgery [2008]
Shauna Pencer Reinblatt, M.D.
Assistant Professor of Psychiatry [2006]
Megan Elizabeth Reller, M.D., M.P.H.
Assistant Professor of Pathology [2007]
Baltazar Reynafarje, M.D., Ph.D.
Visiting Assistant Professor of Biological Chemistry [1986; 1979]
Steven J. Reynolds, M.D.C.M., M.P.H.
Assistant Professor of Medicine [2003]
Marcia Ribeiro, M.D.
Assistant Professor of Neurology [2000; 1998]
John Jeremy Rice, Ph.D.
Adjunct Assistant Professor of Biomedical Engineering [2001]
Elisabeth G. Richard, M.D.
Assistant Professor of Dermatology [2009] (from 09/21/09)
Rafael Mayo Richards, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009], Assistant Professor of Anesthesiology and Critical Care Medicine [2009]
Gina S. Richman, Ph.D.
Assistant Professor of Psychiatry [1990; 1987]
Jeremy D. Richmon, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [2008; 20]
Ronald C. Richter, M.D.
Assistant Professor of Ophthalmology [1986; 1982]
Stefan Riedel, M.D., Ph.D.
Assistant Professor of Pathology [2007]
Kristin A. Rieker, Ph.D.
Assistant Professor of Medicine [2006; 2003]
Reed D. Riley, M.D.
Assistant Professor of Medicine [1999; 1996]
Sheryl L. Rimrodt, M.D.
Assistant Professor of Pediatrics [2006; 2005]
Vivian Rismondo-Stankovich, M.D.
Assistant Professor of Ophthalmology [2000]
Eva Katharina Ritzl, M.D.
Assistant Professor of Neurology [2003]
Juan J. Rivera, M.D.
Assistant Professor of Medicine [2009]

FACULTY 381
Paul R. Rivkin, M.D.
Assistant Professor of Psychiatry [1998]
Pual E. Roberts, M.D.
Assistant Professor of Psychiatry [1985]
Hector A. Robles, M.D., M.P.H.
Assistant Professor of Radiology and Radiological Science [1999]
Jose M. Rodriguez-Paz, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2006]
John F. Rogers, M.D.
Assistant Professor of Medicine [1984]
Glen Stanley Roseborough, M.D.
Assistant Professor of Surgery [2000]
Jason D. Rosenberg, M.D.
Assistant Professor of Neurology [2006; 2003]
Paul B. Rosenberg, M.D.
Assistant Professor of Psychiatry [2003]
Jo Ann Rosenfeld, M.D.
Assistant Professor of Medicine [2000]
Ariella M. 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 Surgery [2005; 2004]
David M. Roth, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1980]
Kate Rothko, M.D.
Adjunct Assistant Professor of Pathology [1989; 1987]
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]
James Rubenstein, M.D.
Assistant Professor of Neurology [2007; 2001], Instructor in Pediatrics [2001]
Michelle A. Rudy, Ph.D., Pharm.D.
Assistant Professor of Oncology [2003; 2001]
Dobrila D. Rudnicki, Ph.D.
Assistant Professor of Psychiatry [2009; 2006]
Jeffrey A. Rumbaugh, M.D., Ph.D.
Assistant Professor of Neurology [2004] (to 10/31/09)
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 Ryden, M.D.
Assistant Professor of Medicine [1996; 1992]
Saran Sabunciyian, Ph.D.
Assistant Professor of Pediatrics [2009; 2007]
K. George Sachariah, M.D.
Assistant Professor of Radiology and Radiological Science [1981; 1980]
Cristina L. Sadowski, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2005]
Neal T. Sakima, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1991; 1989]
Rachel Marie E. Salas, M.D.
Assistant Professor of Neurology [2008], Assistant Professor of Medicine [2008]
Betty Jo Salmeron, M.D.
Adjunct Assistant Professor of Psychiatry [2006]
Cynthia F. Salorio, Ph.D.
Assistant Professor of Physical Medicine and Rehabilitation [2005; 2002]
Donald I. Saltzman, M.D.
Assistant Professor of Orthopedic Surgery [1990; 1974]
John B. Sampson, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2004]
Jack F. Samuels, Ph.D.
Assistant Professor of Psychiatry [1997; 1991]
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 M. 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]
Antonio Santillan-Gomez, M.D., M.B.A.
Assistant Professor of Gynecology and Obstetrics [2007]
Patricia B. Santora, Ph.D.
Assistant Professor of Psychiatry [1996; 1992]
M. Catherine Sargent, M.D.
Assistant Professor of Orthopedic Surgery [2005] (to 08/31/09)
Maryam Sattari, M.A.
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, Ph.D., M.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 H. Schaeffer, M.D.
Assistant Professor of Medicine [1989]
Edward M. Schaeffer, M.D., Ph.D.
Assistant Professor of Urology [2007], Assistant
Professor of Oncology [2009]
Stephen Schatz, M.D.
Assistant Professor of Urology [2009] (from
09/01/09)
Janet Nagel Scheel, M.D.
Assistant Professor of Pediatrics [1999]
Adam J. Schiavi, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical
Care Medicine [2009; 2008]
Michael W. Schlund, Ph.D.
Assistant Professor of Psychiatry [2001]
Karen 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 Orthopedic Surgery [2003],
Assistant Professor of Biomedical Engineering
[2009]
Steven A. Schonfeld, M.D.
Assistant Professor of Medicine [1982]
Robert K. Schreter, M.D.
Assistant Professor of Psychiatry [1981; 1978]
Pamela Rose Schroeder, M.D., Ph.D.
Assistant Professor of Medicine [2009; 2006]
Michael C. Schubert, Ph.D.
Assistant Professor of Otolaryngology-Head and
Neck Surgery [2005; 2004]
Clarence G. Schulz, M.D.
Assistant Professor of Psychiatry [1975; 1966]
Thomas G. Schulze, M.D.
Adjunct Assistant Professor of Psychiatry [2009]
Gail F. Schwartz, M.D.
Assistant Professor of Ophthalmology [2000; 1996]
Jamie McElrath Schwartz, M.D.
Assistant Professor of Anesthesiology and Critical
Care Medicine [2005]
Joseph M. Schwartz, M.D.
Assistant Professor of Psychiatry [1997; 1995]
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]

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 Shilkofski, 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]

Lillie Shockney, M.A.S., B.S., R.N.
University Distinguished Service Assistant Professor of Breast Cancer in the Department of Surgery [2007; 2006], Assistant Professor of Gynecology and Obstetrics [2007]

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]

Venkataramana K. Sidhaye, M.D.
Assistant Professor of Medicine [2009; 2006]

Ann N. Sieber, M.S.
Assistant Professor of Orthopedic Surgery [2000; 1998]

Andrew W. Siegel, Ph.D., J.D.
Assistant Professor of Gynecology and Obstetrics [2003]

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 A. Silber, M.D., Ph.D.
Assistant Professor of Medicine [2000]

Janet M. Siliciano, Ph.D.
Assistant Professor of Medicine [2005; 1998]

Ronald Paul Silverman, M.D.
Assistant Professor of Plastic Surgery [2000]

Oliver P. Simmons, M.D.
Assistant Professor of Plastic Surgery [2006]

Eva Simmons-O'Brien, M.D.
Assistant Professor of Dermatology [1994; 1993], Assistant Professor of Medicine [1994; 1993]

Lisa Simonson, M.D.
Assistant Professor of Medicine [1996; 1993]

Crystal F. Simpson, M.D.
Assistant Professor of Medicine [2003], Assistant Dean for Student Affairs [2004]

Alon Sinai, Ph.D.
Adjunct Assistant Professor of Neurology [2008]

Andrew Lawrence Singer, M.D., Ph.D.
Assistant Professor of Surgery [2008; 2006]

H. Rosy Singh, M.D.
Assistant Professor of Radiology and Radiological Science [1992]

Navin Singh, M.D.
Assistant Professor of Plastic Surgery [2001; 1999], Assistant Professor of Gynecology and Obstetrics [2006], Assistant Professor of Neurological Surgery [2006]

Rameet Singh, M.D.
Assistant Professor of Gynecology and Obstetrics [2005; 2003]

Sonal Singh, M.B.B.S., M.P.H.
Assistant Professor of Medicine [2009]

Debasish Sinha, Ph.D.
Assistant Professor of Ophthalmology [2001]

Gita 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., M.A.
Assistant Professor of Orthopedic Surgery [2004]

Sheri Slezak, M.D.
Assistant Professor of Plastic 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]
<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beth S. Slomine, Ph.D.</td>
<td>Assistant Professor of Medical Psychology in the Department of Psychiatry [2000; 1997]</td>
</tr>
<tr>
<td>Christopher L. Smith, M.D.</td>
<td>Assistant Professor of Radiology [2007; 2006]</td>
</tr>
<tr>
<td>David P. Smith, M.D.</td>
<td>Assistant Professor of Radiology and Radiological Science [1994; 1991]</td>
</tr>
<tr>
<td>Jeffrey M. Smith, M.D., M.P.H.</td>
<td>Assistant Professor of Gynecology and Obstetrics [1996; 1994] (on leave of absence to 09/30/09)</td>
</tr>
<tr>
<td>Seth A. Smith, Ph.D.</td>
<td>Assistant Professor of Radiology and Radiological Science [2009; 2008]</td>
</tr>
<tr>
<td>Stephen R. Smith, M.D.</td>
<td>Assistant Professor of Medicine [1982; 1981]</td>
</tr>
<tr>
<td>Wanli Smith, Ph.D.</td>
<td>Assistant Professor of Psychiatry [2006; 2005]</td>
</tr>
<tr>
<td>Constance L. Smith-Hicks, M.D., Ph.D.</td>
<td>Assistant Professor of Neurology [2008; 2006]</td>
</tr>
<tr>
<td>Tracey L. Smith-Stierer, M.D.</td>
<td>Assistant Professor of Anesthesiology and Critical Care Medicine [1995; 1993]</td>
</tr>
<tr>
<td>Claire Snyder, Ph.D.</td>
<td>Assistant Professor of Medicine [2005], Assistant Professor of Oncology [2005]</td>
</tr>
<tr>
<td>Janet M. Soeffing, M.D.</td>
<td>Assistant Professor of Medicine [2007]</td>
</tr>
<tr>
<td>Steven F. Solga, M.D.</td>
<td>Visiting Assistant Professor of Medicine [2007; 2004]</td>
</tr>
<tr>
<td>Steven J. Sollott, M.D.</td>
<td>Assistant Professor of Medicine [1992]</td>
</tr>
<tr>
<td>Barry Scott Solomon, M.D., M.P.H.</td>
<td>Assistant Professor of Pediatrics [2002]</td>
</tr>
<tr>
<td>Clifford T. Solomon, M.D.</td>
<td>Assistant Professor of Neurological Surgery [1999; 1992]</td>
</tr>
<tr>
<td>David Solomon, M.D., Ph.D.</td>
<td>Assistant Professor of Neurology [2004], Assistant Professor of Otolaryngology-Head and Neck Surgery [2004]</td>
</tr>
<tr>
<td>Sharon D. Solomon, M.D.</td>
<td>Assistant Professor of Ophthalmology [2002; 2000], Occupying the Katherine Graham Professorship in Ophthalmology</td>
</tr>
<tr>
<td>Danny Y. Song, M.D.</td>
<td>Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2004], Assistant Professor of Oncology [2004], Assistant Professor of Urology [2004]</td>
</tr>
<tr>
<td>Christine Chia-Chi Soong, M.D.</td>
<td>Assistant Professor of Medicine [2009; 2007]</td>
</tr>
<tr>
<td>Gabriel Soudry, M.D.</td>
<td>Assistant Professor of Radiology and Radiological Science [2008]</td>
</tr>
<tr>
<td>Philippe Alain Soyer, M.D.</td>
<td>Assistant Professor of Radiology and Radiological Science [1995]</td>
</tr>
<tr>
<td>Lisa A. Spacek, M.D., Ph.D.</td>
<td>Assistant Professor of Medicine [2004]</td>
</tr>
<tr>
<td>Christopher John Sperati, M.D.</td>
<td>Assistant Professor of Medicine [2007]</td>
</tr>
<tr>
<td>Melissa Riedy Spevak, M.D.</td>
<td>Assistant Professor of Radiology and Radiological Science [1996]</td>
</tr>
<tr>
<td>Ethan J. Spiegler, M.D.</td>
<td>Assistant Professor of Radiology and Radiological Science [1993; 1990], Instructor in Medicine [1991]</td>
</tr>
<tr>
<td>David Douglass Spragg, M.D.</td>
<td>Assistant Professor of Medicine [2006]</td>
</tr>
<tr>
<td>Sharmila Sreeddy, M.S., M.A.</td>
<td>Assistant Professor (Audiology &amp; Speech) of Otolaryngology-Head and Neck Surgery [2000; 1997]</td>
</tr>
<tr>
<td>Janet F. Staab, Ph.D.</td>
<td>Assistant Professor of Medicine [2008]</td>
</tr>
<tr>
<td>Simona Stager, Ph.D.</td>
<td>Assistant Professor of Pharmacology and Molecular Sciences [2005]</td>
</tr>
<tr>
<td>Heather Maureen Starmer, M.A.</td>
<td>Assistant Professor (Audiology &amp; Speech) of Otolaryngology-Head and Neck Surgery [2009; 2006]</td>
</tr>
<tr>
<td>Joseph William Stauffer, D.O.</td>
<td>Assistant Professor of Anesthesiology and Critical Care Medicine [2005]</td>
</tr>
<tr>
<td>P. Zoe Stavri, Ph.D.</td>
<td>Visiting Assistant Professor of Health Sciences Informatics [2001]</td>
</tr>
<tr>
<td>Duncan Scott Stearns, M.D.</td>
<td>Adjunct Assistant Professor of Pathology [2008]</td>
</tr>
<tr>
<td>Joshua Daniel Stearns, M.D.</td>
<td>Assistant Professor of Anesthesiology and Critical Care Medicine [2006]</td>
</tr>
<tr>
<td>Cynthia D. Steele, M.P.H.</td>
<td>Assistant Professor of Psychiatry [2005; 1989]</td>
</tr>
<tr>
<td>Kimberly Eden Steele, M.D.</td>
<td>Assistant Professor of Surgery [2007; 2005]</td>
</tr>
<tr>
<td>David H. Stein, M.D., M.P.H.</td>
<td>Assistant Professor of Dermatology [1995; 1992]</td>
</tr>
<tr>
<td>Martin Irwin Steinberg, M.D.</td>
<td>Assistant Professor of Psychiatry [1997; 1996]</td>
</tr>
<tr>
<td>Steven Jeffrey Steinberg, Ph.D.</td>
<td>Assistant Professor of Neurology [2003; 2000]</td>
</tr>
<tr>
<td>Claudia A. Steiner, M.D., M.P.H.</td>
<td>Assistant Professor of Medicine [1994]</td>
</tr>
<tr>
<td>Laura Marie Sterni, M.D.</td>
<td>Assistant Professor of Pediatrics [1996]</td>
</tr>
<tr>
<td>Kent A. Stevens, M.D.</td>
<td>Assistant Professor of Surgery [2008]</td>
</tr>
<tr>
<td>Rosalyn W. Stewart, M.D., M.S.</td>
<td>Assistant Professor of Medicine [2004]</td>
</tr>
<tr>
<td>William M. Stiers, Ph.D.</td>
<td>Assistant Professor of Physical Medicine and Rehabilitation [2005]</td>
</tr>
</tbody>
</table>
Monique F. Stins, Ph.D.
Assistant Professor of Neurology [2008; 2007]
Andrew I. Stolbach, M.D.
Assistant Professor of Emergency Medicine [2007]
Kenneth B. Stoller, M.D.
Assistant Professor of Psychiatry [2000; 1998]
Nancy V. Strahan, M.D.
Assistant Professor of Medicine [1999; 1985]
Eric David Strauch, M.D.
Assistant Professor of Pediatric Surgery [1999; 1995]
John J. Strouse, M.D.
Assistant Professor of Pediatrics [2006; 2004], Assistant Professor of Medicine [2008]
Geetha Subramaniam, M.B.B.S.
Assistant Professor of Psychiatry [2003; 1998]
Aruna Kumar Subramaniam, M.D.
Assistant Professor of Medicine [2001]
G. Mani Subramaniam, M.D., Ph.D.
Assistant Professor of Medicine [2001]
Sangeeta Dileep Sule, M.D.
Assistant Professor of Pediatrics [2004; 2003], Instructor in Medicine [2003]
Charlotte J. Sumner, M.D.
Assistant Professor of Neurology [2006]
Zhaoli Sun, M.D., Ph.D.
Assistant Professor of Surgery [2003; 1999]
Jennifer Unjoo Sung, M.D.
Assistant Professor of Ophthalmology [2001]
Andrew J. Surmak, M.D.
Assistant Professor of Surgery [1981]
Stacy J. Suskauer, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2008; 2007]
Marc C. Sussman, M.D.
Assistant Professor of Surgery [1993]
Ronald J. Sweren, M.D.
Assistant Professor of Dermatology [2009; 1989]
Heather J. Symons, M.D.
Assistant Professor of Oncology [2007]
Katsuyuki Taguchi, Ph.D.
Assistant Professor of Radiology and Radiological Science [2007; 2005]
Clifford Mitsuo Takemoto, M.D.
Assistant Professor of Pediatrics [1999], Assistant Professor of Pediatrics [1999]
Eiki Takimoto, Ph.D.
Assistant Professor of Medicine [2007; 2006]
Kellie Louise Tamashiro, Ph.D.
Assistant Professor of Psychiatry [2008]
Erwin Tan, M.D.
Assistant Professor of Medicine [2004]
Shiv Darius Tandon, Ph.D.
Assistant Professor of Pediatrics [2006; 2002]
Harikrishna Tandri, M.B.B.S.
Assistant Professor of Medicine [2008]
Nelson Tang, M.D.
Assistant Professor of Emergency Medicine [1987]
Craig P. Tanio, M.D.
Assistant Professor of Medicine [1997]
Jennifer Williams Tanio, M.D.
Assistant Professor of Medicine [1998; 1996]
Feng Tao, M.D., Ph.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2005] (from 09/01/09), Instructor in Anesthesiology and Critical Care Medicine [2007; 2005] (to 08/31/09)
Xuguang (Grant) Tao, M.D., Ph.D.
Assistant Professor of Medicine [2003]
Janis Marie Taube, M.D.
Assistant Professor of Dermatology [2009] (from 08/01/09), Assistant Professor of Pathology [2009] (from 08/01/09)
Sean Dixon Taverna, Ph.D.
Assistant Professor of Pharmacology and Molecular Sciences [2008]
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]
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 Orthopedic 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, Ph.D., M.B.B.S.
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]

P. Justin Tortolani, M.D.  
Assistant Professor of Orthopaedic Surgery [1988]

Pegah Touradji, 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] (from 08/17/09)

Maria Trent, M.D.  
Assistant Professor of Pediatrics [2001]

Michael Edward Trice, M.D.  
Assistant Professor of Orthopedic 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.  
Assistant Professor of Medicine [2007]

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 Turban, M.D.  
Assistant Professor of Medicine [2009; 2007]

Clifford Turen, M.D.  
Assistant Professor of Orthopedic Surgery [1994]

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]

Richard M. Ugarte, M.D., M.P.H.  
Assistant Professor of Medicine [2006; 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 B. 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]

Sinisa Urban, Ph.D.  
Assistant Professor of Molecular Biology and Genetics [2006]

Victor C. Urrutia, M.D.  
Assistant Professor of Neurology [2005]

Dhananjay M. Vaidya, Ph.D., M.P.H., M.B.B.S.  
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 Orthopedic Surgery [2009]

Mustafa Shakir Vali, M.B.B.S.  
Assistant Professor of Radiology [2003]

Cristianna Vallera, M.D.  
Assistant Professor of Anesthesiology and Critical Care Medicine [2009; 2008]

Ryan Vandrey, Ph.D.  
Assistant Professor of Psychiatry [2008; 2007]

Ravi Varadhan, Ph.D.  
Assistant Professor of Medicine [2004; 20]

Stuart R. Varon, M.D.  
Assistant Professor of Psychiatry [2001; 1994]

Roma A. Vasa, M.D.  
Assistant Professor of Psychiatry [2002; 1997]

Arun Venkatesan, Ph.D., M.D.  
Assistant Professor of Neurology [2007; 2006]

Michael Y. Viksman, M.D., Ph.D.  
Assistant Professor of Medicine [1996]

Virginia Susan Villani, M.D.  
Assistant Professor of Psychiatry [2000]

Nikos Vlahos, M.D.  
Assistant Professor of Gynecology and Obstetrics [2000; 1999]

Jens Vogel-Claussen, M.D.  
Assistant Professor of Radiology and Radiological Science [2007] (on leave of absence from 10/01/09)

Becky Marie Vonakis, Ph.D.  
Assistant Professor of Medicine [2001]

Carolyn Clymer Voorhees, Ph.D., M.B.A.  
Assistant Professor of Medicine [1996; 1993]

Alexander Vu, D.O., M.P.H.  
Assistant Professor of Emergency Medicine [2005]

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]

A. Terry Walman, M.D.
Assistant Professor of Anesthesiology and Critical Care Medicine [1984; 1982]

Hao Wang, Ph.D.
Assistant Professor of Oncology [2009] (from 08/31/09)

Jean S. Wang, M.D.
Assistant Professor of Medicine [2005; 2004] (to 08/31/09)

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] (from 09/01/09)

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]

Tian-Li Wang, Ph.D.
Assistant Professor of Gynecology and Obstetrics [2003]. Assistant Professor of Oncology [2004]

H. Richard Waranch, Ph.D.
Assistant Professor of Medical Psychology in the Department of Psychiatry [1981; 1979]

Juliana 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.D., 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 L. Weaver, M.D.
Assistant Professor of Psychiatry [1994; 1990]

Kim Webster, M.A.
Assistant Professor (Audiology & Speech) of 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]

Sharon Lynn Weintraub, M.D.
Assistant Professor of Surgery [2008]

Carlos O. Weiss, M.D., M.H.S.
Assistant Professor of Medicine [2006]

Clifford R. Weiss, M.D.
Assistant Professor of Radiology and Radiological Science [2008]

Margaret A. Weiss, M.D.
Assistant Professor of Dermatology [1993; 1982]

Alyson Wells, M.D.
Assistant Professor of Plastic 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 Oncology [2003; 2000]

Sarah Wheelan, M.D., Ph.D.
Assistant Professor of Oncology [2006]

Brent R. Whitaker, D.V.M.
Assistant Professor of Art as Applied to Medicine [2001]

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]

Lara B. Wilder, Sc.D.
Assistant Professor of Medicine [1993; 1986]

Hans R. Wilhelmson, M.D., D.D.S.
Assistant Professor of Plastic Surgery [1995]

Eric H. Williams, M.D.
Assistant Professor of Plastic Surgery [2009; 2006]

Kayode Ayodele Williams, M.D., M.B.A.
Assistant Professor of Anesthesiology and Critical Care Medicine [2005]

Mark F. Williams, M.D.
Assistant Professor of Otolaryngology-Head and Neck Surgery [1999]

Marlene Stephanie Williams, M.D.
Assistant Professor of Medicine [1999]

Richard Bland Williams, III, M.D.
Adjunct Assistant Professor of Medicine [2009]

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 B. Wisniewski, Ph.D.
Assistant Professor of Pediatrics [2003; 2002]

Timothy F. Witham, M.D.
Assistant Professor of Neurological Surgery [2006; 2005]

Ilan Shor Wittstein, M.D.
Assistant Professor of Medicine [1998]

Andrew Wolfe, Ph.D.
Assistant Professor of Pediatrics [2007; 2006], Assistant Professor of Physiology [2008]

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]

Jean-Paul Wolinsky, M.D.
Assistant Professor of Neurological Surgery [2005; 2004], Assistant Professor of Oncology [2009]

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]

Elizabeth Wood, M.S.
Assistant Professor of Gynecology and Obstetrics [2008; 2003]

Katherine C. Wu, M.D.
Assistant Professor of Medicine [2000]

Mark N. Wu, M.D., Ph.D.
Assistant Professor of Neurology [2009] (from 08/01/09), Assistant Professor of Medicine [2009] (from 08/01/09)

Tinghuai Wu, M.D., Ph.D.
Assistant Professor of Ophthalmology [1999] (on leave of absence to 09/14/09)

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 and Radiological Science [1992; 1988]

Samuel Yang, M.D.
Assistant Professor of Emergency Medicine [2005; 2002]

Sevil Yasar, M.D.
Assistant Professor of Medicine [2001]

Youseph Yazdi, Ph.D., M.B.A.
Assistant Professor of Biomedical Engineering [2009] (from 09/01/09)

Ricardo A. Yazigi, M.D.
Assistant Professor of Gynecology and Obstetrics [2006]

Srinivasan Yegnasubramanian, M.D., Ph.D.
Assistant Professor of Oncology [2004]

Hsin-Chieh Yeh, Ph.D.
Assistant Professor of Medicine [2008; 2006]

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 H. Ying, M.D.
Assistant Professor of Neurology [2004], Assistant Professor of Ophthalmology [2004]

Elaine Yong, M.D.
Visiting Assistant Professor of Medicine [2007; 2006]

Kiyoshi Yoshimura, M.D., Ph.D.
Assistant Professor of Surgery [2007; 2006], Assistant Professor of Oncology [2007; 2006]

Jeffery Hunter Young, M.D., M.H.S.
Assistant Professor of Medicine [2002; 2000]

Mark Allen Young, M.D.
Assistant Professor of Physical Medicine and Rehabilitation [2009]

Rex Chin-Wei Yung, M.D.
Assistant Professor of Medicine [2000], Assistant Professor of Oncology [2000]

T. Andrew Zabel, Ph.D.
Assistant Professor of Psychiatry [2005; 2003]

Natasha E. Zachara, Ph.D.
Assistant Professor of Biological Chemistry [2005]

Nicholas Zachos, Ph.D.
Assistant Professor of Medicine [2008; 20]

Kathleen M. 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 and Radiological Science [2008]

Cynthia Ann Zahnow, Ph.D.
Assistant Professor of Oncology [2001; 2000]

Ari L. Zaiman, M.D., M.P.H.
Assistant Professor of Medicine [2008; 2004]
Khwaja Javaid Zakriya, M.B.B.S.
Assistant Professor of Anesthesiology and Critical Care Medicine [2002]

Elias Thomas Zambidis, M.D., Ph.D.
Assistant Professor of Oncology [2005; 2004], Assistant Professor of Pediatrics [2005; 2004]

Richard C. Zellars, M.D.
Assistant Professor of Radiation Oncology and Molecular Radiation Sciences [2001; 2003], Assistant Professor of Oncology [2001]

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 and Radiological Science [2006; 2005]

Kechen Zhang, M.D.
Assistant Professor of Biomedical Engineering [2002; 20], Assistant Professor of Neuroscience [2003]

Rong Zhang-Howard, M.D., Ph.D.
Assistant Professor of Medicine [2009; 2001]

Lei Zheng, M.D., Ph.D.
Assistant Professor of Oncology [2009]

Tao Zheng, M.D.
Assistant Professor of Medicine [2004; 20]

Feng-Quan Zhou, Ph.D.
Assistant Professor of Orthopaedic Surgery [2005], Assistant Professor of Neuroscience [2005]

Jinyuan Zhu, Ph.D.
Assistant Professor of Radiology and Radiological Science [2001; 1999]

Yong-di Zhou, Ph.D.
Adjunct Assistant Professor of Neurological Surgery [2009; 2001]

Yun Zhou, Ph.D.
Assistant Professor of Radiology [2003; 2002]

Heng Zhu, Ph.D.
Assistant Professor of Pharmacology and Molecular Sciences [2004], Assistant Professor of Oncology [2005]

Yao-Yao Zhu, M.D., Ph.D.
Assistant Professor of Medicine [2000]

Wendy C. 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 Zieman, M.D.
Assistant Professor of Medicine [2001]

J. Samuel Zigler, Jr., Ph.D.
Assistant Professor of Ophthalmology [2007; 2006]

Bashir Ahmed Zikria, M.D.
Assistant Professor of Orthopedic Surgery [2007]

Karen Paul Zimmer, M.D.
Assistant Professor of Pediatrics [2005]

Brian Michael Zimmerman, 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 of Anesthesiology and Critical Care Medicine [1990; 1988], Joint Appointment in Gynecology and Obstetrics [1992]

Edward Lee Zuroweste, M.D.
Assistant Professor of Medicine [2001]

ASSISTANT PROFESSORS EMERITI

George C. Alderman, M.D.
Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery [1999; 1956]

Harold Joseph Alfert, M.D.
Assistant Professor Emeritus of Urology [1989]

Shaukat A. Ashai, M.B.B.S.
Assistant Professor Emeritus of Gynecology and Obstetrics [2009; 1976]

Arthur Baitch, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1967]

Frank T. Barranco, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1962]

H. Vaughan Belcher, M.D.
Assistant Professor Emeritus of Surgery [1989; 1973]

Mary Jane Blaustein, R.N.
Assistant Professor Emerita of Psychiatry [1992; 1974]

James B. Brooks, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1955]

Mervyn L. Carey, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [1981; 1956]

Gaylord L. Clark, Jr., M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1969; 1964]

Erlinda F. Deleon-Gaston, M.D.
Assistant Professor Emeritus of Radiology [1990; 1969]

Walter E. Dandy, Jr., M.D.
Assistant Professor Emeritus of Anesthesiology and Critical Care Medicine [1991; 1952]

James H. Dorsey, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [2001; 1964]

Albert E. Dreyfus, M.D.
Assistant Professor Emeritus of Psychiatry [1998; 1950]

James R. Duke, M.D.
Assistant Professor Emeritus of Ophthalmology [1983; 1955]
Robert E. Ensor, M.D.
Assistant Professor Emeritus of Radiology and Radiological Science [1990; 1972]

John J. Fahey, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1955]

William F. Fritz, M.D.
Assistant Professor Emeritus of Medicine [1992; 1955]

Kurt Glaser, M.D.
Assistant Professor Emeritus of Psychiatry [1981], Assistant Professor Emeritus of Pediatrics [1981; 1972]

Gerald A. Glowacki, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [2001; 1968]

Emily M.S. Haller, M.D.
Assistant Professor Emerita of Gynecology and Obstetrics [1980; 1976]

Harriet L. Haskins, A.M.
Assistant Professor (Audiology & Speech) Emerita of Otolaryngology-Head and Neck Surgery [1976; 1949]

Elmer Hoffman, M.D.
Assistant Professor Emeritus of Surgery [1994; 1955]

Thomas M. Holcomb, M.D.
Assistant Professor Emeritus of Pediatrics [2000; 1969]

Thomas E. Hunt, Jr., M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1956]

C. Ramadas Kamath, M.D.
Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery [1983; 1981]

Anne J. Krush, M.S.S.A.
Assistant Professor Emerita of Medicine [1985; 1976]

Arnold F. Lavenstein, M.D.
Assistant Professor Emeritus of Pediatrics [1982; 1958]

James Lawrence, III, M.D.
Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery [1976; 1973]

Paul M. Leand, M.D.
Assistant Professor Emeritus of Surgery [1968]

Samuel M.M. Lumpkin, M.D.
Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery [1979; 1966]

Roger H. Michael, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1976]

Ambadas Pathak, M.D.
Assistant Professor Emeritus of Pediatrics [1978]

Howard H. Patt, M.D.
Assistant Professor Emeritus of Surgery [1984; 1956]

Lydia L. Pauli, M.D.
Assistant Professor Emerita of Pediatrics [1985; 1954]

Thomas H. Powell, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1969]

Harold E. Ramsey, M.D.
Assistant Professor Emeritus of Surgery [1980; 1969], Assistant Professor Emeritus of Otolaryngology-Head and Neck Surgery [1980]

Anne B. Redfern, M.D.
Assistant Professor Emerita of Plastic Surgery [1997; 1977]

Nasser Rezai, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [1979; 1973]

Edward H. Richardson, Jr., M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [1982; 1947]

William F. Rienhoff, III, M.D.
Assistant Professor Emeritus of Surgery [1992; 1953]

Charles Savage, M.D.
Assistant Professor Emeritus of Psychiatry [1982; 1965]

Peter Schilder, M.D., Ph.D.
Assistant Professor Emeritus of Neurology [2006; 1992]

Frank F. Schuster, M.D.
Assistant Professor Emeritus of Neurology [1993; 1969]

Woodrow Seamone, B.S.
Assistant Professor (Research) Emeritus of Orthopedic Surgery [1991; 1980]

Waldron M. Sennott, M.D.
Assistant Professor Emeritus of Radiology and Radiological Science [1974; 1966]

Sylvan M.E. Shane, D.D.S.
Assistant Professor Emeritus of Oral Surgery [1989; 1980]

Lex B. Smith, M.D.
Assistant Professor Emeritus of Psychiatry [1968; 1954]

Thomas W. Snider, M.D.
Assistant Professor Emeritus of Radiology and Radiological Science [1994; 1962]

Donald B. Spangler, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [2001; 1982]

Alvin A. Stambler, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [2001; 1982]

Edward L. Suarez-Murias, M.D.
Assistant Professor Emeritus of Psychiatry [1972; 1943]

Bernard Tabatznik, M.B.B.Ch.
Assistant Professor Emeritus of Medicine [1990; 1961]

Alan J. Tapper, M.D.
Assistant Professor Emeritus of Gynecology and Obstetrics [1975; 1972]
Mahmud Thamer, M.D.
Assistant Professor Emeritus of Medicine [1997; 1970]

Kirby L.C. VonKessler, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [2004; 1967]

Barbara Young, M.D.
Assistant Professor Emerita of Psychiatry [1993; 1953]

Robert E. Zadek, M.D.
Assistant Professor Emeritus of Orthopedic Surgery [1992; 1961]

INSTRUCTORS

Fouad M. Abbas, M.D.
Instructor in Gynecology and Obstetrics [2006]

Riad Zuhdi Abdelkarim, M.D.
Instructor in Medicine [2008]

Gautam Agrawal, M.D.
Instructor in Radiology [2006]

Abdullah Shafique Ahmad, Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2008]

Hassan M. Ahmed, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2007]

Akinwande A. Akintola, M.D.
Instructor in Psychiatry [2003]

Samuel Robert Akman, M.D.
Instructor in Gynecology and Obstetrics [2007]

Nada Alachkar, M.D.
Instructor in Medicine [2008]

Eli B. Alegado, M.D.
Instructor in Medicine [2005]

Alvin Kandanatt Antony, M.D.
Instructor in Physical Medicine and Rehabilitation [2008]

Colette M. ap Rhys, Ph.D.
Instructor in Neurological Surgery [2007]

Raya Armaly, M.D.
Instructor in Ophthalmology [2002]

W. Perry Arnold, M.D.
Instructor in Radiology and Radiological Science [1976]

Beth L. Aronson, M.D.
Instructor in Gynecology and Obstetrics [1985]

Pedro Pablo Arrabal, M.D.
Instructor in Gynecology and Obstetrics [2006]

Thelma S. Asare, M.D.
Instructor in Gynecology and Obstetrics [2007]

Paul L. Asdourian, M.D.
Instructor in Orthopedic Surgery [1988]

Walter F. Atta, M.D.
Instructor in Emergency Medicine [2000]

Samer Attar, M.D.
Instructor in Orthopaedic Surgery [2009] (from 09/01/09)

John Nathaniel Aucott, M.D.
Instructor in Medicine [1996]

Shahid Aziz, M.D.
Instructor in Pediatrics [1992]

Richard Babkes, M.D.
Instructor in Neurology [1981]

Michelle L. Bahrain, D.O.
Instructor in Medicine [2004]

Susan Elaine Bailey, M.D.
Instructor in Psychiatry [2003]

Alva Says Baker, III, M.D.
Instructor in Psychiatry [1999]

Ashwin Balagopal, M.D.
Instructor in Medicine [2009]

Janaki Balakrishnan, M.D.
Instructor in Radiology and Radiological Science [1983]

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 of Plastic Surgery [2009]

Eli E. Bar, Ph.D.
Instructor in Pathology [2008]

Michael S. Barr, M.D.
Instructor in Medicine [2000]

David C. Bastacky, D.M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2004]

Marcelo Batkis, M.D.
Instructor in Psychiatry [2007]

Michael J. Battaglia, II, M.D.
Instructor in Orthopedic Surgery [2006]

Pierre-Louis Bazin, Ph.D.
Instructor in Radiology [2009; 2006]

Sheldon B. Bearman, M.D.
Instructor in Radiology and Radiological Science [1974]

C. Elizabeth Beasley, M.D.
Instructor in Psychiatry [1991]
Andrew N. Becker, D.O.  
Instructor in Medicine [2005]

Daniel Becker, M.D.  
Instructor in Neurology [2008]

Shahnaz Begum, Ph.D., M.B.B.S.  
Instructor in Pathology [2008]

Heidi Beilis, M.D.  
Instructor in Radiology and Radiological Science [1997]

Azin Elizabeth Bekhrad, M.D.  
Instructor in Psychiatry [2005]

Samuel I. Benesh, M.D.  
Instructor in Medicine [1997]

Jared Berkowitz, M.D.  
Instructor in Urology [2009]

Adam Richard Berliner, M.D.  
Instructor in Medicine [2006]

Benjamin D. Bernstein, M.D.  
Instructor in Dermatology [1988]

Arun K. Bhasin, M.D.  
Instructor in Anesthesiology and Critical Care Medicine [2003]

Mario Antonio Bianchet, Ph.D.  
Instructor in Biophysics and Biophysical Chemistry [2004]

Alexis Bilbow, M.D.  
Instructor in Anesthesiology and Critical Care Medicine [2008] (to 07/31/09)

James D. Biles, M.D.  
Instructor in Urology [1975]

Howard J. Birenbaum, M.D.  
Instructor in Pediatrics [1985; 1984]

Bernhard Birnbaum, M.D.  
Instructor in Medicine [1991; 1986]

Julius Birnbaum, M.D.  
Instructor in Medicine [2008]

Kevin E. Bishoff-Carlson, M.D.  
Instructor in Medicine [1998]

Sharen Bisson, M.D.  
Instructor in Psychiatry [1994]

Deborah Gisriel Bittar, M.D.  
Instructor in Pediatrics [1996]

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 M. 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 Blum, M.M.H.  
Instructor in Psychiatry [1978; 1974]

M. Barry Blum, M.D.  
Instructor in Ophthalmology [1994]

Stuart D. Blumenthal, D.D.S.  
Instructor in Pediatrics [1998]

Michael L. Bobrow, M.D.  
Instructor in Radiology [2009]

Joanna M. Bock, M.D.  
Instructor in Medicine [2009] (from 09/01/09)

Emad M. Boctor Mikhail, Ph.D.  
Instructor in Radiology and Radiological Science [2007]

Richard Boehler, M.D., M.B.A.  
Instructor in Medicine [2006]

Eric Boelter, Ph.D.  
Instructor in Psychiatry [2009]

Catherine A. Booser, M.D.  
Instructor in Medicine [1997]

Sharon P. Bord, M.D.  
Instructor in Emergency Medicine [2008; 20]

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] (from 09/01/09)

Jennifer E. Bracey, M.D.  
Instructor in Medicine [2009]

David A. Bradt, M.D., M.P.H.  
Instructor in Emergency Medicine [1995]

Gregory William Branch, M.D.  
Instructor in Medicine [1994]

Karen A. Broderick, M.D.  
Instructor in Pediatrics [1987]

Howard D. Bronstein, M.D.  
Instructor in Medicine [1968]

Amanda M. Brown, Ph.D.  
Instructor in Neurology [2007; 2004]

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 S. 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]

Suzanne M. 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; 1998]
Gary H. Cassel, M.D.
Instructor in Ophthalmology [1986]
Liudmila Cebotaru, M.D., J.D.
Instructor in Ophthalmology [2009; 2005]
Mayy Farid Chahla, M.D.
Instructor in Medicine [2008]
Sabrina Theresa Chaklos, M.D.
Instructor in Medicine [2009]
Anutosh Chakraborty, Ph.D.
Instructor in Neuroscience [2009; 2008] (from 09/01/09), Research Associate in Neuroscience [2008] (to 08/31/09)
Fred T. Chan, M.D.
Instructor in Medicine [2003]
Shalini Chandra, M.D.
Instructor in Medicine [2007]
Aruna Chandran, M.D.
Instructor in Pediatrics [2008]
Larry William Chang, M.D., M.P.H.
Instructor in Medicine [2009]
Stephanie Chang, M.D., M.P.H.
Instructor in Medicine [2006]
Raquel Francine Charles, M.D.
Instructor in Medicine [2009]
Franklin E. Chatham, M.D.
Instructor in Medicine [2005]
Aditi Chatterjee, Ph.D.
Instructor in Otolaryngology-Head and Neck Surgery [2008]
Zachary Lee Chattler, D.P.M.
Instructor in Orthopedic Surgery [2001]
Sajida Chaudry, M.D.
Instructor in Medicine [2006]
William Checkley, M.D., Ph.D.
Instructor in Medicine [2009]
Belinda Yim Chen, M.D.
Instructor in Medicine [1994]
Kenneth H. Cho, M.D.
Instructor in Radiology and Radiological Science [2005]
Grant Victor Chow, M.D.
Instructor in Medicine [2009]
Alexander Christoff, B.S.
Instructor in Ophthalmology [2009]
Tracey Lynn Chunn, M.D.
Instructor in Medicine [2000]
Michelle J. Clarke, M.D.
Instructor in Neurological Surgery [2009]
Emmanuelle M. Clerisme-Beaty, M.D., M.H.S.
Instructor in Medicine [2009]
John Cmar, M.D.
Instructor in Medicine [2008]
Timothy P. Codd, M.D.
Instructor in Orthopedic Surgery [1995]
Nancy Codori, M.D., M.P.H.
Instructor in Medicine [2006]
Robert Norman Cole, Ph.D.
Instructor in Biological Chemistry [2000; 1998]
Brendan J. 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]
David A. Cowan, M.D.
Instructor in Dermatology [2008]
Damian D. Crawford, M.D.
Instructor in Medicine [2009]
Deidra Candice Crews, M.D.
Instructor in Medicine [2009]
Joy Elizabeth Crook, M.D.
Instructor in Emergency Medicine [2007]
Lisa Culp, M.B.A.
Instructor in Physical Medicine and Rehabilitation [2006]
Naomi Paula Cutler, M.D.
Instructor in Medicine [2002]
Franco R. D'Alessio, M.D.
Instructor in Medicine [2008]
Nabil N. Dagher, M.D.
Instructor in Surgery [2008]
Holly Ryerson Dahman, M.D.
Instructor in Medicine [2005]
Dean Hamid Dalili, M.D.
Instructor in Medicine [2005] (to 10/16/09)
Mahendra Damala, M.D.
Instructor in Medicine [2009]
Elizabeth Lee Daugherty, M.D., M.P.H.
Instructor in Medicine [2008]
Kathryn B. de Medeiros, Ph.D.
Instructor in Psychiatry [2006]
Anthony Louis DeFuilio, Ph.D.
Instructor in Psychiatry [2009]
Melissa DeMore, Ph.D.
Instructor in Psychiatry [2008]
Pankaj R. Desai, M.D.
Instructor in Medicine [2006]
Samit Prakash Desai, M.D.
Instructor in Emergency Medicine [2009]
Amy Elizabeth DeZern, M.D.
Instructor in Medicine [2009]
Sailaja M. Didolkar, M.D.
Instructor in Gynecology and Obstetrics [1990]
Ledys 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] (from 07/31/09)

Robert F. Draper, Jr., M.D.
Instructor in Orthopedic Surgery [1977]

Anthony J. Drobnick, M.D.
Instructor in Psychiatry [1998]

Jonathan Dubois Dubin, M.D.
Instructor in Medicine [1990]

Gwen L. DuBois, M.D.
Instructor in Medicine [1989]

Karen Dunlap, O.D.
Instructor in Ophthalmology [2008]

Caroline McDonald DuPont, M.D.
Instructor in Psychiatry [1999]

Sridhar M. Durbhakula, M.D.
Instructor in Orthopedic Surgery [2005]

Stephanie Durruthy, M.D.
Instructor in Psychiatry [1989]

Jacquelyn Duval-Harvey, Ph.D.
Instructor in Psychiatry [2002; 2000]

Mary Cheffings Eaton, Ph.D.
Instructor in Psychiatry [1996]

Deena R. Ebright, M.D.
Instructor in Medicine [2003]

Shaker M. Eid, M.D.
Instructor in Medicine [2008]

Roland C. Einhorn, M.D.
Instructor in Medicine [1987]

David Lee Eisenberg, M.D.
Instructor in Medicine [2006]

AbdEl-Monem Mohamed A. El-Sharkawy, M.S., Ph.D.
Instructor in Radiology [2008]

Calvin Eng, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2009] (from 08/01/09)

Karen A. Engstrom, M.D.
Instructor in Gynecology and Obstetrics [1982]

Laura Maciell Erdman, M.D.
Instructor in Gynecology and Obstetrics [2005]

Joshua Benjamin Ewen, M.D.
Instructor in Neurology [2007]

Dalia A.H. Fadul, M.D.
Instructor in Radiology [2007]

Eddy Fan, M.D.
Instructor in Medicine [2007]

Jinshui Fan, M.D., Ph.D.
Instructor in Medicine [2007]

Robyn Neblett Fanfair, M.D., M.P.H.
Instructor in Medicine [2009]

Saleem Farooqui, M.D.
Instructor in Radiology [2009]
Sandra B. Gabelli, Ph.D.
Instructor in Biophysics and Biophysical Chemistry [2006; 2002]

Nicole Jean Gable, M.D.
Instructor in Pediatrics [2008]

Christopher Jordan Gamper, M.D., Ph.D.
Instructor in Oncology [2008]

Neeraj Gandotra, M.D.
Instructor in Pediatrics [2008]

David Gannon, D.P.M.
Instructor in Orthopaedic Surgery [2002]

Travis Francis Ganunis, M.D.
Instructor in Pediatrics [2000]

Ivan H. Garcia, M.D.
Instructor in Ophthalmology [1997]

Jose Carlos Garcia-Garcia, Ph.D.
Instructor in Pathology [2008]

Donald E. Garland, D.O.
Instructor in Gynecology and Obstetrics [1981]

Nader G. Gary, M.D.
Instructor in Ophthalmology [2000]

Abraham Allan Genut, M.D.
Instructor in Neurology [1995]

Nicholas P. Georges, M.D.
Instructor in Radiology and Radiological Science [1993]

Jonathan M. 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]

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, Ph.D.
Instructor in Medicine [1996]

Andrew Todd Goldstein, M.D.
Instructor in Gynecology and Obstetrics [2000]

Jason 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. Gonzales, M.D.
Instructor in Medicine [2005]

Helen Minifie Gordon, M.D.
Instructor in Medicine [2000]

Kim Lesley Goring, M.B.B.S.
Instructor in Medicine [2006] (to 09/09/09)

Madhav Goyal, M.D., M.P.H.
Instructor in Medicine [2009]

Gene E. Green, M.D.
Instructor in Medicine [2006]

Melva Isadora Green, M.D.
Instructor in Psychiatry [2004]

Carlton C. Greene, M.D.
Instructor in Medicine [1977]

Rosemarie Greyson-Fleg, M.D.
Instructor in Radiology and Radiological Science [1984]

Dmitry N. Grigoryev, M.D., Ph.D.
Instructor in Medicine [2005]

Rafael Guerrero-Preston, Ph.D., M.P.H.
Instructor in Otolaryngology-Head and Neck Surgery [2008]

Kenneth S. Gummerson, M.D., Ph.D.
Instructor in Medicine [1995]

Hilary Eileen Gwynn, M.D.
Instructor in Neurology [2007]

Florence Hackerman, M.A.
Instructor in Psychiatry [2004; 2002]

Tammy D. Hadley, M.D.
Instructor in Medicine [1995]

Charles A. Haile, M.D.
Instructor in Medicine [1996; 1983]

Sandra Watson Hairston, M.D.
Instructor in Medicine [2006]

Ellen 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 U. Haque, M.B.B.S.
Instructor in Medicine [2003]

Daniel C. Hardesty, M.D.
Instructor in Medicine [1995]

Anthony J. Harrell, M.D.
Instructor in Medicine [2006]

Che M. Harris, M.D.
Instructor in Medicine [2009]

Raymond J. Harshbarger, III, M.D.
Instructor of Plastic Surgery [2004]

Howard W. Hauptman, M.D.
Instructor in Medicine [1991]

Ling He, M.D., Ph.D.
Instructor in Pediatrics [2009]
Xin He, Ph.D.
Instructor in Radiology and Radiological Science [2009; 2008] (from 10/01/09), Research Associate in Radiology and Radiological Science [2008] (to 09/30/09)
Michelle L. Hearns, M.D.
Instructor in Pediatrics [1998]
David Heath, Ph.D.
Instructor in Radiology and Radiological Science [1993]
Deborah L. Hebb, M.D.
Instructor in Gynecology and Obstetrics [1988]
Alvin W. Hecker, M.D.
Instructor in Pediatrics [1992]
Todd D. Heller, M.D.
Instructor in Medicine [1991]
Linda Smith Hellmann, M.S.W.
Instructor in Psychiatry [1997]
Mark Thomas Helquist, M.D.
Instructor in Radiology [2009]
Sanya Henry, M.D.
Instructor in Radiology [2009]
Leanna J. Herman, Ph.D.
Instructor in Psychiatry [2008]
Anne-Gilbert Carrie Herzke, M.D.
Instructor in Medicine [2008]
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. Hodas, M.D.
Instructor in Psychiatry [1994]
Sheila Mohajer Hofert, M.D.
Instructor in Pediatrics [2009] (from 08/01/09)
Christopher J. Hoffmann, M.D., M.P.H.
Instructor in Medicine [2009]
Susan E. Hofkamp, Ph.D.
Instructor in Physical Medicine and Rehabilitation [2008]
George Martin Hoke, M.D.
Instructor in Medicine [2003]
Stephan G. Holtzclaw, M.D.
Instructor in Emergency Medicine [1995]
Marc A. 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]
Carolyn Clarkson Houk, M.D.
Instructor in Medicine [1998]
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]
Erica E. Howe, M.D.
Instructor in Medicine [2008]
Vanessa Howells, M.D.
Instructor in Psychiatry [2007]
Leo Hsiao, D.O.
Instructor in Anesthesiology and Critical Care Medicine [2008] (to 07/31/09)
Robert Y. Hsiao, M.D.
Instructor in Medicine [2005]
John Michael Huete, Ph.D.
Instructor in Psychiatry [2006]
Paula J. Hurley, Ph.D.
Instructor in Urology [2008]
Andres Hurtado, M.D.
Instructor in Neurology [2008]
Constance W. Hwang, M.D., M.P.H.
Instructor in Medicine [2006]
Willy Hwang, M.D.
Instructor in Radiology [2009]
Matthew Eric Hyndman, M.D.
Instructor in Urology [2009]
Josephine O. Ibrionke, O.D.
Instructor in Ophthalmology [2004] (to 09/30/09)
Sandra Schwartz Isbister, M.D.
Instructor in Gynecology and Obstetrics [2000]
Christopher Ish, M.D.
Instructor in Medicine [2006]
Allesa Paige Jackson, M.D.
Instructor in Psychiatry [2002]
Cheryl Anne Jackson, M.D.
Instructor in Medicine [1996]
Julie Mendelson Jacobstein, M.D.
Instructor in Gynecology and Obstetrics [2006]
Mariflor S. Jamora, M.D.
Instructor in Psychiatry [2000]
Alpa Laheri Jani, M.D.
Instructor in Medicine [2005]
Laura Boyle Jaweed, D.P.T.
Instructor in Physical Medicine and Rehabilitation [2009]
Fern Marie Jeffries, M.D.
Instructor in Medicine [1998]
Heather K. Jennett, Ph.D.
Instructor in Psychiatry [2008]
Gerald J. Jerome, Ph.D.
Instructor in Medicine [2006]
Na Young Ji, M.D.
Instructor in Psychiatry [2008]
Kristine Erica Johnson, M.D.
Instructor in Medicine [2008]
Carolyn V. Jones, None
Instructor in Art as Applied to Medicine [2001]

Ann E. Jones-Cole, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2001]

Milan K. Joshi, M.D.
Instructor in Psychiatry [1981]

Sushant Kachhap, Ph.D.
Instructor in Oncology [2008]

Christine Kajubi, M.D.
Instructor in Medicine [2007]

Paul J. Kaloudis, M.D.
Instructor in Emergency Medicine [2009]

Mitchel A. Kanter, M.D.
Instructor of Plastic Surgery [1990]

William R. Kanter, M.D.
Instructor of Plastic 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]

Sanjay Ramkrishna Kedhar, M.D.
Instructor in Ophthalmology [2008; 2003]

Courtney Pierce Keeton, Ph.D.
Instructor in Psychiatry [2008]

Gregory B. Kelly, M.D.
Instructor in Medicine [1986]

Martha M. Kennedy, M.S., Ph.D., N.P.
Instructor in Anesthesiology and Critical Care Medicine [2006]

Julia Kharlip, M.D.
Instructor in Medicine [2008]

Adnan N. Kiani, M.P.H., M.D.
Instructor in Medicine [2008; 2006]

Barbara A. Kim, M.D.
Instructor in Psychiatry [2002]

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 R. Kingery, Ph.D.
Instructor in Psychiatry [2005]

Dmitry E. Kiyatkin, M.D.
Instructor in Medicine [2007]

Sybil Ann Klaus, M.D.
Instructor in Pediatrics [2009]

Antonie Debra Kline, M.D.
Instructor in Pediatrics [1996]

Hazen G. Kniffin, Jr., M.D.
Instructor in Psychiatry [1962]

Leise Rose Knoepp, M.D.
Instructor in Gynecology and Obstetrics [2008]

Todd Matthew Kolb, M.D., Ph.D.
Instructor in Medicine [2009]

Sitaramma Kottapalli, M.B.B.S.
Instructor in Pediatrics [1984]

Buddy G. Kozen, Jr., M.D.
Instructor in Emergency Medicine [2007]

Chris Kraft, Ph.D.
Instructor in Psychiatry [2001]

Timothy L. Krohe, M.D.
Instructor in Medicine [1993] (to 09/27/09)

Paula J. Kue, M.D.
Instructor in Medicine [2007]

Pallavi P. Kumar, M.D.
Instructor in Medicine [2007]

Kevin K. Kwong, Ph.D.
Instructor in Medicine [2007; 20]

Delese LaCour, M.D.
Instructor in Gynecology and Obstetrics [2008]

Oliver B. Laeyendecker, M.S., M.B.A.
Instructor in Medicine [2008; 2005]

Kathy L. Lampi, M.D.
Instructor in Medicine [2004]

Edward M. Land, B.S.
Instructor in Physical Medicine and Rehabilitation [2007]

Jeffrey S. Landsman, M.D.
Instructor in Medicine [2007]

Joanne P. Lanzo, M.D.
Instructor in Pediatrics [1991]

Erika R. Larson, M.D.
Instructor in Medicine [2006]

Tina M. Latimer, M.D.
Instructor in Emergency Medicine [2009]

Naudia Natalee Lauder, M.D.
Instructor in Medicine [2009]

Bruce S. Lebowitz, D.P.M.
Instructor in Orthopedic Surgery [2001]

James Mark Leipzig, M.D.
Instructor in Orthopedic Surgery [1998]

Eddy S. Leman, Ph.D.
Instructor in Urology [2007] (to 08/31/09)

Enzo J. Leone, D.P.M.
Instructor in Orthopedic Surgery [2005]

Jeannie-Marie Sheppard Leoutsakos, Ph.D.
Instructor in Psychiatry [2009] (from 09/01/09)

Brian C. Lerner, M.D.
Instructor in Ophthalmology [1992]
Renee A. Lerner, M.D.
Instructor in Ophthalmology [1991]

Robert A. Lessey, M.D.
Instructor in Psychiatry [1990]

Charles M. Leve, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2003]

Marshall A. Levine, M.D.
Instructor in Oncology [1979]

Matthew Jason Levy, D.O.
Instructor in Emergency Medicine [2009]

Nikita A. Levy, M.D.
Instructor in Gynecology and Obstetrics [2002]

Kieu X. Luu, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2009]

Robert I. Levy, M.D.
Instructor in Medicine [1965; 1960]

Susan M. Levy, M.D.
Instructor in Medicine [1999]

Thomas H. Ley, Ph.D.
Instructor in Psychiatry [1995]

Dai Jun Li, M.D., Ph.D.
Instructor in Pathology [2009]

Gang (Gary) Li, Ph.D.
Instructor in Medicine [2009]

Huamin Li, M.D., Ph.D.
Instructor in Medicine [2001]

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 Surgery [2005]

Anthony Martinez, M.D.
Instructor in Medicine [1995]

Jonathan K. Marx, M.D.
Instructor in Radiology and Radiological Science [2006]

Richard J. Mason, M.D.
Instructor in Orthopedic Surgery [2001]

Pamela A. Matson, Ph.D., M.P.H.
Instructor in Pediatrics [2007]

Jonathan Matz, M.D.
Instructor in Medicine [1992]

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]

Raegan McDonald-Mosley, M.D.
Instructor in Gynecology and Obstetrics [2008]

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 W. McIntosh, M.D.
Instructor in Psychiatry [2003]

Marco A. Mejia, M.D.
Instructor in Medicine [2006]

Michael Melia, M.D.
Instructor in Medicine [2008]

Deepa Menon, M.B.B.S.
Instructor in Neurology [2007]

Sarah A. Mess, M.D.
Instructor of Plastic Surgery [2009] (from 09/01/09)

Jennifer M. Meuchel, M.D.
Instructor in Psychiatry [2008]

Sarah Mezban, M.B.B.Ch.
Instructor in Radiology [2008]

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]

Ryan S. Miller, M.D.
Instructor in Pediatrics [2006]

Gary A. Milles, M.D., M.P.H.
Instructor in Medicine [1997]

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 and Radiological Science [1990]

Allan J. Monfried, M.D.
Instructor in Pediatrics [1992]

Juan A. Morales-Torres, M.D., Ph.D.
Instructor in Emergency Medicine [2009]

George W. 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. Mulaikat, M.B.B.S.
Instructor in Pediatrics [1991]

Daniel Munoz, M.D., M.P.A.
Instructor in Medicine [2009]

John J. Murphy, D.P.M.
Instructor in Orthopedic Surgery [2002]

Biljana Music, Ph.D.
Instructor in Urology [2009; 2001]

Palaniappan Ganesh Muthappan, M.D.
Instructor in Medicine [2009]

Alejandro Jose Necochea, M.D., M.P.H.
Instructor in Medicine [2009]

John A. Nesbitt, III, M.D.
Instructor in Medicine [1978]

Christine Pham Nguyen, M.D.
Instructor in Gynecology and Obstetrics [2007]

Sridhar Nimmagadda, Ph.D.
Instructor in Radiology and Radiological Science [2008], Joint Appointment in Medicine [2009]

Avigdor I. Niv, M.D.
Instructor in Orthopedic Surgery [1980]

Philip Jaratsak Nivatpumin, M.D.
Instructor in Medicine [2007]

Gary J. Noronha, M.D.
Instructor in Medicine [2006]

William Ellis Northington, M.D.
Instructor in Emergency Medicine [2008]

James S. Novick, M.D.
Instructor in Medicine [2002]

Irwin J. Nudelman, M.D.
Instructor in Urology [1963]

Jeanne S. Nunez, M.D.
Instructor in Pediatrics [2006]

Rajesh Kumar NV, Ph.D.
Instructor in Oncology [2009; 2007] (from 09/01/09), Research Associate in Oncology [2007] (to 08/31/09)

Thomas P. O'Brien, M.D.
Instructor in Pediatrics [1993]

John B. O'Donnell, M.D.
Instructor in Orthopedic 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]
Joan Ordman, M.D.
Instructor in Medicine [2006]

Michael Orsi, M.D.
Instructor in Radiology [2009]

Lynn M. Oswald, Ph.D.
Instructor in Psychiatry [2003]

Yvonne Ottaviano, M.D.
Instructor in Medicine [1995]

David A. Pace, M.D.
Instructor in Radiology [2009]

Thomas J. Pace, M.D., M.P.H.
Instructor in Medicine [2007]

Jennifer Teitelbaum Palmer, M.D.
Instructor in Psychiatry [2008]

Dimitrios Pappas, M.D.
Instructor in Medicine [2009]

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]

Clarissa L. Parrish, M.D.
Instructor in Pediatrics [2007]

James P. Paskert, M.D.
Instructor of Plastic Surgery [1987]

Kashiben G.J. Patel, M.B.B.Ch.
Instructor in Medicine [2004]

Kavita Pattani, M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2009]

Robert Fielding Pegues, M.D.
Instructor in Gynecology and Obstetrics [2007]

Susan Perkins-Parks, Ph.D.
Instructor in Psychiatry [1997]

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]

Tara Perti, M.D.
Instructor in Medicine [2008]

Kiemanh Pham, M.D.
Instructor in Emergency Medicine [2009]

Swati Phatak, M.D.
Instructor in Medicine [2006]

Michael A. Phelps, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2008]

Karran A. Phillips, M.D.
Instructor in Medicine [2007]

Anthony Pinto, M.D.
Instructor in Pediatrics [1986]

Claro L. Pioroda, M.D.
Instructor in Surgery [1982]

Jerome S. Plasse, M.D.
Instructor of Plastic Surgery [1985]

Antonis Politis, M.D.
Instructor in Psychiatry [2003]

Steven T. Pondek, M.D.
Instructor in Medicine [2002]

Adebowale Adedayo Popoola, M.D.
Instructor in Psychiatry [2005]

John B. Posey, M.D.
Instructor in Neurological Surgery [1977]

Jeffrey N. Posner, M.D.
Instructor in Medicine [1987]

Adam Bradley Possner, M.D.
Instructor in Medicine [2009]

David Bryan Powers, M.D., D.M.D.
Instructor of Plastic Surgery [2008]

Sudeep Pramanik, M.D., M.B.A.
Instructor in Ophthalmology [2009] (from 11/01/09)

Suzanne Prestwich, M.D.
Instructor in Pediatrics [2008]

Tatiana Michelle Prowell, M.D.
Instructor in Oncology [2006]

Shanta Purcell, M.D.
Instructor in Medicine [2006]

W. Thomas Purcell, M.D.
Instructor in Oncology [2002]

Tao Qiu, Ph.D.
Instructor in Orthopaedic Surgery [2009] (from 07/15/09)

Michael Radowsky, M.B.B.Ch.
Instructor in Dermatology [1978]

Sunil Rajani, M.D.
Instructor in Medicine [1998]

Kiran C. Rajmane, M.D.
Instructor in Radiology [2009]

Murugappan Ramanathan, Jr., M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2009]

Douglas Edward Ramsey, M.D.
Instructor in Radiology [2009]

John Nolan Ratchford, M.D.
Instructor in Neurology [2009]

P. Gregory Rausch, M.D.
Instructor in Oncology [1994]

Albert C. Recio, M.D.
Instructor in Physical Medicine and Rehabilitation [2007]

Janet Record, M.D.
Instructor in Medicine [2006]

Shirley E. Reddoch, M.D.
Instructor in Pediatrics [2008]

Lisa C. Reichenbach, Ph.D.
Instructor in Psychiatry [1995]

Jerome P. Reichmister, M.D.
Instructor in Orthopedic Surgery [1978]
Barry J. Reiner, M.D.
Instructor in Pediatrics [1992]

Rodica Retezar, M.D.
Instructor in Emergency Medicine [2007] (on leave of absence)

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 of Plastic Surgery [1993]

Mary G. Ripple, M.D.
Instructor in Pathology [2000]

Beatrice M. Robbins, M.S.N.
Instructor in Psychiatry [2006]

Caroline 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]

Maria Francesca Rodowski, M.D.
Instructor in Psychiatry [2001]

Ricardo L. Rodriguez, M.D.
Instructor of Plastic Surgery [1991]

Francisco Rojas, M.D.
Instructor in Gynecology and Obstetrics [2006]

Christopher Joseph Romero, M.D.
Instructor in Pediatrics [2008]

Mark Romig, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2008]

Eva Maria Rorer, M.D.
Instructor in Ophthalmology [1999; 1996]

Lawrence Ira Rosenberg, M.D.
Instructor of Plastic Surgery [2005]

Jerome Rose, M.D.
Instructor in Ophthalmology [1991]

Patricia Roy, M.D.
Instructor in Ophthalmology [2008]

Dawn S. Ruben, D.V.M.
Instructor in Molecular and Comparative Pathobiology [2007]

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]

Rose Marie Samaniego, M.D.
Instructor in Pediatrics [1985]

Eric Samstad, M.D.
Instructor in Psychiatry [2005]

Lakshmi Santhanam, Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2009]

Geeta Sarphare, Ph.D.
Instructor in Psychiatry [2006]

Nicola C. Sater, M.D.
Instructor in Psychiatry [2003]

Mark D. Scarupa, M.D.
Instructor in Medicine [2004]

Nicoline Schiess, M.D.
Instructor in Neurology [2008]

Patricia L. Schmoke, M.D.
Instructor in Ophthalmology [1994]

Jeffrey Evan Schreiber, M.D.
Instructor of Plastic Surgery [2006]

Arthur Schroeder, M.D.
Instructor in Medicine [1984]

Jakob C.L. Schutz, M.D.
Instructor in Radiology [2009]

Jerry Ellis Seals, M.D.
Instructor in Medicine [1997]

Paul E. Segal, D.O.
Instructor in Medicine [2007]

Laura Jean Seidel, M.D.
Instructor in Psychiatry [2001]

Carlton C. Sexton, M.D.
Instructor in Radiology and Radiological Science [1983]

Ami Aalok Shah, M.D.
Instructor in Medicine [2009]

Deepak A. Shah, M.D.
Instructor in Medicine [2008]

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 Orthopedic Surgery [2002; 2001]

Richard Morris Shapiro, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2002]

Robert A. Shaw, M.D.
Instructor in Medicine [1988]

Elias K. Shaya, M.D.
Instructor in Radiology and Radiological Science [1990], Instructor in Medicine [1990; 2007]
Ardele G. Shefchek, M.D.
Instructor in Pediatrics [1987]

Ronald L. Sherman, D.P.M.
Instructor in Orthopedic Surgery [2002]

Taha Z. Shipchandler, M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2009]

Marilyn Short, M.D.
Instructor in Gynecology and Obstetrics [1988]

Kelly Showalter, M.S.
Instructor in Physical Medicine and Rehabilitation [2008]

Margaret Showel, M.D.
Instructor in Oncology [2009]

Samir F. Shureih, M.D.
Instructor of Plastic Surgery [1984]

Janet Volk Siddiqui, M.D.
Instructor in Pediatrics [2005]

Zishan K. Siddiqui, M.D.
Instructor in Medicine [2006]

Aniket R. Sidhaye, M.D.
Instructor in Pediatrics [2006], Instructor in Medicine [2007]

Allen E. Silver, M.D.
Instructor in Ophthalmology [1991]

Michael A. Silverman, M.D.
Instructor in Emergency Medicine [1998]

Eric Simball, M.D.
Instructor in Medicine [2001]

Georgette A. Sims, M.D.
Instructor in Pediatrics [1988]

Ghassan Sinada, D.D.S.
Instructor in Otolaryngology-Head and Neck Surgery [2006] (to 05/16/09)

Michele Singer, M.D.
Instructor in Pediatrics [2004]

Devinder Singh, M.D.
Instructor of Plastic Surgery [2009]

Vikesh K. Singh, M.D.
Instructor in Medicine [2008]

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.P.H., M.B.A.
Instructor in Medicine [2008]

Cynthia A. Smith, Ph.D.
Instructor in Psychiatry [2002]

Hermon W. Smith, M.D.
Instructor in Pediatrics [1989]

Milena H. 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]

Jonathan David Solomon, M.D.
Instructor in Ophthalmology [2006]

Patrick Ryan Sosnay, M.D.
Instructor in Medicine [2008]

Armando Soto, M.D.
Instructor of Plastic Surgery [2002]

Paul Levi Soto, Ph.D.
Instructor in Psychiatry [2008]

Stephen Martin Sozio, M.D.
Instructor in Medicine [2009]

Matt W. Specht, Ph.D.
Instructor in Psychiatry [2008]

Anirudh Sridharan, M.D.
Instructor in Medicine [2006]

Rose Stavinoha, M.D.
Instructor in Otolaryngology-Head and Neck Surgery [2009]

Kelly Brungardt Stein, M.D.
Instructor in Medicine [2009]

Howard Steiner, M.D.
Instructor in Medicine [1990]

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]

Baogen Y. Su, Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2007] (to 08/10/09)

Qingning Su, Ph.D.
Instructor in Anesthesiology and Critical Care Medicine [2005]

Troy Sullivan, M.D.
Instructor in Medicine [2008]

Meenakshi Suman, M.D.
Instructor in Psychiatry [2007]

Anil Suryaprasad, M.D.
Instructor in Medicine [2007]

Richard M. Susel, M.D.
Instructor in Ophthalmology [2006]

Labib H. Syed, M.D.
Instructor in Radiology [2008]

Boglarka Szabo, M.D.
Instructor in Psychiatry [2004]

Myron J. Szczukowski, Jr., M.D.
Instructor in Orthopedic Surgery [1998]

Darlene B. Tad-Y, M.D.
Instructor in Medicine [2008]

Jade Marie Tan, M.D.
Instructor in Pediatrics [2008]

Carol F. Tankard, Ph.D.
Instructor in Psychiatry [2007]

Elizabeth Lyn Tanzi, M.D.
Instructor in Dermatology [2005]

Lila Tarmin, M.D.
Instructor in Medicine [2000]
Eddie L. Taylor, Jr., M.D.
Instructor in Radiology [2009]

John K. Taylor, III, D.D.S.
Instructor in Otolaryngology-Head and Neck Surgery [2008]

Lori S. Taylor, M.D.
Instructor in Radiology [2009]

Raymond Taylor, Jr., M.D.
Instructor in Medicine [2006]

Nik Tchopev, M.D., M.B.A.
Instructor in Pediatrics [2008], Instructor in Medicine [2008; 2009]

Jacob Tendler, M.D.
Instructor in Psychiatry [1982]

Stephanie Alicia Terezakis, M.D.
Instructor in Radiation Oncology and Molecular Radiation Sciences [2009] (from 08/17/09)

Tamara DeShawn Terry, M.D.
Instructor in Gynecology and Obstetrics [2006]

S. Marc Testa, Ph.D.
Instructor in Psychiatry [2007]

Oleg M. Teytelboyd, M.D.
Instructor in Radiology [2008] (to 07/31/09)

Rajiv N. Thakkar, M.D.
Instructor in Medicine [2006]

Sumeska Thavarajah, M.D.
Instructor in Medicine [2005]

Kathryn Thomas, Ph.D.
Instructor in Psychiatry [2005]

Jon Tilburt, M.D., M.P.H.
Instructor in Medicine [2007]

Haruka Matsubara Torok, M.D.
Instructor in Medicine [2009]

Patryce A. Toye, M.D.
Instructor in Medicine [1990]

Tina Pham Tran, M.D.
Instructor in Anesthesiology and Critical Care Medicine [2008]

Erik Tryggestad, Ph.D.
Instructor in Radiation Oncology and Molecular Radiation Sciences [2006]

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]

Susan Tsai, M.D.
Instructor in Surgery [2008]

Tonya Denise Tuggle, M.D.
Instructor in Psychiatry [1998]

Elizabeth Turin, M.D.
Instructor in Psychiatry [2005]

Sayeedha Uddin, M.D., M.P.H.
Instructor in Gynecology and Obstetrics [2005] (to 08/31/09)

Tracy D. Vannorsdall, Ph.D.
Instructor in Psychiatry [2009]

Edith Margaret Vargo, M.D.
Instructor in Medicine [1998]

Rebecca Gaye Vaurio, Ph.D.
Instructor in Psychiatry [2007]

Martha Luz Velez, M.D.
Instructor in Pediatrics [2000]

Farhad Vesuna, Ph.D.
Instructor in Radiology and Radiological Science [2009]

Kittane S. Vishnupriya, M.D.
Instructor in Medicine [2007]

Thomas B. Volatile, M.D.
Instructor in Orthopedic Surgery [1998]

Stanley B. Wadsworth, M.S.
Instructor in Radiology [1975]

Barry Jay Waldman, M.D.
Instructor in Orthopedic Surgery [1998]

Chao Wan, M.D.
Instructor in Orthopaedic Surgery [2009] (from 07/15/09)

George C. Wang, M.D.
Instructor in Medicine [2008]

Hang Wang, Ph.D.
Instructor in Urology [2007]

Kenneth C. Wang, M.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. Welzant, M.D.
Instructor in Medicine [1964; 1962]

Bo Wen, Ph.D.
Instructor in Medicine [2009]

Michael J. 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]

Paul R. Wilging, Ph.D.
Instructor in Medicine [2006]

Donna L. Willis, M.D.
Instructor in Medicine [1991]
E. Hunter Wilson, Jr., M.D.
Instructor in Medicine [1973; 1959]

Thomas Scott Wilson, M.D., Ph.D.
Instructor in Medicine [1995]

John P. Witt, M.D.
Instructor in Psychiatry [1973; 2002]

Raymond A. Wittstadt, M.D.
Instructor in Orthopedic Surgery [2001]

Ericka L. 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]

Bruce S. Wolock, M.D.
Instructor in Orthopedic Surgery [1990]

Siew-Jyu Wong, M.D.
Instructor in Pediatrics [1991]

Dakara Rucker Wright, M.D.
Instructor in Dermatology [2009]

Renee Wright, M.D.
Instructor in Medicine [2006]

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 K. Wung, M.D.
Instructor in Medicine [2009]

Lisa A. Wuyek, Ph.D.
Instructor in Psychiatry [2008]

Jenel Steele Wyatt, M.D.
Instructor in Medicine [2006]

Gerald Wyse, M.D.
Instructor in Radiology [2008]

Shuli Xia, Ph.D.
Instructor in Neurology [2006]

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]

Mohammad H. Yavari Rad, M.D.
Instructor in Physical Medicine and Rehabilitation [2007]

Nancy Younan, M.D.
Instructor in Psychiatry [2000]

Mohammed Younus, M.D.
Instructor in Psychiatry [2001]

Albert A. Zachik, M.D.
Instructor in Psychiatry [1996]

Sammy Zakaria, M.D., M.P.H.
Instructor in Medicine [2008]

Michelle Nabulumba Zikusoka, M.D.
Instructor in Medicine [2009]

Neal B. Zimmerman, M.D.
Instructor in Orthopedic Surgery [1989]

Raymond H. Zollinger, M.D., M.B.A.
Instructor in Medicine [2003]

Jamshed 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 Orthopedic Surgery [1962]

James M. Hitzrot, II, M.D.
Instructor Emeritus in Orthopedic 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 A. Timoll, M.D.
Instructor Emeritus in Gynecology and Obstetrics [2006; 1977]

H. Thomas Unger, M.D.
Instructor Emeritus in Psychiatry [1997; 1967]

ASSISTANTS

Anil Thomas Abraham, M.D.
Assistant in Anesthesiology and Critical Care Medicine [2009]

Donald W. Alves, M.D.
Assistant in Emergency Medicine [2007]

Sarah Anis, M.D.
Assistant in Ophthalmology [2009]

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]

Anna Bordelon, M.D.
Assistant in Ophthalmology [2009]

Stephen Bowditch, M.S.
Assistant in Otolaryngology-Head and Neck Surgery [1999]

Jill D. Brensinger Trimbath, M.S.
Assistant in Medicine [2002]

Molly E. Campion, M.S.
Assistant in Physical Medicine and Rehabilitation [1998; 2002]

Ryan Carpenter, Au.D.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2004]

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]

Jill E. Chinnici, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [1998]

Alan B. Cohen, M.D.
Assistant in Medicine [1967]

James E. Corwin, M.D.
Assistant in Emergency Medicine [2006]

Jonathan David Cuda, M.D.
Assistant in Pathology [2009]

Steven Clark Cunningham, M.D.
Assistant in Surgery [2009]

Yassine J. Daoud, M.D.
Assistant in Ophthalmology [2009]

Tejwant S. Datta, M.D.
Assistant in Surgery [2009]

Robert W. Davis, D.O.
Assistant in Ophthalmology [2009]

Tyler C. DeLange, M.D.
Assistant in Emergency Medicine [2009]

Niccolo D. 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]

Isadore A. Feldman, M.D.
Assistant in Emergency Medicine [2006]

E. Robert Feroli, Jr., Pharm.D.
Assistant in Medicine [1980]

Joel Mark Fradin, M.D.
Assistant in Radiology and Radiological Science [1998; 1993]

Marianne M. Franco, M.D.
Assistant in Surgery [2009]

Hillary Ganek, M.A.
Assistant in Otolaryngology-Head and Neck Surgery [2009] (from 07/15/09)

Jaleh Sue Garman, M.S.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2002]

Helene S. Goldberg, M.P.H.
Assistant in Psychiatry [1993]

Nephtali R. Gomez, M.D.
Assistant in Surgery [2009]

Paul William Grutter, M.D.
Assistant in Orthopaedic Surgery [2008] (to 07/31/09)

Janice E. Hedblom, M.S.W.
Assistant in Psychiatry [1981; 2004]

Krista J. Heinlen, Au.D.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2008]

Karen Marie Hladik, M.D.
Assistant in Emergency Medicine [2001]

Charles F. Hoesch, M.D.
Assistant in Medicine [1981]

Steven C. Hortopan, M.P.H.
Assistant in Urology [1997]

Ning Hu, M.D.
Assistant in Emergency Medicine [2009] (from 09/01/09)

Michael E. Hull, M.D.
Assistant in Emergency Medicine [2006]

Adam D. Jacobowitz, M.D.
Assistant in Ophthalmology [2009]

Nicholas Jaszczaek, M.D.
Assistant in Surgery [2009] (from 07/13/09)

John A. Johansen, M.D.
Assistant in Orthopaedic Surgery [2009] (from 08/01/09)

Ryan David Katz, M.D.
Assistant in Anesthesiology and Critical Care Medicine [2009]

Muge R. Kesen, M.D.
Assistant in Ophthalmology [2009]

Ben J. Kim, M.D.
Assistant in Ophthalmology [2008]

George J. Koenig, Jr., D.O.
Assistant in Surgery [2009] (from 07/13/09)

John J. Koo, M.D.
Assistant in Ophthalmology [2008]

Gail Glotfelty Kramer, M.D.
Assistant in Emergency Medicine [2006]
Jacklynn R. Krick, M.S.  
Assistant in Pediatrics [1980]

Meredith A. Lakey, M.D.  
Assistant in Pathology [2009]

Angela Teresa Lataille, Au.D.  
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2004]

George D. Lawrence, M.D.  
Assistant in Medicine [1981]

Tao Tuan Le, M.D.  
Assistant in Medicine [2005]

David James Leu, M.D.  
Assistant in Orthopaedic Surgery [2009] (from 08/01/09)

Aisha Ann Macedo, M.D.  
Assistant in Ophthalmology [2009] (from 07/06/09)

Alexander MacKenzie, Ph.D.  
Assistant in Medical Psychology in the Department of Psychiatry [1985; 1976]

Alexis G. Malkin, O.D.  
Assistant in Ophthalmology [2009]

Andrea Marlowe, M.A.  
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2006]

Michael D. Mauro, D.O.  
Assistant in Orthopaedic Surgery [2009] (from 08/01/09)

Dan H. McDougal, M.D.  
Assistant in Medicine [1985]

Gregory Stuart McLoughlin, M.D.  
Assistant in Orthopaedic Surgery [2009] (from 08/01/09)

Mariah P. Menichino, Au.D.  
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2006]

David I. Miller, M.D.  
Assistant in Medicine [1962]

Vijayachandra S. Nair, M.D.  
Assistant in Medicine [2007]

Michael Thomas O’Malley, M.D.  
Assistant in Pathology [2009]

Michael P. O’Reilly, M.D.  
Assistant in Orthopaedic Surgery [2008] (to 07/31/09)

Hardin A. Pantle, M.D.  
Assistant in Emergency Medicine [2004], Assistant in Pediatrics [2004]

Jason Young Park, M.D., Ph.D.  
Assistant in Pathology [2009]

Brian Pinto, Pharm.D.  
Assistant in Medicine [2007]

Marshall Frank Prentice, D.D.  
Assistant in Medicine [1993]

Bryan D. Propes, M.D.  
Assistant in Ophthalmology [2008]

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]

Ahren C. Rittershaus, M.D.  
Assistant in Pathology [2009]

Norman Robertson, M.D.  
Assistant in Psychiatry [2007]

Linda Rogers, C.R.N.P., B.S.  
Assistant in Psychiatry [2000]

Arthur L. Rudo, M.D.  
Assistant in Medicine [1980]

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 A. Savadel, M.D.  
Assistant in Medicine [1984]

Nicholas P. Schweizer, M.S.  
Assistant in Psychiatry [2006]

Nathan A. Scott, III, M.D.  
Assistant in Medicine [1987]

Kenneth M. Shermock, Pharm.D.  
Assistant in Medicine [2009]

Chanjuan Shi, M.D., Ph.D.  
Assistant in Pathology [2010] (from 01/01/10)

Dyanne Simpson, D.O.  
Assistant in Psychiatry [2007]

Nathan R. Sklar, M.D.  
Assistant in Radiology and Radiological Science [1998; 1993]

Silvia Skripenova, M.D.  
Assistant in Pathology [2009]

Patricia Smouse, M.S.N.  
Assistant in Pediatrics [1989]

Akrit Sodhi, M.D., Ph.D.  
Assistant in Ophthalmology [2008]

Divya Srikumaran, M.D.  
Assistant in Ophthalmology [2009]

Kalliopi Stasi, M.D., Ph.D.  
Assistant in Ophthalmology [2008] (to 07/06/09)

Donald Craver Swing, Jr., M.D.  
Assistant in Pathology [2009]

David Andrew Tompkins, M.D.  
Assistant in Psychiatry [2008]

Melvin B. Tuggle, II, D.D.  
Assistant in Medicine [1993]

Jeffrey Jahan Vakil, M.D.  
Assistant in Orthopaedic Surgery [2008] (to 07/31/09)

Herbert W. Watson, Jr., M.Div  
Assistant in Medicine [1994]

Alicia D. White, M.S.  
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2003]
Mallene Wiggin, M.A.
Assistant (Audiology & Speech) in Otolaryngology-Head and Neck Surgery [2008]

Alice L. Wilkenfeld, M.D.
Assistant in Emergency Medicine [2004]

Lonny Brett Yarmus, D.O.
Assistant in Medicine [2009]

Jennifer Dobson Yeagle, M.E.
Assistant in Otolaryngology-Head and Neck Surgery [1999]

LECTURERS

Kulwant S. Ahluwalia, M.D.
Lecturer in Pediatrics [2001; 1976]

David C. Allison, M.D., Ph.D.
Lecturer in Surgery [1992; 1986]

Robert J. 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]

Tracey 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. Durnowicz, M.D.
Lecturer in Pediatrics [2007]

Allen Foster, M.D.
Lecturer in Ophthalmology [1985]

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]

Tasha Zemrus Greenberg, M.D.
Lecturer in Pathology [2007]

Florence P. Haseltine, M.D., Ph.D.
Lecturer in Gynecology and Obstetrics [2001]
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]

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

Yohannes Afework, M.Sc.
Research Associate in Radiology [2002]

Rachana Agarwal, Ph.D.
Research Associate in Medicine [2006]

Emilia Albesiano, Ph.D.
Research Associate in Oncology [2008]

Richard P. Allen, Ph.D.
Research Associate in Neurology [2002; 1980]

Ravi Kumar Anchoori, Ph.D.
Research Associate in Oncology [2008]

Daniel John Angelini, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2009]

Miguel Antonio Aon, Ph.D.
Research Associate in Medicine [2004; 2001]

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]

Charles Richard Baffi, Ph.D.
Research Associate in Oncology [2008]

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, MSW
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]

Clare Li-June Bao, M.A.
Research Associate in Medicine [2005]

Grace Link Barnes, M.P.H.
Research Associate in Medicine [2006]

Roxanne K. Barrow, B.S.
Research Associate in Neuroscience [1988]

Marian L. Batts-Turner, M.S.N.
Research Associate in Medicine [2001]

Robert M. Beatty, Ph.D.
Research Associate in Oncology [2003; 2007]

Cynthia A. Berlinicke, Ph.D.
Research Associate in Ophthalmology [2005]

Lena Bezman, M.D., M.P.H.
Research Associate in Neurology [2003]

Anil Bhunia, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2008]

Imran A. Bhutto, M.B.B.S.
Research Associate in Ophthalmology [2007]

Genila M. Bibat, M.D.
Research Associate in Pediatrics [2001]

Barbara Anne Biedrzycki, 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]

Mark Bodner, Ph.D.
Research Associate in Neurological Surgery [2005]

Susanne Bonekamp, Ph.D.
Research Associate in Radiology and Radiological Science [2006]

Marta Bosch-Marce, Ph.D.
Research Associate in Neurology [2007]

Lelita Talamantez Braiterman, Ph.D.
Research Associate in Cell Biology [1998]

James Robert Brasic, M.D., M.P.H.
Research Associate in Radiology and Radiological Science [2007]

Patricia L. Bright, Ph.D.
Research Associate in Pathology [2006]

Lynn Anne Bristol, Ph.D.
Research Associate in Neurology [1997]

Mary Elizabeth Brummet, M.S.
Research Associate in Medicine [2003]

Edward B. Bunker, M.P.H., M.S.
Research Associate in Health Sciences Informatics [2008]

Frederick M. Burkle, Jr., M.D., M.P.H.
Research Associate in Emergency Medicine [2002; 2000]
Youngjoo Byun, Ph.D.
Research Associate in Radiology [2007]
Huaibin Cai, Ph.D.
Research Associate in Pathology [2000]
Suyi Cao, M.D.
Research Associate in Anesthesiology and Critical Care Medicine [1999; 2004]
Shivaun A. Celano, Pharm.D.
Research Associate in Medicine [2000]
Boyoun Cha, Ph.D.
Research Associate in Medicine [2006]
Seung Hun Cha, Ph.D.
Research Associate in Biological Chemistry [2007]
Fumin Chang, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2008]
Chris Cheadle, Ph.D.
Research Associate in Medicine [2005]
Weiran Chen, M.D.
Research Associate in Neurology [2003]
Ying Chen, Ph.D.
Research Associate in Radiology [2008]
Jie Cheng, Ph.D.
Research Associate in Physiology [2002]
Sheila M. Cherry, Ph.D.
Research Associate in Physiology [2009]
Kristin L. Chichester, M.S.
Research Associate in Medicine [2000]
Chuang-Jiun Chiou, Ph.D.
Research Associate in Oncology [2006]
Gabriel Civallero, Ph.D.
Research Associate in Pediatrics [2009]
Michael I. Collector, B.S.
Research Associate in Oncology [1991; 2000]
Paul J. Converse, Ph.D.
Research Associate in Medicine [2002]
Elizabeth DeCuevas, Ph.D.
Research Associate in Cell Biology [2004]
Marlin H. Dehoff, M.S.
Research Associate in Neuroscience [1999]
James T. Deremeik, M.S.
Research Associate in Ophthalmology [1999; 1994]
Francescaolpato Di Cello, Ph.D.
Research Associate in Medicine [2007]
Ailing Dong, Ph.D.
Research Associate in Ophthalmology [2008]
Maire E. Doyle, Ph.D.
Research Associate in Medicine [2007]
Yong Du, Ph.D.
Research Associate in Radiology and Radiological Science [2005]
Michelle Nuttall Eakin, Ph.D.
Research Associate in Medicine [2009]
Gigi Jasmine Ebenezer, M.B.B.S., M.D.
Research Associate in Neurology [2004]
Georg Benedikt Ehret, M.D.
Research Associate in Pediatrics in Genetic Medicine [2008]
Eva Ehrlich, M.S.
Research Associate in Medicine [1989]
Julia N. Eron, Ph.D.
Research Associate in Otolaryngology-Head and Neck Surgery [2009]
Marjorie Elisabeth Ewertz, B.S.N.
Research Associate in Medicine [2006]
Mary Jo Fackler, Ph.D.
Research Associate in Oncology [2002]
Jed W. Fahey, M.S.
Research Associate in Pharmacology and Molecular Sciences [1993]
Mohamed H. Farah, Ph.D.
Research Associate in Neurology [2006]
Andreia Faria, M.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, Ph.D.
Research Associate in Oncology [2006]
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]
George Shiu-Kai Fung, Ph.D.
Research Associate in Radiology [2008]
Alicia Rose Gable, M.P.H.
Research Associate in Pathology [2008]
Lucio Gama, M.Sc.
Research Associate in Molecular and Comparative Pathobiology [1998]
Shanmugasundara Ganapathy Kanniappan, Ph.D.
Research Associate in Radiology [2006]
Li Gao, M.D., Ph.D.
Research Associate in Medicine [2005]
Ping Gao, Ph.D.
Research Associate in Medicine [2007]
Melissa Garland, M.S.
Research Associate in Radiology and Radiological Science [1998]
Sommer Elizabeth Gentry, Ph.D.
Research Associate in Surgery [2005]
Duane R. Geruschat, Ph.D.
Research Associate in Ophthalmology [1988]
Joseph S. Gillen, B.S.
Research Associate in Radiology and Radiological Science [1997]
Anne E. Gocke, Ph.D.
Research Associate in Neurology [2009]
Amy Lynne Goodrich, M.S.N.
Research Associate in Oncology [2005; 20]
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 and Radiological Science [2007]
Sergio J. Gutierrez, M.D.
Research Associate in Neurology [2003]
Laura I. Gutierrez-Alamillo, M.D.
Research Associate in Medicine [2007]
Jane L. Halpern, M.D., M.P.H., D.P.H.
Research Associate in Medicine [1993]
Takashi Hayashi, Ph.D.
Research Associate in Neuroscience [2009] (to 08/31/09)
Bin He, Ph.D.
Research Associate in Radiology [2008]
Yiping He, Ph.D.
Research Associate in Oncology [2008]
Joseph G. Hennessey, B.S.
Research Associate in Psychiatry [1993]
J. Enrique Hererra-Galeano, M.S.
Research Associate in Medicine [2005]
Lynda D. Hester, A.A.
Research Associate in Neuroscience [1985]
Hakim Hiel, Ph.D.
Research Associate in Otolaryngology-Head and Neck Surgery [2001]
John Hilton, D.Phil.
Research Associate in Radiology and Radiological Science [1999]
Paul N. Hoffman, M.D., Ph.D.
Research Associate in Ophthalmology [1998; 1981]
Katherine Cullinan Holman, Ph.D.
Research Associate in Psychiatry [2003]
Craig M. Hooker, M.P.H.
Research Associate in Oncology [2002]
Edward Horowitz, B.A.
Research Associate in Medicine [1996]
Franck Housseau, Ph.D.
Research Associate in Oncology [2002]
Jiahua Hu, Ph.D.
Research Associate in Neuroscience [2009]
Lina Hu, M.D., Ph.D.
Research Associate in Neurology [2003]
Rong Hu, M.D., Ph.D.
Research Associate in Medicine [2008]
Hao Huang, Ph.D.
Research Associate in Radiology [2006]
Langqing Huang, M.D., Ph.D.
Research Associate in Oncology [2004]
Yiping Huang, Ph.D., M.D.
Research Associate in Dermatology [2008]
Sherry Ann Hudson, MSB
Research Associate in Medicine [1997]
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]
Koko Ishizuka, M.D., Ph.D.
Research Associate in Psychiatry [2009] (from 09/01/09)
Susan Senciak Ishmael, Ph.D.
Research Associate in Medicine [2008]
Chuen-Chuen Jang, Ph.D.
Research Associate in Biological Chemistry [2009]
Mollie W. Jenckes, M.H.Sc.
Research Associate in Medicine [1998]
Jun Seop Jeong, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2009]
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xiaofeng Jia, M.D., Ph.D.</td>
<td>Research Associate in Biomedical Engineering</td>
<td>[2007], [2009]</td>
</tr>
<tr>
<td>Hangyi Jiang, Ph.D.</td>
<td>Research Associate in Radiology and Radiological Science</td>
<td>[1999]</td>
</tr>
<tr>
<td>Chunfa (Charles) Jie, Ph.D.</td>
<td>Research Associate in Medicine</td>
<td>[2002]</td>
</tr>
<tr>
<td>Zhe Jin, M.D., Ph.D.</td>
<td>Research Associate in Medicine</td>
<td>[2006]</td>
</tr>
<tr>
<td>Melina Viola Jones, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2006]</td>
</tr>
<tr>
<td>Richard Owen Jones, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[1998]</td>
</tr>
<tr>
<td>Shilpa D. Kadam, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2008]</td>
</tr>
<tr>
<td>Laura M. Kallay, Ph.D.</td>
<td>Research Associate in Physiology</td>
<td>[2007]</td>
</tr>
<tr>
<td>Yoichiro Kamimura, Ph.D.</td>
<td>Research Associate in Cell Biology</td>
<td>[2008]</td>
</tr>
<tr>
<td>Parag Perry Karmarkar, M.S.</td>
<td>Research Associate in Radiology and Radiological Science</td>
<td>[2002; 1998]</td>
</tr>
<tr>
<td>Varalakshmi Katuri, Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[2009]</td>
</tr>
<tr>
<td>Zubair Khan, M.D., M.P.H.</td>
<td>Research Associate in Otolaryngology-Head and Neck Surgery</td>
<td>[2007]</td>
</tr>
<tr>
<td>Sanjay Khare, Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[2006] (to 10/05/09)</td>
</tr>
<tr>
<td>George R. Kim, M.D.</td>
<td>Research Associate in Pediatrics</td>
<td>[2006], [2009]</td>
</tr>
<tr>
<td>Hiroaki Kimura, Ph.D.</td>
<td>Research Associate in Pathology</td>
<td>[2008]</td>
</tr>
<tr>
<td>Bonnie S. King, M.H.S.</td>
<td>Research Associate in Pathology</td>
<td>[2009]</td>
</tr>
<tr>
<td>Jason Paul Kirkness, Ph.D.</td>
<td>Research Associate in Medicine</td>
<td>[2009] (from 10/01/09)</td>
</tr>
<tr>
<td>Han Seok Ko, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2008]</td>
</tr>
<tr>
<td>Carol Kobrin, Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[2004]</td>
</tr>
<tr>
<td>Irina A. Kolosova, Ph.D.</td>
<td>Research Associate in Anesthesiology and Critical Care Medicine</td>
<td>[2008]</td>
</tr>
<tr>
<td>Hiroyuki Konishi, M.D., Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[2007]</td>
</tr>
<tr>
<td>Ferdynand J. Kos, Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[2004]</td>
</tr>
<tr>
<td>Michael Kottgen, Ph.D., M.D.</td>
<td>Research Associate in Biological Chemistry</td>
<td>[2007] (to 08/31/09)</td>
</tr>
<tr>
<td>Lisa Elinor Kratz, Ph.D.</td>
<td>Research Associate in Pediatrics</td>
<td>[1996]</td>
</tr>
<tr>
<td>Balaji Krishnamachary, Ph.D.</td>
<td>Research Associate in Radiology and Radiological Science</td>
<td>[2006]</td>
</tr>
<tr>
<td>Chitra Krishnan, M.S.</td>
<td>Research Associate in Neurology</td>
<td>[2005]</td>
</tr>
<tr>
<td>Anil Kumar, M.B.B.S.</td>
<td>Research Associate in Radiology and Radiological Science</td>
<td>[2007]</td>
</tr>
<tr>
<td>Herman E. A. Kwansa, Ph.D.</td>
<td>Research Associate in Anesthesiology and Critical Care Medicine</td>
<td>[2003]</td>
</tr>
<tr>
<td>Bachchu Lal, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2003]</td>
</tr>
<tr>
<td>Oleg V. Lapshin, M.D., Ph.D.</td>
<td>Research Associate in Medicine</td>
<td>[2008]</td>
</tr>
<tr>
<td>Jessica Kiely Law, M.D., M.P.H.</td>
<td>Research Associate in Pediatrics</td>
<td>[2006]</td>
</tr>
<tr>
<td>Ann Marie Lawler, Ph.D.</td>
<td>Research Associate in Physiology</td>
<td>[2004; 2003]</td>
</tr>
<tr>
<td>Jeffrey Pettit Leal, B.A.</td>
<td>Research Associate in Radiology</td>
<td>[1998; 2007]</td>
</tr>
<tr>
<td>Mohamed Lehar, M.D.</td>
<td>Research Associate in Otolaryngology-Head and Neck Surgery</td>
<td>[2000]</td>
</tr>
<tr>
<td>M. Victor Lemas, Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[1996]</td>
</tr>
<tr>
<td>Lisa K. Leventhal, M.S.</td>
<td>Research Associate in Medicine</td>
<td>[2003]</td>
</tr>
<tr>
<td>Guanhan Li, M.D., Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2009] (from 09/26/09)</td>
</tr>
<tr>
<td>Jianguo David Li, M.D.</td>
<td>Research Associate in Medicine</td>
<td>[2008]</td>
</tr>
<tr>
<td>Li Li, M.D., Ph.D.</td>
<td>Research Associate in Oncology</td>
<td>[2007]</td>
</tr>
<tr>
<td>Wenxue Li, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2004]</td>
</tr>
<tr>
<td>Xianghong Li, Ph.D.</td>
<td>Research Associate in Molecular Biology and Genetics</td>
<td>[2008]</td>
</tr>
<tr>
<td>Yun Li, Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2007]</td>
</tr>
<tr>
<td>Zhao Bo Li, M.D., Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2005; 2006]</td>
</tr>
<tr>
<td>Zhi Li, Ph.D.</td>
<td>Research Associate in Neuroscience</td>
<td>[2008]</td>
</tr>
<tr>
<td>Yideng Liang, M.D., Ph.D.</td>
<td>Research Associate in Neurology</td>
<td>[2009]</td>
</tr>
<tr>
<td>Zhaohao Liao, M.D.</td>
<td>Research Associate in Oncology</td>
<td>[2004]</td>
</tr>
</tbody>
</table>
Da-Ting Lin, Ph.D.
Research Associate in Neuroscience [2007]

Chia-Ying Liu, Ph.D.
Research Associate in Radiology and Radiological Science [2009]

Guanshu Liu, Ph.D.
Research Associate in Radiology and Radiological Science [2008]

Hua Liu, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2006]

Jianyong Liu, M.D., Ph.D.
Research Associate in Oncology [2007]

Lixin Liu, Ph.D.
Research Associate in Surgery [2009]

Manchang Liu, M.D., Ph.D.
Research Associate in Medicine [2006]

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]

Lili Lu, Ph.D.
Research Associate in Ophthalmology [2003]

Wenju Lu, M.D.
Research Associate in Medicine [2008]

Yang Lu, Ph.D.
Research Associate in Neurology [2003]

Dong-Gen Luo, Ph.D.
Research Associate in Neuroscience [2009]

Antonio Jose Machado Segundo, M.D.
Research Associate in Radiology [2008]

Deborah MacMillan, M.S.N.
Research Associate in Gynecology and Obstetrics [2009]

Farideh Majidi, M.S.
Research Associate in Oncology [1995]

Kenji Mandai, Ph.D.
Research Associate in Neuroscience [2009]

Cherie L. Marvel, Ph.D.
Research Associate in Neurology [2006]

William B. Mathews, Ph.D.
Research Associate in Radiology and Radiological Science [1997]

Mary A. McAllister, M.A.
Research Associate in Radiology and Radiological Science [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. McClellan, Ph.D.
Research Associate in Health Sciences Informatics [1994], Research Associate in Pharmacology and Molecular Sciences [1986]

Sonya Nell Meeker, B.S.
Research Associate in Medicine [1997]

Tatiana Melnikova, M.D., Ph.D.
Research Associate in Pathology [2008]

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, Ph.D., M.D.
Research Associate in Neurology [2006]

Mona Adel Mohamed, M.B.B.Ch.
Research Associate in Radiology and Radiological Science [2007]

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]

Ann B. Moser, B.A.
Research Associate in Neurology [1989; 1981]

Mahnaz Motevali, M.S.
Research Associate in Pathology [2008]

Taryn F. Moy, M.S.
Research Associate in Medicine [1995]

Tracy Murray-Stewart, M.A.
Research Associate in Oncology [2009]

Menekhem Muz Zviman, Ph.D.
Research Associate in Medicine [2005]

Mohammad Naqibuddin, M.P.H.
Research Associate in Medicine [2006]

Gueno G. Nedeltchev, D.V.M.
Research Associate in Medicine [2006]

Suzanne Amato Nesbit, Pharm.D.
Research Associate in Oncology [2005]

Qiang Ni, M.S.
Research Associate in Pharmacology and Molecular Sciences [2006]

Kimberly Ann Noonan, M.P.H.
Research Associate in Oncology [2008]

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]

Fan Pan, Ph.D., M.D.
Research Associate in Oncology [2002]

Niranjan Pandey, Ph.D.
Research Associate in Biomedical Engineering [2009]

Jong Myun Park, Ph.D.
Research Associate in Medicine [2006]

Thomas L. Parks, M.S.
Research Associate in Medicine [2007]

Teresa L. Parsons, Ph.D.
Research Associate in Medicine [2005]
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]

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]

Klaus B. Prontek, Ph.D.
Research Associate in Medicine [1999] (to 08/31/09),
Research Associate in Oncology [1999; 2009] (from 09/01/09)

Olga Pletnikova, M.D.
Research Associate in Pathology [2005]

James J. Potter, B.S.
Research Associate in Medicine [1995; 1988]

Umair Qazi, M.D., M.P.H.
Research Associate in Surgery [2008]

Di Qian, M.S.
Research Associate in Radiology and Radiological Science [2004]

Lu Qin, B.S.
Research Associate in Oncology [2002]

Qin Qin, Ph.D.
Research Associate in Radiology and Radiological Science [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 and Radiological Science [1993]

Sangeeta Ray, Ph.D.
Research Associate in Radiology and Radiological Science [2005]

Karen A. Robinson, M.Sc.
Research Associate in Medicine [2003], Joint Appointment in Health Sciences Informatics [2004; 2003]

Laura E. Rocco, M.S.
Research Associate in Medicine [1992]

Olivier Rousset, Ph.D.
Research Associate in Radiology and Radiological Science [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]

Sofyan Salem, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2009]

Gordon R. Sandford, Sc.D.
Research Associate in Oncology [2002]

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, P.A., M.B.A.
Research Associate in Emergency Medicine [2000]

Barbara W. Schweizer, B.S.
Research Associate in Psychiatry [2004]

Jane Ruble Scocca, Ph.D.
Research Associate in Medicine [2001]

Emily G. Severance, Ph.D.
Research Associate in Pediatrics [2008]

Sena Feride Sezen, Ph.D.
Research Associate in Urology [2006]

David M. Shade, J.D.
Research Associate in Medicine [2001]

Syed Mahmood Shah, M.B.B.S.
Research Associate in Ophthalmology [2006] (to 07/15/09)

Tariq Shah, Ph.D.
Research Associate in Radiology [2009]

Judy B. Shahan, M.S.
Research Associate in Emergency Medicine [1999]

Jikui Shen, M.D., Ph.D.
Research Associate in Ophthalmology [2002]

Jung Hoon Shin, Ph.D.
Research Associate in Neuroscience [2005] (to 09/30/09)

Wendy S. 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; 20]

Chad Slawson, Ph.D.
Research Associate in Biological Chemistry [2006]

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 and Radiological Science [1998; 1996]

Meena Somanchi, Ph.D.
Research Associate in Medicine [2007]

Hong Song, Ph.D.
Research Associate in Radiology and Radiological Science [2009] (from 10/01/09)

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.
Research Associate in Radiology and Radiological Science [2007]

Joseph Webster Stayman, Ph.D.
Research Associate in Biomedical Engineering [2009] (from 09/01/09)

Martin J. Stumpf, M.A.
Research Associate in Radiology and Radiological Science [2003]

Surojit Sur, Ph.D.
Research Associate in Oncology [2008]

Lee J. Swartz, M.B.A.
Research Associate in Medicine [2005]

Katalina Szabo, M.D.
Research Associate in Radiology and Radiological Science [1994]

Charles Conover Talbot, Jr., B.S.
Research Associate in Medicine [1999; 2003] (to 10/16/09)

Paul Tan, Ph.D.
Research Associate in Pharmacology and Molecular Sciences [2008]

Jing Tang, Ph.D.
Research Associate in Radiology and Radiological Science [2008]

Larisa Gennadievna Tereshchenko, M.D., Ph.D.
Research Associate in Medicine [2009] (from 09/01/09)

William P. Tew, Ph.D.
Research Associate in Biological Chemistry [1985]

Meridith Hill Thanner, Ph.D.
Research Associate in Emergency Medicine [2006]

Gareth Michael Thomas, Ph.D.
Research Associate in Neuroscience [2005]

Ling Tiah, M.B.B.S.
Research Associate in Emergency Medicine [2008]

Wenjing Tong, Ph.D.
Research Associate in Pathology [2006]

Kyra Tsapkini, Ph.D.
Research Associate in Neurology [2009] (from 08/01/09)

Mark J. Vaal, B.S.
Research Associate in Neurology [2008]

Kartik Venkatachalam, Ph.D.
Research Associate in Biological Chemistry [2008]

Candelaria Vergara, M.D.
Research Associate in Medicine [2009]

Donna L. Vogel, M.D., Ph.D.
Research Associate in Physiology [1997]

Feng Wu, M.D.
Research Associate in Medicine [2005]

Xiangwei Wu, M.D.
Research Associate in Orthopaedic Surgery [2009] (from 07/15/09)

Minghui Xiang, Ph.D.
Research Associate in Medicine [2009]

Bo Xiao, M.D., Ph.D.
Research Associate in Neuroscience [2008; 1999]

Huqing Xiao, M.D.
Research Associate in Medicine [1994]

Yi Xie, Ph.D.
Research Associate in Molecular Biology and Genetics [2009]

Desheng Xu, M.D.
Research Associate in Neuroscience [2002]

Jia Xu, Ph.D.
Research Associate in Neuroscience [2009]

Jingyan Xu, Ph.D.
Research Associate in Radiology and Radiological Science [2005]

Wenlian Xu, Ph.D.
Research Associate in Molecular Biology and Genetics [2008] (to 07/12/09)

Yi Xu, M.D.
Research Associate in Molecular and Comparative Pathobiology [2006]

Kazuyo Yamaji-Kegan, Ph.D.
Research Associate in Anesthesiology and Critical Care Medicine [2006]

Xiao Ping Yang, M.D., Ph.D.
Research Associate in Medicine [2004]

Xiao-Ru Yang, Ph.D., M.D.
Research Associate in Medicine [2008]
Xiaoju Yang, M.D.
Research Associate in Medicine [2000]
Sheng Yao, Ph.D.
Research Associate in Oncology [2009]
Xiaobu Ye, M.D.
Research Associate in Oncology [2008]
Ray-Whay Chiu Yen, M.S.
Research Associate in Oncology [1991]
Hong Yu, M.D., Ph.D.
Research Associate in Oncology [2003]
Qilu Yu, Ph.D.
Research Associate in Medicine [2006]
Weii (Wayne) Yu, Ph.D.
Research Associate in Oncology [2003]
Yanxing Yu, Ph.D.
Research Associate in Oncology [2008; 2004]
Daniel S. Yuan, M.D.
Research Associate in Molecular Biology and Genetics [2004]
Jie Yuan, M.D.
Research Associate in Neurology [2002]
Asifa K. Zaidi, Ph.D.
Research Associate in Medicine [2008]
Karen I. Zeller, Ph.D.
Research Associate in Medicine [2004]
Emil Zeynalov, M.D.
Research Associate in Anesthesiology and Critical Care Medicine [2009] (to 11/09/09)
Dongming Zhang, M.S., M.L.S.
Research Associate in Health Sciences Informatics [2003]
Huafeng Zhang, Ph.D.
Research Associate in Oncology [2008]
Ping-Wu Zhang, M.D., Ph.D.
Research Associate in Neurology [2008]
Yimao Zhang, M.S.
Research Associate in Radiology and Radiological Science [2004]
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]
Gefeng (Gloria) Zhu, Ph.D.
Research Associate in Oncology [2009]
Wenlian Zhu, Ph.D.
Research Associate in Radiology and Radiological Science [2009]
Jianchao Zong, Ph.D.
Research Associate in Oncology [1997]

RESEARCH ASSOCIATES EMERITI
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
Summer Acevedo, Ph.D.
Visiting Scientist in Neurology [2009]
Manuel H. Aguilar-Oliveira, M.D.
Visiting Scientist in Medicine [2009]
Ruth Ashery-Padan, Ph.D.
Visiting Scientist in Ophthalmology [2008] (to 08/01/09)
Weiliang Bai, M.D.
Visiting Scientist in Otolaryngology-Head and Neck Surgery [2009] (from 09/01/09)
Waidi Khaled Barbour, M.D., Ph.D.
Visiting Scientist in Ophthalmology [2008; 20]
Anastasios G. Bezerianos, Ph.D.
Visiting Scientist in Biomedical Engineering [2009] (from 01/04/10)
Shridhar Bhat, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2005]
Gregory F. Burton, Ph.D.
Visiting Scientist in Neurology [2001] (to 08/31/09)
Cuneyt Calisir, M.D.
Visiting Scientist in Radiology [2008]
Yuzhen Cao, Ph.D.
Visiting Scientist in Biomedical Engineering [2009]
Marek Cebrat, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2006]
Donald L. Champagne, Ph.D.
Visiting Scientist in Ophthalmology [2008]
Dimitrios Chatzidimitriou, M.D., Ph.D.
Visiting Scientist in Pathology [2009]
Yuehtsen Juliette Chung, Ph.D.
Visiting Scientist in History of Medicine [2009]
Keith Warren Crawford, Ph.D., R.Ph.
Visiting Scientist in Medicine [2008]
Pierre Croisille, M.D.
Visiting Scientist in Radiology and Radiological Science [1999; 1997]
Zhigang Dai, M.D.
Visiting Scientist in Orthopaedic Surgery [2009]
Haiyan Ding, Ph.D.
Visiting Scientist in Biomedical Engineering [2009]
Craig A. Dionne, Ph.D.
Visiting Scientist in Oncology [2003]
Kenyon M. Evans-Nguyen, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2008] (to 07/31/09)
Ann M. Ferrie, B.S.
Visiting Scientist in Neuroscience [2008]
Thomas Kwok-Fah Foo, Ph.D.
Visiting Scientist in Radiology and Radiological Science [1998]
Masahiro Fujimuro, Ph.D.
Visiting Scientist in Oncology [2009]

Masahiro Fukaya, Ph.D.
Visiting Scientist in Neuroscience [2008]

Wesley David Gilson, Ph.D.
Visiting Scientist in Radiology and Radiological Science [2007]

Sandeep N. Gupta, Ph.D.
Visiting Scientist in Radiology and Radiological Science [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]

Li Jiang, M.D.
Visiting Scientist in Radiology [2007]

Robert Thomas Kambic, Ph.D.
Visiting Scientist in Health Sciences Informatics [2006]

Peter Keating, Ph.D.
Visiting Scientist in History of Medicine [2010] (from 01/01/10)

Christian James Ketchum, Ph.D.
Visiting Scientist in Physiology [2005], Visiting Scientist in Cell Biology [2005]

Eun-Kyoung Kim, Ph.D.
Visiting Scientist in Neuroscience [2006]

Hocheol Kim, Ph.D.
Visiting Scientist in Anesthesiology and Critical Care Medicine [2006] (to 07/31/09)

Juno Kim, M.S.
Visiting Scientist in Neuroscience [2008]

Yong Sik Kim, M.D.
Visiting Scientist in Medicine [2008]

Alan P. Kozikowski, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2003]

Seung Han Lee, M.D., Ph.D.
Visiting Scientist in Neurology [2009]

Wei Qi Lei, M.S.
Visiting Scientist in Orthopaedic Surgery [2009] (from 07/15/09)

Chavonne Danielle Lenoir, Dr.P.H.
Visiting Scientist in Pediatrics [2006]

Cong Li, Ph.D.
Visiting Scientist in Radiology [2009]

Jun Li, M.D.
Visiting Scientist in Orthopaedic Surgery [2009] (from 07/15/09)

Ming-Chang Li, Ph.D., M.D.
Visiting Scientist in Neurological Surgery [2009]
Silvia A. Pineiro, Ph.D.
Visiting Scientist in Biophysics and Biophysical Chemistry [2009]

Jose W. Rodriguez, M.D.
Visiting Scientist in Neurology [2008]

Jong-Lyel Roh, M.D., Ph.D.
Visiting Scientist in Otolaryngology-Head and Neck Surgery [2008]

Takashi Sato, M.S.
Visiting Scientist in Oncology [2008]

Michael Schar, M.S.
Visiting Scientist in Radiology and Radiological Science [2005]

Frank V. Schraml, M.D.
Visiting Scientist in Radiology [2000]

Nicola Scichilone, M.D.
Visiting Scientist in Medicine [2003]

Steven M. Shea, Ph.D.
Visiting Scientist in Radiology and Radiological Science [2005]

Anding Shen, Ph.D.
Visiting Scientist in Medicine [2006]

Kui Shen, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2005]

Changqing Shi, M.D.
Visiting Scientist in Neurology [2009]

Sa Shi, Ph.D.
Visiting Scientist in Medicine [2009]

Kye-Shik Shim, M.D.
Visiting Scientist in Pediatrics [2009] (from 09/01/09)

Om Vir Singh, Ph.D.
Visiting Scientist in Pediatrics [2009]

Glenn Slavin, Ph.D.
Visiting Scientist in Radiology and Radiological Science [1999]

Can Solakoglu, M.D.
Visiting Scientist in Neurological Surgery [2008]

Piotr Suffcynski, Ph.D.
Visiting Scientist in Neurology [2009]

Hiroyuki Suganuma, Ph.D.
Visiting Scientist in Pharmacology and Molecular Sciences [2009]

Haiyan Sun, Ph.D.
Visiting Scientist in Neuroscience [2009]

Gihan I. Tennekoon, M.B.B.S.
Visiting Scientist in Neuroscience [2009]

Elizabeth Tran, Ph.D.
Visiting Scientist in Neuroscience [2008]

Zhibo Wen, M.D.
Visiting Scientist in Radiology [2008]

Lu Xia, M.D., Ph.D.
Visiting Scientist in Medicine [2009]

Xu Yao, M.D.
Visiting Scientist in Medicine [2009]

Bing Yu, M.D.
Visiting Scientist in Orthopaedic Surgery [2009] (from 07/15/09)

Jie (Jane) Zeng, M.S.
Visiting Scientist in Pathology [2009]

Jie Zhang, Ph.D.
Visiting Scientist in Neuroscience [1994]

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]

INTERDIVISIONAL JOINT APPOINTMENTS

Patricia A. Abbott, Ph.D.
Joint Appointment in Health Sciences Informatics [2001]

Peter C. 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]

Gerard F. Anderson, Ph.D.
Joint Appointment in Medicine [1994]

Mehran Armand, Ph.D.
Joint Appointment in Orthopedic 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]

Terri H. Beaty, Ph.D.
Joint Appointment in Oncology [1995]

Michael Bender, Ed.D.
Joint Appointment in Pediatrics [1993; 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., M.B.A.
Joint Appointment in Medicine [2001]

John C.S. Breitner, M.D., M.P.H.
Joint Appointment in Psychiatry [1998]

Patrick N. Breysse, Ph.D., M.H.S.
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]

David DuPuy Celentano, Sc.D.
Joint Appointment in Medicine [2002]

Jeanne Charleston, R.N.
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]

Pierre A. Coulombe, Ph.D.
Joint Appointment in Biomedical 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]

Cheryl R. Dennison, Ph.D., R.N.
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]

Anna Palmer Durbin, M.D.
Joint Appointment in Medicine [1999]

Sydney E Morss 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]

Jennifer H. Elisseeff, Ph.D.
Joint Appointment in Orthopedic Surgery [2003]

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 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]

Michael Christopher Gibbons, M.D.
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 Guyer, M.D.
Joint Appointment in Pediatrics [1990]

Neal A. Halsey, M.D.
Joint Appointment in Pediatrics [1985]

Justin Hanes, Ph.D.
Joint Appointment in Biomedical Engineering [1998], Joint Appointment in Oncology [1998; 2005], Joint Appointment in Neurological Surgery [1998; 2009], Joint Appointment in Oncology [1995; 2005]

J. Marie Hardwick, Ph.D.
Joint Appointment in Neurology [1995; 1988], Joint Appointment in Oncology [1999], Joint Appointment in Pharmacology and Molecular Sciences [1988]

Samer S. Hattar, Ph.D.
Joint Appointment in Biomedical Engineering [1998]

Martha N. Hill, Ph.D.
Joint Appointment in Medicine [1990]

Peter C. Holland, Ph.D.
Joint Appointment in Neuroscience [2001]

David Robert Holtgrave, Ph.D.
Joint Appointment in Medicine [2006], Joint Appointment in Oncology [2006]

Kalina Hristova, Ph.D.
Joint Appointment in Biomedical Engineering [2002]

Han-Yao Huang, M.P.H., Ph.D.
Joint Appointment in Oncology [2005] (to 08/31/09)

Karen Huss, Ph.D., D.N.Sc.
Joint Appointment in Medicine [1995]

Pablo A. Iglesias, Ph.D.
Joint Appointment in Biomedical Engineering [2003]

Rafael A. Irizarry, Ph.D.
Joint Appointment in Medicine [2009]

Jeffrey V. Johnson, Ph.D.
Joint Appointment in Medicine [1989]

Hee-Soon Juon, Ph.D.
Joint Appointment in Oncology [2005]

Norma Kanarek, M.P.H., Ph.D.
Joint Appointment in Oncology [2001]

Wen Hong Linda Kao, Ph.D.
Joint Appointment in Medicine [2006]

Robert H. Kargon, Ph.D.
Joint Appointment in History of Medicine [1984]

Ruth A. Karron, M.D.
Joint Appointment in Pediatrics [1989]

Joanne Katz, Sc.D.
Joint Appointment in Ophthalmology [1994; 1982]
Wayne Mitzner, Ph.D.
Joint Appointment in Anesthesiology and Critical Care Medicine [1990], Joint Appointment in Biomedical Engineering [1992], Joint Appointment in Medicine [1990]

Ramin Mojtabai, M.D., Ph.D., M.P.H.
Joint Appointment in Psychiatry [2008]

William John Moss, M.D., M.P.H.
Joint Appointment in Pediatrics [1999]

Kenrad E. Nelson, M.D.
Joint Appointment in Medicine [1987]

Myaing M. Nyunt, M.D., Ph.D., M.P.H.
Joint Appointment in Medicine [2008]

Sharon Jean Olsen, M.S.
Joint Appointment in Oncology [1999]

Anna O. Orlova, Ph.D.
Joint Appointment in Health Sciences Informatics [2001]

David M. Paige, M.D.
Joint Appointment in Pediatrics [1978; 1969]

Nathaniel F. Pierce, M.D.
Joint Appointment in Medicine [1997; 1966]

Fernando Javier Pineda, Ph.D.
Joint Appointment in Health Sciences Informatics [2002]

Elizabeth A. Platz, M.P.H., Sc.D.
Joint Appointment in Oncology [1999], Joint Appointment in Urology [2001]

Sekhar PothiReddy, Ph.D.
Joint Appointment in Oncology [2000]

Sean T. 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]
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 Health Sciences Informatics [2001]

K. J. Wang, Ph.D.
Joint Appointment in Medicine [2003]

Joel F. 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] (from 08/01/09)

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., M.H.S.
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]
Postdoctoral Fellows 2009-2010

ANESTHESIOLOGY AND CRITICAL CARE MEDICINE

Olatunbosun Olukayode Aganga, M.D. 1
Chinwe Chi Chi Ajuba-Iwuji, M.D. 1
Reza Amini, M.S., Ph.D. to 01/11/2010
Ankur Anand, M.D. 1
Promise Temidayo Ariyo, M.D. 1
Nadya Averbach, M.D. to 12/16/2009 1
Chinyere Chinenyenu Azuogu, M.D. 1
Mosunmola O. Babade, M.D. 1
Nana Dwomoh Benneh, M.D. 1
Ramola Bhambhani, M.B.B.S. to 09/08/2009 1
Ramola Bhambhani, M.B.B.S. from 10/01/2009
Kerry Kusz Blaha, M.D. 1
Elena Blasco-Colmenares, M.B.B.S. to 08/21/2009 1
Anna Todaro Brown, M.D. 1
Charles Hugh Brown, IV, M.D. 1
Laura Boeck Burton, M.D. 1
Veronica Ortiz Bussio, M.D. 1
Chun-Lin Chen, Ph.D. to 10/31/2009 1
Cindy Hsin-I Chen, M.D. 1
Patrick Wade Clark, M.D. 1
Lia Ellen Clattenburg, M.D., M.P.H. 1
Kimberly Anne Cover, M.D. 1
Pierre-Antoine Francois Crassous, Ph.D. to 11/30/2009 1
Yasser Mohamed Dahab, M.D. 1
Amir Omar Elhassan, M.D. 1
Elizabeth Marie Elliott, M.D. 1
Mark Raymond Ettinger, M.D. 1
Chunling Fan, M.S., Ph.D. 1
Christopher Faustin, M.D., M.S. 1
Marcos De Sousa Ferreira, M.D. from 10/26/2009
Artemus Flagg, II, M.D., M.P.H. 1
Jennifer Lorayne Fuller, M.D. 1
Nishant Ashok Gandhi, D.O. 1
Harold Joseph Gelfand, M.D. from 08/20/2009
Steven L. Gibson, M.D. 1
Aditya Ashokkumar Goel, Ph.D. (on leave of absence from 10/23/2009 to 11/06/2009)
Andrew Joseph Goins, D.O. 1
Anastassia Grigorieva, M.D. 1
Justin Thames Hamrick, M.D. 1
Sayeh Hamzehzadeh, M.D. 1
Matthew Paul Harper, M.D. 1
Lihuah He, Ph.D. to 04/30/2010
Fay Anne Horng, M.D. 1
Jeremy M. Huff, D.O. 1
Joseph C. Hung, M.D. 1
Monique Elesha James, M.D. 1
Stacie Nicole Johnson, M.D. 1
Sheng-Chin Kao, M.D. from 08/01/2009
Shruti Gupta Kapoor, M.D., M.P.H. 1
Yun Tai Kim, Ph.D.
Grace Kong, M.B.B.S. 1
Chun-Yi Lee, Ph.D. from 08/01/2009
Frank Hanchong Lee, M.D. from 07/13/2009 to 07/31/2009
Rung-Chi Li, M.Sc., Ph.D. to 07/31/2009
Wesley Liao, M.D. 1
Elaina Ewei Lin, M.D. 1
Peter Charlie Lin, M.D. 1
Jonathan Lissauer, M.D. 1
Raina Marie Lourens, M.D. 1
Bo Ma, Ph.D.

Michael Fernandez Mantinan, M.D. 1
Ty Asher Martindale, D.O., M.H.S. 1
Christina Rose Miller, M.D. 1
Kyaw Soe Mon, M.D. 1
Sang-Kwan Moon, Ph.D. to 02/28/2010
Arnab Mukherjee, M.D. 1
Young Jun Oh, M.D., Ph.D. to 02/28/2010
John Young Ok, M.D. 1
Sean Michael Owens, D.O.
Tiffany S. Owens, M.D. 1
Tanveer Kaur Pannu, M.D. 1
Melissa Lynn Pant, M.D. 1
Amit Manu Patel, M.D. 1
Ketan B. Patel, M.D. 1
Andre Poloczek, M.D. to 04/30/2010
Jane Radov, M.D. 1
Rebecca Lynn Reeves, D.O. 1
Philip E.F. Roman, M.D. 1
James Adam Rothschild, M.D. 1
Sungwoo Ryoo, Ph.D. to 10/31/2009
Rosanne Bravin Sheinberg, M.D. 1
Ming-Hung Shih, M.D. to 07/27/2009
Gautam Sikka, M.D.
Jochen Steppan, M.D. 1
Shawn Michelle Sumida, M.D. 1
Dora Syin, M.D. 1
Babak Tabatabai, M.D. 1
Carin Marie Tauriello, M.D. 1
Brandon Michael Togioka, M.D. 1
Jonelon Gabriel Tsang, M.B.B.S. 1
Matthew Robert Vana, M.D. 1
April Joy Runa Villamayor, M.D. 1
Bing Wang, M.D. to 03/25/2010
Emmett E. Whitaker, M.D. (on leave of absence to 09/15/2009) 1
Jamie Rene Wingate, M.D. 1
Caroline Culbertson Wright, M.D. 1
Christopher Lee Wright, Ph.D. to 07/17/2009
He Wu, Ph.D. from 10/12/2009
Sarah Elaine Wyhs, M.D. 1
Ji-Tian Xu, Ph.D. 1
Dawn Yan, M.D. 1
Ya Yang, Ph.D. to 02/08/2010
Jian Zhang, M.D., Ph.D. to 04/30/2010
Xiuli Zhao, Ph.D. 1
Gehua Zhen, M.D.
Fei Zheng, M.D., M.P.H. 1
Jianhong Zhu, Ph.D. to 01/31/2010
Zachary Matthew Zumbar, M.D., M.P.H. 1

Adult Cardiothoracic Anesthesiology

Tricia Desvarieux, M.D.
Rabi Kumar Panigrahi, M.B.B.S.
Michele Leigh Sumler, M.D.
Darcy Louise Towsley, M.D.

Critical Care Medicine

Houssam Farres, M.D. to 07/13/2009
Samuel Michael Galvagno, Jr., D.O. to 07/13/2009
Randeep Gill, M.D. from 07/13/2009
Caron Hong, M.D. from 07/13/2009
Absar Mirza, M.B.B.S. from 07/13/2009
Michael Eniagant Nottidge, M.B.B.S., M.P.H. to 07/31/2009
Sadeq Ali Quraishi, M.D. from 07/13/2009
Imani Thornton, M.D. from 07/13/2009

Adult Cardiothoracic Anesthesiology

Tricia Desvarieux, M.D.
Rabi Kumar Panigrahi, M.B.B.S.
Michele Leigh Sumler, M.D.
Darcy Louise Towsley, M.D.

Critical Care Medicine

Houssam Farres, M.D. to 07/13/2009
Samuel Michael Galvagno, Jr., D.O. to 07/13/2009
Randeep Gill, M.D. from 07/13/2009
Caron Hong, M.D. from 07/13/2009
Absar Mirza, M.B.B.S. from 07/13/2009
Michael Eniagant Nottidge, M.B.B.S., M.P.H. to 07/31/2009
Sadeq Ali Quraishi, M.D. from 07/13/2009
Imani Thornton, M.D. from 07/13/2009
Trung Quang Vu, M.D. to 07/13/2009

**Pain Medicine**
Meredith Claire Brandt Adams, M.D. from 07/15/2009
Haitham A. Al-Grain, M.D. from 07/15/2009
Karsten Bartels, M.D. from 08/19/2009
Brandon Jesse Goff, D.O. to 08/31/2009
Steven Marshall Harrison, M.D. to 09/28/2009
Spencer Scott Heaton, M.D. from 08/15/2009
Paul Kuy Seang Ky, D.O. to 07/13/2009
Jing Wang, M.D., Ph.D. to 07/13/2009

**Pediatric Critical Care**
Jason Wayne Custer, M.D.
Apryle Y. Funderburk, M.D. from 07/29/2009 to 08/25/2009
Rachel A. Gast, M.D. from 10/21/2009 to 11/17/2009
Dheeraj Goswami, M.D.
Malika Gupta, M.B.B.S. from 11/18/2009 to 12/16/2009
Jing Wang, M.D., Ph.D.

**Pediatrics**
Jessica Anne George, M.D.
Andrew John Iskander, M.D. from 10/05/2009
Eric Lee, M.D. from 07/06/2009
Christine Lan Mai, M.D. to 07/20/2009
Oyetokunbo Olubukola Oyetunde, M.D. to 07/26/2009
Shivani Mayank Patel, M.B.B.S.
Charles Wainwright Zahalka, M.D. to 07/06/2009

**BIOLOGICAL CHEMISTRY**
Bradley Chun-Yee Akitake, Ph.D.
Michael Andrew Anderson, Ph.D. from 10/01/2009
Ronald Jarrod Copeland, Ph.D.
Daryle Joseph Depianto, Ph.D. to 08/31/2009
Melissa Ann Fowler, Ph.D. from 09/14/2009
Yuchen Jiao, M.D., Ph.D.
Ji Hoon Kim, M.S., Ph.D.
Youngsoeck Lee, Ph.D.
Zachary Richard Gagnon, Ph.D.
Morten Frier Gjerstorff, Ph.D. from 10/21/2009 to 12/19/2009
Ryan S. Gray, Ph.D. from 07/06/2009

**BIOMEDICAL ENGINEERING**
Yong Ping Chen, Ph.D.
Young Seok Choi, Ph.D.
Stacey Deleria Finley, Ph.D. from 09/08/2009
Adrian Mark Haith, Ph.D. from 12/01/2009
Li Hua, Ph.D.
Princess Izevbua Imoukhuede, Ph.D.
Jun Izawa, Ph.D.
Toufic Gorges Jabbour, M.S., Ph.D. from 12/20/2009
Rosy Rani Joshi-Mukherjee, Ph.D.
Aysha Saad Keisler, Ph.D.
Gang Liu, Ph.D.
Xiaodong Liu, Ph.D.
Anil Digambar Maybhate, Ph.D.
Vignesh Muthuvijayan, Ph.D. to 04/30/2010
Paul Christian Nelson, Ph.D.
Jean-Jacques Orban de Xivry, M.S., Ph.D.
Michael Scott Osmanski, Ph.D.
Amina Ann Qutub, Ph.D. to 07/31/2009
Corban Gregory Rivera, Ph.D.
Elena Victoria Rosca, Ph.D.
Sean Joseph Sleee, Ph.D.
Marianne Odile Stefanini, M.A., M.S., Ph.D.
Michael Raphael Tadross, M.D., Ph.D. to 11/30/2009
Caitlin Susannah Torgerson, Ph.D.
Yicong Wu, Ph.D.
In Hong Yang, Ph.D. from 09/21/2009
Matthew Ralph Zahner, Ph.D.
Yuying Zhang, Ph.D. from 11/16/2009
Desheng Zheng, Ph.D. to 09/25/2009
Yi Zhou, Ph.D.

**BIOPHYSICS AND BIOPHYSICAL CHEMISTRY**
Colin Echeverria Aitken, Ph.D.
Christopher Edward Berndsen, Ph.D.
Eduardo Emilio Chufan, Ph.D. to 09/15/2009
Ajit Bikram Datta, Ph.D.
Kamau Mudada Fahie, Ph.D. from 10/21/2009 to 05/27/2010
Guo Fu, Ph.D.
Tao Huang, Ph.D.
Jennifer Marie Kavran, Ph.D.
Kwangsoo Kim, Ph.D.
Min Sung Kim, Ph.D.
Ping Liu, M.S., Ph.D.
Simon Amadeus Messing, Ph.D.
Jagpreet Singh Nanda, Ph.D.
Vaishnavi Rajagopal, Ph.D. from 09/08/2009
Sarah Elizabeth Walker, Ph.D.
Reuven Wiener, Ph.D.

**CELL BIOLOGY**
Marina Allary, Ph.D.
Yulia Artemenko, Ph.D.
Jemima R. Barrowman, Ph.D.
Rita Thomas Brookheart, Ph.D. from 12/16/2009
Huaqing Cai, M.S., Ph.D.
Chun-Lin Chen, Ph.D. from 11/01/2009
Se Yeon Chung, Ph.D.
Rebecca Marie Fox, Ph.D.
Jonathan Chen Kiat Franca-Koh, Ph.D. to 08/31/2009
Zachary Richard Gagnon, Ph.D. from 09/08/2009
Morten Frier Gjerstorff, Ph.D. from 10/21/2009 to 12/19/2009
Ryan S. Gray, Ph.D. from 07/06/2009
Chuan-Hsiang Huang, M.D., Ph.D. to 05/31/2010
Hiroshi Ike, Dr. Sc., M.A.
Afshan Ismat, Ph.D.
Bilal Ersen Kerman, Ph.D. to 07/31/2009
Toru Komatsu, Ph.D. to 04/19/2010
Tianzhi Luo, Ph.D.
Rika Maruyama, Ph.D.
James Edward Mullally, Ph.D.
Wei Shao, Ph.D.
Alexandra Surcel, Ph.D.
Yasushi Tamura, Ph.D.
Zongtian Tong, Ph.D. to 01/18/2010
Tasuku Ueno, Ph.D. to 03/31/2010
Junko Wakabayashi, Ph.D.
Yu Wang, M.S., Ph.D.
Zhongyan Zhang, Ph.D.
QiongQiong Zhou, Ph.D.

DERMATOLOGY
Christopher John Bengson, M.D., M.H.S.
Alice Ya-Chun Chuang, M.D.
Ali Dana, M.D., Ph.D.
Amena Marie DeLuca, M.D.
Yelena Mirensky Frankel, M.D., M.P.H.
Anne Han, M.D.
Adrianna Janell Jackson, M.D.
Catherine Hee Yong Lee, M.D., M.Sc.
David Alvin Lee, M.D.
Sofia Marica Shea, M.D.
Noelle Starr Sherber, M.D.
Mark Minh Tran, M.D.

Dermatopathology
John Harland Irlam, D.O. from 09/01/2009 to 09/30/2009
Giuseppe Miliello, M.D.
Arun Prakash Venkat, M.B.A., M.D.
Joseph Anthony Whitten, M.D., M.S. to 07/31/2009

Pediatric Dermatology
Eric Paul Brumwell, M.D. from 01/04/2010 to 01/31/2010
Rebekah Hewett Clifford, M.D. from 09/01/2009 to 09/30/2009
Mark Edward Eaton, M.D. from 09/01/2009 to 09/30/2009
Jeffrey J. Kelly, D.O. from 12/01/2009 to 12/31/2009

EMERGENCY MEDICINE
John William Burger, M.D., M.P.H.
Sarah Jean Carle, M.D.
Emily Streyer Carlisle, M.A., M.D.
Kuan-Fu Chen, M.D. to 03/05/2010
Michael Christopher Cordeiro, M.D.
Chidiebere Uzoma Ekeocha, M.B.A., M.D.
Tiffany Clair Fong, M.D.
David Douglas Gilbert, D.O.
Mark Adam Goldstein, M.D.
Martha Noelle Goodin, M.D.
Sommer Nikishia Gripper, M.D.
Latonya Michelle Hendricks, D.O.
Harry E. Heverling, Jr., D.O.
Bridget Helen Highet, M.D.
John Matthew Holst, D.O.
Trishena Nikishia Jones, M.D.
Samiru Rahman Khandker, M.D.
Bret Kiker, M.D.
Brian Jeremy Kipe, M.D.
Timothy Christopher Laeger, M.D.
Darren Peter Mareiniss, J.D., M.D.
Tyler Martinez, D.O.
Michael R. Melia, M.D. from 07/02/2009
Melinda Jane Morton, M.D., M.P.H.
Markhabat Omirdinovna Muminova, M.D. to 10/06/2009
Kenneth Mwatha, M.D.
Hares Ahmad Najand, M.D.
Seungkyung Park, Ph.D. from 08/01/2009 to 10/31/2009
Susan Marie Peterson, M.D.
Randall Trenton Rhyme, M.D.
Jordan Michael Sax, M.D.
Sneha Harshad Shah, M.D.
Cyrus G. Shahpar, M.D., M.P.H.
Ryan Scott Shanahan, M.D.
Stephani Lynn Simon, D.O.
Sarah Anne Stewart De Ramirez, M.D., M.P.H., M.Sc.
Roshni Ishwarsinh Thakore, M.D.
Jonathan Sidney Thierman, M.D., Ph.D.
Stephen Charles Viel, M.D.
Andrew C. Yoon, M.D.
Sания Zalizada, M.D.

FUNCTIONAL ANATOMY AND EVOLUTION
Rachel Heather Dunn, Ph.D.

GYNECOLOGY AND OBSTETRICS
Modupe Veronique Agueh, M.D.
Francisco Aguirre, M.D.
Alejandra Denisse Alvarez, M.D.
Joyce Nuqui Barlin, M.D.
Shazia Bashir, M.D., M.P.H.
Codi Dawn Beam, M.D.
Meredith Lee Birsner, M.D.
Alaina Joelle Brown, M.D.
Alexandre Buckley De Meritens, M.D.
Mindy Sue Christianson, M.D.
Sarah Lauren Cohen, M.D.
Abigail Elizabeth Dennis, M.D.
Jennifer Ann Ducey, M.A., M.D.
Cindy Moria Duke, M.D.
Jill Edwardson, M.D., M.P.H.
Maureen Elise Grundy, M.D.
Camille Catherine Gunderson, M.D.
Sarah Jean Hanson, M.D.
Sherrine Adele Ibrahim, M.D.
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.
Tiffany Samara McNair, M.D.
Alok Pant, M.D.
Elizabeth O'Connor Purcell, M.D.
Melissa Lauren Russo, M.D.
Sangini Bhadrik Shah Sheth, M.D., M.P.H.
Khara Michelle Simpson, M.D.
Julie Sara Solomon, M.D.
Hindi Elaine Stohl Posy, M.D.
Sarah Malena Wheeler, M.D.
Abigail Duncan Winder, M.D.
Jizhong Zou, M.S., Ph.D.

Gynecologic Oncology
Aimee C. Fleury, M.D.
Okechukwu Anthony Ibeanu, M.B.B.S., M.P.H.
Stefanie Masako Ueda, M.D.
Maternal-Fetal Medicine
Anya Jeannine Bailis, M.D.
Christopher Scott Ennen, M.D.
Teresa Martino, D.O. to 12/31/2009
Kristy Ann Ruis, M.D.
Amanda P. Stewart, M.D.
Linda Marie Szymanek, M.D., Ph.D.

Reproductive Endocrinology
Paul Robert Brezina, M.B.A., M.D.
Aimee Catherine Jacobs, M.D. from 11/30/2009 to 12/31/2009
Nneka N. McNeal-Jackson, M.D. from 10/05/2009 to 10/31/2009
Kerri M. Nardone, D.O. from 08/31/2009 to 10/02/2009
Dana Lynn Shanis, M.D. from 11/01/2009 to 11/30/2009
Brad Blachly Swelstad, M.D.
Melissa Marie Yates, M.D.

HEALTH SCIENCES INFORMATICS
Yair G. Rajwan, Dr. Sc., M.Sc. from 09/01/2009
Terry Hsin-Yi Shen, M.P.H., Ph.D. from 09/01/2009

HISTORY OF MEDICINE
Karen Kruse Thomas, M.A., Ph.D.

MCKUSICK-NATHANS INSTITUTE OF GENETIC MEDICINE
Eva Andres-Mateos, Ph.D.
Pallav Bhatnagar, Ph.D.
Thi Vu Bui, Ph.D. from 12/01/2009
Grzegorz Maciej Burzynski, Ph.D. from 08/18/2009
Raghothama Chaerkady, Ph.D.
Tsung-Cheng Chang, Ph.D.
Erica Ellen Davis, M.S., Ph.D. to 10/31/2009
Betty Quynh-Huong Doan, M.P.H., Ph.D.
Vishal Kirtikant Doshi, M.B.B.S., M.P.H.
Jefferson James Doyle, M.B.B.Ch., M.H.S.
Eran Elhaik, Ph.D. to 01/26/2010
Elana Gallo, Ph.D.
Santhi Kalaichelvi Ganesh, M.D.
Simone Gupta, M.Sc., Ph.D. from 11/15/2009
Yen-Yi Ho, Ph.D. from 08/10/2009
Qian Jiang, Ph.D.
Fatima Jinawath, M.D., Ph.D.
Ashish Kapoor, M.Sc., Ph.D.
Oliver Andrew Kent, Ph.D.
Vinayak Kotoor, M.B.B.S.
Yangqian Liu, Ph.D.
David Charles Loch, Ph.D.
Weibo Luo, Ph.D.
Rebecca Maria Mejias-Estevez, Ph.D.
Ronald Alan Miller, II, Ph.D. to 08/03/2009
Edwin Oh, Ph.D. to 10/15/2009
Vasyl Pihur, M.S., Ph.D. from 08/10/2009
Sergio Rey, Ph.D.
Sheikh Amer Riazuddin, Ph.D. to 10/31/2009
Srirangan Sampath, Ph.D.
Neeraj Sharma, Ph.D.
Chrstel van Erp, Ph.D.
Lei Wang, Ph.D. to 03/30/2010
Ying Wang, M.D., Ph.D.
Hong Wei, M.D.
Chak Lui Wong, Ph.D. from 08/17/2009
Yi Yang, Ph.D.
Regina Margarita Zambrano, M.D.
Xuechu Zhao, Ph.D. to 10/30/2009

MEDICINE
Johns Hopkins Hospital House Staff-
Internal Medicine
Nisha Aggarwal, M.D.
Christine Campo Alewine, M.D., Ph.D.
Gobind Anand, M.D.
Clarissa Grace Barnes, M.D.
Julie Ann Beaver, M.D.
Lauren Dana Block, M.D.
Natalie McCarver Bowman, M.D., M.Phil.
Emily Pfeil Brigham, M.D.
Gabriel C. Brooks, M.D.
Lorrel Elizabeth Brown, M.D.
Monica Belinda Bueso, M.D.
Angel T. Chan, M.D.
Eunpi Cho, M.D.
Jonathan Chrispin, M.D.
James N. Cooper, M.D.
Ashwini Sagar Davison, M.D.
Rebecca Hope Dezube, M.D.
Jonathan Walter Dukes, M.D.
Justin Matthew Dunn, M.A., M.D., M.P.H.
Adel Rafek El Boueiz, M.D.
Romanus Roland Faigle, M.D.
Natasha Noelle Fontaine, M.D.
Sravanya Gavin, M.D.
Kevin Gibbs, M.D.
Daniel Lee Gilstrap, M.D.
Raymond Carlos Givens, M.D., Ph.D.
Christian Burrey Gocke, M.D., Ph.D.
Adena Hope Greenbaum, M.D., M.P.H.
Keiko Iwahara Hagen, M.D.
Robert Stewart Hagan, M.D., Ph.D.
Charles Franklin Haines, M.D.
Robert William Hallowell, M.D.
Timothy James Harris, M.D., Ph.D.
Fiona Patricia Havers, M.A., 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.
Richard Johnson, M.D.
Christopher George Kanakry, M.D.
Clare Kelleher, M.D.
Sara Condon Keller, M.D., M.P.H.
Rina G. Khatri, M.D.
Sharon Bokyong Kim, M.D.
Matthew Christopher Konerman, M.D.
Monica Arlene Konerman, M.D.
Rupa Radhika Krishnasawmy, M.D.
Mikhailia Wanakee Lake, M.D.
Lakshmi Devi Lattimer, M.D.
Abigail Ames Lenhart, M.D.
Berkeley Nguyen Limketkai, M.D., M.S.
Anna Litvak, M.D.
Kara Mari Loubser, M.D.
Donald Ray Lynch, Jr., M.D.
Julia Anne Marsh, M.D.
Scott Coleman Matherly, M.D.
John William McEvoy, M.B.B.Ch.
Camille Michael Minder, M.D.
Jason Robert Mock, M.D.
Payam Mohassel, M.D.
Venkata Anupama Narla, M.D.
Jennifer Sparr Nayor, M.D.
Matthew Gregory Nayor, M.D.
Dara Lee Neuman-Sunshine, M.D.
Phuong-Khanh Jessica Nguyen-Trong, M.D.
Timothy Michael Niessen, M.D., M.P.H.
Veronique Rachele Nussenblatt, M.D., M.H.S.
Ifeoma Obiageli Onuorah, M.D.
Zoe Anne Orecki, M.D., M.P.H.
Heather Anne Parsons, M.D., M.P.H.
Harsh Patels, M.D.
Joanna Miller Peloquin, M.D.
Steven Casey Pugliese, M.D.
Susan Yuani Quan, M.D.
Deepa Rangachari, M.D.
Shaline Daliparthy Rao, M.D.
Kim Anna Reiss, M.D.
Julie Lorraine Rosenthal, M.D.
Bruce Fernando Sabath, M.D.
Joanna Miller Peloquin, M.D.
Steven Casey Pugliese, M.D.
Susan Yuani Quan, M.D.
Deepa Rangachari, M.D.
Shaline Daliparthy Rao, M.D.
Kim Anna Reiss, M.D.
Julie Lorraine Rosenthal, M.D.
Heather Anne Parsons, M.D., M.P.H.
Harsh Patel, M.D.
Joanna Miller Peloquin, M.D.
Steven Casey Pugliese, M.D.
Susan Yuani Quan, M.D.
Deepa Rangachari, M.D.
Shaline Daliparthy Rao, M.D.
Kim Anna Reiss, M.D.
Julie Lorraine Rosenthal, M.D.

Emmanuel Cruz Gorospe, M.D., M.P.H.
Ashul Govitl, M.D.
Ariel Ruth Green, M.D., M.P.H.
Elizabeth Edith Harris, M.D.
John Patrick Hemming, M.D.
Ramin Sedaghat Herati, M.D.
Ashleigh Mica Hicks, M.D.
Roger Sai-kit Ho, M.D., M.S.
Brian M. Howard, M.D.
Nicole Janee Hunt, M.D.
Hamid Majid Kargbo, M.D.
Joyce Michelle Koh, M.D.
Marc Robert Larochelle, M.D.
Stanley Shi-Dan Liu, M.D.
Kit Yu Lu, M.D.
Christine S. Mativo, M.D.
Sarah Elizabeth Miller, M.D.
Meta M. Mobula, M.D.
Melissa Danielle Morgan, M.D.
Wachirapon Jordan Pluek, M.D.
Theresa Anne Rowe, D.O.
Michael Wayne Sauder, M.D., M.P.H.
Nancy Schoenborn, M.D.
Sarah Elizabeth Sharfstein, M.D.
Bradley Charles Strunk, M.D.
Benjamin Y. Tu, M.D.
Paul Ravi Waldron, M.D., M.P.H.
Tanyaporn Wansom, M.D.
Kai Tai Xu, M.D.

Johns Hopkins Bayview Medical Center House Staff-Internal Medicine
Sean Tabi Agbor-Enoh, M.D.
Frank Akwaa, M.D.
Jemilat Olaeyi Badamas, M.D.
Lora Georgieva Bankova, M.D.
LaPrincess Cerise Brewer, M.D., M.P.H.
Jennifer Lynn Brown, M.D., M.S.
Margaret Welsh Cavanaugh-Hussey, M.D., M.P.H.
David Shi-Ann Chang, M.D.
Jennifer Klyten Chen, M.D.
Mok-Chung Jennifer Cheng, M.D.
Ryan Edwin Childers, M.D.
Justin David Chronister, D.O.
Cecilia Pilar Chung-Nakandakari, M.D.
Melissa Nicole Dattalo, M.D., M.P.H.
Brian James Doyle, M.D.
Claudia P. Dumfeh, M.D.
Mary Katherine Elfrey, D.O.
Olufunmilayo Olubukola Falade, M.D.
Elizabeth Ann Felton, M.D.
Kristina Michelle Frogale, M.D.
Jeneen Manlangit Gifford, M.D.

Johns Hopkins University/Sinai Hospital Program-Internal Medicine
Ritika Rylka Abraham, M.B.B.S. to 06/22/2010
Teamrat Araia Adhanom, M.D. to 06/23/2010
Jurga Adomaityte, M.D. to 06/23/2010
Jay Paul Agrawal, M.D. to 06/22/2010
Hasmik Arzumanian, M.D. to 06/23/2010
Aarti Khushal Bhise, M.B.B.S. to 06/22/2010
Bobby Ray Burches, Jr., D.O. to 06/22/2010
Marc Jason Caligata, M.D. to 06/22/2010
Rashmi Chandra, M.B.B.S. to 06/22/2010
Pamela Rondi Damisse, M.D. to 06/23/2010
Vu Hung Dang, M.D. to 06/22/2010
Schonze Frances Del Pozo, M.D. to 06/23/2010
Graham Dondlinger, M.D. to 06/22/2010
Anupama Doraiswamy, M.B.B.S. to 05/31/2010
Aparna V. Gadekar, M.B.B.S. to 06/23/2010
Kapil Gangwal, M.B.B.S. to 06/23/2010
Jean Gauvin, M.D., Ph.D. to 06/22/2010
Helen Ghawan, M.D. to 06/23/2010
Mohit Girotra, M.B.B.S. to 06/23/2010
Aneta Petrova Gramatikova, M.D. to 06/22/2010
Rajeev Gupta, M.B.B.S. to 06/22/2010
Miruais S. Hamed, M.D. to 05/31/2010
Jonathan A. Henesch, M.D. to 06/22/2010
Javaid Khan, M.B.B.S. to 06/22/2010
Spas V. Kotev, M.D. to 06/22/2010
Martin Kubin, M.D. to 06/22/2010
Tara Lynne McCollin, M.D. to 06/22/2010
Ana-Maria Orba, M.D. to 06/22/2010
Margaret Ayo Owegi, M.B.B.S. to 09/22/2009
Manjari Pandey, M.B.B.S. to 06/22/2010
Tejas Baldevbhai Patel, M.B.B.S.
Oana-Valeria Paun, M.D. to 06/22/2010
Harish Bhanudevan Pillai, M.B.B.S. to 06/22/2010
Marina Louise Pratt, M.D. to 06/22/2010
Deepa Raghavan, M.B.B.S. to 06/22/2010
Bharat Rattan, M.B.B.S. to 06/22/2010
Amadeo Denina Rivera, Jr., M.D. to 06/22/2010
Nira Amrita Roopnarinesingh, M.B.B.S. to 06/22/2010

Cardiovascular
Giulio Agnetti, Ph.D.
Rukhsar Ahmed, M.B.B.S. from 08/01/2009
Takeshi Aiba, Ph.D.
Ashwin Sivappa Akki, M.B.B.S., Ph.D.
Andre Luiz Cerqueira Almeida, M.D. to 05/31/2010
Luciano Costa Amado, M.D.
Marietta Samantha Ambrose, M.D.
Fariba Ariaei, M.S., Ph.D. from 09/01/2009
Elisabeth Karin Arkenbout, Ph.D.
Hiroshi Ashikaga, M.D., Ph.D.
Sandeept Bansal, M.D., M.P.H.
Andreas Sebastian Barth, M.D., Ph.D.
Valeriani Raphaelli Bead, M.D.
Ram Hari Belbase, M.B.B.S. from 11/16/2009 to 11/30/2009
Cassius Diego Belfonte, M.B.B.S. from 09/01/2009 to 09/15/2009
Scott Adam Berkowitz, M.B.A., M.D.
Michael Joseph Blaha, M.D.
Catherine Young Campbell, M.D.
Rodrigo Julio Cerci, M.D.
Khalid Chakir, M.S., Ph.D.
Karuna Chilukuri, M.B.B.S.
Eui Young Choi, M.D.
Sang Il Choi, M.D.
Seong Hoon Choi, M.A., M.D., Ph.D.
Andrew Paul DeFilippis, M.D.
Deeptankar Demazumder, M.D.
Veronica Lea Jumarang Dimaano, M.D.
David Nash Edwards, M.D., Ph.D.
Kristian Eskesen, M.D. from 01/01/2010
Heidi Luise Estner, M.D.
Justyna Patrycja Fert-Bober, Ph.D.
Dmitri Andreyevich Gagarin, M.D. from 08/31/2009 to 09/24/2009
Gustavo Khattar Godoy, M.D.
Garth Nigel Graham, M.A.
Rebekah Lynn Gundry, Ph.D.
Ashish Gupta, M.S., Ph.D.
Anchal Gusain, M.S.C., Ph.D. from 11/20/2009
Colleen Mary Harrington, M.D.
Rani Khalil Hasan, M.D.
Toyoko Hiroi, D.V.M., Ph.D.
Ronald Joseph Holewinski, Ph.D.
Aaron Horne, Jr., M.B.A., M.D.
Christian JohnHunter, M.D.
Cathrine Husberg, D.Sc., M.Sc.
Chao -Wei Hwang, M.D.
Rahul Jain, M.B.B.S.
Nicholaos Kakouros, M.B.B.S. from 10/16/2009
Nina Kaludercic, Ph.D.
Sivajothi Kanagalingam, M.D.
Brinder Singh Kanda, M.D. from 09/17/2009 to 10/14/2009
Satish Kenchiaiah, M.B.B.S., M.P.H.
Kerunne Segametsi Ketiogetswe, M.D.
Jonathan Alder Kirk, Ph.D. from 09/01/2009
Norimichi Koitabashi, M.D., Ph.D.
Dong Ik Lee, Ph.D.
Andrew Robert Leventhal, M.D., Ph.D.
Ting Liu, M.S., Ph.D.
Vishal C. Mehra, M.B.B.S.
Nathan Oliver Mewton, M.D. from 01/01/2010
Kiran Musunuru, M.D., Ph.D.
Christian Daniel Nagy, M.D.
Chiadi Ericson Ndumele, M.D.
Anders Opdahl, M.D. from 07/02/2009
Gurushwer Singh Panjrah, M.B.B.S.
Kapil Parakh, M.B.B.Ch., M.P.H.
Aurelio Carvalho Pinheiro, M.D.
Alban Benoit Redheuil, M.D.
Rosanne Rouf, M.D.
Miguel Sautantarlia Tomes, M.D.
Takeshi Sasaki, M.D. from 10/01/2009
Kelli Hulett Schliendorn, M.D.
Florian Sebastian Schoenhoff, M.D.
Karl Heinz Schuleri, M.D.
Rajesh Babu Sekar, M.S., Ph.D. to 08/15/2009
Kinya Seo, Ph.D. from 07/15/2009
Farooq Hameed Sheikh, M.D.
Lincoln Takura Shenje, M.B.B.Ch., M.S.C., Ph.D.
Brian Allan Stanley, Ph.D.
Brad Steven Sutton, M.D.
Yelena Sergeevna Tarasova, D.M.D.
Ryan James Tedford, M.D.
Gisela Teixido-Tura, M.D. from 01/01/2010
Carlo Gabriele Tocchetti, M.D.
Emily Joy Tsai, M.D. to 09/30/2009
Helge Uhrigshardt, Ph.D. from 11/01/2009
Carolina Isabel Valdiviezo Schlomp, M.D.
Jose Danilo Vargas, M.D., Ph.D.
Shengbing Wang, Ph.D.
Heba Sabri Foud Wassif, M.B.B.Ch., M.P.H.
Vabren L. Watts, Ph.D. from 07/08/2009
Hulya Yalcin, M.D. from 11/01/2009 to 04/01/2010
Raymond Tze-Heng Yan, M.D. to 09/30/2009
Kihei Yoneyama, M.D. from 10/01/2009
Khurram Shahzad Zakaria, M.B.B.S.
Dou Zhang, M.D., Ph.D.
Manling Zhang, M.D.
Pingbo Zhang, Ph.D.
Lufang Zhou, M.S., Ph.D.
Guangshuo Zhu, M.D. from 10/01/2009
Lingyun Zu, M.D. to 03/31/2010

Clinical and Molecular Rheumatology
Karunakar Akasapu, M.B.B.S. from 11/30/2009 to 12/31/2009
Sameer Sadashiv Chaudhari, M.B.B.S. from 07/29/2009 to 09/01/2009
Nikolay Guinev Delev, M.D.

428 POSTDOCTORAL FELLOWS
Caroline D’Souza, M.D. from 07/31/2009 to 10/01/2009
John Clayton Hall, Ph.D.
Charles Franklin Henderson, M.D.
Dhruv Joshi, M.B.B.S. from 10/30/2009 to 11/29/2009
Sabiha Khan, M.D.
Sanjivani Avinash Kolge, M.B.B.S. from 09/30/2009 to 10/29/2009
Aisha Lateef, M.B.B.S. from 11/30/2009 to 05/31/2010
Rebecca Lynn Manno, M.D.
Janet Willoughby Maynard, M.D.
Zsuzsanna Hortobagyi McMahan, M.D.
Kristi Vergena Mizelle, M.D., M.P.H.
Malini Moni, B.D.S. to 03/23/2010
Zin Min Nwe, M.B.B.S. to 07/30/2009
Ana-Maria Orbai, M.D. from 09/18/2009 to 11/11/2009
Jin Kyun Park, M.D.
Marzouq A. Qubti, M.D.
Saru Sachdeva, M.B.B.S. from 11/02/2009 to 12/15/2009
Shinji Sato, M.D.
Maryna Shayuk, M.D. from 08/17/2009 to 10/18/2009
Ritu Valiyil, M.D.
Nandini Umesh Yadav, M.D. from 08/31/2009 to 09/29/2009
Clinical Cardiac Electrophysiology
Fawaz Sulaiman Alhumaid, M.D.
Cassius Diego Belfonte, M.B.B.S. from 09/16/2009 to 09/30/2009
Aravindan Kolandaivelu, M.D.
Ravi Ranjan, M.D., Ph.D.
Boon Yew Tan, M.B.B.Ch.
Larisa Gennadiyevna Tereshchenko, M.D. to 08/31/2009
Christine Marie Tompkins, M.D., M.S.
Andrew Zhigalin, M.D.
Clinical Immunology
Jelena Bogdanovic, Ph.D. to 07/31/2009
Laura Kimberly Chong, M.D.
Yang-Ling Chou, Ph.D.
Marisha Liana Cook, M.D.
Matthew Michael Hewitt, Ph.D.
Jae Won Jeong, M.D., M.S., Ph.D.
Yoon Keun Kim, M.D., Ph.D.
Youn Seup Kim, M.D., Ph.D.
Waseem Makhouli, M.D.
Yukiko Muroi, Ph.D. from 08/01/2009
Ho Jeong Na, Ph.D.
Miya Okada Paterniti, M.D.
Carl Robert Potenzieri, Ph.D.
George John Pyrgos, M.D.
Jessica Rabe Savage, M.D., M.S.
Mi-Kyung Shin, Ph.D. from 11/01/2009
Jenny Stitt, M.D. from 10/01/2009 to 10/31/2009
Jinho Yu, M.D., Ph.D.
Baojun Yuan, M.D. from 11/01/2009
Yufeng Zhou, M.D.
Clinical Pharmacology
Jianmeng Chen, M.D., Ph.D.
Kelly Elise Dooley, M.D., M.P.H.
Francisco Jose Leyva, M.D., Ph.D. from 08/26/2009
Liye Li, M.D., Ph.D.
Florenzia Marine McAllister, M.D.
Endocrinology and Metabolism
Zakaria Abdel-Ghaffar Youssef Abd Elmageed, Ph.D. from 09/01/2009 to 10/31/2009
Shabina Roohi Ahmed, M.D.
Elie Alcheikh, M.D. from 10/12/2009 to 11/08/2009
Murugan Avaniyapuram Kannan, Ph.D.
Shivam Amrut Champa, M.D.
Ari Shyee Eckman, M.D.
Diala El-Maouche, M.D., M.S. from 09/14/2009 to 09/28/2009
Ana B. Emiliano, M.D.
Nadeen Hosein, M.D.
Peng Hou, M.S., Ph.D. to 08/31/2009
Kavita Iyengar, M.B.B.S. from 10/01/2009 to 10/30/2009
Rita Rastogi Kalyani, M.D.
Zhi Liu, Ph.D.
Jennifer Sophies Roberts Mammen, M.D., M.Phil.
Marco Martari, M.Sc., Ph.D. to 07/31/2009
Nestoras Nicolas Mathioudakis, M.D.
Maria Belen Menucci, M.D. from 07/31/2009 to 10/01/2009
Kendall Ford Moseley, M.D.
Miguel Munoz, M.D.
Alessia Sagazio, M.D. from 09/14/2009
Naseem Mohammed Mousa Sunnoqrot, M.B.B.Ch.
from 11/12/2009 to 12/09/2009
Sanin Syed, M.D. from 07/06/2009 to 07/31/2009
Vanessa Jeannette Walker Harris, M.D.
Dongqing Wang, M.D.
Gastroenterology
Stuart Kevin Amateau, M.D., Ph.D.
Vivian Abena Asamoah, M.D.
Rukshana Nadia Cader, M.B.B.Ch.
Guldane Cengiz-Seval, M.D. to 09/25/2009
Vinay Chandrasekhar, M.D.
Lea Ann Chen, M.D.
Tian-E Chen, Ph.D. to 01/14/2010
Stefan David, M.D.
Sameer Dhalla, M.D.
Zhen Ding, M.D., Ph.D.
Xiaojun Feng, Ph.D. from 08/01/2009
Amrit Ghosh, Ph.D.
Lihong Gu, M.D., Ph.D. from 09/01/2009
Winoah Anya Henry, M.B.B.S.
Naveen Kumar Jha, M.S., Ph.D. from 01/02/2010
Cristina Jimeno-Ayllon, M.D. from 09/01/2009 to 11/30/2009
Shi Jin, Ph.D. from 11/16/2009
Daniela Jodorkovsky, M.D.
Edmundo Samuel Justino, M.D.
Mirajul Hoque Kazi, M.Sc., Ph.D.
Tamika Salima Khan, M.D. from 09/28/2009 to 10/23/2009
Mouen A. Khashab, M.D. from 08/01/2009 to 08/31/2009
Seakwoo Lee, M.S., Ph.D.
Zhaoxia Li, M.D., Ph.D.
David Benjamin Liang, M.D.
Shuwen Liang, M.S., Ph.D. to 04/29/2010
Rong Lin, M.D. to 10/01/2009
Zhihong Lin, Ph.D. to 01/08/2010
POSTDOCTORAL FELLOWS 429
Valeriy Ivanovich Lukyanenko, Ph.D. from 11/30/2009
Delegmaa Luvsanjav, Ph.D. from 09/28/2009 to 06/07/2010
Anne Marie O’Broin Lennon, M.B.B.Ch., Ph.D.
Kenolisa Onwueme, M.D., Ph.D.
Bogdan Constantin Paun, M.D. to 07/31/2009
Octavia Evette Pickett-Blakely, M.D.
Jennifer Cohen Price, M.D.
Daniil Rolshud, M.D.
Mobin Shah, M.B.B.S.
Zhaohui Tang, M.D., Ph.D.
Anne Graves Tuskey, M.D.
Ming-Hsi Wang, M.D. to 07/31/2009
Ming-Hsi Wang, M.D. from 12/01/2009 to 12/31/2009
Mei Ye, Ph.D.
Xinjun Zhu, M.D., M.S.

General Internal Medicine
Reza Alavi, M.D.
Elie Alcheikh, M.D. from 12/07/2009 to 01/03/2010
Saul Bryan Blecker, M.D.
Sarah Stark Casagrande, M.H.S., Ph.D. from 08/09/2009
Nadine Esther Chen, M.D.
Dana Kelly Christo, M.P.H., Ph.D.
Kimberly A. Gudzune, M.D.
Jessie Katherine Kimbrough-Sugick, M.D., M.P.H.
Rashmi Prem Kumar, M.D.
Kimberly Daniella Martin, Ph.D. from 10/01/2009
Henry Joseph Michtalik, M.D., M.P.H.
Anne Kress Monroe, M.D., M.S.P.H.
Ranee Chatterjee Montgomery, M.D.
Sadie Anthea Peters, M.D.
Ileana Lucia Ponor, M.D. from 11/30/2009 to 12/31/2009
Lipika Samal, M.D.
Letitia Jeanna Wright, M.D.

Geriatric Medicine
Alia Alhumaid, M.D.
Scott Adam Berkowitz, M.B.A., M.D.
Jessica Leigh Colburn, M.D.
Erin Rand Giovanetti, Ph.D.
Mily Kannarkat, M.D.
Fred Chau-Yang Ko, M.D., M.S.
Amy Mahoney Matteini, Ph.D.
Kendall Ford Moseley, M.D.
Atoosa Rabiee, M.D.
Samir Kumar Sinha, D.Phil., M.D., M.Sc.
Gregory Lind Taylor, II, M.D.
Mya Sandra Thein, M.B.B.S.
Yanhua Wu, M.D. to 09/19/2009

GI Advanced Therapeutics
Mouen A. Khashab, M.D. from 09/09/2009

Hematology
Anupa Baral, M.B.B.S. from 08/28/2009 to 09/24/2009
Amy M. Belton, Ph.D.
Joelle Anne Hillion, Ph.D.
Xiaosong Huang, Ph.D. from 10/12/2009 to 05/08/2010
Biju Joseph, M.S., Ph.D.
Quy Hoa Le Thi, M.D.
Dwella Kimyada Nelson, Ph.D.
Peng Sun, Ph.D. to 05/17/2010
Zhao hui Ye, M.S., Ph.D. from 10/06/2009

Infectious Diseases
Nisheeth Agarwai, M.Sc., Ph.D. to 04/30/2010
Deepak Vinay Gregory Almeida, Ph.D. to 01/20/2010
Carolyn Dahlen Alonso, M.D.
Nicole C. Ammerman, Ph.D. from 12/01/2009
Claire Andrejak, M.D. from 11/01/2009
Rangolee Shrawan Arora, M.D. to 07/30/2009
Justin Richard Bailey, M.D., Ph.D.
Stephen Arthur Berry, M.D.
Michael Anand Chattergoon, M.D., Ph.D.
Neelkamal Chaudhary, Ph.D.
Daniel Stephen Chertow, M.D.

Internal Cardiology
Agustus Alexander Beck, M.D.
Todd Andrew Dorfman, M.D.
Michael Patrick Flaherty, M.D.

Lupus Fellowship
Waleed Abbas Bolad, M.D. to 11/19/2009
Parul Sharma, D.O. to 11/15/2009 (on leave of absence from 08/10/2009 to 08/31/2009)
Medical Genetics
Hooi Sian Eng, Ph.D. from 11/01/2009

Molecular Medicine
Delphine Danielle Fradin, Ph.D.
Hong Ji, Ph.D.
Christine Marie Ladd-Acosta, Ph.D. from 09/25/2009
Winston George Timp, Ph.D.

Nephrology
Veena Kalmanje Acharya, M.D.
Amir Said Alizadeh Naderi, M.D.
Jean-Claude N. Bassila, M.D. to 07/31/2009
Leandro Bernardo, M.D. from 10/02/2009 to 11/01/2009
Ganga Bhavani Boobilli, M.B.B.S. from 09/01/2009 to 09/30/2009
Teresa Katie Chen, M.D.
Rutul Jagdish Dalal, M.B.B.S. from 12/01/2009 to 12/31/2009
Gang-Jee Ko, Ph.D. to 12/30/2009 (on leave of absence from 09/01/2009 to 11/15/2009)
Dongyan Liu, M.D.
Luis Fernando Carvalho Menezes, M.D., Ph.D. to 10/18/2009
Patricia Outeda Garcia, Ph.D.
Rudolf Pullmann, M.D. from 09/01/2009 to 11/30/2009
Julia Jarrard Scialla, M.D.
Sanjeev Rashmikant Shah, M.D.
Qian Mei Sun, Ph.D. from 01/02/2010 to 01/09/2010
Jinxiang Yu, Ph.D. from 12/01/2009
Asif Mohammad Zakaria, Ph.D.

Nephrology (Bayview)
Ralph Michel Daher, M.D.
John Paul Havill, M.B.B.S.
Adrien L. Janvier, M.D., Ph.D.
Aastha Sethi, M.B.B.S.

Occupational Medicine
Sammy Jafar Almashat, M.D.
Danny Theja Kumar Avula, M.D. to 07/31/2009
Helen Carol Azzam, M.D.
Nyasha J. Bakare, M.D.
Eileen Marie Birmingham, M.D.
Kevin Lee Bowman, M.B.A., M.D.
Shrey Anilchandra Desai, M.B.B.S. to 09/30/2009
Erin E. Duffy, M.D.
Jennifer Lipkowitz Eaton, M.D., M.P.H.
Christopher Gareth Hardy, D.O.
Mark Edward Humphrey, M.D.
Julia Minjung Kim, M.D.
Clarence K. Lam, M.D.
Marcia Bennette LoBrano, M.D.
Alefyah K. Mesiwala, M.D.
Mame Khouedria Niang, M.D.
Charles Marshall Preston, M.D.
Gayatri Guduru Reddy, M.D.
Alexander Prakash Samuel, M.D. to 08/31/2009
Sherry Sood, M.D. to 08/31/2009
June Thalia Spector, M.D.
Ken Lin Tai, M.D.
Jennifer Lynn Tinch, M.D.
Aldo Tinoco, M.D.
Kanika Michele Whitehead, M.D.

Pulmonary and Critical Care Medicine
Ola Abdelrehim Ahmed Abdelrehim, M.B.B.Ch. to 12/13/2009
Neil Raj Aggarwal, M.D.
Jason Atticus Akulian, M.D., M.P.H.
Cristine Elizabeth Berry, M.D. to 06/29/2010
Christian Bime, M.D.
Katharine Elliot Black, M.D.
Sonali Bose, M.D. to 06/29/2010
Andrew Thierman Braun, M.D.
Aranzazu Campo Ezquibel, M.B.B.S.
Som Nath Chalise, M.B.B.S. from 08/03/2009 to 08/31/2009
Chien-Hung Chin, M.D.
Ji-Young Choi, Ph.D. from 02/01/2010
Samuel Lester Collins, Ph.D.
Geoffrey Robert Connors, M.D. to 06/29/2010
Danna Doratotaj, M.D. from 11/09/2009 to 12/06/2009
Luciano Ferreira Drager, M.D. from 08/25/2009
Michael Bradley Drummond, M.D.
Padmaraj D. Duvvuri, M.B.B.S. from 08/03/2009 to 08/31/2009
Michael Hermann Eberlein, M.D., Ph.D.
Hala El Chami, M.D. from 02/01/2010
Jason Matthew Elinoff, M.D.
Daniel Clark Files, M.D. to 06/29/2010
William Arthur Fischer, II, M.D. to 06/29/2010
Brian Thomas Garibaldi, M.B.B.S. from 09/02/2009 to 09/30/2009
SeungHye Han, M.D. from 11/09/2009 to 12/09/2009
Adam Breaux Hernandez, M.D.
Monica Ann Hoffman, M.D. from 11/19/2009 to 02/04/2010
Rajani Jagana, M.B.B.S. from 09/01/2009 to 09/30/2009
Cheilonda Johnson, M.B.B.S.
Jonathan C. Jun, M.D.
Biren Bharat Kamdar, M.D.
Bo Soo Kim, M.D. to 06/29/2010
Jerome Le Pavec, Ph.D. to 10/31/2009
Elizabeth Ann Lendermon, M.D.
Oktai Mamedov, M.D. from 08/03/2009 to 08/31/2009
Vikramjit Mukherjee, M.B.B.S. from 09/02/2009 to 09/30/2009
David John Murphy, M.D.
Shivakumar Narayanan, M.B.B.S. from 12/16/2009 to 01/14/2010
Maria Pallayova, M.D.
Maria Grazia Perino, Ph.D. from 01/04/2010
Matthew Robert Pipeling, M.D.
Hataya Kristy Poonyagariyagorn, M.D.
Robert Michael Reed, M.D. to 06/29/2010
Christian Reinke, M.D.
Otgongchimeg Rentsendorj, M.Sc., Ph.D.
Robert Randall Rusher, M.D.
Timothy Jude Scialla, M.D. to 06/29/2010
Christian Reinke, M.D.
Otgonchimeg Rentsendorj, M.Sc., Ph.D.
Robert Randall Rusher, M.D.
Robert Scott Stephens, M.D.
Hui Sun, Ph.D. from 08/01/2009
Alexander Dung Truong, M.D., M.P.H.
Abhaya Varma, M.B.B.S. from 02/25/2010 to 03/29/2010
Natalie Elliott West, M.D.
Hemang Yadav, M.B.B.S. from 09/03/2009

Transplant Hepatology
Dawn McDowell Torres, M.D.

MOLECULAR AND COMPARATIVE PATHOBIOLOGY
Shahin Assenefia, D.V.M. from 08/10/2009
Nicole Minnette Azene, D.V.M., M.S.
Emily J. Bailey, D.V.M.
Sarah Evelyn Beck, D.V.M.
Kathleen Kelly Brennan, D.V.M.
Angela Kathleen Brice, D.V.M., Ph.D. to 01/31/2010
Eric Kenneth Hutchinson, D.V.M.
Simon Yat-Ming Long, V.M.D. from 07/06/2009
Maria Lorenzo, D.V.M.
Maria Carmen Martino-Cardona, D.V.M.
Kelly Ann Metcalf Pate, D.V.M.
Denise A. Schultz, D.V.M.
Gillian Curtis Shaw, D.V.M., M.S.
Brian Wesley Simons, D.V.M.
Terese L. Southard, M.D., Ph.D. to 09/30/2009
Polina Sysa, M.D.
Ceereena Ubaida Mohien, Ph.D. from 12/01/2009
Joanna Lynn Walker, D.V.M.

MOLECULAR BIOLOGY AND GENETICS
Tudor Constantin Badea, M.A., M.D., Ph.D.
Courtney Rae Busch, Ph.D.
Hugh Brian Cahill, Ph.D.
Jing Cai, Ph.D.
Hao Chang, Ph.D.
Qian Chen, Ph.D.
Ki Young Choi, Ph.D.
Eric Michael Cooper, Ph.D.
Junbiao Dai, Ph.D.
Lixin Dai, Ph.D.
Karen Ocampo David, Ph.D.
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. from 07/16/2009
Bo Huang, Ph.D.
Nuttara Jamonnak, Ph.D.
Ji Hoon Kim, M.S., Ph.D. from 10/12/2009
Sang Joon Kim, Ph.D.
Yu-Yi Lin, M.D., Ph.D. to 08/31/2009
Chen Ling, Ph.D.
POSTDOCTORAL FELLOWS

NEUROLOGY

Chidamber Bharath Alamelumangapuram, M.B.B.S. from 08/04/2009 to 08/31/2009
Lavinia Alberi, Ph.D. to 02/28/2010 (on leave of absence from 08/01/2009 to 09/16/2009)
Syed Shaida Ahmad Andabali, M.Sc., Ph.D.
Rahila Ansari, M.D., M.S., Ph.D.
Martinson Kweku Arnan, M.D.
Koichi Ayukawa, Ph.D. to 03/31/2010
Arun K. Azhagiri, M.Sc., Ph.D.
Koichi Ayukawa, Ph.D. to 03/31/2010
Arun K. Azhagiri, M.Sc., Ph.D.
Mihyun Bae, Ph.D. from 11/02/2009
Jean-Claude N. Bassila, M.D. from 12/01/2009 to 12/22/2009
Ram Hari Belbase, M.B.B.S. from 02/01/2010 to 03/01/2010
Leandro Bernardo, M.D. from 01/02/2010 to 01/31/2010
Bharathi, Ph.D.
Michael A. Bonaguidi, Ph.D.
Jessica Sharon Carmen, Ph.D.
Dominic T. Cheng, M.S., Ph.D.
Zhikai Chi, M.D., Ph.D. from 11/01/2009
Yolanda Chik, M.D.
Kimberly Michele Christian, Ph.D.
Christhunesa Soundararajan Christudass, M.Sc., Ph.D.
Cynthia Ann DeBoy, Ph.D. to 07/31/2009
Renee Nicole Douville, Ph.D. to 12/31/2009
Josh Lee Duckworth, M.D.
Stephen Matthew Eacker, Ph.D.
Christopher Paul Eckstein, M.D.
Amos Akintayo Fatokun, M.D.
Yuanzheng Gao, Ph.D.
Susan George, M.B.B.S. from 07/31/2009 to 09/24/2009
Mehdi Ghasemi, M.D. from 10/01/2009
Abhijeet Govind Ghatol, M.B.B.S. from 07/31/2009 to 09/01/2009
Ozge Gunduz, Ph.D. from 09/21/2009
Ichiro Hamazaki, Ph.D.
Daniel M. Harrison, M.D.
Holly Elaine Hinson, M.D.
Kareem G. Hirsch, M.D., Ph.D.
Laura Beth Jaeger, Ph.D.
Mi-Hyeon Jang, M.S., Ph.D. to 03/31/2010
Parastoo Jangouk, M.D.
Shyian S. Jen, M.D.
Madhavi Jinka, M.B.B.S.
Tarja Alison Juopperi, D.V.M., M.S., Ph.D.
Satish Kabra, M.B.B.S. from 09/02/2009 to 10/01/2009
Alice Chong Kang, Ph.D.
Navaz Karanjia, M.D.
Senthilkumar Shanmugam Karuppagounder, Ph.D.
from 09/01/2009
Charlotte M. Kastl, M.D. from 11/01/2009 to 11/30/2009
Ju Young Kim, M.S., Ph.D. to 05/09/2010
Woon Ryoung Kim, Ph.D.
Edward Lukianos Isak Knapp, Ph.D.
Swapna Kolukula, M.B.B.S. from 09/01/2009 to 09/28/2009
Lingling Kong, Ph.D.
Anna Korzeniewska-Janiszewska, M.S., Ph.D. to 11/01/2009
Anvita Kumar, Ph.D. to 07/31/2009
Lori Ann Lebson, Ph.D. to 02/28/2010
Byoung Dae Lee, Ph.D.
Youngjin Lee, Ph.D.
Yun-II Lee, Ph.D. to 04/30/2010
Angelo Carmen Lepore, Ph.D.
Michael Levy, M.D., Ph.D. to 09/30/2009
Guanhao Li, M.D., M.S., Ph.D. to 09/25/2009
Ying Li, Ph.D.
Jose Luis Lopez, Jr., M.D.
Dengke K. Ma, Ph.D. to 08/31/2009
Concepcion Maldonado Adrian, Ph.D. to 03/31/2010
Manjunath Markandaya, M.B.B.S.
Elisabeth Breese Marsh, M.D.
Scott A. Marshall, Jr., M.D. to 07/31/2009
Ian Martin, Ph.D.
Raya Massoud, M.D.
Jennifer McGuire, M.D. from 08/03/2009 to 08/31/2009
Manasa Madhuri Metireddy, M.B.B.S. from 01/05/2010 to 02/01/2010
Melissa Motta, M.D., M.P.H.
Melanie Mueller, Ph.D. from 08/15/2009
Shivakumar Narayanan, M.B.B.S. from 10/02/2009 to 11/01/2009
Senthilkumar Natesan, D.V.M., Ph.D. to 08/31/2009
Scott Douglas Newsome, D.O. to 12/31/2009
Kwan Leung Ng, M.D.
Yasmine Odia, M.D., M.S.
Ozioma Chima Okonkwo, Ph.D.
Sophia Theodore Papadeas, Ph.D.
Suchitra Paranj, M.B.B.S. from 11/02/2009 to 11/30/2009
Valeriy V. Parfenov, M.D.
Brian Nathaniel Pasley, Ph.D. from 07/28/2009
Srananthi Pataparla, M.D. from 09/29/2009 to 10/26/2009
Emily Grace Potter, Ph.D.
John Calvin Probasco, M.D.
Abid Y. Qureshi, M.D.
David Shannon Race, Ph.D.
Kavita Suresh Rao, M.B.B.S.
Liana Isa Shapiro Rosenthal, M.D.
Nidhi Rumpal, M.S., Ph.D. to 09/30/2009
Bogachan Sahin, M.D., Ph.D.
Xiaoyan Shan, M.D., Ph.D.
Anjail Z. Sharrief, M.D.
Avgusta Y. Shestyuk, Ph.D.
Xiaohai Shi, Ph.D. from 09/01/2009
Sangwoo Shim, Ph.D. to 02/28/2010
Joonho Shin, Ph.D.
Krupa Hemantkumar Shukla, Ph.D. from 11/16/2009
Shawn F. Smyth, M.D.
Juan Song, Ph.D.
Wenji Sun, M.D. to 12/14/2009
Kyongie Sung, Ph.D. to 12/31/2009
Nino Tabatadze, Ph.D. to 07/31/2009
Alexander Andrea Tarnutzer, M.D. from 08/01/2009
Katherine Page Thomas, M.D.
Jing Tian, Ph.D. to 04/30/2010
F. Rainer von Coelln, M.D.
Angela Wabulya, M.B.Ch.B.
Yingfei Wang, Ph.D. to 04/30/2010
Zhexing Wen, Ph.D. from 08/01/2009
Sharifia Shunta Wills, Ph.D.
Megan C. Wright, Ph.D.
Yanjue Wu, Ph.D. to 11/30/2009
Chang Xia, M.D. from 07/07/2009 to 08/03/2009
Wei Xiong, M.D.
Yulan Xiong, Ph.D.
Hangxiu Xu, M.D., Ph.D.
Jinchong Xu, Ph.D. from 01/01/2010
Yongjie Yang, M.S., Ph.D.
Jeffrey Min-In Yau, Ph.D. from 10/01/2009
Mahdi Yazdany, M.D. to 07/30/2009
Huimei Yu, Ph.D.
Changqing Yuan, Ph.D. from 08/02/2009
Chun Zhong, Ph.D. from 12/01/2009
Jing Zhu, Ph.D.

Clinical Neurophysiology
Mackenzie Carpenter Cervenka, M.D.
Deivasumathy Muthuvogvidan, M.B.B.S.
Tung T. Tran, M.D.

Kennedy Krieger Institute
Vinay Choubey, Ph.D. from 10/22/2009
Andre Wayne Phillips, Ph.D. to 03/31/2010
Jaswinder Kaur Sharma, M.D. from 10/01/2009 to 04/13/2010
Simona Spinelli, Ph.D.
Raj Amin Stewart, Ph.D. to 09/07/2009
Peng Sun, Ph.D.
Mingyao Ying, Ph.D.

Neuroimmunology and Neurological Infections
Shiv Saidha, M.B.B.Ch. from 10/01/2009
Ik Lin Tan, M.B.B.S. from 01/18/2010

Neurology-Vascular
Richard Leigh, M.D.
Steven Robert Zeiler, M.D., Ph.D.

Neuromuscular Medicine
Erika L.F. Hedderick, M.D.
Lyle W. Ostrow, M.D., Ph.D.
Ricardo Horacio Roda, M.D., Ph.D.

Pediatric Neurology
Rooman Ahad, M.D. 1
Adam Brett Edwards, M.D. from 12/01/2009 to 12/31/2009
Ryan Jordan Felling, M.D. 1
Sarah Aminoff Kelley, M.D. 1
Paul R. Lee, Jr., M.D., Ph.D. 1
Christopher Brandon Oakley, M.D. 1
Sandra Kristina Ruby, M.D. from 09/01/2009 to 09/30/2009
David Scott Wolf, M.D., Ph.D. 1

Sleep Medicine
Nishiena Sharad Gandhi, M.D., M.P.H.

NEUROSCIENCE
Amit Agarwal, Ph.D. from 01/04/2010
Victor Anggono, Ph.D.
Yoichi Araki, Ph.D.
Matthew Ryan Barton, M.D.
Yair Ben-Chaim, Ph.D.
Rajnish Bharedwaj, M.B.B.S., Ph.D. to 12/31/2009
Hannah Justine Block, Ph.D.
Mardi Susanna Byerly, Ph.D.
Li-Hui Cao, Ph.D.
Ivana Celic, Ph.D.
Shu-Ling Chiu, Ph.D.
Jeonghoon Choi, Ph.D.
Yunsook Choi, Ph.D. to 09/30/2009
Roger Lee Clem, Ph.D.
Robert H. Cudmore, Ph.D. from 08/17/2009
Jimmy de Melo, Ph.D.
Alicia Laura Degano, Ph.D. to 09/07/2009
Christopher David Deppmann, Ph.D. to 11/30/2009
Michael Tri Hoang Do, Ph.D.
Zhaobing Gao, Ph.D.
Liang Han, Ph.D. from 09/01/2009
Anthony Weldon Harrington, Ph.D.
Ethan Garrett Hughes, Ph.D. from 08/31/2009
Natasha Hussain, Ph.D. (on leave of absence to 08/15/2009)
Sangyun Jeong, Ph.D.
Qingguang Jiang, Ph.D.
Zheng Jiang, Ph.D. from 08/26/2009
Yunju Jin, Ph.D.
Krishna Rangadhamarao Juluri, Ph.D.
Shin Hyeok Kang, M.S., Ph.D.
Paul Moonwan Kim, M.D., Ph.D.
Seyun Kim, M.S., Ph.D.
Cheng-Hang Liu, Ph.D.
Man Maggie Liu, Ph.D. to 11/15/2009
Qin Liu, Ph.D. to 01/31/2010
Wenqin Luo, Ph.D.
David Maag, Jr., Ph.D.
Takako Makita, Ph.D. to 09/30/2009
Joseph William McFadden, Ph.D. from 08/03/2009
Janna Leigh Merte, Ph.D. to 07/31/2009
Akishi Onishi, Ph.D. to 08/11/2009
Joo Min Park, Ph.D. to 05/14/2010
Sungjin Park, Ph.D.
Martin Paukert, M.D.
Bindu Diana Paul, M.S., Ph.D.
Goran Periz, Ph.D. to 11/30/2009
Brad Erich Pfeiffer, Ph.D.
Santosh Ramamurthy, Ph.D.
Martin Miguel Riccomagno, Ph.D.
Juan Ignacio Sbodio, Ph.D.
Balakrishnan Selvakumar, M.Sc., Ph.D.
Nilkantha Sen, Ph.D.
Kamal Deep Sharma, M.Sc., Ph.D.
Xiaohai Shi, Ph.D. to 08/31/2009
Gek Ming Sia, Ph.D.
Ileana Soto-Reyes, Ph.D. to 08/31/2009
Srinivasa Subramaniam, Ph.D.
Zongxiang Tang, Ph.D.
Gelsy Torres-Oviedo, Ph.D.
Tracy Samantha Tran, M.S., Ph.D.
Erin Virginia Lamont Vasudevan, Ph.D.
Lenora Joanne Volk, Ph.D.
Hao-Ran Wang, Ph.D. from 07/13/2009 to 06/14/2010
Qiang Wang, Ph.D. to 01/31/2010
Zhen Wang, Ph.D. from 08/25/2009
Kevin Michael Wright, Ph.D.
Jing Wu, Ph.D. to 03/31/2010
Meng Wu, Ph.D. to 01/29/2010
Tian Xue, Ph.D.
Wei Yan, Ph.D. to 05/14/2010
Ye Yan, Ph.D. to 04/04/2010
Haibo Yu, Ph.D.
Wei Zhang, Ph.D. to 11/15/2009
Wenchang Zhang, Ph.D. from 01/25/2010
Yong Zhang, Ph.D.
Jing Zhu, Ph.D.
Camila Lidia Zold, M.S., Ph.D. from 09/17/2009

434 POSTDOCTORAL FELLOWS
Beiyan Zou, Ph.D.

ONCOLOGY CENTER

Martin Joseph Ankrah Aryee, Ph.D.
Liudmila Vladimirovna Danilova, Ph.D.
Jie Ding, M.S., Ph.D. to 09/30/2009
Alexander Vladimirovich Favorov, Ph.D. (on leave of absence from 09/01/2009 to 11/29/2009)
Elana Judith Fertig, Ph.D.
Liudmila Vladimirovna Danilova, Ph.D.
Jie Ding, M.S., Ph.D.
Daniel Kejzman, M.D.
Vanessa Ferreira Merino, M.A., Ph.D.
Loris Mularoni, Ph.D.
Raquel Maria Silny, M.D.
Svitlana Tyekucheva, Ph.D. to 09/11/2009
Leyao Wang, Ph.D.

Cancer Biology

Yi Cai, Ph.D.
Daming Chen, Ph.D.
Ian Shen-Yi Cheong, Ph.D.
Su Mi Choi, Ph.D. from 08/04/2009
Young Bong Choi, Ph.D.
Devin Charles Dressman, Ph.D.
Haritharan P. Easwaran, M.Sc., Ph.D.
Elana S. Ehrlich, Ph.D.
Soma Ghosh, M.S., Ph.D.
Christin Lee Hanigan, Ph.D. from 10/01/2009
Megan Albert Healey, Ph.D.
Mohammad Zulfiquar Qossain, Ph.D. from 08/10/2009
Hee Jung Hwang, Ph.D.
Tianyun Jiang, M.D.
Lihua Jin, Ph.D.
Sian Jones, Ph.D.
Christine G. Joseph, Ph.D.
Chandrashkehar Dwarkanath Kamat, Ph.D. from 11/09/2009
Kasey Anne Karen, Ph.D. from 10/26/2009
Huili Li, Ph.D.
Renfeng Li, Ph.D.
Liang Liang, Ph.D.
Hua Liu, M.D., Ph.D.
Il Minn, Ph.D.
Anjali Mishra, Ph.D.
Helai Mohammad, Ph.D.
Ebba Jenny Nissen, M.D. from 10/05/2009 to 12/07/2009
Heather Maureen O’Hagan, Ph.D.
Srinivas Reddy Papaiahgari, M.S., Ph.D. to 08/31/2009
Kalpeshkumar Govindbhai Patel, M.B.B.S. from 11/02/2009
Yuan Qiao, Ph.D.
Carlo Rago, Ph.D.
Marcelo Martins Reis, M.D., Ph.D.
Yunzhao Ren, M.D., Ph.D.
Yvonne Margaret Saenger, M.D. to 07/15/2009
Oleg Andreas Schmidt-Kittler, Ph.D.
Francesca Scrimieri, Ph.D.
Subhojit Sourendra Sen, Ph.D.
Megan Jean Stine, Ph.D. to 08/07/2009
Susanna V. Ulahannan, M.D. from 07/23/2009 to 09/02/2009
Maria Cristina Villarroel, M.D. to 08/31/2009
Shondelle Marie Wilson, Ph.D.
Jian Wu, A.M., M.Phil., Ph.D. to 10/31/2009
Yu Wu, M.D., Ph.D.
Jian Yang, Ph.D. to 06/14/2010

Experimental Therapeutics

Madhavi Billam, Ph.D. to 08/15/2009
Shuangling Chen, M.D.
Long Soon Chun, M.D., Ph.D.
Grace Ann Cornblatt, Ph.D.
Jason Matthew D’Antonio, Ph.D.
John Paul Gustin, Ph.D.
Michael C. Haffner, M.D.
Preethi Chandran Korangath, Ph.D. from 09/28/2009
Maja Blagoeva Kostova, Ph.D.
Xiaohui Liang, B.M.
Pang-Kuo Lo, Ph.D.
Simon Alexander Williams, Ph.D.
Qingsong Zhu, M.Sc., Ph.D. to 10/31/2009

Hematologic Malignancies

Zita Arany, Ph.D.
Alena Dabrazhynetskaya, Ph.D. to 12/31/2009
Nadira Durakovic, M.D. from 08/01/2009 to 12/15/2009
Tamer E. Fandy, M.S.C., Ph.D.
Arturo Loaiza-Bonilla, M.B.B.S. from 08/31/2009 to 09/24/2009
Thomas Prebet, M.D. from 10/01/2009

Hematology/Medical Oncology

Ritika Ryfka Abraham, M.B.B.S. from 09/15/2009 to 10/12/2009
Durga Dhot Adhikari, M.B.B.S. from 09/15/2009 to 09/30/2009
Emmanuel Stylianos Antonarakis, M.B.B.Ch.
Christopher Timmons Badger, M.D. from 12/01/2009 to 12/31/2009
Ani Sarkis Balmanoukian, M.D.
Aditya Bardia, M.B.B.S.
Aarti Khushal Bhatia, M.B.B.S. from 07/21/2009 to 08/21/2009
Timothy Francis Burns, M.D., Ph.D.
Kevin J. Cheung, M.D.
Roisin M. Connolly, M.B.B.S.
Rafael Almeida De Oliveira, M.D. to 07/30/2009
Ana M. DeJesus-Acosta, M.D.
Graham Dondlinger, M.D. to 07/20/2009
Ashkan Emadi, M.D., Ph.D.
Amir Fathi, M.D.
Stephanie Louise Gailllard, M.D., Ph.D.
Gabriel Ghiaur, M.D., Ph.D.
Nilanjan Ghosh, M.B.B.S.
Michael Richard Grunwald, M.D.
Michaela Jane Higgins, M.B.B.Ch.
Matthias Holdhoff, M.D., Ph.D.
Christopher Simon Hourigan, B.M.-B.Ch., D.Phil.
Hatim Husain, M.D.
Danijela Jelovac, M.D.
Neha Korde, M.D. from 10/26/2009 to 11/22/2009
Evan Jacob Lipson, M.D.
Florence Marine McAllister, M.D.
Kelly Westbrook Mitchell, M.D.
Rakhi Prakash Naik, M.D.
George Reinhold Oliver, M.D., Ph.D.
Vandana Palagiri, M.B.B.S. from 10/30/2009 to 11/30/2009
Channing J.C. Paller, M.D.
Jong Chul Park, M.D. from 11/02/2009 to 11/17/2009
Harish Bhanudevan Pillai, M.B.B.S. from 11/10/2009 to 12/07/2009
Jeffrey J. Pu, M.D.
Brian Carl Shaffer, M.D. from 08/31/2009 to 09/27/2009
Immunology/Hematopoiesis
Joseph James Barbi, M.S., Ph.D.
Yukan Duan, Ph.D.
Justin Philip Edwards, Ph.D.
Stephen Richard Lee Goding, Ph.D.
Monica Vanina Goldberg, M.D., Ph.D.
Joseph Frank Grosso, Ph.D.
Tomoe Higuchi, M.D., Ph.D.
Silvia Kimpfler, Ph.D.
Yan Liu, M.D., M.Sc., Ph.D. from 08/31/2009 to 09/14/2009
Eric Richard Lutz, Ph.D.
Ana Markovic, Ph.D. from 08/17/2009 to 09/28/2009
Jennifer Nichole Uram, Ph.D. to 10/31/2009
Panagiotis Tzevelekos, M.D. from 08/18/2009 to 09/14/2009
Ming-Hsi Wang, M.D. from 10/01/2009 to 10/29/2009
Breelyn Ann Wilky, M.D.
John Wrangle, M.D., M.P.H.
Chang Xia, M.D. from 09/01/2009 to 09/28/2009
Cecilia Hiromi Yshii Tamashiro, M.D. from 12/08/2009 to 01/04/2010
Huichun Zhan, M.D.
Medical Oncology
Jonathan Kimball Alder, Ph.D.
Elizabeth Alice Griffiths, M.D. to 12/31/2009
Akil Abid Merchant, M.D.
Christian Frederick Meyer, M.D., M.S., Ph.D.
Chimen A. Kesserwan, M.D.
Calvin K. Lee, M.D.
Hema Kishore Dave, M.B.B.S.
Julia E. Doomer, M.S., Ph.D.
Patric Joseph Grohar, M.D., Ph.D.
Hong Guo, Ph.D.
Sun Hwa Hong, M.S., Ph.D.
Chimen A. Kesserwan, M.D.
Calvin K. Lee, M.D.
Daniel W. Lee, III, M.D.
Deena Rachel Levine, M.D.
Ou Ma, Ph.D. from 10/01/2009 to 12/07/2009
Leigh Jessica Marcus, M.D.
Ashley Taylor-King Munchel, M.D.
Francis Jay Mussai, M.A., M.B.B.Ch.
Sandep Singh Negi, Ph.D.
Tea Soon Park, Ph.D.
Devang Jagdish Pasiakia, M.D.
Marina V. Pryzhkova, Ph.D.
Eric Hutton Raabe, M.D., Ph.D.
Rachel Elizabeth Rau, M.D.
Eric Stephen Schafer, M.D.
Nilay Shah, M.D.
Nirali N. Shah, M.D.
Preeti Shah, M.Sc., Ph.D.
Jessica Carolyn Shand, M.D., M.H.S.
Edward Allan R. Sison, M.D.
Mattoo M. Trucco, M.D.
Lisa Marie Williams, M.D.
Li Zhang, Ph.D.
Pediatric Oncology
Colleen Elizabeth Annesley, M.D.
Fernanda I. Arnaldez, M.D.
James Thomas Curry Bagdett, M.D., Ph.D.
Paul Wesley Burridge, Ph.D.
Nataliya A. Buxbaum, M.D.
Christian Matthew Capitini, M.D.
Emi Hojo Caywood, M.D. to 08/15/2009
Lea C. Cunningham, M.A., M.D.
Deepika Saxena Darbari, M.B.B.S.
Nirali N. Shah, M.D.
Preeti Shah, M.Sc., Ph.D.
Jeffrey J. Pu, M.D.
Brian Carl Shaffer, M.D. from 08/31/2009 to 11/02/2009
Immunology/Hematopoiesis
Joseph James Barbi, M.S., Ph.D.
Yukan Duan, Ph.D.
Justin Philip Edwards, Ph.D.
Stephen Richard Lee Goding, Ph.D.
Monica Vanina Goldberg, M.D., Ph.D.
Joseph Frank Grosso, Ph.D.
Tomoe Higuchi, M.D., Ph.D.
Silvia Kimpfler, Ph.D.
Yan Liu, M.D., M.Sc., Ph.D. from 08/31/2009 to 09/14/2009
Eric Richard Lutz, Ph.D.
Ana Markovic, Ph.D. from 08/17/2009 to 09/28/2009
Jennifer Nichole Uram, Ph.D. to 10/31/2009
Panagiotis Tzevelekos, M.D. from 08/18/2009 to 09/14/2009
Ming-Hsi Wang, M.D. from 10/01/2009 to 10/29/2009
Breelyn Ann Wilky, M.D.
John Wrangle, M.D., M.P.H.
Chang Xia, M.D. from 09/01/2009 to 09/28/2009
Cecilia Hiromi Yshii Tamashiro, M.D. from 12/08/2009 to 01/04/2010
Huichun Zhan, M.D.
Christina Yeeka Weng, M.D. ¹
Adam Scott Wenick, M.D., Ph.D. ¹
Faikia Ambachew Woreta, M.D., M.P.H. ¹
Zhenhua Xu, Ph.D.
Zhiyong Yang, M.D., Ph.D.
Takeshi Yoshida, Ph.D. to 02/08/2010
Tsunehiko Yoshida, Ph.D.
Xiufeng Zhong, Ph.D. to 05/31/2010

Cornea and Anterior Segment Service
Je-Min Chae, D.V.M. to 08/31/2009
Sungdong Chang, Ph.D., Ph.D. from 08/21/2009
Christoph Engler, M.D.
Yasin A. Khan, M.D. to 01/29/2010
Clar Nicheilleachair, M.B.B.Ch., M.Sc. to 12/31/2009
Yutaro Nishi, M.D. to 07/31/2009
Simone Santos, M.D. to 05/31/2010
Woranart Tattiyakul, M.D. to 06/14/2010
Canan A. Utine, M.D. to 12/31/2009

Glaucoma Service
Phenpan Hirunyachote, M.D.
Eugenio A. Maul, M.D. to 04/30/2010

Neuro-ophthalmology/Orbital Unit
Masoud Aghsaei-Fard, M.D. from 08/03/2009
Cristian Marcelo Salgado, M.D. to 07/31/2009
Valerie Touitou, M.D. to 10/23/2009
Zoe Rebecca Williams, M.D. to 07/24/2009
Wen Ying Helena Wu-Chen, M.D. from 07/13/2009

Retinal Vascular Service
Katayoon Baradaran Ebrahimi, M.D.
Marisol del Valle Cano, Ph.D.
Jangwon Heo, Ph.D. from 01/15/2010
Afseehin Amin Khwaja, M.B.B.S.
Naoshi Kondo, M.D.
Thomas Kin-Man Lee, M.D.
Akkio Miki, M.D.
Katsuaki Miki, M.D., Ph.D.
Geetha Parthasarathy, M.Sc., Ph.D.
Laura Pinni, M.D.
Murilo Felix Roggia, M.D. to 05/31/2010
Gitanjali Sehrawat, Ph.D.
Peykan Turcuoglu, M.D. from 07/13/2009
Jun Wan, Ph.D.
Jianmin Wang, M.D. to 02/22/2010
Zhi Xie, Ph.D.
Shiri Zayit-Soudry, M.D. from 08/24/2009
Mingbing Zeng, M.D. from 09/14/2009

Strabismus and Pediatric Ophthalmology
Didar S. Anwar, M.B.B.Ch. from 07/29/2009
Natthira Chaisrisawadsuk, M.D. from 01/01/2010
Kristina Irisch, Ph.D.
Pittaya Phamonaavachavan, M.D. to 01/31/2010

Vitreo-Retinal Surgical Service
Elham Hatem Naimi, M.D.
Mohamed A. Ibrahim, M.B.B.Ch.

ORTHOPAEDIC SURGERY
Mehmet Serdar Alp, M.D. to 07/31/2009
Rishi Balkissoon, M.D., M.P.H.
Jonathan Alexander Bernard, M.D. from 07/15/2009

Danielle Joy Casagrande, M.D. from 11/16/2009 to 01/24/2010
Jean-Claude Gregoire D’Alleyrand, M.D. from 11/19/2009 to 12/24/2009
Ashvin Kumar Dewan, M.D. ¹
Monthida Fangtham, M.D. from 09/02/2009 to 10/01/2009
Payam Farjoodi, M.D. ¹
Michael Thomas Freehill, M.D. ¹
Joseph P. Gjolaj, M.D. ¹
Elan Michael Goldwyn, M.D. from 12/25/2009 to 01/30/2010
Hamid Hassanzadeh, M.D. ¹
Michael A. Hawks, M.D. to 07/31/2009
Casey Jo Humbyrd, M.D. ¹
Eun Mi Hur, Ph.D.
James Cooper Johnston, M.D. ¹
Anita Kaur, M.B.B.S. from 10/02/2009 to 11/01/2009
Sayed Alimuddin Kazi, M.B.B.S. from 07/31/2009 to 09/01/2009
Julie Michelle Keller, M.D. from 10/13/2009 to 11/18/2009
Elisa Jeanne Knutsen, M.D. from 09/07/2009 to 11/15/2009
Wen Min Lau, Ph.D. to 10/16/2009
Rushyuan Jay Lee, M.D. ¹
Zhaoyang Li, Ph.D. from 11/02/2009
David Michael Anthony Macias, M.D. ¹
Oktai Mamedov, M.D. from 11/02/2009 to 11/30/2009
Natalia Maroz, M.D. from 07/10/2009 to 07/30/2009
Daniel Marsland, M.B.B.Ch. from 10/20/2009
Emmanuel Nganku Menga, M.D. ¹
Maria Belen Menucci, M.D. from 12/01/2009 to 01/01/2010
Addisu Mesfin, M.D. ¹
Stuart Hopper Myers, M.D. ¹
Sergly Nesterenko, M.D. ¹
Andres Eduardo O’Daly, M.D.
David Erin Oj, M.D. ¹
Derek Francis Papo, M.D. ¹
Benjamin McVay Petre, M.D. ¹
Carmen Paz Pichard, M.D. ¹
Kristof R. Reid, M.D. ¹
Ryan Christopher Riddle, Ph.D. from 07/06/2009
Thomas Milleret Ring, M.D., M.S. ¹
David Malachy Rose, M.B.B.S. to 09/30/2009
Saijilafu, Ph.D. to 10/28/2009
Nima Salari, M.D. ¹
Swapnil B. Shah, M.D. from 09/07/2009 to 10/12/2009
Swapnil B. Shah, M.D. from 03/09/2010 to 04/13/2010
Michael A. Sirotia, M.D. to 12/31/2009 ¹
Umasuthan Srikumaran, M.D. ¹
Benjamin Eric Stein, M.D. ¹
Sara Elisabeth Strebe, M.D. from 08/01/2009 to 09/06/2009
Eric Wan Tan, M.D., M.S. ¹
Miho Jean Tanaka, M.D. ¹
Peter Ronald Thomas, M.D., M.S. to 09/30/2009
Augusta Catherine Whitney, M.D. to 09/06/2009
Alan Yong Yan, M.D. ¹

Shoulder Surgery
Pingal Anilbhai Desai, M.B.B.S. to 04/30/2010
Juan Garzon-Muvdi, M.D. to 01/31/2010
OTOLARYNGOLOGY-HEAD AND NECK SURGERY

Yuri Agrawal, M.D., 1
Joanna Cecila Arthur, Ph.D. to 10/30/2009
Simon Roderick Alfred Best, M.D., 1
Sheetal Bhan, M.Sc., Ph.D.
Mariana Bralt Rodrigues DeOliveira, 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. from 09/01/2009
Yong Gu Cho, M.M.S., Ph.D. to 03/16/2010
James Henri Clark, M.B.B.Ch. from 07/07/2009
Chenkai Dai, Ph.D.
Santanu Dasgupta, M.S., Ph.D.
Steven Jeffrey Eliades, M.D., Ph.D., 1
Carole Fakhry, M.D., M.P.H. to 10/30/2009
Carole Fakhry, M.D., M.P.H. from 01/01/2010
Gene Yevgeny Fridman, M.S., Ph.D. to 11/30/2009
Yumei Fu, Ph.D.
Daria A. Gaykalova, Ph.D. from 11/09/2009
Chad Alan Glazer, M.D.
Lisa Grant, Ph.D. to 02/23/2010
Yubin Hao, Ph.D.
Patrick Thomas Hennessey, M.D., 1
Alexander Tell Hillel, M.D.
Gi Jung Im, M.D., M.M.S., Ph.D. from 02/16/2010
Sung Koo Kang, M.S., Ph.D.
Amit Kochhar, M.D., 1
Jee-Hyun Kong, Ph.D. to 03/29/2010
Kulsoom Laeeq, M.B.B.S.
Amanda Marie Lauer, M.S., Ph.D.
Pamela Alejandra Leal Rojas, Ph.D. from 10/01/2009 to 10/31/2009
Cynthia LeBron, Ph.D.
Ryan Jeffrey Li, M.D.
Frank Robert Lin, M.D., Ph.D. to 12/31/2009
Myriam Del Mar Loyo, M.D.
Sofia Lyford-Pike, M.D.
Leonel Francisco Maldonado-Gonzalez, M.D. to 04/11/2010
Rodrigo Martinez Monedero, M.B.B.S. to 02/28/2010
Thuy-Anh Nguyen Melvin, M.D., 1
Atta Mohyuddin, M.B.B.S. to 10/31/2009
Wojciech Krzysztof Mydlarz, M.D., 1
Louis John Nkrumah, M.D., M.S., Ph.D., 1
Jahn Natalie O’Neil, Ph.D.
Kimberly L. Ostrow, M.A., Ph.D.
Prodipto Pal, Ph.D. to 02/15/2010
Il-Seok Park, Ph.D. to 08/31/2009
Isabelle Catherina Roux, Ph.D.
Tanusree Sen, Ph.D.
Meena Seshamani, M.D., Ph.D., 1
Chunbo Shao, Ph.D. to 06/14/2010
David Falace Smith, M.D., 1
Ian Michael Smith, M.D., 1
Ethan Soudry, M.D.
Babar Sultan, M.D., 1
Wenyue Sun, Ph.D.
Marietta Tan, M.D., 1
Justin H. Turner, M.D., 1
David Marcel Vasquez, M.D., Ph.D.
Bryan Kevin Ward, M.D., 1
Eric Laurent Wersinger, Ph.D.
Gaosong Wu, Ph.D. from 01/02/2010
Eunyoung Yi, Ph.D.
Xiaoli Zhong, Ph.D. to 03/03/2010
Gang-Ming Zou, M.D., Ph.D. to 07/31/2009

Dental and Oral Medicine

David Kyle Clark, D.D.S. from 09/01/2009 to 10/31/2009
David Kyle Clark, D.D.S. from 03/01/2010 to 03/31/2010
Eugene Huang, D.D.S., 1
Antoine Gerard Johnson, D.D.S. from 11/01/2009 to 01/31/2010
Seokhwan Oh, D.D.S., 1
Huy Chi Trinh, D.D.S. to 08/31/2009
Huy Chi Trinh, D.D.S. from 02/15/2010 to 02/28/2010

Otology-Neurotology

Wade W. Chien, M.D.
Charles Matthew Stewart, M.D., Ph.D.

PATHOLOGY

Joseph Aoki, M.D., 1
David Vincent Baewer, M.D., Ph.D., 1
Justin Avery Bishop, M.D., 1
Erin Michelle Carney, M.D., 1
Alex Gee Mun Chang, M.D., 1
Guoli Chen, M.D., 1
Ashley Marie Cimino-Mathews, M.D., 1
Carla Lashannon Ellis, M.D., M.S., 1
Hillary Rose Elwood, M.D., 1
Baojin Fu, M.D., 1
Cheng-Ying Ho, M.D., 1
Kathryn Jockovic, M.D., 1
Matthew Scott Karafin, M.D., 1
Julie Katz Karp, M.D., 1
Robert Eric LeBlanc, M.D., 1
Gloria Huang Lewis, M.D., 1
Chad Michael McCall, M.D., 1
Oliver Gene McDonald, M.D., Ph.D., 1
Zina Meriden, M.D., 1
Delicia La Shaun Munfus-McCray, M.D., 1
Matthew Theodore Olson, M.D., 1
Brent Alan Orr, M.D., 1
Nemanja Rodic, M.D., 1
Hillary Maren Ross, M.D., 1
Safia Nawazish Salaria, M.B.B.S., 1
Mark Atienza Samols, M.D., Ph.D., 1
John J. Schmieg, M.D., Ph.D., 1
Aatur Dilip Singhi, M.D., Ph.D., 1
Andrea Proctor Subhawong, M.D., 1
Matthew Paul Tilson, M.D., 1
Christopher James Vandenburgue, M.D., Ph.D., 1
Jeremy Vincent, M.D., 1
Laura DeLong Wood, M.D., Ph.D., 1
Gang Zheng, B.M., Ph.D., 1
Rui Zheng, M.D., Ph.D., 1

Autopsy Pathology

Shahin Assefnia, D.V.M. from 08/10/2009
Sarah Evelyn Beck, D.V.M.
Angela Kathleen Brice, D.V.M., Ph.D. to 09/30/2009
Simon Yat-Ming Long, V.M.D. from 07/06/2009
Denise A. Schultz, D.V.M.
Gillian Curtis Shaw, D.V.M., M.S.
Brian Wesley Simons, D.V.M.

Cardiovascular Pathology

Constantinos Anagnostopoulos, M.D. to 11/30/2009
Samarjit Das, Ph.D.
Mark Jeffrey Kohr, Ph.D. to 04/07/2010
Jason Jun Su, Ph.D. to 01/29/2010
Jianshi Yu, Ph.D. from 09/01/2009

Clinical Chemistry
Dylan Minh Bach, M.D. from 11/02/2009 to 11/30/2009
Jinong Li, Ph.D. to 04/30/2010
Yan Li, Ph.D.
Danni Li Meany, Ph.D. from 12/31/2009
Joely Ann Straseski, M.S., Ph.D.
Yuan Tian, Ph.D.

Cytopathology
Max Karl Fischer, M.D., M.P.H. from 12/01/2009 to 12/31/2009
Summer L. Nugent, M.D.
Srividy Sathiyamoorthy, M.B.B.S. from 01/01/2010 to 01/31/2010
Lisa Marie Stoll, M.D., M.P.H.

Division of Ophthalmic Pathology
Laura Asnaghi, M.S., Ph.D.
D Anand Rajan Kanagasabapathy, M.B.B.S.

GI-Liver Pathology
Hector Andres Alvarez, M.D. to 12/15/2009
Haibo Bai, Ph.D.
Savita Bisht, Ph.D. to 10/07/2009
Toby Charles Cornish, M.D., Ph.D.
Hubert Darius J. Daniel, M.Sc., Ph.D.
Sugganth Daniel, M.B.B.S. from 08/03/2009 to 10/31/2009
Sonai Gupta, Ph.D.
Adriana Alina Handra-Luca, M.D. from 11/01/2009
Seung-Mo Hong, M.D., Ph.D.
Chaoxin Hu, Ph.D. from 10/01/2009
Hirohiko Kamiyama, M.D. to 01/31/2010
Rajesh Kannangai, M.D. from 09/09/2009
Dora M. Lam-Himin, M.D.
Ang Li, Ph.D.
Ming-Tseh Lin, M.D.
Hanno Ernst Goswin Matthaei, M.D. to 04/30/2010
Masamichi Mizuma, M.D. to 04/30/2010
Yoshiki Naito, Ph.D.
Vivekandanand Perumal, Ph.D. to 09/30/2009
Dipankar Pramanik, Ph.D. from 09/10/2009
Chuanjuan Shi, M.D., Ph.D. to 12/31/2009
Audrey Louise Josette Vincent, Ph.D. to 03/31/2010
Megha Waghrey, Ph.D. to 03/31/2010
Shinichi Yachida, M.D.
Lanjing Zhang, M.D. from 10/05/2009 to 10/30/2009
Yi Zhong, M.D.

Gynecologic Pathology
Wen-Chung Chen, M.D. from 09/03/2009
Bin Guan, Ph.D.
Yuzhen Guo, Ph.D. to 04/19/2010
Wei-Ting Hsueh, M.D. to 11/16/2009
Subhashini Jagu, Ph.D. to 10/31/2009
Tae Heung Kang, D.Sc. to 03/31/2010
Balasubramanyam Karamam, M.Sc., Ph.D. to 08/31/2009
Elisabetta Kuhn, M.B.B.S. from 09/03/2009
Dan Lu, Ph.D.
Pradeep Kumar Panuganti, M.B.B.S. to 02/28/2010

Alexander Stoeck, Ph.D.
Michelle Marie Thiaville, Ph.D.
Wai-Hong Wu, Ph.D. from 11/20/2009
Qi Zeng, M.D. to 08/31/2009
Yuqian Zhang, Ph.D. to 09/25/2009

Hematologic Pathology
Daisy Varunni Alapat, M.D. to 07/31/2009
Junaid Baqai, M.B.B.S. from 02/01/2010 to 02/28/2010
Amy Susan Duffield, M.D., Ph.D.
Shiyama V. Mudali, M.D.

Immunopathology
Rigu Gupta, M.B.B.S. to 05/31/2010
Stanislav Vladimirovich Khoruzhenko, M.D.
Ae Ryon Kim, Ph.D.
Paola Leporati, M.D. from 10/26/2009
Davinna LaChelle Ligons, Ph.D.
Taylor Louise Reynolds, D.V.M.
Shey-Cheng Tzou, Ph.D. from 08/15/2009
Zuoxiang Xiao, Ph.D.

Informatics
Hong Tai, Ph.D.

Kidney-Urologic Pathology
Kirstie Anne-Merrea Adams, Ph.D.
Carliise Renee Bethel, Ph.D. to 03/31/2010
William Dean Brandt, Ph.D. from 08/17/2009
Fadi Brimo, M.D.
Susmita Ghosh, Ph.D. to 05/07/2010
Bora Gurel, M.D. to 01/31/2010
Xiaobing He, Ph.D. to 11/13/2009
Christopher Michael Heaphy, Ph.D.
Zhenhua Huang, Ph.D.
Shizhang Ling, Ph.D. to 01/31/2010
Sambit Kumar Mohanty, M.D. from 08/01/2009 to 08/31/2009
Brian D. Robinson, M.D.
Luciana Schultz, M.D. to 02/08/2010
Karen Sandell Stansos, M.S., Ph.D. to 04/02/2010

Medical Microbiology
Olga V. Nikolskaia, M.D. from 07/27/2009

Molecular and Cellular Pathology
Jewel Amethyst Daniel, Ph.D.

Molecular Genetic Pathology
Shuko Harada, M.D. from 08/01/2009
Athanassios Christos Tsiatis, M.D.

Neuropathology
Kerstin Elisabeth Braunstein, Ph.D.
Qing Chang, Ph.D.
Wing Han Vivian Chow, M.Phil., Ph.D. to 05/27/2010
Kari-Elise Tryggestad Codispoti, M.D.
Emanuela Colla, M.S., Ph.D.
Sonja George, Ph.D. from 11/18/2009 to 12/13/2009
Diego Iacono, M.D., Ph.D. to 08/07/2009
Yun Ha Jeong, Ph.D.
Jae Kwang Kim, Ph.D. to 07/30/2009
Jae Kwang Kim, Ph.D. from 08/10/2009 to 08/31/2009
Ying Liu, Ph.D. to 11/29/2009
Vasiliki Machairaki, Ph.D.
Hilary Highfield Nickols, M.D., Ph.D. from 07/13/2009 to 07/31/2009
Xiu Shao, B.M., Ph.D. to 08/25/2009
Juan G. Verastegui-Jimenez, M.D. from 11/03/2009 to 11/16/2009
Steven Miles White, M.D., Ph.D. from 09/01/2009 to 09/30/2009
Leyan Xu, Ph.D. to 11/30/2009
Eduardo Daniel Zamora, M.D. from 12/01/2009 to 02/28/2010

Selective (Renal)
Danniele Gomes Holanda, M.D.

Selective (Urological)
Yingbei Chen, M.D., Ph.D.
Motohide Uemura, M.D., Ph.D. to 05/31/2010
Huihui Ye, M.D.

Surgical Pathology
Giuseppe Militello, M.D.
Arun Prakash Venkat, M.B.A., M.D.

Transfusion Medicine
Patricia A.R. Brunke, M.D. to 10/31/2009
Aaron Andrew Ross Tobian, M.D., Ph.D.

PEDIATRICS
Lubna Qazi Abdullah, M.D.¹
Jennifer Alphonso Abraham, M.A., Ph.D.
Amit Agrawal, M.D.
Rajni Ahlawat, M.B.B.S.
Sama Farheen Ahsan, M.D.¹
Catherine Michelle Albert, M.D.¹
Melissa Jayne Allman, Ph.D.
Kristin Marie Arca, M.D.
Fidelis Eghoateh Atianjoh, Ph.D.
Dimitar Bogdanov Avtanski, M.Sc., Ph.D.
Kismet M. Baldwin, M.D. from 09/23/2009 to 10/20/2009
Viveck Baluja, M.D.
Breanna Sky Barger-Kamate, M.D.¹
Mihee Jeon Bay, M.D.
Katherine A. Beckwith-Fickas, M.D., M.P.H.¹
Hans Tomas Bjornsson, M.D., Ph.D.¹
Melissa M. Blanock Mower, Psy.D. to 08/31/2009
Ashley Marie Blouin, Ph.D.
Manish Bodas, Ph.D.
Laura Elizabeth Bodnar, M.A., Ph.D. to 08/31/2009
Kyle William Boerke, M.S., Psy.D.
Challice Lee Bonifant, M.D.¹
Alison Boyce, M.D. from 07/27/2009 to 08/31/2009
Gia Marie Bradley, M.D.
Christine Briscetti, M.D.
Christina Breisch Brooks, M.A., Psy.D. from 09/01/2009
Nicole Marie Brown, M.D.
Marissa Ann Brunetti, M.D.
Luis Francisco Caicedo-Oquendo, M.D.
Marc Addison Callender, M.D.¹
Maria Cancio, M.B.B.Ch.¹
Rebecca Faith Carlin, M.D.¹
Mary Elizabeth Caruso-Anderson, Ph.D.
Diana Nicole Carvajal, M.D.
Sarah Elizabeth Cavanagh, Ph.D. from 09/01/2009
Alison Kristen Chapman, M.D.
Maria Izabel Chiamoler, M.D., Ph.D.
Jessica Pease Clarke-Pounder, M.D.¹
Lauren Merritt Cohee, M.D.¹
Carolyn Ann Stirling Cole, M.A., Ph.D. to 08/31/2009
Stacy Lorine Cooper, M.D.¹
Stephanie Nicole Creme, M.D.
Sarah Kathleen Shea Crowne, Ph.D.
Susan Davidson, M.D.¹
Stephanie Solter de Wit, M.D.
Megan Hyle DeCapite, M.D.¹
Marissa Janel DeFreitas, M.D.¹
Neal Arledge DeJong, M.D.¹
Seifu M. Demissie, M.D.
Shamieka Virella Dixon, M.D. from 07/06/2009
Constantine Stephen Djedjos, M.D.
Abigail A. Donaldson, M.D.
Caroline Gilpin DuCoin, Psy.D. from 09/01/2009
Letitia Kathlene Thompson Dzirasa, M.D.¹
Kelly Lee Ecker, D.O.
Abdallah Frederic Elias, M.D.¹
Lisa Tennyson Emrick, M.D.
Branden Michael Engorn, M.D.¹
Doris Oluikemi Fadoju, M.D.
Jill Ann Fahrner, M.D., Ph.D.¹
Doran Leonard Fink, M.D., Ph.D.
Aisha Hughes Frazier, M.D., M.P.H.
Brandi Kaye Freeman, M.D.
Meghan Elizabeth Gaare, M.D.¹
Sharon Rachael Ghazarian, M.D.
Ashley Conrad Gibb, Ph.D. from 09/01/2009
Tanjala Trinette Gipson, M.D.
Melissa Luke Gonzalez, M.A., Ph.D. to 08/31/2009
William Adam Gower, M.D.
Deanna Mae Green, M.D.
Stephanie Elaine Griese, M.D.¹
Rana Farouk Hamdy, M.D., M.P.H.¹
Carla Rita Hanash, M.D.
Jessica Curley Hankinson, M.A., Ph.D. from 09/01/2009
Erum Aftab Hartung, M.D.
Ran He, Ph.D. from 07/17/2009
Melissa Collison Hendricks, Ph.D.
Judson Ryan Heugel, M.D.¹
Bernaedette Anne Hillman, M.D.
Suchitra K. Hourigan, B.M.—B.Ch.¹
Jessica Ann Howlett, M.D.
Colleen Ann Hughes Driscoll, M.D.
Joan Jasien, M.D.
Mandeep Singh Jassal, M.D.
Punit Narayan Jhaveri, M.D.
Khaliha Aasha Johnson, M.D.¹
Jennifer Jaime Johnston, M.D.
Jennifer K. Jubulis, M.D.
Kristen M. Kalymon, M.S., Ph.D.
Farisha Kamran, M.B.B.S. from 08/31/2009 to 09/30/2009
Vishnu Varohan Reddy Kanala, M.D. to 07/31/2009
Lisa Michelle Kantz, M.A., M.D.¹
Nisha Jaykumar Kapadia, M.D.¹
Corinne Allison Keet, M.D., M.S.
Michael Daniel Keller, M.D.¹
Kalpashri Kesavan, M.B.B.S.¹
Alissa Khan, M.D.¹
Amina Munawer Khan, M.D., M.P.H.¹
Shalinee Khurana, M.B.B.Ch. from 08/26/2009 to 09/22/2009
Faye Oh Kim, Ph.D. from 11/01/2009
Wonha Kim, M.D.¹
Allison Layla Marie Kirk, M.D.¹
Jessica Leigh Komlos, M.D.¹
Vinayak Kottoor, M.B.B.S.
Evelyn Hwang Kow, M.D.¹
Thomas Patrick Krupica, Jr., M.D.¹
Eboni Ife Lance, M.D.
Jamie Laubisch, M.D.¹
Lacey Marie LeBlanc, Ph.D. from 11/01/2009
Benjamin Lee, M.D.¹
Ryan Wai Yan Lee, M.D.
Stephanie A. Lee, Psy.D. from 09/01/2009
Hanna Beth Lemeran, M.D., M.P.H.
Eve Michele Moore, M.D.
Kantahyanee Whitt Murray, M.A., Ph.D. to 03/30/2010
Satya Devi Narisety, M.D.
Suzana Nesu Francia, M.D. from 10/01/2009
Melanie Kandt Nies, M.D.
Maryam Nobari Tabrizi, M.D.
Horacio Javier Novaira, Ph.D.
Julia Noether O'Neal, M.D.
Joshua Joseph O'Neal, M.D.¹
Erika Torjusen, M.D.
Young-Hoon Ahn, Ph.D.
Rashmi Bankoti, Ph.D. from 02/28/2010
Shonoi Andrea Barnett, Ph.D. from 11/01/2009
Adriana Bora, Ph.D. from 11/30/2009
Chien-Sheng Chen, Ph.D. from 07/15/2009 to 09/01/2009
Christina Elena Pierorazio, M.D.
Elyse Dara Pine-Twaddell, M.D.
Alison Christine Tribble, M.D.
Megan Marie Tschudy, M.D.
Elizabeth Winsans Tucker, M.D.
Erlanger A. Turner, Ph.D. from 09/01/2009
Krishna Kumari Upadhya, M.D., M.P.H.
Christopher John Valente, M.D.
Alexandra Vasilesescu, D.O., M.S.
Hilary Joyce Vernon, M.D., Ph.D.
Michael Francis Walsh, M.D.
Jennifer Lindy Webb, M.D.
Darcey Kate Weidemann, M.D.
Sheng Wu, M.S., Ph.D.
Jian-Chun Xiao, Ph.D.
Michiyo Yamazaki, Ph.D. to 12/31/2009
Hao Yu, Ph.D.
Regina Margarita Zambrano, M.D.
Longkun Zhu, Ph.D.
Karen Leigha Zimowski, M.D.¹
PHARMACOLOGY AND MOLECULAR SCIENCES
Young-Hoon Ahn, Ph.D.
Rashmi Bankoti, Ph.D. to 02/28/2010
Shonoi Andrea Barnett, Ph.D. from 11/01/2009
Adriana Bora, Ph.D. from 11/30/2009
Chien-Sheng Chen, Ph.D. from 07/15/2009 to 09/01/2009
Youngjun Dang, Ph.D. to 12/31/2009
Xinxin Gao, Ph.D.
QingLi He, Ph.D. from 09/21/2009
Marc A. Holbert, Ph.D.
Shaohui Hu, Ph.D.
Rong Huang, Ph.D.
Kannan Karukurichi, M.Sc., Ph.D.
Pablo Hector Horacio Lopez, Ph.D. to 07/31/2009
Sohum Mehta, Ph.D. from 12/01/2009
Chandrani Mukherjee, Ph.D.
Robert Howard Newman, Ph.D.
Rodney Louis Nyland, II, Ph.D.
Veronica Tiffany Pinnick, Ph.D. from 09/03/2009
Hee Sool Rho, Ph.D.
Tilman Hans Jorg Schneider-Poetsch, Ph.D. from 08/04/2009 to 09/30/2009
Wei Shi, Ph.D.
Joong Sup Shim, Ph.D.
Gregory George Simon, Ph.D. to 11/29/2009
Mary Regina Stahley, Ph.D.
Yan Sun, Ph.D. from 07/20/2009
Stephen James Swatkoski, Ph.D.
Zhihong Wang, Ph.D. to 03/09/2010
Yu Ye, Ph.D.
Jianshi Yu, Ph.D. to 08/31/2009
Jingzhong Zhou, Ph.D. to 12/07/2009
Jian Zhu, M.S., Ph.D. from 07/16/2009 to
08/15/2009

PHYSICAL MEDICINE AND REHABILITATION
Anna V. Agranovich, M.A., Ph.D. from 09/01/2009
Lisa Shanel Barrett, M.D. from 09/01/2009
Joseph Anthony Bax, D.O. from 10/01/2009
Erik Stanton Brand, M.D., M.Sc. from 10/01/2009
Margaret Anne Budd, M.P.H., Ph.D. to 08/31/2009
Philippines Garcia Cabahug, M.D. from 08/01/2009
Srikrishna Chandran, M.D.
Tae Hwan Chung, M.D. to 12/31/2009
Michelle Cintron, D.O.
Celene A. Fyffe, M.A., Ph.D. from 07/16/2009
Joseph Michael Galea, Ph.D. to 03/25/2010
Dustin Phillip Gay, M.D. from 10/01/2009 to
12/31/2009
Daniel Eli Halpert, D.O.
Haroon Imran Hameed, M.B.B.S.
Mariam Maira Hameed, M.B.B.S.
Erik Hans Hoyer, M.D.
Phong Nguyen Kieu, M.D.
Shinya Mikushi, D.D.S., Ph.D.
Nathan Jon Neufeld, D.O.
Nathan M. Parmer, Psy.D.
Vishal Thakral, D.O.
Katherine Dawn Travnicek, M.D.
Jing Wang, M.D.
Jessica H. Wolfman, M.S., Ph.D. from 01/01/2010
Christine L. Yantz, Ph.D.
Morvarid Yousefi, M.D.

Pediatric Rehabilitation Medicine
Marykatharine Nutini, D.O. from 08/01/2009
Scott C. Schultz, M.D.

Spinal Cord Injury Medicine Program
Tapankumar N. Joshi, M.B.B.S. to 08/31/2009

PHYSIOLOGY
Amanda Nell Barry, M.S., Ph.D. from 09/01/2009
Ashima Bhattacharjee, Ph.D. (on leave of absence
07/12/2009)
Sharmistha Bhattacharyya, Ph.D. from 12/03/2009
Nabab Gupta, Ph.D.
Yuta Hatori, Ph.D. from 11/02/2009
Chandra Mohan Khantwal, Ph.D.
Kalyan Chakravarthy Kondapalli, M.S., Ph.D.
Sharon Virginia LaMont Leitch, Ph.D.
Huiqing Li, Ph.D. from 07/20/2009
Lihua Liang, M.S., Ph.D.
Jonathan Michael Peterson, M.S., Ph.D.
Owen Maxwell Woodward, Ph.D.
Meifang Xiao, Ph.D. from 01/01/2010
Yongqiang Zhang, Ph.D.

PSYCHIATRY AND BEHAVIORAL SCIENCES
Bagrat Abazyan, M.D.
Shauna Prendergast Acquavita, Ph.D.
Serhii Sergeyevich Akimov, Ph.D.
Allan Michael Andersen, M.D.
Denis Godwin Antoine, Il., M.D.
Nicolas Arbez, Ph.D. from 12/01/2009
Eleni Aretouli, Ph.D.
Yuval Asner, M.D.
Yauvy Ayhan, M.D. to 10/13/2009
Nicholas Thomas Bello, Ph.D. to 02/28/2010
Rebecca Birnbaum, M.D.
Matthew David Burkey, M.D., M.P.H.
Claudia Michelle Campbell, Ph.D.
Minnova Emmanuelle Ceide, M.D.
Shin-Bey Chang, M.D.
Yong Cheng, Ph.D. to 01/31/2010
Rachel Rose Chrisliu, M.D.
Kristal Tenille Clark, M.D.
Nida Hennessy Corry, Ph.D. to 08/14/2009
Caitlin Rose Costello, M.D.
Jennifer Marie Coughlin, M.D.
Mary L. Cutler, M.D.
Megan Jeanne Dailey, Ph.D.
Catherine Marie Davis, Ph.D. from 11/16/2009
James Arthur Disney, M.D.
Sasikanth Doddapaneni, M.D.
Angela N. Duke, Ph.D. to 04/30/2010
Kelly Elaine Dunn, Ph.D. to 05/15/2010
Lauryn Lynn Eberman, M.D.
Nicole Renee Edmond, M.D.
Daniel Patrick Evatt, Ph.D. from 07/16/2009
Chete Margaret Eze-Nliam, M.B.B.S., M.P.H. from
10/08/2009
Jinrong Fu, Ph.D.
Steven Andrew Galati, M.D.
Neda F. Gould, Ph.D.
Zhizhong Guo, M.D. from 07/17/2009
Aikko Hayashi, M.D., Ph.D.
Sean Philip Hefferman, M.D.
Meghann Maureen Henelly, M.D.
Porch Kirklanl Henry, Ph.D. from 08/01/2009
Hideki Hiyama, M.Sc., Ph.D. to 11/30/2009
Jamie Alyson Hom, M.D.
Pamela Jean Horn, M.D.
Frederick William Houts, M.D.
Yong Huang, Ph.D. from 08/03/2009
Amy Laura Huberman, M.D.
Koko Ishizuka, Ph.D. to 08/30/2009
Hanna Jaaro-Peled, M.Sc., Ph.D.
Mai Liang, M.D., Ph.D.
Jing Jin, Ph.D. to 03/31/2010
Shinichi Kano, M.D., Ph.D.
Sun-Hong Kim, Ph.D.
Mary Claire Kimmel, M.D.
Bethea AnnaLouise Kleykamp, M.A., Ph.D.
Mikhail Nikolaas Koffarnus, Ph.D. from 08/16/2009
Minori Koga, Ph.D. from 08/01/2009
Richard Sang Un Lee, Ph.D.
Jeanne-Marie Sheppard Leoutsakos, Ph.D. to
08/31/2009
Yu-Chu Liang, M.S., Ph.D. from 10/01/2009
Zhao-Hui Liu, M.S., Ph.D. to 08/31/2009
Sally Louise Long, Ph.D.
Joel D. Mack, M.D.
Katherine Anne MacLean, Ph.D. from 09/16/2009
David Aaron Maroof, Ph.D. from 09/01/2009
Shawn Thomas Mason, M.S., Ph.D.
Daniel C. Mathews, M.D.
Erin Ann McClure, Ph.D. to 06/15/2010
Oriol Molina Andreu, M.D. from 07/17/2009 to
09/30/2009
Lauren Virginia Moran, M.D.
Harvey Melton Morris, Ph.D. to 06/29/2010
Megan Marie Mroczkowski, M.D. 1
Minae Niwa, Ph.D. from 10/16/2009
Jun Nomura, Ph.D.
Ozioma Chima Okonkwo, Ph.D. from 07/19/2009
Renata M. Okonkwo, M.A., Ph.D. from 09/02/2009
Christopher Justin Pagnani, M.D. 1
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Meihi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Vinay Kishor Parekh, M.D. 1
Smitta Vinubhai Patel, M.D., M.P.H.
Mehdi Pirooznia, Ph.D.
Vladimir Mikhailovich Pogorelov, Ph.D. from 07/27/2009
Leon Tan Que, Jr., M.D. 1
Jennifer Barsky Reese, M.S., Ph.D.
Chad Jason Reissig, Ph.D. to 09/24/2009
Erica Martin Richards, M.D., Ph.D.
Jose Y. Rios-Robles, M.D., M.P.H.
Ayesha Iqbal, M.B.B.S. from 09/23/2009 to 10/20/2009
Arzu Ozturk, M.D.
Pedro Ricardo Pinto, M.D. from 09/01/2009 to 12/31/2009

PET Clinical Fellowship (Nuclear Medicine)
Ovsev Uzuner, M.D.

Surgery
Jeremiah Geoffrey Allen, M.D. 1
George John Arnaoutakis, M.D. 1
Mathew M. Augustine, M.D. 1
Jennifer Marie Bailey-Lundberg, Ph.D. from 10/05/2009
Claude Anthony Beaty, Jr., M.D. 1
Jonathan Carlin Berger, M.D. 1
Stuart Leighton St. Aubin Blackwood, M.D. 1
Gabriel Alon Brat, M.D. 1
Benjamin Sands Brooke, M.D. 1
William Reece Burns, III, M.D. 1
Zaki Salman Busbaih, M.B.B.S. to 03/31/2010
Melissa Suzanne Camp, M.D. 1
Shuming Chen, Ph.D.
Mechteld Christine de Jong, M.D. from 09/01/2009
Andrew P. Dhanasopon, M.D. 1
Stephanie Rae Downing, M.D. 1
Trevor Ashton Ellison, M.D. 1
Katherine Winifred Emery, M.D., M.S. 1
Charles John Galanis, M.D. 1
Jacqueline Mary Garonzki Wang, M.D. 1
Timothy Jacob George, M.D. 1
Natalia Oleg Glebova, M.D., Ph.D. 1
Seth Daniel Goldstein, M.D., M.Phil. 1
Zhen Gooi, M.D. 1
James Earl Harris, Jr., M.D. 1
Jin He, M.D. 1
Wei Huang, Ph.D. from 11/01/2009
Sameer Kaiser, M.D. 1
Amit Kaul, M.B.B.S. from 09/01/2009
Clinton Dunkel Kemp, M.D. 1
Adam Jacob Mathias Kern, M.D. 1
Abtin Hajiloo Khosravi, M.D., M.S. 1
Arman Kilic, M.D. 1
Guennadi Kouniavsky, M.D. to 01/31/2010
Christopher J. Barreiro, M.D. 1
Pramod Narayan Bonde, M.B.B.S. to 07/31/2009
Wirt Whitfield Cross, Jr., M.D. from 10/01/2009 to 10/31/2009
Ashraf Jamal Haddad, M.B.B.S. from 09/01/2009 to 09/30/2009
Stephen James Huddleston, M.D. 1
Harsh Jain, M.D. 1
Kaushik Mandal, M.B.B.S. 1
Gregory Duncan Rushing, M.D. 1
Maurice Antonio Smith, M.D. 1

Cardiac Surgery
Christopher J. Barreiro, M.D. 1
Pramod Narayan Bonde, M.B.B.S. to 07/31/2009
Sara Kirsten Rasmussen, M.D., Ph.D. 1
José Humberto Salazar Osuna, M.D. to 03/01/2010
Ibrahim Sultan, M.D. 1
Debasish Sundi, M.D. 1
Raul Sebastian, M.D. from 09/01/2009
Kevin Cerqueira Soares, M.D. 1
Norann Amir Zaghloul, M.S., Ph.D.

Pediatric Surgery
Michael Benjamin Brewer, M.D. from 01/27/2010 to 02/28/2010
Marc Gribler, M.D. from 12/16/2009 to 01/26/2010
Mary Jo Haley, M.D. from 09/01/2009 to 10/06/2009
Rashida J. Laurence, M.D. from 10/07/2009 to 11/10/2009
Sara Kirsten Rasmussen, M.D., Ph.D. 1
Jose Humberto Salazar Osuna, M.D. to 03/01/2010
Stefan Scholz, M.D. 1
Subhadra Shashidharan, M.B.B.S. to 09/13/2009
Qihong Wang, M.D.

Plastic Surgery
Elfsthia Andrikopoulou, M.D. from 11/02/2009
John George Apostolidis, M.D. 1
Mazen Ibrahim Bedri, M.D. 1
Rachel Olga Bluebond-Langner, M.D. 1
Emile N. Brown, M.D. 1
Jose G. Christiano Neto, M.D. 1
Thomas Lawrence Chung, D.O.¹
Jeffrey Michael Feiner, M.D.¹
Michael J. Feldman, M.D.
Keith E. Pollmar, M.D.¹
Luther Hamilton Holton, III, M.D.¹
Helen Gloria Hui-Chou, M.D.¹
Joseph Alexander Kelamis, M.D.¹
Avron Herschel Lipschitz, M.B.B.Ch.¹
Michail Magarakis, M.D.
Suhail Kamrudin Mithani, M.D.¹
Gerhard Salomo Mundinger, M.D.¹
Habeeba S. Park, M.D. from 12/01/2009 to 12/31/2009
Erin Mariel Rada, M.D.¹
Sachin M. Shridharani, M.D.¹
Matthew Gokey Stanwix, M.D.¹
Jonathan A. Zelken, M.D.¹

Surgical Critical Care
Dessislava V. Boneva, M.D. from 07/13/2009
Nicholas Jaszczak, M.D. to 07/12/2009
George Joseph Koenig, Jr., D.O., M.S. to 07/12/2009

Surgical Oncology and Endocrinology
Florence Depontieu, Ph.D. to 12/15/2009

Transplant Surgery
Priyanka Govindan, M.B.B.S. to 03/14/2010
Georges Mounir Haidar, M.D. from 11/08/2009 to 12/05/2009
Masayuki Hisada, M.D.
Sunil Suhas Karhadkar, M.B.B.S.
Seoung Hoon Kim, M.D., Ph.D.
Anthony Leary Mark, M.D.
Takehiro Okabayashi, Ph.D. to 03/31/2010
Habeeba S. Park, M.D. from 01/01/2010 to 01/31/2010
Christopher Eric Simpkins, M.D., M.P.H.
Kris Burton Williams, M.D. from 10/11/2009 to 11/07/2009
Xiuying Zhang, Ph.D.

Vascular Surgery
James Lawrence Guzzo, M.D.
Ying Wei Lum, M.D.

UROLOGY
Shadi Raymond Badan, M.D. to 01/01/2010
Trinity Jude Bivalacqua, M.D., Ph.D. to 12/31/2009¹
Katherine Elizabeth Bright D’Antonio, Ph.D. to 07/17/2009
John Bernard Effler, Jr., M.D.¹
Fernando Nestor Facio, Jr., M.D., M.Sc. to 11/30/2009
Jatinder Goyal, M.B.B.S. from 08/26/2009
Angela Devi Gupta, M.D.¹
Rong Hu, Ph.D.
Chien-Ming Huang, M.D. from 09/01/2009
Zhenhua Huang, Ph.D.
Sumit Isharwal, M.B.B.S.
YouQiang Li, M.D., Ph.D. from 01/04/2010
Chunyan Liu, B.M., Ph.D. to 07/30/2009
Stacy Leah Loeb, M.D.¹
Ifanyichukwu Ifeyinwa Megwalu, M.D.¹
Steven Michael Mooney, Ph.D. to 05/30/2010
Amarnath Mukherjee, Ph.D.
Jeffrey Kyle Mullins, M.D.¹
Xiaohua Ni, Ph.D.
Phillip Martin Pierorazio, M.D.¹
Sefa Resim, M.D. to 10/14/2009
Judit Ribas, Ph.D.
Wilmer Burton Roberts, M.D., Ph.D.¹
Ashley Evan Ross, M.D., Ph.D.¹
Anthony John Schaeffer, M.D.¹
Michelle Jo Semins, M.D.¹
Takumi Shiraishi, M.D., Ph.D.
Abhinav Sidana, M.B.B.S.
Takahito Suyama, M.D., Ph.D. to 03/31/2010
Naser Uddin, M.Phil., Ph.D.
Shuanzeng Wei, M.D.
Ping Wu, Dr.Med.Sc., M.D.
Yi Xie, M.D. to 07/31/2009
Bo Yin, Ph.D. from 12/01/2009
Yu Zeng, Ph.D.

Pediatric Urology
Nima Baradaran, M.D. from 08/24/2009
Raimondo Maximilian Maria Cervellione, M.D. to 05/31/2010
Timothy Martin Phillips, M.D.
Andrew Alexander Stec, M.D.
Jiakai Zhu, M.D. to 12/31/2009¹

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
Ashley Kandanatt Antony, Roanoke Rapids, NC
B.S., Harvard University, 2006
Mark Wayne Ball, Harlan, KY
B.S., Centre College, 2006
Anshuman Kumar Bansal, West Bloomfield, MI
B.S., Johns Hopkins University, 2006
Aaron Lee Berkowitz, Broomall, PA
B.A., George Washington University, 1999
B.S., George Washington University, 1999
Ph.D., Harvard University, 2009
Tal Eliram Berkowitz, Atlanta, GA
B.A., Emory University, 2004
Mark Bicket, Edmond, OK
B.A., University of Oklahoma (Norman), 2006
B.A., University of Oklahoma (Norman), 2006
Alexander Carl Billioux, Easley, SC
B.A., Northwestern State University, Louisiana, 2003
Ph.D., University of Oxford, 2006
Matthew Mikhail Boelig, Londonderry, NH
B.S., Yale University, 2006
Curtis William Bone, Baltimore, MD
B.S., Louisiana State University (Baton Rouge), 2004
Andrew Thomas Boyd, Burlington, IA
B.A., University of Iowa, 2005
Laura Christine Cappelli, Bloomfield Hills, MI
B.A., University of Pennsylvania, 2006
Abigail Leigh Youngberg Carlson, Rochester, MN
B.A., Wellesley College, 2005
Audrey Jacqueline Chan, Glen Burnie, MD
B.A., Johns Hopkins University, 2005
Catherine Lee Chen, Baltimore, MD
B.A., Rice University, 2001
Steven Tze-wei Chen, Fremont, CA
B.S., Johns Hopkins University, 2005
Shelly Seungah Choo, Paramus, NJ
A.B., Harvard University, 2006
Anthony Chung-Kai Chyou, Baltimore, MD
B.S., Johns Hopkins University, 2006
Benjamin Ross Cohen, Atlanta, GA
B.A., Dartmouth College, 2005
Gordon James Cohen, New York, NY
B.A., Cornell University, 1999
Frank Edward Corrigan III, Atlanta, GA
B.A., Vanderbilt University, 2006
John Patrick Costello, Neenah, WI
B.S., University of Wisconsin (Madison), 2006
Jennifer Lynn Cuhran, New Castle, PA
B.S., Pennsylvania State University, 2006
Keith Edward Curtis, Boulder, CO
B.A., Naropa University, 2001
Matthew John Czarny, Burlington, WI
B.S., University of Wisconsin (Madison), 2006
Hormuzdiyar Henry Dasenbrock, Albuquerque, NM
B.A., University of Pennsylvania, 2005
Ghazala Amirali Datoo, Stone Mountain, GA
B.S., Emory University, 2006
Yi Deng, Galloway, NJ
B.S., Stanford University, 2006
Catherine Lindsey Distler, Leawood, KS
B.A., University of Notre Dame, 2006
Paul James Doherty, Washington, DC
B.A., University of Virginia, 1998
Pavle Doroslovacki, Bethesda, MD
B.S., University of Maryland (College Park), 2006
Wei D. Duan-Porter, State College, PA
B.S., Pennsylvania State University, 2000
Fei Jamie Dy, Singapore
B.A., Johns Hopkins University, 2004
M.S., Johns Hopkins University, 2005
Lana Rae Elpert, Madison, SD
B.S., University of Minnesota (Twin Cities), 2006
Erica Nicole Elzey, Stone Mountain, GA
B.S., Spelman College, 2006
Brian Robert Englund, Indianapolis, IN
B.A., Indiana University (Bloomington), 2003
B.S., Indiana University (Bloomington), 2003
Oluwatosin Oyefolake Fatusin, Houston, TX
B.S., Baylor University, 2005
Finbar Timothy Foley, Great Neck, NY
B.A., Yale University, 2001
M.S., Queens College (New York), 2003
Shannon Caroline Fraser, Hamilton, NY
B.S., Cornell University, 2006
Alodia Ashenda Gabre-Kidan, Seattle, WA
B.A., Columbia University, 2004
Courtney Rory Goodwin, Gainesville, FL
B.A., University of Florida, 2002
Lauren Elizabeth Graham, St. Louis, MO
B.A., Earlham College, 2004
Ron Gutmark, Cincinnati, OH
B.A., Stanford University, 2005
Tamia Alisha Harris, Atlanta, GA
B.S., Haverford College, 2003
Zachary Ryan Healy, Millersville, MD
B.S., Georgia Institute of Technology, 2002
Ph.D., Johns Hopkins University, 2006
Andrew Hunter Hughes, Toronto, Canada
B.S., McMaster University, 2006
Ernest Taijin Jaramillo-Hanes, Napa, CA
B.S., United States Naval Academy, 2006
Emily Louise Johnson, Rochester, MN
B.A., Dartmouth College, 2003
Justin Michael Johnson, Fayetteville, NC
B.S., University of North Carolina (Chapel Hill), 2006
Kristen Elaine Johnson, Arlington, VA  
B.A., University of North Carolina (Chapel Hill), 2002

Kristin Hoi-Yan Kan, Arlington, TX  
B.A., Baylor University, 2005

Julie Frances King, Annapolis, MD  
B.A., Northwestern University, 1995

Phebe Sill Ko, North Salt Lake, UT  
B.S., Duke University, 2005

Kimiyoshi James Kobayashi, Waltham, MA  
B.S., Tufts University, 2004


Kavitha Padmanabhan Kolappa, Chocowinity, NC  
B.A., University of North Carolina (Chapel Hill), 2005

Benjamin Dylan Kornfeld, Deerfield, IL  
B.A., Washington University in St. Louis, 2006

Thomas Adam Kosztowski, Des Plaines, IL  
B.S., University of Illinois (Urbana), 2005

Janet Lynn Kowalski, Elgin, IL  
B.S., Purdue University, 2006

Karim Shiraz Ladha, Providence, RI  
B.A., Brown University, 2006

Elizabeth Nguyen Le, Tarzana, CA  
B.S., University of California (Los Angeles), 2005

Maggie R. Lesley, Alexandria, VA  
B.S., Georgia Institute of Technology, 2001

Edward Felix Lin, N Potomac, MD  
B.S., Massachusetts Institute of Technology, 2006

Jamie Gail Lipman, Andover, MA  
B.S., Brown University, 2001

Sarah Elizabeth Lusk, Prescott, AZ  
B.S., Arizona State University, 2006

Brandon Joseph Lynch, Prescott Valley, AZ  
B.S., University of Arizona, 2006

Crystal Mercia Malvoisin, Orangeburg, SC  
B.S., The University of Newcastle, 2006

David Reeve Marker, Fredericksburg, VA  
B.S., Brigham Young University, 2000

Chintan Hansraj Maru, Brookfield, CT  
B.A., Duke University, 2004

Simon C. Mathews, Suwanee, GA  
B.A., University of Virginia, 2004

Jeremy Robin McCallum, Saginaw, MI  
B.S., Johns Hopkins University, 2006

M.S., Johns Hopkins University, 2006

Matthew Miskimon, Perry Hall, MD  
B.S., University of Maryland (Baltimore County), 2002

Satish Misra, Cary, NC  
B.S., University of North Carolina (Chapel Hill), 2006

Monica Nitin Modi, Henderson, NV  
B.S., Yale University, 2006

Elizabeth Lauren Munter, Chesapeake, VA  
B.S., Georgia Institute of Technology, 2005

Asif Khan Mustafa, Harleysville, PA  
B.A., University of Pennsylvania, 2001

M.S., University of Pennsylvania, 2001

Kimanh Duong Nguyen, Castro Valley, CA  
B.A., University of California (Berkeley), 2005

Rita Phi-Thuy Tran Nguyen, San Jose, CA  
B.A., Stanford University, 2005

Trang Kim Nguyen, Baltimore, MD  
B.S., Johns Hopkins University, 2003

M.S., Johns Hopkins University, 2005

Junaid Nizamuddin, Roanoke, VA  
B.S., University of Virginia, 2006

Damaris Deryu Nou, Rockville, MD  
B.S., Yale University, 2005

Eric Nou, Eden Prairie, MN  
B.S., Yale University, 2005

Nathan Coleman Nussbaum, Charleston, SC  
B.A., Yale University, 2002

Julia Elizabeth Oat-Judge, Farmington, CT  
B.A., Yale University, 2006

Teresa Mary Kateri O’Herron, Newburgh, NY  
B.A., Bryn Mawr College, 2002

James Brendan O’Keefe, Centennial, CO  
B.A., Colorado College, 2006

Meghan Elizabeth O’Neill, Urbandale, IA  
B.S., University of Notre Dame, 2005

Chinedu Ifeinwia Onyedike, Williamsburg, VA  
B.S., University of Maryland (Baltimore County), 2004

Ryan Kenneth Oroso, Albuquerque, NM  
B.S., New Mexico State University, 2006

Kaustubha Dilip Patil, Hilliard, OH  
B.S., Johns Hopkins University, 2006

Joanna Kristine Pearson, Shelby, NC  
B.A., University of North Carolina (Chapel Hill), 2002

M.A., University College Dublin, 2003

Javier Perez-Rodriguez, Gainesville, FL  
B.S., University of Florida, 2006

Eleanor Lynne Pitz, Millers, MD  
B.S., College of William and Mary, 2006

David Yao Fei Poon, Mount Kisco, NY  
B.A., Harvard University, 2006

Srivatsan Raghavan, Pittsburgh, PA  
B.S., Massachusetts Institute of Technology, 1997

M.S., Massachusetts Institute of Technology, 1998

Ph.D., Johns Hopkins University School of Medicine, 2010

Nathaniel Thomas Readal, Allison Park, PA  
B.A., Johns Hopkins University, 2005

Zachery Roger Reichert, Crystal Lake, IL  
B.A., Washington University in St. Louis, 2002

Raymond E. Robinson, Davis, CA  
B.S., University of California (Davis), 2004

Sudip Kumar Saha, Louisville, KY  
B.S., Johns Hopkins University, 2006

Surajit Saha, Jackson Heights, NY  
B.A., Harvard University, 2006

Justin Michael Schaffer, Minneapolis, MN  
B.S., Stanford University, 2003

M.S., University of Minnesota (Twin Cities), 2006

Jessica Nicole Schmidt, Iowa City, IA  
B.A., Grinnell College, 2002
<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Education Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanie Schorr</td>
<td>Suffield, CT</td>
<td>B.A., Dartmouth College, 2006</td>
</tr>
<tr>
<td>Farzad Sedaghat</td>
<td>Timonium, MD</td>
<td>B.A., University of Virginia, 2006</td>
</tr>
<tr>
<td>Carolyn Margaret Senger</td>
<td>Okemos, MI</td>
<td>B.A., University of Michigan (Ann Arbor), 2006</td>
</tr>
<tr>
<td>Shannon J. C. Shan</td>
<td>Edmonton, Canada</td>
<td>B.S.C., University of Toronto, 2004</td>
</tr>
<tr>
<td>Farzad Sedaghat</td>
<td>Timonium, MD</td>
<td>B.A., University of Virginia, 2006</td>
</tr>
<tr>
<td>Eugenie Chia-Ching Shieh</td>
<td>Huntington Beach, CA</td>
<td>B.A., Harvard University, 2006</td>
</tr>
<tr>
<td>Siddharth Srivastava</td>
<td>Baton Rouge, LA</td>
<td>B.A., Columbia University, 2006</td>
</tr>
<tr>
<td>Sahael Stapleton</td>
<td>Quartz Hill, CA</td>
<td>B.S., University of California (Los Angeles), 2005</td>
</tr>
<tr>
<td>Melanie Schorr</td>
<td>Suffield, CT</td>
<td>B.A., Dartmouth College, 2006</td>
</tr>
<tr>
<td>Farzad Sedaghat</td>
<td>Timonium, MD</td>
<td>B.A., University of Virginia, 2006</td>
</tr>
<tr>
<td>Carolyn Margaret Senger</td>
<td>Okemos, MI</td>
<td>B.A., University of Michigan (Ann Arbor), 2006</td>
</tr>
<tr>
<td>Shannon J. C. Shan</td>
<td>Edmonton, Canada</td>
<td>B.S.C., University of Toronto, 2004</td>
</tr>
<tr>
<td>Farzad Sedaghat</td>
<td>Timonium, MD</td>
<td>B.A., University of Virginia, 2006</td>
</tr>
<tr>
<td>Eugenie Chia-Ching Shieh</td>
<td>Huntington Beach, CA</td>
<td>B.A., Harvard University, 2006</td>
</tr>
<tr>
<td>Siddharth Srivastava</td>
<td>Baton Rouge, LA</td>
<td>B.A., Columbia University, 2006</td>
</tr>
<tr>
<td>Sahael Stapleton</td>
<td>Quartz Hill, CA</td>
<td>B.S., University of California (Los Angeles), 2005</td>
</tr>
<tr>
<td>Tomeka Lynette Suber</td>
<td>Greensboro, NC</td>
<td>B.S., University of North Carolina (Chapel Hill), 2002</td>
</tr>
<tr>
<td>Timothy James Sutton</td>
<td>Chagrin Falls, OH</td>
<td>B.S., Rochester Institute of Technology, 2003</td>
</tr>
<tr>
<td>Ramya Narasimha Swamy</td>
<td>North Potomac, MD</td>
<td>B.S., University of Maryland (College Park), 2005</td>
</tr>
<tr>
<td>Shan Tang, Cary</td>
<td>NC</td>
<td>B.A., Harvard University, 2006</td>
</tr>
<tr>
<td>Stephanie Kenfack Tankou</td>
<td>Baltimore, MD</td>
<td>B.S., University of Illinois (Urbana), 2001</td>
</tr>
<tr>
<td>Joshua Tray Taylor</td>
<td>Tuscaloosa, AL</td>
<td>B.S., University of Alabama, 2006</td>
</tr>
<tr>
<td>Savyasachi Chandrashekh</td>
<td>Coral Springs, FL</td>
<td>B.S., University of Rochester, 2005</td>
</tr>
<tr>
<td>Beverlie Lui Ting</td>
<td>Vancouver, Canada</td>
<td>B.A., Harvard University, 2006</td>
</tr>
<tr>
<td>Mabel Patricia Toribio</td>
<td>Kenner, LA</td>
<td>B.S., Duke University, 2006</td>
</tr>
<tr>
<td>Yana Turovskaya</td>
<td>Plymouth, MN</td>
<td>B.S., Stanford University, 2006</td>
</tr>
<tr>
<td>Maya Subbalakshmi Venkataraman</td>
<td>Clifton Park, NY</td>
<td>B.S., Duke University, 2006</td>
</tr>
<tr>
<td>Cassandra Vanessa Villegas</td>
<td>Los Angeles, CA</td>
<td>B.S., Stanford University, 2000</td>
</tr>
<tr>
<td>Khinh Ranh Voong</td>
<td>Philadelphia, PA</td>
<td>B.A., University of Pennsylvania, 2005</td>
</tr>
<tr>
<td>Jingya Wang, Clarksville</td>
<td>MD</td>
<td>B.A., Yale University, 2006</td>
</tr>
<tr>
<td>Trevor Robert Williams</td>
<td>Clifton Park, NY</td>
<td>B.S., Tufts University, 2006</td>
</tr>
<tr>
<td>Samantha Leigh Williamson</td>
<td>Baltimore, MD</td>
<td>B.A., Princeton University, 2004</td>
</tr>
<tr>
<td>Stephen Scott Wreesman</td>
<td>Simi Valley, CA</td>
<td>B.S., Masters College, 2006</td>
</tr>
<tr>
<td>Florence Jeniffer Wu</td>
<td>Coral Springs, FL</td>
<td>B.A., Yale University, 2006</td>
</tr>
<tr>
<td>Ingrid Jingnan Wu</td>
<td>Livingston, NJ</td>
<td>B.A., Rutgers University, 2004</td>
</tr>
<tr>
<td>Ming Ming Xu</td>
<td>Whippany, NJ</td>
<td>B.A., Washington University in St. Louis, 2006</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Education Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferhina Sultana Ali</td>
<td>Staten Island, NY</td>
<td>B.S., University of Rochester, 2007</td>
</tr>
<tr>
<td>Martha Obeng Amoako</td>
<td>Triangle, VA</td>
<td>B.S., Brown University, 2007</td>
</tr>
<tr>
<td>Maralysa Angelique Bann</td>
<td>Eden Prairie, MN</td>
<td>B.S., University of Minnesota (Twin Cities), 2006</td>
</tr>
<tr>
<td>Bradley Powers Barnett</td>
<td>Clifton, VA</td>
<td>B.A., University of Virginia, 2001</td>
</tr>
<tr>
<td>Leonid Bartik</td>
<td>Tucson, AZ</td>
<td>B.S., University of Arizona, 2006</td>
</tr>
<tr>
<td>Shamin Bhattacharyya</td>
<td>Chelmsford, MA</td>
<td>B.S., Yale University, 2007</td>
</tr>
<tr>
<td>Jennifer Xiaojin Cai</td>
<td>Canton, MI</td>
<td>B.A., Harvard University, 2007</td>
</tr>
<tr>
<td>Ashley Anderson Campbell</td>
<td>New Haven, CT</td>
<td>B.S., Yale University, 2007</td>
</tr>
<tr>
<td>Elizabeth Marie Catherwood</td>
<td>Chevy Chase, MD</td>
<td>B.S., United States Air Force Academy, 2007</td>
</tr>
<tr>
<td>Ravi Anant Chandra</td>
<td>Berkeley, CA</td>
<td>B.S., Stanford University, 2002</td>
</tr>
<tr>
<td>Daniel S. Chang</td>
<td>Santa Monica, CA</td>
<td>B.S., University of California (Berkeley), 2007</td>
</tr>
<tr>
<td>Rupsa Chaudhury</td>
<td>Lexington, MA</td>
<td>B.A., Rice University, 2007</td>
</tr>
<tr>
<td>James Xiao Chen</td>
<td>Boys, MD</td>
<td>B.S., University of Connecticut, 2007</td>
</tr>
<tr>
<td>Nancy Cheng</td>
<td>Wichita, KS</td>
<td>B.A., Harvard University, 2007</td>
</tr>
<tr>
<td>Matthew Tyler Crim</td>
<td>Cartersville, GA</td>
<td>B.A., University of Georgia, 2005</td>
</tr>
<tr>
<td>Clare Dean, Clarksville</td>
<td>MD</td>
<td>B.S., University of Georgia, 2005</td>
</tr>
<tr>
<td>Peter James DeBartolo</td>
<td>Tempe, AZ</td>
<td>B.S., Arizona State University, 2007</td>
</tr>
<tr>
<td>Kenneth William DeFontes</td>
<td>Kingsville, MD</td>
<td>B.S., College of William and Mary, 2007</td>
</tr>
</tbody>
</table>
Joshua Adam Denney, Birmingham, AL  
B.S., University of Georgia, 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

Jodel Giraud, Malden, MA  
B.S., University of Massachusetts (Boston), 1998

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 Halbsgut, Cary, NC  
B.A., Yale University, 2007

Catherine Elizabeth Handy, Westbury, NY  
B.A., Harvard University, 2006

Aisha Harun, Madison, WI  
B.S., University of Wisconsin (Madison), 2007

Edmund Doi-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

Adam Iddriss, Baltimore, MD  
B.S., University of Pittsburgh, 2007

Omar Farooq Ishaq, Panama City, FL  
B.S., University of Florida, 2007

Alan Richard Johnson, Lyndonville, NY  
B.S., Houghton College, 2007

Kopal Shama Kulkarni, State College, PA  
B.A., Stanford University, 2007

M.A., Stanford University, 2007

Thomas Adam Lardaro, Wakefield, RI  
B.S., University of Connecticut, 2005

Cecilia Alejandra Larocca, Bronx, NY  
B.S., Cornell University, 2006

HeeWon Lee, Denver, CO  
B.A., Harvard University, 2006

Kathleen C. Lee, Sudbury, Ontario, Canada  
B.S., Princeton University, 2007

Jessica Li, San Francisco, CA  
B.S., Stanford University, 2007

Daniel En-Hao Ling, San Diego, CA  
B.A., Harvard University, 2005

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

B.S., University of California (Berkeley), 2007

Lia Ilona Losonczy, Yonkers, NY  
B.A., Columbia University, 2006

Raoul James Manalac, Zachary, LA  
B.S., Louisiana State University (Baton Rouge), 2007

Diana Lauren Mandelker, East Northport, NY  
B.S., Yale University, 2003

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

Chad Edward McCarthy, Baltimore, MD  
B.S., University of Maryland (College Park), 2005

M.A., Johns Hopkins University, 2007

Ross Howard McMillan, Tallahassee, FL  
B.S., Morehouse College, 2007

Melanie McNally, Manchester, NH  
B.S., Boston College, 2006

Vivek Arjun Mehta, Orange, CA  
B.S., University of California (Irvine), 2006

Brandon Michael Metcalf, Catonsville, MD  
B.S., Washington College, 2006

Di Mu, Philadelphia, PA  
A.B., Harvard University, 2007

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

450 STUDENTS
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandra Rose Paul</td>
<td>Gansevoort, NY</td>
<td>B.S., Union College (New York), 2007</td>
</tr>
<tr>
<td>Courtney Anne Pendleton</td>
<td>Plainville, CT</td>
<td>B.S., New York University, 2004</td>
</tr>
<tr>
<td>Matthew Eugene Peters</td>
<td>Northumberland, PA</td>
<td>B.S., Pennsylvania State University, 2007</td>
</tr>
<tr>
<td>Matthew Eugene Peters</td>
<td>Northumberland, PA</td>
<td>B.S., Pennsylvania State University, 2007</td>
</tr>
<tr>
<td>Richard Arthur Pollock</td>
<td>Lake Orion, MI</td>
<td>B.S., Michigan State University, 2007</td>
</tr>
<tr>
<td>Haoming Qiu</td>
<td>Shrewsbury, MA</td>
<td>B.A., Cornell University, 2007</td>
</tr>
<tr>
<td>Sarah Roxana Ramsay</td>
<td>New York, NY</td>
<td>B.A., Columbia University, 2005</td>
</tr>
<tr>
<td>Elizabeth Sara Rosenblatt</td>
<td>Bethesda, MD</td>
<td>B.S., Massachusetts Institute of Technology, 2007</td>
</tr>
<tr>
<td>Jessica Kerr Schifman</td>
<td>Atlanta, GA</td>
<td>B.A., Cornell University, 2005</td>
</tr>
<tr>
<td>Jeremy Adam Schneider</td>
<td>St. Louis, MO</td>
<td>B.A., Stanford University, 2007</td>
</tr>
<tr>
<td>Pokmeng See</td>
<td>San Jose, CA</td>
<td>B.S., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Kumaran Senthil</td>
<td>North Potomac, MD</td>
<td>B.S., University of Maryland (College Park), 2007</td>
</tr>
<tr>
<td>B.S., University of Maryland (College Park), 2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joseph P. Shader</td>
<td>Corvallis, OR</td>
<td>B.S., Oregon State University, 2006</td>
</tr>
<tr>
<td>Adam Christopher Shaner</td>
<td>Manhattan, KS</td>
<td>B.S., University of Kansas, 2007</td>
</tr>
<tr>
<td>Nathan William Skelley</td>
<td>Joplin, MO</td>
<td>B.S., Cornell University, 2007</td>
</tr>
<tr>
<td>Michael Charles Smith Jr.</td>
<td>Waco, TX</td>
<td>B.A., University of Texas (Austin), 2005</td>
</tr>
<tr>
<td>Justin Alexander Soboorno</td>
<td>Wichita, KS</td>
<td>M.P.H., Yale University, 2007</td>
</tr>
<tr>
<td>Jason Frank Solus</td>
<td>Oak Lawn, IL</td>
<td>B.A., University of Chicago, 2007</td>
</tr>
<tr>
<td>Arielle Alexandra Stewart</td>
<td>Arlington, VA</td>
<td>B.A., Virginia Commonwealth University, 2006</td>
</tr>
<tr>
<td>Miriam Tamar Stewart</td>
<td>Baltimore, MD</td>
<td>B.A., Yale University, 2002</td>
</tr>
<tr>
<td>Sophia Anne Strike</td>
<td>Takoma Park, MD</td>
<td>B.S.E., Duke University, 2007</td>
</tr>
<tr>
<td>Daniel Quain Sun</td>
<td>Edmonton/Alberta, Canada</td>
<td>B.S., University of Pennsylvania, 2007</td>
</tr>
<tr>
<td>Jacob Louis Taylor</td>
<td>Chevy Chase, MD</td>
<td>B.A., Yale University, 2003</td>
</tr>
<tr>
<td>Jeffrey John Tosoian</td>
<td>South Lyon, MI</td>
<td>B.S., University of Michigan (Ann Arbor), 2007</td>
</tr>
<tr>
<td>Christine Ngoc Bich Tran</td>
<td>Baltimore, MD</td>
<td>B.S., Cornell University, 2007</td>
</tr>
<tr>
<td>Allison Leigh Tsao</td>
<td>Newburyport, MA</td>
<td>B.S., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Natalia Vlassova</td>
<td>Los Angeles, CA</td>
<td>B.S., University of California (Los Angeles), 2007</td>
</tr>
<tr>
<td>Trang Minh Vu</td>
<td>Baltimore, MD</td>
<td>B.S., University of Maryland (College Park), 2007</td>
</tr>
</tbody>
</table>

**SECOND YEAR**

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sameer Ahmed</td>
<td>Edison, NJ</td>
<td>B.S., Cornell University, 2007</td>
</tr>
<tr>
<td>Hamid R. Alai</td>
<td>Tampa, FL</td>
<td>B.A., University of South Florida, 2008</td>
</tr>
<tr>
<td>Anubhav Gautam Amin</td>
<td>Hasbrouck Heights, NJ</td>
<td>B.S., New York University, 2008</td>
</tr>
<tr>
<td>Kamna Singh Balhara</td>
<td>Sugar Land, TX</td>
<td>B.A., Rice University, 2007</td>
</tr>
<tr>
<td>Jathin Bandari</td>
<td>Westborough, MA</td>
<td>B.S., University of Rochester, 2008</td>
</tr>
<tr>
<td>Jillian Tracey Baron</td>
<td>Lansdale, PA</td>
<td>B.A., Brown University, 2007</td>
</tr>
<tr>
<td>Hatic Basdag</td>
<td>Baltimore, MD</td>
<td>B.S., Johns Hopkins University, 2006</td>
</tr>
<tr>
<td>M.S., Johns Hopkins University, 2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John Patrick Begly</td>
<td>Geneva, NY</td>
<td>B.S., McGill University, 2008</td>
</tr>
<tr>
<td>Matthew Travis Bender</td>
<td>Chicago, IL</td>
<td>B.A., Yale University, 2006</td>
</tr>
<tr>
<td>Catherine Stebbins Bennet</td>
<td>Chester, CT</td>
<td>B.S., Georgetown University, 2006</td>
</tr>
<tr>
<td>Allison Diane Berry</td>
<td>Baltimore, MD</td>
<td>B.A., Lawrence University, 2007</td>
</tr>
<tr>
<td>Eike Blohm</td>
<td>Missoula, MT</td>
<td>B.A., University of Montana (Missoula), 2007</td>
</tr>
<tr>
<td>Morgan Michelle Bonds</td>
<td>Hutchinson, KS</td>
<td>B.S., Kansas State University, 2008</td>
</tr>
<tr>
<td>Jessica Jane Briggs</td>
<td>Katy, TX</td>
<td>B.A., University of Texas (Austin), 2008</td>
</tr>
<tr>
<td>B.S., University of Texas (Austin), 2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benjamin Asby Brinton</td>
<td>Salt Lake City, UT</td>
<td>B.A., Brigham Young University, 2006</td>
</tr>
<tr>
<td>Kevin Broderick</td>
<td>Columbia, MD</td>
<td>B.S., United States Military Academy, 2008</td>
</tr>
<tr>
<td>Kate Josephine Buretta</td>
<td>East Troy, WI</td>
<td>B.S., University of Wisconsin (Madison), 2008</td>
</tr>
<tr>
<td>Alejandro Candelario</td>
<td>Plano, TX</td>
<td>B.A., Yale University, 2003</td>
</tr>
<tr>
<td>Christine Harman Cary</td>
<td>Oakton, VA</td>
<td>B.A., University of Virginia, 2008</td>
</tr>
<tr>
<td>Kevin Zou Chang</td>
<td>Arcadia, CA</td>
<td>B.A., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Lisa Yinhua Chen</td>
<td>Edina, MN</td>
<td>B.S., Duke University, 2007</td>
</tr>
<tr>
<td>Name</td>
<td>City, State</td>
<td>Degree(s)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Yian Chen</td>
<td>Los Angeles, CA</td>
<td>B.S., Yale University, 2008</td>
</tr>
<tr>
<td>Alyssa Yoorim Choi</td>
<td>Issaquah, WA</td>
<td>B.A., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Joani Marie Christensen</td>
<td>Santa Claus, IN</td>
<td>B.A., Vanderbilt University, 2007</td>
</tr>
<tr>
<td>Julia Dawn Colchamiro-Smart</td>
<td>Annapolis, MD</td>
<td>B.A., New York University, 2006</td>
</tr>
<tr>
<td>Kate Hannah Cole</td>
<td>Owings Mills, MD</td>
<td>B.A., Dartmouth College, 2002</td>
</tr>
<tr>
<td>Zachary Allen Corder</td>
<td>Bannock, OH</td>
<td>B.S., Ohio State University, 2008</td>
</tr>
<tr>
<td>Solange Eryl Cox</td>
<td>South Hadley, MA</td>
<td>B.A., Mount Holyoke College, 2008</td>
</tr>
<tr>
<td>David Do</td>
<td>Savage, MN</td>
<td>B.M.E., University of Minnesota (Twin Cities), 2008</td>
</tr>
<tr>
<td>Mahmood El-Gasim</td>
<td>Phoenix, AZ</td>
<td>B.S., Duke University, 2008</td>
</tr>
<tr>
<td>Laura Elizabeth Ellington</td>
<td>Greenville, TX</td>
<td>B.A., Austin College, 2008</td>
</tr>
<tr>
<td>Katherine Anne Fallano</td>
<td>Parkton, MD</td>
<td>B.A., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Tom Shi Feng, Madison</td>
<td>MS</td>
<td>B.A., Princeton University, 2008</td>
</tr>
<tr>
<td>Julie Cathleen Fields</td>
<td>Seabrook, SC</td>
<td>B.S., University of Maryland (Baltimore County), 2008</td>
</tr>
<tr>
<td>Timothy Theodore Fierlage</td>
<td>Reisterstown, MD</td>
<td>B.S., Vanderbilt University, 2007</td>
</tr>
<tr>
<td>Edmond Nketti Fomunung</td>
<td>Athens, GA</td>
<td>B.S., University of Georgia, 2008</td>
</tr>
<tr>
<td>Shiv Gandhi</td>
<td>Mableton, GA</td>
<td>B.S., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Mikhail Mikhailovich Gorbounov</td>
<td>South Windsor, CT</td>
<td>B.S., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Lark Julie Greenwald</td>
<td>Rancho Mirage, CA</td>
<td>B.S., Yale University, 2008</td>
</tr>
<tr>
<td>Inna V. Grishkan</td>
<td>Newton, MA</td>
<td>B.S., Boston College, 2008</td>
</tr>
<tr>
<td>Zachary David Guss</td>
<td>Rancho Mirage, CA</td>
<td>B.A., Harvard University, 2008</td>
</tr>
<tr>
<td>Sarah J. Hahn</td>
<td>Lutherville, MD</td>
<td>B.A., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Thomas Carroll Hanff</td>
<td>Los Angeles, CA</td>
<td>B.S., University of California (Los Angeles), 2008</td>
</tr>
<tr>
<td>Amanda May Hong</td>
<td>Beavercreek, OH</td>
<td>B.A., Case Western Reserve University, 2008</td>
</tr>
<tr>
<td>Nigel Naichieh Hsu</td>
<td>Edison, NJ</td>
<td>B.A., Dartmouth College, 2008</td>
</tr>
<tr>
<td>Khaldia Ibrahim</td>
<td>Alexandria, VA</td>
<td>A.B., Harvard University, 2004</td>
</tr>
<tr>
<td>Christopher Mitchell Jackson</td>
<td>Lebanon, VA</td>
<td>B.A., Wake Forest University, 2008</td>
</tr>
<tr>
<td>Amit Jain</td>
<td>Portland, OR</td>
<td>B.S., University of California (Berkeley), 2008</td>
</tr>
<tr>
<td>Sarah Elizabeth Johnstone</td>
<td>Cambridge, MA</td>
<td>B.A., University of Chicago, 2001</td>
</tr>
<tr>
<td>Ph.D., Massachusetts Institute of Technology, 2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arun Jose</td>
<td>Commack, NY</td>
<td>B.S., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Tymoteusz Jan Kajstura</td>
<td>Ossining, NY</td>
<td>B.A., Oberlin College, 2007</td>
</tr>
<tr>
<td>Elizabeth Ann Ketner</td>
<td>Columbia, MD</td>
<td>B.A., University of Colorado, 2004</td>
</tr>
<tr>
<td>M.H.S., Johns Hopkins Bloomberg School of Public Health, 2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christina Sookjin Kim</td>
<td>Sammamish, WA</td>
<td>B.A., Johns Hopkins University, 2006</td>
</tr>
<tr>
<td>Karan Kumar</td>
<td>Mississauga, Canada</td>
<td>B.S., Cornell University, 2007</td>
</tr>
<tr>
<td>Carmen Kut</td>
<td>Baltimore, MD</td>
<td>B.S., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Marian Grace Lacy</td>
<td>Flagstaff, AZ</td>
<td>B.S., University of Arizona, 2007</td>
</tr>
<tr>
<td>Spencer Truman Lake</td>
<td>Saint James, MD</td>
<td>B.S., Stanford University, 2003</td>
</tr>
<tr>
<td>Lisa Danielle Lareau</td>
<td>Westborough, MA</td>
<td>B.A., Harvard University, 2006</td>
</tr>
<tr>
<td>Kathleen Anne Lee</td>
<td>Weston, MA</td>
<td>B.A., Harvard University, 2006</td>
</tr>
<tr>
<td>Nicole Leistikow</td>
<td>Baltimore, MD</td>
<td>B.A., Yale University, 1996</td>
</tr>
<tr>
<td>Xuan Thanh Le-Nguyen</td>
<td>Forest Park, GA</td>
<td>B.S., Yale University, 2008</td>
</tr>
<tr>
<td>Brian Min-hann Lin</td>
<td>Oakland, MI</td>
<td>B.A., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Geoffrey Martin Lynn</td>
<td>Deland, FL</td>
<td>B.S., Elon College, 2007</td>
</tr>
<tr>
<td>Marisa Kristeen Matthys</td>
<td>Farmington Hills, MI</td>
<td>B.S., University of Michigan (Ann Arbor), 2008</td>
</tr>
<tr>
<td>Elizabeth Harlan Michelle</td>
<td>Charlotte, NC</td>
<td>B.S., University of Richmond, 2008</td>
</tr>
<tr>
<td>Marko Mircetic</td>
<td>Des Plaines, IL</td>
<td>B.A., Grinnell College, 2005</td>
</tr>
<tr>
<td>Alisa Mo</td>
<td>Plano, TX</td>
<td>B.A., Cornell University, 2008</td>
</tr>
<tr>
<td>Amir Moheb Mohareb</td>
<td>Toronto, Canada</td>
<td>B.S., York University, 2008</td>
</tr>
<tr>
<td>Camilo Alejandro Molina</td>
<td>Naples, FL</td>
<td>B.A., Miami University, 2008</td>
</tr>
<tr>
<td>Craig Bryant Hjemdahl Monsen</td>
<td>Bedford, NY</td>
<td>B.A., Harvard University, 2008</td>
</tr>
<tr>
<td>Amanda Jane Morris</td>
<td>N. Potomac, MD</td>
<td>B.S., Massachusetts Institute of Technology, 2008</td>
</tr>
<tr>
<td>Jonathan Fink Mosser</td>
<td>York, PA</td>
<td>B.A., Middlebury College, 2006</td>
</tr>
<tr>
<td>Benjamin Clark Murphy</td>
<td>Charlottesville, VA</td>
<td>B.S., University of Virginia, 2007</td>
</tr>
<tr>
<td>Julie Chung Lam Ng</td>
<td>Richmond, BC</td>
<td>B.A., University of British Columbia, 2008</td>
</tr>
<tr>
<td>John Hone Nichols</td>
<td>Somerville, MA</td>
<td>B.A., Dartmouth College, 2001</td>
</tr>
</tbody>
</table>
Kurun Partap Singh Oberoi, Queens Village, NY
B.S., University of Michigan (Ann Arbor), 2008

Chiagozie Oluchi Ononiuw, Belltsville, 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

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

Yelena Prints, San Jose, CA
B.S., Stanford University, 2006

Sarah Brown Puryear, Athens, GA
B.S., University of Georgia, 2007

Rebecca Lynett Recker, Placentia, CA
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
M.S., University of Wisconsin (Madison), 2007
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

Paul Christopher Scherer, Media, PA
B.A., University of Pennsylvania, 2008

Eric Lewis Dutton Scholten, West Des Moines, IA
B.A., Saint Olaf College, 2008

Helen Celeste Selonick, Crownsville, MD
B.A., Williams College, 2007

Eliash Ruth Shamir, Vienna, VA
B.S., University of Virginia, 2008

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

Katherine Ann Sperle, Bethesda, MD
B.S., Georgetown University, 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

Seth Logan Studer, Monroe City, MO
B.S., University of Missouri (Columbia), 2004

Joel Chaim Sunshine, Potomac, MD
B.S., Brandeis University, 2007
M.S., Brandeis University, 2007

Sarah Brem Sunshine, Owings Mills, MD
B.S., Brandeis University, 2008

John Lorenzo Thurston Jr., Miramar, FL
B.S., University of Miami, 2008

Amy Ruth Unterman, Pacific Palisades, CA
B.A., Princeton University, 2008

Suzanne Westbrook van Landingham, Great Falls, VA
B.A., Princeton University, 2008

Vadim Andre Villarroel, Belmont, MA
B.A., Dartmouth College, 2004

Aaron Wendell Wallman, New York, NY
B.A., Amherst College, 2005

Rudi Wang, Houston, TX
B.S., Stanford University, 2008

Paul Logan Weygandt, Johnstown, PA

Aaron Tyler Wild, Quaker Hill, CT
B.A., Yale University, 2008

Samuel Thomas Wilkinson, Hamilton, VA
B.S., Brigham Young University, 2008

Luke Allister Wylie, Baltimore, MD
B.A., University of California (San Diego), 2007
B.S., University of California (San Diego), 2007

Eunice Yang, Mendota Heights, MN
B.A., Harvard University, 2008

Phyllis Shan-Chun Yang, Overland Park, KS
B.A., University of Pennsylvania, 2008

Jithin Yohannan, Nanuet, NY
B.A., New York University, 2008

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.S., Johnstown College, 2008

Jennifer Qi Zhang, Woodridge, IL
B.S., Massachusetts Institute of Technology, 2008

124

FIRST YEAR

Ishrat Ahmed, Chesterfield, MO
B.S., Johns Hopkins University, 2009
M.S., Johns Hopkins University, 2009

Javad Raymond Azadi, Columbus, OH
B.S., Ohio State University, 2009

Kaylin Jessica Beck, Ridgewood, NY
B.A., Siena College, 2008
B.S., Siena College, 2008

Jennifer Qi Zhang, Woodridge, IL
B.S., Massachusetts Institute of Technology, 2008

Neal Bhatiani, Winter Haven, FL
B.S., Duke University, 2009
<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Ioshua Brener</td>
<td>Beachwood, OH</td>
<td>B.A., Columbia University, 2009</td>
</tr>
<tr>
<td>Tyler Steven Brown</td>
<td>Reno, NV</td>
<td>B.A., Princeton University, 2006</td>
</tr>
<tr>
<td>Megan Elizabeth Buress</td>
<td>Baltimore, MD</td>
<td>B.A., Harvard University, 2008</td>
</tr>
<tr>
<td>Kevin Butler</td>
<td>Loveland, CO</td>
<td>B.S., University of Colorado (Boulder), 2004</td>
</tr>
<tr>
<td>Christopher Robert Cashman</td>
<td>Boston, MA</td>
<td>B.A., Bowdoin College, 2007</td>
</tr>
<tr>
<td>Heather Jane Chalfin</td>
<td>Ellicott City, MD</td>
<td>B.S., Carnegie Mellon University, 2009</td>
</tr>
<tr>
<td>David Sining Chen</td>
<td>Clarksville, MD</td>
<td>B.S., University of Maryland (College Park), 2009</td>
</tr>
<tr>
<td>Eben Clattenburg</td>
<td>Perkinsville, VT</td>
<td>B.A., Dartmouth College, 2009</td>
</tr>
<tr>
<td>Lauren Marie Clough</td>
<td>Rochester Hills, MI</td>
<td>B.S., Brigham Young University, 2009</td>
</tr>
<tr>
<td>Nathan E. Cutler</td>
<td>Peru, IN</td>
<td>B.S., University of Notre Dame, 2009</td>
</tr>
<tr>
<td>Meghan Desale</td>
<td>Sunnyvale, CA</td>
<td>B.A., Boston University, 2008</td>
</tr>
<tr>
<td>Avani Satish Dholakia</td>
<td>Middlesboro, KY</td>
<td>B.S., Yale University, 2009</td>
</tr>
<tr>
<td>Jonathan Carl Dudley</td>
<td>Grand Rapids, MI</td>
<td>B.S., Calvin College, 2006</td>
</tr>
<tr>
<td>Jonathan Dyal</td>
<td>Sarasota, FL</td>
<td>B.A., Stanford University, 2008</td>
</tr>
<tr>
<td>Ramy El-Diwany</td>
<td>Washington, DC</td>
<td>B.A., University of California (Berkeley), 2008</td>
</tr>
<tr>
<td>Katherine Yu-Ting Fan</td>
<td>Port Moody, Canada</td>
<td>B.S., Duke University, 2008</td>
</tr>
<tr>
<td>Jose Miguel Flores</td>
<td>Dover, PA</td>
<td>B.S., Pennsylvania State University, 2009</td>
</tr>
<tr>
<td>Emilee Cahill Flynn</td>
<td>Baltimore, MD</td>
<td>B.S., Canisius College, 2008</td>
</tr>
<tr>
<td>Mariam Lomaico Olivia Fofana</td>
<td>Edina, MN</td>
<td>A.B., Harvard University, 2006</td>
</tr>
<tr>
<td>Mirinda Ann Gillespie</td>
<td>Baltimore, MD</td>
<td>B.A., Yale University, 2005</td>
</tr>
<tr>
<td>Brenda Laliz</td>
<td>Williamsburg, VA</td>
<td>M.S., Johns Hopkins Bloomberg School of Public Health, 2009</td>
</tr>
<tr>
<td>Brian Chun Kim Goh</td>
<td>Baton Rouge, LA</td>
<td>B.S., Louisiana State University (Baton Rouge), 2009</td>
</tr>
<tr>
<td>Brian Wayne Goldner</td>
<td>Sacramento, CA</td>
<td>B.A., Emory University, 2008</td>
</tr>
<tr>
<td>Chad Samuel Gorbatskin</td>
<td>Decatur, GA</td>
<td>B.A., Dartmouth College, 2008</td>
</tr>
<tr>
<td>Rachel Jennifer Gottlieb</td>
<td>Williamsville, NY</td>
<td>B.A., Harvard University, 2009</td>
</tr>
<tr>
<td>Yihe Guan</td>
<td>Ann Arbor, MI</td>
<td>B.S., University of Michigan, 2008</td>
</tr>
<tr>
<td>Richa Gupta</td>
<td>El Paso, TX</td>
<td>B.S., University of Texas (Austin), 2009</td>
</tr>
<tr>
<td>Vikash Gupta</td>
<td>Towson, MD</td>
<td>B.S., University of Maryland (College Park), 2007</td>
</tr>
<tr>
<td>Alexander Scott Harding</td>
<td>Baltimore, MD</td>
<td>B.A., Yale University, 2008</td>
</tr>
<tr>
<td>Thomas Harrison Heflin</td>
<td>Camino, CA</td>
<td>B.A., University of California (Davis), 2009</td>
</tr>
<tr>
<td>Jessica Felicia Henderson</td>
<td>Lithonia, GA</td>
<td>B.A., Hampton University, 2009</td>
</tr>
<tr>
<td>Antony Hsieh</td>
<td>Tucson, AZ</td>
<td>B.S., University of Arizona, 2008</td>
</tr>
<tr>
<td>Ian Hsu</td>
<td>Troy, MI</td>
<td>B.S., University of Michigan (Ann Arbor), 2009</td>
</tr>
<tr>
<td>Rwo-Wen Huang</td>
<td>Walnut, CA</td>
<td>B.A., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Matthew George Huddle</td>
<td>Bloomington, IL</td>
<td>B.A., Illinois Wesleyan University, 2009</td>
</tr>
<tr>
<td>Stephen Kelly Jacobsen</td>
<td>Springfield, MO</td>
<td>B.S., University of Missouri (Rolla), 2001</td>
</tr>
<tr>
<td>Bonnie Marie Kaas</td>
<td>Myersville, MD</td>
<td>B.S., Ursinus College, 2009</td>
</tr>
<tr>
<td>Darya Aleksandrov Kizub</td>
<td>Baltimore, MD</td>
<td>B.A., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Lakshmi Krishnan</td>
<td>Sugar Land, TX</td>
<td>B.A., Wake Forest University, 2006</td>
</tr>
<tr>
<td>Yuen-Ting Kwong</td>
<td>Timonium, MD</td>
<td>B.A., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Janet Yum Lee</td>
<td>Philadelphia, PA</td>
<td>B.A., Princeton University, 1999</td>
</tr>
<tr>
<td>Jason Evan Liebowitz Jr.</td>
<td>Rockville, MD</td>
<td>J.D., Harvard University, 2003</td>
</tr>
<tr>
<td>Worawan Limpitikul</td>
<td>Songkhla, Thailand</td>
<td>B.S., Johns Hopkins University, 2009</td>
</tr>
<tr>
<td>Thomas William Link</td>
<td>Holbrook, NY</td>
<td>B.S., Johns Hopkins University, 2007</td>
</tr>
<tr>
<td>Dianna Liu</td>
<td>Town And Country, MO</td>
<td>B.S., Stanford University, 2009</td>
</tr>
<tr>
<td>Lucy Hsinlu Liu</td>
<td>Cupertino, CA</td>
<td>B.S., Johns Hopkins University, 2008</td>
</tr>
<tr>
<td>Minghao Liu</td>
<td>Bronx, NY</td>
<td>B.S., Yale University, 2009</td>
</tr>
<tr>
<td>Heather Ga Hyung Lyu</td>
<td>Edinburg, VA</td>
<td>B.A., University of Virginia, 2009</td>
</tr>
<tr>
<td>Sara Alleen Madanikia</td>
<td>Bethesda, MD</td>
<td>B.S., Georgetown University, 2008</td>
</tr>
<tr>
<td>Ian-James Knute Malm</td>
<td>East Greenwich, RI</td>
<td>B.A., Macalester College (St. Paul), 2008</td>
</tr>
<tr>
<td>Chih-Ping Mao</td>
<td>Austin, TX</td>
<td>B.S., Johns Hopkins University, 2009</td>
</tr>
<tr>
<td>Caitlin Eileen Martin</td>
<td>Chapel Hill, NC</td>
<td>B.S., University of North Carolina (Chapel Hill), 2008</td>
</tr>
<tr>
<td>Priya Mary Mathews</td>
<td>Silver Spring, MD</td>
<td>B.S., University of Maryland (Baltimore County), 2009</td>
</tr>
<tr>
<td>Peter Christian McCaffrey</td>
<td>Dallas, TX</td>
<td>B.A., Southern Methodist University, 2009</td>
</tr>
</tbody>
</table>
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 Igoevna Nikolaeva, Champaign, IL  
B.S., Johns Hopkins University, 2008

Ashwini Nirjan, 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

Hiten Dilip 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 Ryback, Muncie, IN  
B.S., University of Notre Dame, 2009

Roger William Samuels, Baltimore, MD  
B.S., Syracuse University, 2004

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
M.D. CANDIDATES IN SPECIAL PROGRAMS

Jane Laurel Andrews, Cincinnati, OH
  B.A., Northwestern University, 2005; M.P.H. candidate, Bloomberg School of Public Health
Ifeanyi Ugochukwu Anidi, Hyde Park, MA
  B.S., Yale University, 2006; Ph.D. candidate, Bloomberg School of Public Health
Jordan J. Ash, Mesa, AZ
  B.S., Brigham Young University, 2006; M.P.H. candidate, Bloomberg School of Public Health
N'Dama Miankanze Bamba, Baltimore, MD
  B.S., Morgan State University, 2005; M.H.S., Johns Hopkins Bloomberg School of Public Health, 2006; Student in Residence: Research in Emergency Medicine
Noy Bassik, Fair Lawn, NJ
  B.S., Rutgers University, 2003; B.S., Rutgers University, 2004; Ph.D. candidate, Whiting School of Engineering
Elizabeth Eileen Bell, Baltimore, MD
  B.S., University of Notre Dame, 2005; Ph.D. candidate, Human Genetics
Agedi Nicholson Boto, Baltimore, MD
  B.S., California Institute of Technology, 2002; Ph.D. candidate, Pharmacology and Molecular Sciences
Kelly Patricia Burke, Woodbury, MN
  B.A., Kenyon College, 2006; Ph.D. candidate, Immunology
Michael Anthony Bushey, Utica, NY
  B.S., University of Pittsburgh, 2004; Ph.D. candidate, Cellular and Molecular Medicine
Emilia Louise Picard Campbell, Haiku, HI
  B.A., Wesleyan University (Connecticut), 2005; Student in Residence: Doris Duke Fellowship
Abigail Leigh Youngberg Carlson, Rochester, MN
  B.A., Wellesley College, 2005; Student in Residence: Research in Epidemiology and Infection Control
James Terrance Carson, Battle Creek, MI
  B.S., University of Michigan (Ann Arbor), 2006; M.P.H. candidate, Bloomberg School of Public Health
Deanna Rae Cottomai, Columbus, OH
  B.A., Ohio State University, 2005; B.S., Ohio State University, 2005; Student in Residence: Doris Duke Fellowship
Raymond Cheong, Columbia, MD
  B.S., University of Maryland (College Park), 2002; Ph.D. candidate, Biomedical Engineering
Raghu Ram Chivukula, Wichita, KS
  B.A., Johns Hopkins University, 2005; Ph.D. candidate, Human Genetics
Shelly Seungah Choo, Paramus, NJ
  A.B., Harvard University, 2006; Student in Residence: Doris Duke Fellowship
Andrea Lauren Christman, Owings Mills, MD
  B.A., Johns Hopkins University, 2006; Ph.D. candidate, Bloomberg School of Public Health
Kavan Terrence Clifford, Atlanta, GA
  B.S., Morehouse College, 2003; Ph.D. candidate, Neuroscience
Benjamin Ross Cohen, Atlanta, GA
  B.A., Dartmouth College, 2005; Student in Residence: Research in Urologic Oncology
Tricia Ruth Cottrell, St. Louis, MO
  B.S., Washington University in St. Louis, 2004; Ph.D. Candidate, Cellular and Molecular Medicine
Robert Jamal Drummond, Jacksonville, FL
  B.S., Morehouse College, 2002; Ph.D. candidate, Cellular and Molecular Medicine
Jared James Eddy, Avon, CT
  B.A., Brown University, 2004; Ph.D. candidate, University of Cambridge
Jeffrey Tevebaugh Ehmsen, Goleta, CA
  B.S., University of California (Irvine), 2001; M.S., University of Oxford, 2003; Ph.D. candidate, Neuroscience
Caitlin Conner Engelhard, Crozet, VA
  B.A., Swarthmore College, 2003; Ph.D. candidate, Neuroscience
Paul Esteso, Tallahassee, FL
  B.S., Florida State University, 2004; Ph.D. candidate, Cellular and Molecular Medicine
Oluwatoso Oyefolake Fatusin, Houston, TX
  B.S., Baylor University, 2005; M.P.H. candidate, Bloomberg School of Public Health
Maria Esteli Garcia, Oakland, CA
  B.A., University of California (Berkeley), 2003; Student in Residence: Fogarty Research Fellowship
Matthew Avery Gibson, Charlottesville, VA
  B.S., West Virginia University, 2002; Ph.D. candidate, Biomedical Engineering
Lee Andrew Goeddel, St. Louis, MO
  B.S., University of Notre Dame, 2006; M.P.H. candidate, Bloomberg School of Public Health
Ron Gutmark, Cincinnati, OH
  B.A., Stanford University, 2005; Student in Residence: Doris Duke Fellowship
Emily Beth Heikamp, Metairie, LA
  B.S., Duke University, 2005; M.S.C., Oxford University Medicine School, 2007; Ph.D. candidate, Immunology
Gary Ping-Hao Ho, Boston, MA
  A.B., Harvard University, 2004; Ph.D. candidate, Cellular and Molecular Medicine
John Bassam Issa, Pueblo, CO
  B.S., Johns Hopkins University, 2004; Ph.D. candidate, Biomedical Engineering
Vivek Kalia, Birmingham, AL
  B.A., University of Alabama, 2006; B.S., University of Alabama, 2006; M.S., University of Alabama, 2006; M.P.H. candidate, Bloomberg School of Public Health
Bridget Patrice Keenan, Mount Airy, MD
B.S., Loyola College, 2006; Ph.D. candidate, Immunology

KiBem Kim, Baltimore, MD
B.A., Johns Hopkins University, 2002; Ph.D. candidate, Cellular and Molecular Medicine

Isaac Abraham Kinde, Beaumont, CA
B.S., University of Maryland (Baltimore County), 2005; Ph.D. candidate, Cellular and Molecular Medicine

Michael Alexander Koldobskiy, Columbia, MO
B.S., Yale University, 2003; Ph.D. candidate, Pharmacology and Molecular Sciences

Michael Davin Kornberg, Kissimmee, FL
B.S., Yale University, 2003; Ph.D. candidate; Neuroscience

Theodore Sander Kouo, Peoria, IL
B.A., Northwestern University, 2004; Ph.D. candidate, Immunology

Henry Robert Kramer, Smithtown, NY
B.A., Cornell University, 2006; Student in Residence: Research in Medicine

Andre Rashad Kydd, Elkins Park, PA
B.S., Harvard University, 2004; Ph.D. candidate, Cellular and Molecular Medicine

Elizabeth Nguyen Le, Tarzana, CA
B.S., University of California (Los Angeles), 2005; Student in Residence: Research in Medicine

Shin Rong Lee, Sugar Land, TX
B.S., Yale University, 2007; PhD. candidate, Biomedical Engineering

Jimmy Cheng Ho Lin, New Haven, CT
B.A., Yale University, 2001; Ph.D. candidate, Cellular and Molecular Medicine

Tiffany Link, Placentia, CA
B.S., California State University (Long Beach), 2004; Ph.D. candidate, Cellular and Molecular Medicine

David Liu, Seattle, WA
B.A., Stanford University, 1999
M.S., Stanford University, 2001; M.P.H. candidate, Bloomberg School of Public Health
S. Julie-Ann Lloyd, Boston, MA
S.B., Massachusetts Institute of Technology, 2003
S.M., Massachusetts Institute of Technology, 2005; Ph.D. candidate, Cellular and Molecular Medicine

Micah Joel Maxwell, Reisterstown, MD
B.A., Harvard University, 2003; Ph.D. candidate, Cellular and Molecular Medicine

Annemarie McMillan McCartney, Baltimore, MD
B.S., New York University, 2007; Ph.D. candidate, Immunology

Robert Gene Mealer, Bozeman, MT
B.S., Montana State University, 2005; Ph.D. candidate, Neuroscience

Sara Davenport Miller, New York City, NY
B.A., University of Pennsylvania, 1994; Leave of Absence

Matthew Morgan Moake, Geneva, NY
B.S., Cornell University, 2004; Ph.D. candidate, Cellular and Molecular Medicine

Eric Naimet Momin, Acworth, GA
B.A., Harvard University, 2006; Student in Residence: Doris Duke Fellowship

Luis Carlos Monson, Baltimore, MD
B.S., Oregon State University, 2006; M.P.H. candidate, Bloomberg School of Public Health

S. Julie-Ann Lloyd, Boston, MA
S.B., Massachusetts Institute of Technology, 2003; Ph.D. candidate, Immunology

Marianeli Rodriguez, Tulsa, OK
B.S., University of Tulsa, 2005; Ph.D. candidate, Neuroscience

Leilani Marie Sharpe, Olympia, WA
B.S., University of Washington, 2004; Ph.D. program, Biochemistry, Cellular and Molecular Medicine
Philip In Song, Cambridge, MA
B.A., Harvard University, 2006; Student in Residence: Research in Epidemiology

Thing Rinda Soong, Tai Kok Tsui, Kowloon, Hong Kong
B.S., University of California (Berkeley), 2003; Ph.D. candidate, Bloomberg School of Public Health

Traci Jenelle Speed, Rocky Hill, CT
B.A., Colby College, 2003; Ph.D. candidate, Pharmacology and Molecular Sciences

Sonya Chin Tang, Great Neck, NY
B.S., Massachusetts Institute of Technology, 2004; Ph.D. candidate, Biochemistry, Cellular and Molecular Medicine

Martin Samuel Taylor, Baltimore, MD
B.S.E., Princeton University, 2005; Ph.D. candidate, Pharmacology and Molecular Sciences

William Tsao, East Hanover, NJ
B.S., Johns Hopkins University, 2006; Ph.D. candidate, Cellular and Molecular Medicine

Matthew Scott Vandiver, Johnson City, TN
B.S., Furman University, 2006; Ph.D. candidate, Pharmacology and Molecular Sciences

Grace Meng Wang, Hammond, OR
B.S., University of Oregon (Eugene), 2005; Ph.D. candidate, Cellular and Molecular Medicine

Vivian Lee Weiss, Baltimore, MD
B.A., Columbia University, 2004; Ph.D. candidate, Immunology

John Kent Werner Jr., Pittsburgh, PA
B.S., United States Naval Academy, 2001; Ph.D. candidate, Cellular and Molecular Medicine

Meraf Amde Wolle, Jersey City, NJ
B.S., Yale University, 2006; M.P.H. candidate, Bloomberg School of Public Health

Emily Turner Wood, Anacortes, WA
AH, Skagit Valley College, 1999
B.S., University of Washington, 2006; Ph.D. candidate, Neuroscience

Ingrid Jingnan Wu, Livingston, NJ
B.A., Rutgers University, 2004; Leave of Absence

Risheng Xu, League City, TX
A.B., Harvard University, 2007; Ph.D. candidate, Pharmacology

Byung Chul Yoon, Fullerton, CA
B.A., Johns Hopkins University, 2005; Ph.D. candidate, Cambridge University

Qingyang Yuan, Rockville, MD
B.S., University of Maryland (College Park), 2006; Student in Residence: HHMI Fellowship

Lauren Rachel Zeitels, Warren, NJ
B.A., University of Pennsylvania, 2006; Ph.D. candidate, Pharmacology

82

1 In combined M.D.-Ph.D program

2 Counted in the 4th year M.D. class
Summary

M.D. Candidates:
First Year ......................................................... 119
Second Year ..................................................... 124
Third Year .......................................................... 111
Fourth Year ......................................................... 132
Students in Special Programs ..................... 82
Total ................................................................. 568

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Alabama ......................................................... 4
Arizona ............................................................ 9
California ...................................................... 58
Colorado ......................................................... 6
Connecticut ..................................................... 12
District of Columbia ....................................... 3
Florida ......................................................... 22
Georgia .......................................................... 21
Hawaii ............................................................ 1
Illinois .............................................................. 19
Indiana ............................................................. 5
Iowa ................................................................. 6
Kansas ............................................................. 7
Kentucky .......................................................... 5
Louisiana ......................................................... 7
Maryland ......................................................... 92
Massachusetts ................................................. 24
Michigan ........................................................ 19
Minnesota ....................................................... 13
Mississippi ....................................................... 2
Missouri ............................................................ 11
Montana ........................................................... 2
Nevada ............................................................. 4
New Hampshire ............................................. 2
New Jersey ....................................................... 17
New Mexico ....................................................... 2

New York ...................................................... 39
North Carolina .............................................. 12
North Dakota ............................................... 1
Ohio ............................................................... 12
Oklahoma ......................................................... 2
Oregon .......................................................... 3
Pennsylvania ............................................... 27
Rhode Island .................................................. 4
South Carolina .............................................. 6
South Dakota .................................................. 1
Tennessee ......................................................... 2
Texas .............................................................. 23
Utah ............................................................... 2
Vermont ........................................................... 1
Virginia ........................................................... 28
Washington .................................................... 10
West Virginia .................................................. 1
Wisconsin ....................................................... 5

Foreign
Canada ......................................................... 12
Hong Kong ...................................................... 1
India ............................................................... 1
Singapore ....................................................... 1
Taiwan ............................................................ 1
CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE

COLLEGES ATTENDED†

Amherst College ............................................. 2
Anna University * ............................................ 1
Arizona State University ............................... 2
Austin College .............................................. 1
Baylor University ........................................... 2
Boston College .............................................. 4
Boston University .......................................... 2
Bowdoin College ............................................ 2
Brandeis University ......................................... 4
Brigham Young University ................................ 6
Brooklyn College of the City University of New York 1
Brown University ............................................ 7
Bryn Mawr College ........................................... 2
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 .................... 4
Centre College .............................................. 1
Claremont McKenna College ............................ 1
Clarkson University ....................................... 1
Colby College .............................................. 2
College of William and Mary ......................... 3
Colorado College ......................................... 1
Columbia University ....................................... 10
Cornell University ......................................... 16
Dartmouth College ......................................... 9
Duke University ............................................. 14
Earlham College .......................................... 1
Elon College ................................................ 1
Emory University .......................................... 4
Florida State University ................................ 1
Franklin and Marshall College ....................... 1
Furman University ......................................... 1
George Washington University ....................... 2
Georgetown University .................................... 5
Georgia Institute of Technology ..................... 4
Georgia State University ................................ 1
Grinnell College ............................................ 2
Hampton University ....................................... 1
Harvard Business School ................................ 1
Harvard University ....................................... 39
Haverford College ....................................... 2
Hendrix College ............................................ 1
Houghton College ......................................... 1
Howard University ....................................... 1
Illinois Institute of Technology ..................... 1
Illinois Wesleyan University ......................... 1
Indiana University (Bloomington) ................. 2
Johns Hopkins Bloomberg School of Public Health 6
Johns Hopkins University ................................ 65
Johns Hopkins University School of Medicine 3
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 College .............................................. 1
Macalester College (St. Paul) ...................... 1
Maharishi University of Management .......... 1
Marianopolis College * .................................. 1
Massachusetts Institute of Technology .......... 14
Masters College ............................................ 1
McGill University * ........................................ 1
McMaster University * .................................. 1
Miami University .......................................... 1
Michigan State University ............................. 1
Middlebury College ....................................... 1
Montana State University ................................ 1
Morehouse College ....................................... 1
Morgan State University ................................ 1
Mount Holyoke College ................................ 1
Naropa University .......................................... 1
New Jersey Institute of Technology ............. 1
New Mexico State University ...................... 1
New York University ..................................... 4
Northwestern State University, Louisiana ... 1
Northwestern University ................................. 5
Oberlin College ............................................ 1
Ohio State University .................................... 4
Oregon State University ............................... 2
Oxford University Medicine School - Oxford* 1
Pennsylvania State University ..................... 7
Princeton University ...................................... 12
Purdue University .......................................... 2
Queens College (New York) ........................... 1
Rice University ............................................. 3
Rochester Institute of Technology .................. 1
Rutgers University ........................................ 5
Saint Olaf College ........................................ 1
Siena College ............................................... 2
Skagit Valley College ..................................... 1
Southern Methodist University ........................ 1
Spelman College .......................................... 1
Stanford University ....................................... 23
Swarthmore College ..................................... 1
Syracuse University ...................................... 1
The University of Newcastle * ..................... 1
Tufts University ............................................ 4
University of British Columbia * ................. 2
University of California (Berkeley) ............ 17
University of California (Davis) .................. 4
University of California (Irvine) .................. 2
University of California (Los Angeles) ........ 6
University of California (Riverside) ........... 1
University of Chicago ................................... 8
University of Colorado (Boulder) ............... 2
University of Colorado .................................. 1
University of Connecticut ............................ 3
University of Florida ..................................... 6
University of Georgia ................................... 8
University of Illinois (Urbana) .................... 3
University of Iowa ........................................ 1
University of Kansas ................................... 1
University of London * ................................ 1
University of Maryland (Baltimore County) .... 6
University of Maryland (College Park) ......... 12

460 STUDENTS
University of Massachusetts (Boston) .................. 1
University of Miami ........................................ 1
University of Michigan (Ann Arbor) .................... 12
University of Michigan ...................................... 1
University of Minnesota (Twin Cities) .................. 4
University of Mississippi .................................. 1
University of Missouri (Columbia) ...................... 1
University of Missouri (Rolla) ......................... 1
University of Montana (Missoula) ...................... 1
University of Nevada ....................................... 1
University of North Carolina (Chapel Hill) .......... 9
University of Notre Dame ................................ 7
University of Oklahoma (Norman) ..................... 2
University of Oregon (Eugene) ......................... 1
University of Oxford * ...................................... 3
University of Pennsylvania ............................... 12
University of Pittsburgh .................................... 3
University of Richmond ..................................... 1
University of Rochester .................................... 3
University of South Carolina (Columbia) ................ 1
University of South Florida ................................ 1
University of Southern California ........................ 1
University of Sydney * ...................................... 1
University of Texas (Austin) .............................. 8
University of Toronto * .................................... 3
University of Tulsa ......................................... 2
University of Virginia ...................................... 11
University of Washington .................................. 5
University of Wisconsin (Madison) ................... 7
Ursinus College ............................................. 1
Vanderbilt University ....................................... 5
Virginia Commonwealth University .................. 1
Wake Forest University .................................... 2
Washington College ....................................... 2
Washington Jefferson College ......................... 1
Washington University in St. Louis ................. 6
Wellesley College .......................................... 1
Wesleyan University (Connecticut) .................. 1
West Virginia University ................................. 1
Williams College .......................................... 1
Xavier University of Louisiana ....................... 1
Yale University ............................................ 40
York University * ........................................... 1

* 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
Matthew Garrett Bailey, New Windsor, MD
B.S., Shippensburg University of Pennsylvania, 2008
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
Erica Christine Dresselhaus, Lanesville, IN
B.A., Boston University, 2008
Elizabeth Carol Huang Eyler, Durham, NC
B.S., Duke University, 2005
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
Juliane Claudia Kellner, Providence, RI
B.S., Brown University, 2006
Sang Hoon Kim, Seoul, Korea
B.S., Yonsei University, 2006
Ryan Randall McCully, Gloucester, United Kingdom
B.S., University of Massachusetts (Amherst), 2002
Meaghan Mckiernan O’Malley, Springfield, VA
B.S., Boston College, 2006
Susana Rodriguez, Brookline, MA
B.A., California State University (Dominquez Hills), 2004
Teresa A. Romeo, Gibbstown, NJ
B.S., Johns Hopkins University, 2008
Jeremy Daniel Rotty, Berea, KY
B.A., Berea College, 2005
Kaoru Sakabe, Rockville, MD
B.S., University of North Carolina (Chapel Hill), 1999
Shino Shimoji, 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
Kamau M. Fahie, Worcester, MA
B.A., Clark University, 2001
Oyindamola Oladosu, Baltimore, MD
B.S., University of Maryland (Eastern Shore), 2008
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, Storrsmansfield, CT
B.S., University of Connecticut, 2005
Stacey Marie Cromer Berman, Columbia, MD
B.S., Lafayette College, 2005
Clara Margaret-Louise Bien, Ann Arbor, MI
B.S., University of Wisconsin (Madison), 2003
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
Christopher Michael Cherry, Provo, UT
B.S., Brigham Young University, 2004
Zachary Philip Gerhart-Hines, Baltimore, MD
B.S., Pennsylvania State University, 2004
Caitlin Hanlon, Huntingdon, 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
Matthew Joseph Maurer, Rochester, NY
B.S., University of Rochester, 2004
Corrin Ellisia McBride, Baltimore, MD
B.S., Morgan State University, 2003
Christine Nwosu, Durham, NC
B.S., University of Maryland (Eastern Shore), 2004
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, GA
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, New York, NY  
B.A., Barnard College, 2006
Timothy Patrick Brennan, Baltimore, MD  
B.S., Towson University, 2002
Lindsey James Brown, Baltimore, MD  
B.S., Quinipiac College, 2000
Juliene Kimberly Go Co, Honolulu, HI  
B.S., University of the Philippines, 2004
Jennifer Renee Cohen, Washington, DC  
B.S., Howard University, 2003
Carey Elizabeth Connelly, Yardley, PA  
B.S., Gettysburg College, 2001
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, Monroe, MI  
B.S., Michigan State University, 2007
Wei D. Duan-Porter, State College, PA  
B.S., Pennsylvania State University, 2000
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, Bowie, 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
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

Yun Liu, Shanghai, China  
B.S., Fudan University, 2003
Wenyuan Lu, Vermillion, SD  
B.Med., Capital University of Medical Sciences - Beijing, 1996
Christopher Richard Merritt, Fairfield, OH  
B.S., Ohio State University, 2004
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., Georgetown 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
Kristin Lynette Sens, Provo, UT  
B.S., Brigham Young University, 2004
Jeffrey John Shaw, Madison, WI  
B.S., University of Wisconsin (Madison), 2002
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
Kenneth Whitaker Witwer, Elkridge, MD  
B.A., Pennsylvania State University, 1999
Min Wu, Baltimore, MD  
B.S., Tsinghua University, 1996
Xin Ye, Beijing, China  
B.S., Tsinghua University, 2004
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
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, Pakistan, 2002
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

Yuko Oku, San Francisco, CA  
B.S., Worcester Polytechnic Institute (Worcester), 2005

Erin Marie Poth, Oklahoma City, OK  
B.S., Tufts University, 2006

Nicole Ada Rapicavoli, Bolinas, CA  
B.S., University of California (Santa Cruz), 2001

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, Thane, India  
B.S., Bombay College of Pharmacy (Mumbai), 2006

M.S., Northeastern University, 2008

John Kipchirchir Bitok, Brighton, MA  
B.S., Syracuse University, 2004

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

Elizabeth Anne Kolar, Baltimore, MD  
B.S., Salisbury University, 2007

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

Xinchen Teng, Shanghai, China  
B.S., Fudan University, 2001

Department of Physiology

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 Gabriel Currier, Meredith, NH  
B.S., Messiah College, 2006

First Year BCMB Students

Saif Al Qassim, Baltimore, MD  
B.S., University of Michigan, 2008

Tyson David Bowen, Grand Junction, CO  
B.A., University of Colorado, 2009

Danfeng Cai, Shanghai, China  
B.S., Peking University, 2009

Dean Paul Campbell, Hazleton, PA  
B.S., Bucknell University, 2008

April Clayton, Neeses, SC  
B.S., Erskine College, 2008

Tonya Marie Gilbert, Lockport, NY  
B.S., State University of New York (Geneseo), 2008

Hana Leah Goldschmidt, Berkeley, CA  
B.A., Occidental College, 2007

Robert Joseph Huebner, Frederick, MD  
B.S., University of Maryland (Baltimore County), 2006

Basil Hussain, Bolingbrook, IL  
B.S., University of Illinois (Urbana), 2007

Elizabeth Hwang, Flushing, NY  
B.A., State University of New York (Stony Brook), 2003

M.A., Hunter College, 2006

Diedre Joyce Johnson, Green Bay, WI  
Yijie Li, Shanghai, China  
B.S., Peking University, 2009

Ya-Wen Lu, Samut Prakarn, Thailand  
B.A., Williams College, 2009

Ouma Onguka, Oakland, CA  
Cassandra A. Patenaude, Boston, MA  
B.S., University of Maine, 2007

Qing Ma, Beijing, China  
B.S., Peking University, 2009

B.S.Econ., Peking University, 2009

Kim-Vy Nguyen-Ngoc, Hochiminh, Vietnam  
B.S., Vietnam National University, 2005

M.S., Radboud University Nijmegen, 2008

Yulian Zhou, Beijing, China  
B.S., Tsinghua University, 2009

Yuemeng Wang, Beijing, China  
B.S., Tsinghua University, 2009

Hoku Kahele West-Foyle, Seattle, WA  
B.S., University of Washington, 2005

Xianrong Wong, Singapore  
B.Eng., National University of Singapore, 2008

Yulian Zhou, Beijing, China  
B.S., Tsinghua University, 2009
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
Xin Gan, Nanjing, China
B.S., Nanjing University, 2003
Yi Gu, Beijing, China
B.S., Tsinghua University, 2003
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
Jinfei Ni, Farmington, CT
B.S., Fudan University, 2005
Kyoungsook Park, Seoul, Korea
B.S., Seoul National University, 1999
M.S., Seoul National University, 2001
Elizabeth Jane Petro, Hales Corners, WI
B.S., University of Chicago, 2006
Beiji 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
Xiaoyue Wang, Piscataway, NJ
B.S., Nanjing University, 2003
Jr-Ming Yang, Taipei, Taiwan
B.S., National Taiwan University, 1999
M.S., National Taiwan University, 2003
Hongyan Yin, Tianjin, China
B.S., Nankai University, 2000
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
Jun Zhong, Jiangsu, China
B.S., Nanjing University, 2001

BIOMEDICAL ENGINEERING

Soumyadipta Acharya, Akron, OH
M.B.B.S., University of Calcutta, 2001
Manisha Aggarwal, Baltimore, MD
B.Tech., Indian Institute of Technology (Kharagpur), 2004
Vikram Aggarwal, Brampton, 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
Vasudev J. Bailey, Irvine, CA
B.S., University of California (Irvine), 2005
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
Hojjat 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
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
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
Connie Yachan Chang, Princeton Junction, NJ
B.S., Johns Hopkins University, 2005
Hao Chang, Lanzhou, China
B.S., Tsinghua University, 2003
Kelly Chiryum Chang, Cambridge, MA
B.S., Massachusetts Institute of Technology, 2008
Sulin Chen, Singapore
B.S., Johns Hopkins University, 2001
Yun-Ching Chen, Hsinchu, Taiwan
B.S., National Chiao Tung University, 2001
M.S., National Chiao Tung University, 2003
Andrew Wei Cheng, Rochester Hills, MI
B.S., University of Michigan, 2009
Lishui Cheng, Shanghai, China
B.Eng., Shanghai Jiao Tong University, 2003
Raymond Cheong, Columbia, MD
B.S., University of Maryland (College Park), 2002

Yoonju Cho, Seoul, Korea
B.S., Bucknell University, 2005

Liang-Hui Chu, Taipei, Taiwan
B.S., National Tsing Hua University, 2005
M.S., National Tsing Hua University, 2007

Lulu Chu, Beijing, China
B.S., University of Virginia, 2009

Patrick James Conlon, Winter Haven, FL
B.S., University of Florida, 2008

Jason L. Constantino, New Orleans, LA
B.S., Tulane University, 2006

Amber Tahnia Ballard Cross, Silver Spring, MD
B.S., University of Maryland (Baltimore County), 2005

Natan Simcha Davidovics, Washington, DC
B.S., Rutgers University, 2005

Ivy Ellen Dick, Piscataway, NJ
B.S., University of North Carolina (Chapel Hill), 1997

Aigerim Djamanakova, Nutley, NJ
B.S., Yale University, 2007

Laura Ann Doyle, Reston, VA
B.S., Johns Hopkins University, 2007

David Donald Ellison, Provo, UT
B.S., Brigham Young University, 2004

Freddy Alexander Espinoza, North Hollywood, CA
B.S., Massachusetts Institute of Technology, 2008

Hadi Fatemi Shariatpanahi, Tehran, Iran
B.Eng., University of Tehran, 2007

Lei Feng, Sichuan, China
B.Eng., Tsinghua University, 2005

Matthew Stephen Fifer, Ashburn, VA
B.S., University of Virginia, 2009

Charles Ira Fisher, San Diego, CA
B.S., University of California (San Diego), 1999

Darik Wendell Gamble, Waterloo, Canada
B.A.S., University of Waterloo, 2008

Ambhighainath Ganesan, Chennai, India
B.Tech., Indian Institute of Technology (Madras), 2007

Mahmoud Ghandi, Tehran, Iran
B.S., Sharif University of Technology, 2003

Matthew Avery Gibson, Charlottesville, VA
B.S., West Virginia University, 2002

Kiran Gireesan Vanaja, Bangalore, India
B.Eng., University of Mysore, 1997

Alvina Goh, Singapore
B.S., University of Michigan (Ann Arbor), 2000
M.S., California Institute of Technology, 2001

Vahid Golkhou, Tehran, Iran
B.S., University of Tehran, 2001

Giann Gorospe, Somerset, NJ
B.A., University of Pennsylvania, 2009
B.S., University of Pennsylvania, 2009

Elliot Howard Greenwald, West Orange, NJ
B.S., University of North Carolina (Chapel Hill), 2008

Kshitiz Gupta, Mumbai, India
B.Tech., Indian Institute of Technology (Bombay), 2004

James Christian Gwilliam, Taylorsville, UT
B.S., University of Utah, 2007

Benjamin David Haefele, Monument, CO
B.S., Georgia Institute of Technology, 2006

Yasmin Lucy Hashambhoy, Kingston Ontario, Canada
B.S.C., Queen's University (Canada), 2003

Sarah Elizabeth Hemminger, Baltimore, MD
B.S., Johns Hopkins University, 2003

Andres Hernandez, Houston, TX
B.S., University of Houston, 2009

Kaoru Hida, Berkeley, CA
B.S., University of California (Berkeley), 2004

Alice Sin Yu Ho, Markham, Ontario, Canada
B.A.S., University of Toronto, 2006

Suneil Narayan Hosmane, Urbana, IL
B.S., University of Illinois (Urbana), 2003

Iraj Hosseini, Edmonton, Canada
B.Sc., Isfahan University of Technology, 2007

Alan Jerry Huang, Austin, TX
B.S., University of Texas (Austin), 2006
B.S.E.E., University of Texas (Austin), 2006

Hailiang Huang, Baltimore, MD
B.S., Nanjing University, 2003

Daphne Lynn Hutton, Lawrenceville, GA
B.S., Georgia Institute of Technology, 2009

John Bassam Issa, Pueblo, CO
B.S., Johns Hopkins University, 2004

Robert Allan Jacques, Burnaby, Canada
B.S., Johns Hopkins University, 2005

Gowri Jayaram, Lisle, IL
B.S., Northwestern University, 2007

Luke Aaron Johnson, St. Louis, MO
B.S., Washington University in St. Louis, 2006

Manu Ben Johny, Valley Park, MO
B.S., St. Louis University, 2007

Kevin Kahn, Suwanee, GA
B.S., University of Maryland (College Park), 2009

Xiaoxu Kang, Harbin, China
B.S., Beijing University of Aeronautics and Astronautics - Beijing, 2007

Rahul Karnik, Bensalem, PA
B.S., Davidson College, 2001
M.S., University of Illinois (Urbana), 2003

Robert Timothy Kazmierski, Durham, NC
B.S., Duke University, 2003

Deok-Ho Kim, Seoul, Korea
B.S., Pohang University of Science and Technology, 1998
M.S., Seoul National University, 2000

Dewayne June Kim, Portland, OR
B.A., Reed College, 2007

Eugene Kim, Beaverton, OR
B.S., Duke University, 2008
Jacob Elias Koskimaki, Sandy, UT  
B.S., University of Utah, 2006

Arnab Kumar Kundu, Kolkata, India  
B.Tech., Indian Institute of Technology (Kharagpur), 2007

Maggie Meei-Fann Kuo, Palo Alto, CA  
B.S., University of California (San Diego), 2008

Nathanael Kuo, Sachse, TX  
B.S., University of Illinois (Urbana), 2007

Sravanti Kusuma, Tucker, GA  
B.S., Massachusetts Institute of Technology, 2008

Dongwon Lee, Gyeonggi-do, Korea  
B.S., Korea Advanced Institute of Science and Technology - Taegon, 2007

Nayoung Angela Lee, Baltimore, MD  
B.S., Johns Hopkins University, 2003

Shin Rong Lee, Sugar Land, TX  
B.S., Yale University, 2007

Hanwei Li, Cambridge, MA  
B.S., Massachusetts Institute of Technology, 2004

Nan Li, Baltimore, MD  
B.E., Shanghai Jiao Tong University, 2001

Ting Li, Beijing, China  
B.Eng., Tsinghua University, 2002

Xiong Li, Beijing, China  
B.S., Tsinghua University, 2000

Yue Li, Beijing, China  
B.Eng., Tsinghua University, 2002

M.Eng., Tsinghua University, 2005

Issel Anne Lei Lim, Yorktown, VA  
B.S., Massachusetts Institute of Technology, 2005

Shawn Hwei-In Lim, Baltimore, MD  
B.C.E., University of Minnesota (Twin Cities), 2002

Benjamin Chwan Wen Lin, Paramus, NJ  
B.S., Johns Hopkins University, 2007

Kelvin Jeng-Fang Liu, Arcadia, CA  
B.S., University of California (San Diego), 2000

Yihua Loo, Baltimore, MD  
B.S., Johns Hopkins University, 2003

Jun Ma, Baltimore, MD  
B.S., Tsinghua University, 2004

Prashant G. Mali, Mumbai, India  
B.Tech., Indian Institute of Technology (Bombay), 2003

M.Tech., Indian Institute of Technology (Bombay), 2003

Laura Ann Malone, Cary, NC  
B.S., University of North Carolina (Chapel Hill), 2007

Misti Lane Malone, Starkville, MS  
B.S., Mississippi State University, 2002

Mollie Klare Marko, Roosevelt, NJ  
B.S., Rutgers University, 2008

Kathleen McDowell, Charlotte, NC  
B.S., University of Virginia, 2008

Michael Adam Meledeo, College Station, TX  
B.S., Texas A&M University, 2000

Brent Matias Millare, Murrieta, CA  
B.S., University of California (Riverside), 2008

Mehran Mollazadeh, Baltimore, MD  
B.Sc., Sharif University of Technology, 2004

Justin Brandon Morrisson-McAlmon, Mobile, AL  
B.S., Hampton University, 2009

Kartikeya Murari, Baltimore, MD  
B.Tech., Indian Institute of Technology (Madras), 2002

Divya Devaiah Nalayanda, Baltimore, MD  
B.Tech., Osmania University, 2001

M.S., University of Oklahoma (Norman), 2005

Geoffrey Ivan Newman, New York, NY  
B.Eng., City College of New York, The, 2008

Tri Minh Ngo, Tucker, GA  
B.S., Massachusetts Institute of Technology, 2007

M.Eng., Massachusetts Institute of Technology, 2007

Robert William Nickl, Pittsburgh, PA  
B.A., University of Pittsburgh, 2006

B.S., University of Pittsburgh, 2006

David Paul Noren, North Olmsted, OH  
B.S., University of Rochester, 1998

M.S., University of Rochester, 1999

Kevin Casey Olds, Rochester, NH  
B.Eng., Thayer School of Engineering, 2008

Saurababi Paliwal, Baltimore, MD  
B.Tech., Indian Institute of Technology (Madras), 2001

JinSeok Park, Daejoen, Korea  
B.S., Seoul National University, 2008

Yongjin Park, Busan, Korea  
B.S., Seoul National University, 2006

M.S., Carnegie Mellon University, 2008

Farhad Pashakhianloo, Tehran, Iran  
Sarah Elisabeth Pekny, New Kensington, PA  
B.S., Pennsylvania State University, 2009

Karlo Perica, Montgomery, MD  
B.S., Yale University, 2007

Jeffrey Wayne Pompe, Belvidere, IL  
B.S., University of Illinois (Urbana), 2008

Mazdok Pour Abdollah Tolkaboni, Baltimore, MD  
B.S., University of Tehran, 2000

M.S., University of Tehran, 2002

Amir Pourmorteza, Tehran, Iran  
B.M.E., University of Tehran, 2008

Christopher Michael Puleo, Troy, NY  
B.S., Rensselaer Polytechnic Institute, 2003

Yan Qi, Gainesville, FL  
B.Eng., Zhejiang University, 2002

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

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

Sagar Ramesh Shah, Clemson, SC
B.S., Clemson University, 2006
M.S., Clemson University, 2007

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 Solhjoo, 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

Kevin Gilbert Soucy, Baltimore, MD
B.S., University of New Hampshire, 2003

Patricia Sara Arauz Soucy, Louisville, KY
B.S., St. Louis University, 2003

Iossif Alexandrov Strehin, Baltimore, MD
B.S., Northwestern University, 2005

Yasir Suhail, East Lansing, MI
B.Tech., Indian Institute of Technology (Delhi), 2003

Jung Soo Suk, Baltimore, MD
B.Eng., Korea University (Seoul), 2001

William Tam, Newton, MA
B.S., Johns Hopkins University, 2003

Susan Ann Thompson, College Park, MD
B.S., University of Maryland (College Park), 2006

Daniel Jacob Tward, Toronto, Canada
B.S., University of Toronto, 2008

Stephany 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, 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

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

Minnan Xu, Cambridge, MA
B.S., Massachusetts Institute of Technology, 2002

Ming Yang, State College, PA
B.Eng., Tsinghua University, 1999
M.S., Tsinghua University, 2003

Tingting Yang, Shanghai, China
B.S., Fudan University, 2001

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

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  
Renjun Zhu, Beijing, China  
B.S., Tsinghua University, 2009  

**BIOPHYSICS AND BIOPHYSICAL CHEMISTRY**

Sabri Erdemli, Baltimore, MD  
B.S., Middle East Technical University, 2003  

**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  
Elizabeth Jane Denning, Baltimore, MD  
B.S., Juniata College, 2004  
Anthony DiBello, Covington, KY  
B.A., Northern Kentucky University, 2006  
B.S., Northern Kentucky University, 2006  
Kriska Chan Duong-Ly, Baltimore, MD  
B.A., Swarthmore College, 2005  
Katherine Elizabeth Frato, Baltimore, MD  
B.A., College of Wooster, 2004  
Joshua Ivan Friedman, Baltimore, MD  
B.S., Pennsylvania State University, 2005  
John Gallagher, Los Altos, CA  
B.S., University of California (San Diego), 2001  
Zachary Hensel, Baltimore, MD  
B.A., University of Illinois (Urbana), 2005  
B.S., University of Illinois (Urbana), 2005  
Helen Jun, Ellicott City, MD  
B.A., St. Mary’s College of Maryland, 2007  
Sarah Kolitz, Baltimore, MD  
B.S., Massachusetts Institute of Technology, 2003  
Carolyn Lauzon, Los Angeles, CA  
B.A., Occidental College, 2003  
Andrei Levin, Baltimore, MD  
B.S., Massachusetts Institute of Technology, 2008  
B.S., Massachusetts Institute of Technology, 2008  
Megan Elizabeth McDonald, Alamo, CA  
B.S., Davidson College, 2005  
Naveen Philippe Michaud-Agrawal, Baltimore, MD  
B.S., Pennsylvania State University, 2001  
Sarah F. Mitchell, Rochester, NY  
B.A., University of Pennsylvania, 2002  
Sabin Mulepati, Baltimore, MD  
B.S., Susquehanna University, 2008  
Rodrigo Fermin Ortiz-Mezo, Baltimore, MD  
B.S., Boston College, 2003  
Jared Parker, Baltimore, MD  
B.S., University of Alabama, 2004  
Nadine Laure Samara, Baltimore, MD  
B.A., American University of Beirut, 2002  
Joshua Sims, Baltimore, MD  
B.S., University of Florida, 2000  
Jeffrey Lawrence Werbin, New York, NY  
B.S., Harvey Mudd College, 2003  

**CELLULAR AND MOLECULAR MEDICINE**

David Michael Alvarado, Towson, MD  
B.S., University of South Florida, 2007  
Joseph James Babcock, North Haven, CT  
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  
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, NY²  
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  
Bin-Kuan Chou, Kaohsiung City, Taiwan  
B.S., National Taiwan University, 2003  
Scott Haishua Chu, Rockville, MD  
B.S.E., Princeton University, 2005  
Justin Robert Cidado, Boston, MA  
B.S., Bates College, 2004  
Rory Landon Cochran, San Diego, CA  
B.S., University of California (San Diego), 2007  
Timothy Kemp Cooper, Littlestown, PA²  
B.S., University of Denver, 1995  
B.S., University of Illinois (Urbana), 1997  
D.V.M., University of Illinois (Urbana), 1999  
Tricia Ruth Cottrell, St. Louis, MO¹  
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  
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, 2002
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

Sara Hideko Gilmore, Caldwell, ID
B.S., University of Idaho, 2007

Carlos Gomez, Astoria, NY
B.S., State University of New York (Stony Brook), 2001

Andrew Charles Goodwin, Williamsburg, VA
B.S., College of William and Mary, 2005

Kathleen Elizabeth Greenberg, Columbus, OH
B.S., Ohio State University, 2002

Sarah Merin Greenblatt, Hanover, NH
B.S., State University of New York (Geneseo), 2007

Annieha Hack, Nutley, NJ
B.A., Rutgers University, 2005

Tamia Alisha Harris, Atlanta, GA
B.S., Haverford College, 2003

Diane Heiser, Bayport, NY
A.B., Princeton University, 2006

Mark James Henderson, Glenwood, NJ
B.S., North Carolina State University, 2004

William Phillip Hendricks, Phoenix, AZ
B.A., Grand Canyon University, 2002

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

Maimon Eid Hubbi, West Orange, NJ
B.S., Rutgers University, 2002

Maria Malinda James, Rochester, NY
B.A., Johns Hopkins University, 2007

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 Mahrer 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

Kirsten Anne Kulcsar, Fort Collins, CO
B.S., Colorado State University, 2008

Andre Rashad Kydd, Elkins Park, PA
B.S., Harvard University, 2004

Christine Marie Ladd-Acosta, Newton, MA
B.S., University of Massachusetts (Amherst), 1999

Andrew Raymond Larsen, Sudbury, MA
B.A., Skidmore College, 2009

Kelly Ann Leary, Brookline, MA
B.A., Wellesley College, 2002

Janette Lebron, Towson, MD
B.S., Wagner College, 2004

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

Susan rim, Korea Advanced Institute of Science and Technology - Taejon, 2002

Kenya Taiwan Lemon, Falls Church, VA
B.S., Albany State University, 2003

Xiaoji Li, Baltimore, MD
B.S., Xinyang Teachers’ College, 1996
M.S., Wuhan University, 1999

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
B.S., Massachusetts Institute of Technology, 2003
S.M., Massachusetts Institute of Technology, 2005

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 McCartney, Baltimore, MD
B.S., Miami University, 2007

Kelli Ammiesha McDowell, Morrisville, NC
B.S., North Carolina State University, 2006

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

Whei Feng Moriarty, Somerville, MA
B.S., Massachusetts Institute of Technology, 2004

Adam Landes Moyer, Souderton, PA
B.A., Pennsylvania State University, 2007
B.S., Pennsylvania State University, 2007

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

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.S., Boston University, 2003
D.V.M., Purdue University, 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

Taliesha Annette Richards, Baltimore, MD
B.S., University of Maryland (Baltimore County), 2004

Mark Thomas Sausen, Newark, DE
B.A., University of Delaware, 2008

Maia Kathryn Schoonmaker, Carbondale, IL
B.S., University of Illinois (Urbana), 2005

Meghan J. Seitz, 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, 2007
M.S., Michigan State University School of Veterinarian Medicine, 2007

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

Tomeka Lynette Suber, Greensboro, NC
B.S., University of North Carolina (Chapel Hill), 2002

Gregory Lee Szeto, Frederick, MD
B.S., Carnegie Mellon University, 2004

Abigail Lynn Davidson Tadenev, Williamstown, MA
B.A., Williams College, 2003

Stephanie Kenfack Tankou, Baltimore, MD
B.S., University of Illinois (Urbana), 2001

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

Susan Christine Trow, Nashville, TN
B.S., Vanderbilt 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

Krystal Sara Ttosie, Phoenix, AZ
B.S., Arizona State University, 2008

Hayley Sierra Wall, Olympia, WA
B.S., Western Washington University, 2009

David Hong-En Wang, Baltimore, MD
B.A., Asbury College, 1994
M.D., Vanderbilt University School of Medicine, 1999

Grace Meng Wang, Hammond, OR
B.S., University of Oregon (Eugene), 2005

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 Zhu-Wei Yang, Baltimore, MD
B.S., Johns Hopkins University, 2003
Jihye Yun, Gainesville, FL
B.S., Sogang University, 1999
M.S., Korea Advanced Institute of Science and Technology - Taejon, 2001

FUNCTIONAL ANATOMY AND EVOLUTION
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
Evan 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 2
B.A., University of Virginia, 2002
M.S., University of Virginia, 2005
Ryan William Higgins, Hyattsville, MD
B.A., Arizona State University, 2001
M.A., George Washington University, 2008
Megan Anne Holmes, Pompano Beach, FL
B.A., Florida Atlantic University, 2005
Katrina Elizabeth Jones, Liverpool, United Kingdom
B.A., University of Cambridge, 2008
M.Sc., University of Cambridge, 2008
Ali Nabavizadeh, Olathe, KS
B.S., University of Kansas, 2009
Tonya Ann Penkrot, Pittsburgh, PA 2
B.S., University of Pittsburgh, 2000
Frank Joseph Varriale, Lake Luzerne, NY 2
B.S., State University of New York (Oswego), 1997
Georgina McKusick Voegele, Chicago, IL 2
B.A., University of Chicago, 2003
Michael Patrick Yashinski, Lancaster, PA 2
B.A., Franklin and Marshall College, 2004

HISTORY OF MEDICINE
Katherine Elizabeth Arner, Boise, ID
B.A., University of Wisconsin (Madison), 2005
Lisa Beth Boul, Baltimore, MD 2
A.B., Radcliffe College, 1972
M.P.H., University of Minnesota (Twin Cities), 1994
Sandra Eder, Vienna, Austria
M.A., Columbia University, 2002
M.Phil., University of Vienna, 2004
Ami Christine Kariage, Cambridge, MA 2
A.B., Harvard University, 2003
Susan Dorothy Lamb, Toronto, Canada
B.F.A., York University (Canada), 1995
M.A., University of Toronto, 2003
Seth Stein LeJaqc, Ithaca, NY
A.B., Cornell University, 2008
Abigail Heather Markoe, Lawrenceville, NJ 2
B.A., George Washington University, 2003
Andrew Lawrence Nelson, Evanston, IL
B.A., Northwestern University, 2006
Massimo Petrozzi, Rome, Italy
B.A., Universita Degli Studi di Roma “La Sapienza”, 2002
Alicia Puglionesi, Havertown, PA
B.A., University of Pennsylvania, 2009
Christopher Holden Pierce Salguero, Charlottesville, VA 2
B.A., University of Virginia, 1996
Olivia Alton Weisser, New York, NY 2
B.A., Wesleyan University (Connecticut), 2002

HUMAN GENETICS PROGRAM
Timothy David Babatz, Chicago, IL
B.S., Wheaton College, 2007
Elizabeth Eileen Bell, Baltimore, MD 1
B.S., University of Notre Dame, 2005
Rebecca Deering Brose, Centre Hall, PA
B.S., Pennsylvania State University, 2000
Tyessa Nicole Burks, Princess Anne, MD
B.S., University of Maryland (Eastern Shore), 2006
Juan F. Calderon, Santiago, Chile
B.S., Universidad de Chile, 2003
Raghu Ram Chivukula, Wichita, KS 1
B.A., Johns Hopkins University, 2005
Megan Hussey Cleveland, New Orleans, LA
B.S., Louisiana State University (Baton Rouge), 2007
Adrian Alejandro Cuenca, Baltimore, MD
B.A., Johns Hopkins University, 1999
M.H.S., Johns Hopkins Bloomberg School of Public Health, 2002
Bethany Joy Drehman, Chelmsford, MA
B.A., Rhodes College, 2006
B.S., Rhodes College, 2006
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
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
Lindsay Ann Bremer Henderson, Red Wing, MN
B.S., University of Wisconsin (Eau Claire), 2003
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
Chieng 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
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
Stella Suyong Lee, Iowa City, IA
B.S., Ewha Women's University - College of Medicine - 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., Sichuan University, 2008
Elizabeth Marie MacDonald, Minneapolis, MN
B.S., University of Minnesota (Twin Cities), 2004
Diana Lauren Mandelker, East Northport, NY
B.S., Yale University, 2003
Samantha Denise Maragh, Laurel, MD
B.S., Loyola College, 2005
David Mark McGaughey, Columbia, MD
B.A., Amherst College, 2004
Sarah Patricia McGuire-Edie, Baltimore, MD
B.A., Wellesley College, 2005
Khadijah Aisha Mitchell, Pittsburgh, PA
B.S., University of Pittsburgh, 2005
Morassa Mohseni, 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
Audrey Maryam Moshtfehghian, San Antonio, TX
B.S., University of Texas (San Antonio), 2006
Khahn-Dung Hoang Nguyen, Baltimore, MD
B.S., Towson University, 2007
Tejasvi Shankar Nirajan, 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
Jeenah Park, Fullerton, CA
B.S., University of California (Los Angeles), 2007
M.Ed., University of California (Los Angeles), 2008
Evin Michelle Parry, Rockport, MA
B.A., Colby College, 2006
Evantia E. Pashos, Athens, Greece
B.Pharm., National and Kapodistrian University of Athens, 2004
Jennifer Lyn Poitras, Brighton, MA
B.S., University of Connecticut, 2006
Renita Cherie Polk, Mitchellville, MD
B.S., Cedar Crest College, 2008
Megan Krishna Prasad, Los Angeles, CA
B.S., University of California (Los Angeles), 2005
Anandita Rajpurohit, Ridgewood, NJ
A.B., Cornell University, 2004
Kalyani Nithya Ramachandran, Chennai, India
B.Tech., Anna University, 2006
Shruthi Ravimohan, Minneapolis, MN
B.S., University of Minnesota (Twin Cities), 2004
Xylena Reed, Chatteroy, 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
Dong Shen, Shreveport, LA
M.S., Louisiana State University Medical Center School of Graduate Studies, 2002
Gloria Shin, Baltimore, MD
B.A., Johns Hopkins University, 2000
Jessica Lindsay Simmers, Salem, VA
B.S., Roanoke College, 2006
Anna Sliva, Naperville, IL
B.S., Indiana University (Bloomington), 2009
Megan Talbott Smith, Roanoke, VA
B.S., Virginia Commonwealth University, 2007
Nara Lycia 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 Lindsley 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

Perciliz Tan, Killeen, TX
B.S., University of Notre Dame, 2004

Tychele 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), 1996

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)

Mathew M. Augustine, Baltimore, MD
B.A., Johns Hopkins University, 1998
M.D., Yale University School of Medicine, 2003

Jobert Guerrero Barin, Baltimore, MD
B.A., Johns Hopkins University, 1999

Desireé Elaine Barrett, Owings Mills, MD
B.A., University of Maryland (Baltimore County), 1996

Jonathon Drew Bennett, Kingsville, MD
B.A., Wheaton College, 2003

Tullia Carmela Bruno, Erie, PA
B.S., Vanderbilt University, 2004

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, MD
M.D., National Taiwan University, 2001

Christopher Lee Cooper, San Diego, CA
B.S., San Diego State University, 2002

Chung Huu Dang, Seattle, WA
B.A., Eastern Washington University, 2001
B.S., Eastern Washington University, 2001

Erika Lynn Darrah, Pottstown, PA
B.S., Ursinus College, 2002

Greg Michael Delgoffe, Portage, MI
B.S., Western Michigan University, 2004

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 Larraine Geis, Denver, CO
B.S., Colorado State University, 2005

Diana Joyce Goode, Gaithersburg, MD
B.S., University of New Hampshire, 2004

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, 2007

Bridget Patrice Keenan, Mount Airy, MD
B.S., Loyola College, 2006

Theodore Sander Kouo, Peoria, IL
B.A., Northwestern University, 2004

Rebecca Lee Lamason, Elizabethtown, PA
B.S., Millersville University, 2002

Jessica Bomi 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

Yu Li, Clarksville, MD
B.A., Amherst College, 2002

Michael Ethan Linde, Los Angeles, CA
B.A., Emory University, 1996

Daphne Jane Macapagal, Laurel, MD
B.S., Rutgers University, 1998

Obadiah Johnathan Manley, Pasadena, CA
B.S., California Institute of Technology, 1997

Christopher James Nirschl, Herndon, VA
B.S., University of Virginia, 2009

Rose Parkinson, Folcroft, PA
B.A., University of Pennsylvania, 2005

Kristen Nicole Pollizzi, Brookline, MA
B.S., Boston College, 2005

Yuri O. Poluektov, Champaign, IL
B.S., University of Illinois (Urbana), 2007

Seyed Alireza Rabi, Rosedale, MD
B.A.S., University of Toronto, 2006

Kasra Ramyar, Baltimore, MD
B.A., Johns Hopkins University, 1993

Ashley Saint-Fleur, Bethesda, MD
B.S., Yale University, 2002

Adam Tully Waickman, Ray Brook, NY
B.S., Cornell University, 2008

Vivian Lee Weiss, Baltimore, MD
B.A., Columbia University, 2004

Huang Yu Yang, Taoyuan City, Taiwan
M.D., Taipei Medical University, 1998

Zhaoqin Ye, Glen Burnie, MD
B.S., Tsinghua University, 1993
M.S., University of Maryland (College Park), 1999

Stasja Nicole Zaring, Northfield, MN
B.A., Saint Olaf College, 2004

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
Julia Lynn Bachman, St. James, NY
B.A., College of Notre Dame, 2004

Ling Bai, Beijing, China
B.S., Tsinghua University, 2009

Neeraja Manikkavalli Balachander, Andhra Pradesh, India
M.B.B.S., Osmania Medical College - Osmania University - 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

Katherine Cloud Bowman, Charlottesville, VA
B.A., University of Virginia, 2003

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

Zhikai Chi, Beijing, China
M.D., Peking Union Medical College, 2003

Cheng-Hsuan Chiang, Hualien, Taiwan
M.D., National Taiwan University, 2003

Kavan Terrence Clifford, Atlanta, GA¹
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, CA¹
B.S., University of California (Irvine), 2001
M.S., University of Oxford, 2003

Caitlin Conner Engelhard, Crozet, VA¹
B.A., Swarthmore College, 2003

Ting Feng, Shanghai, China
B.S., Shanghai Jiao Tong University, 2007

Christina Theresa Fuentes, Cambridge, MA
B.S., Massachusetts Institute of Technology, 2005

Elinor Jennifer Golden, Baltimore, MD
B.A., Franklin and Marshall College, 2006

Courtney Rory Goodwin, Gainesville, FL¹²
B.A., University of Florida, 2002

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

Kenneth Joseph Hurt, St. Ignatius, MT¹
B.A., Whitman College, 1990
M.D., Johns Hopkins University School of Medicine, 2005

Adam Michael Intrator, New York, NY
B.S., Brown University, 2003

Vijay Mohan K Nambodiri, Thrissur, India
B.Tech., Indian Institute of Technology (Bombay), 2008

Alyssa Mallory Katzenelson, Amherst, MA
B.A., Amherst College, 2006

Sung Soo Kim, Baltimore, MD
B.S., Seoul National University, 1998
M.S., Seoul National University, 2000

Yu Shin Kim, Baltimore, MD
B.S., Kangwon National University, 1999
M.S., Kangwon National University, 2001

Michael Dain Kornberg, Kissimmee, FL¹
B.S., Yale University, 2003
M.S., Yale University, 2003

Elefteria 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-Chien 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 (Rio 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
B.S., University of Arizona, 2005

Tanya Marie Marton, Encino, CA
B.S., Yale University, 2008

Ryota Matsuoka, Sendai, Japan
B.S., Tohoku University, 2004

Robert Gene Mealer, Bozeman, MT¹
B.S., Montana State University, 2005

Nathanial David Miller, Oxford, OH
B.S., Miami University, 2002

Elizabeth Ann Mills, Brightwaters, NY
B.A., College of the Holy Cross, 2007
Ana Lucia Miranda-Angulo, Rockville, MD  
M.D., Universidad de Antioquia - Facultad de Medicina - Medellin, 1999  
M.S., Universidad de Antioquia - Facultad de Medicina - Medellin, 2004

Matthew Miskimon, Perry Hall, MD  
B.S., University of Maryland (Baltimore County), 2002

Michael Avery Muniak, Baltimore, MD  
B.S., Johns Hopkins University, 2005

Asif Khan Mustafa, Harleysville, PA  
B.A., University of Pennsylvania, 2001  
M.S., University of Pennsylvania, 2001

Kush Niranjani Patel, Evansistan, IL  
B.A., Northwestern University, 2005

Yu-Cheng Pei, Taipei, Taiwan  
M.D., Chang Gung University College of Medicine, 1997

Emma Beryl Roach, Baltimore, MD  
B.S., Tulane University, 2003

Mariameli 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 Rykova, Gainesville, FL  
B.S., University of Florida, 2007

Priyanka Sabharwal, Rochester, MN  
M.B.B.S., University of Lucknow - K.G. Medical College - India, 2001

Kurt Andrew Sailor, Baltimore, MD  
B.S., University of Wisconsin (Madison), 1996

Dennis Kumar Sastikumar, Mumbai, India  
M.B.B.S., University of Kerala, 2002

Karisa Colleen Schreck, Baltimore, MD  
B.S., New Jersey Institute of Technology, 2003

Tanu Sharma, Baltimore, MD  
B.S., University of Maryland (Baltimore County), 2009

Delia Silva, Kenilworth, NJ  
B.A., Boston University, 2004

Na Young So, Seoul, Korea  
B.S., Seoul National University, 2004

Coryse Naioka St. Hillaire, Brooklyn Park, MD  
B.S., University of Maryland (College Park), 2000

Gerald Jan-Yu Sun, Los Angeles, CA  
B.S., University of Southern California, 2008

Lu Sun, Beijing, China  
B.S., Tsinghua University, 2006

Sarah Jean Texel, Nottingham, MD  
B.S., Montclair State University, 2001  
M.S., Johns Hopkins University, 2004

Alyssa Maria Ayano Toda, Castro Valley, CA  
B.A., University of California (Berkeley), 2007

Nicolas Xavier Tritsch, Montreal, Canada  
B.Sc., McGill University, 2001

Pathobiology

Koh Meng Aw Yong, Singapore  
B.S., National University of Singapore, 2003

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

Sarah Kacie Brennan, Evanston, IL  
B.S., Northwestern University, 2004

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

Sarah Elizabeth Crossmann, Rochester, NY  
B.S., University of Virginia, 2009

Melek Michelle Erdinc, Baltimore, MD  
B.S., University of Maryland (College Park), 2006

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
Tory Patricia Johnson, Croton, MD  B.S., Ohio State University, 2001
Cheryl Mei-Yi Koh, Madison, WI  B.S., University of Wisconsin (Madison), 2005
Melissa Landek-Salgado, Bridgeview, IL  B.A., University of Chicago, 2002
Sung Yul Lee, Suwon, Korea  B.S., Korea University (Seoul), 2004
Jessica Marie Louise Lidstrom, Stockholm, Sweden  B.S., American University, 2004
Kah Jing Lim, Singapore  B.S., National University of Singapore, 2006
Kah Suan Lim, Singapore  B.S., Nanyang Technological University, 2008
Yiting Lim, Johor Bahru, Malaysia  B.S., National University of Singapore, 2007
Anne Marie Macgregor, Baltimore, MD  B.S., University of Maryland (College Park), 2007
Laxmi Gurunatham Pellakuru, Ellington, CT  B.S., Johns Hopkins University, 2008
Shanayra Samantha Smail, Miami, FL  B.S., Florida Institute of Technology, 2003
David Bolduc, Marlborough, CT  B.S., University of Connecticut, 2008
William Nathaniel Brennen, Newark, DE  B.A., University of Delaware, 2002
Mark Anthony Castanares, Carson, CA  B.S., California State University (Dominquez Hills), 2005
Hong Yuen Wong, Singapore  B.S., Nanyang Technological University, 2008
Erin Li, Beijing, China  B.S., University of Science and Technology of China, 2006
Meng-Jung Chiang, Taipei, Taiwan  B.S., National Taiwan University, 2004
Jian He, Beijing, China  B.S., University of Science and Technology of China, 2006
Evelyn Eisele, Centennial, CO  B.S., Wake Forest University, 2009
Katie Jean Herbst, Baltimore, MD  B.A., Johns Hopkins University, 2006
Elisabeth Marie Hersman, Dover, NH  B.A., Wellesley College, 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 Benedikt, 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
Paweena Chalugun, Samutprakarn, Thailand  M.D., Chulalongkorn University, 2000
Jason Benavidez Dinoso, Brighton, MA  B.S., University of California (Los Angeles), 2002
Evelyn Eisele, Centennial, CO  B.S., Wake Forest University, 2009
Katie Jean Herbst, Baltimore, MD  B.A., Johns Hopkins University, 2006
Elisabeth Marie Hersman, Dover, NH  B.A., Wellesley College, 2008
Jason David Howard, Charlottesville, VA
B.S., University of Virginia, 2003
Christine Ann Jelinek, Baltimore, MD
B.A., Columbia University, 2005
Darshil Tushar Jhaveri, Mumbai, India
B.S., University of Illinois (Urbana), 2008
Nene Nwocha Kalu, Danbury, CT
B.S., University of Texas (Arlington), 2006
M.S., University of Texas (Arlington), 2006
Hyung-Joon Kim, Seongnam, Korea
B.S., Korea University (Seoul), 2009
Michael Alexander Koldobskiy, Columbia, MO
B.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
Nicoletta Alexouda Louissaint, Pittsburgh, PA
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 Politecnica de Madrid, 2003
Moira Ann McMahon, Plano, TX
B.S., University of Texas (Austin), 2002
Andrea Mountney, Harleysville, PA
B.S., Ursinus College, 2004
Johnathan Philip Neiswinger, Hampshire, IL
B.S., Geneva College, 2007
Ishita Das, Bangalore, India
B.S., Sri Venkateswara College, 2002
Mingye Feng, Anhui, China
B.S., University of Science and Technology of China, 2003
Zachary Roger Reichert, Crystal Lake, IL
B.A., Washington University in St. Louis, 2002
Liang Shan, Shanghai, China
B.S., Nankai University, 2003
Lin Shen, Baltimore, MD
M.D., Peking Union Medical College, 2005
John Joseph Skoko, Pittsburgh, PA
B.S., University of Pittsburgh, 2001
Traci Jenelle Speed, Rocky Hill, CT
B.A., Colby College, 2003
Martin Samuel Taylor, Baltimore, MD
B.S.E., Princeton University, 2005
Denis Vasilevich Titov, Lake Forest Park, WA
B.S., Novosibirsk University, 2005
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
David Anthony Walker, Sugarloaf, PA
B.A., University of Pennsylvania, 2008
Qing Wang, Tianjin, China
B.S., Nankai University, 2003
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
Feiran Zhang, Beijing, China
B.S., Tsinghua University, 2006
Xiaosong Zhang, Beijing, China
M.D., Peking Union Medical College, 2004

**PHYSIOLOGY**

**Cellular and Molecular Physiology**

Kathryn Jean Brothers, Evanston, IL
B.A., Carleton College, 2006
Sean T. Byrne, Washington, DC
B.S., College of William and Mary, 2004
Ishita Das, Bangalore, India
B.S., Sri Venkateswara College, 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., Oakland 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
Ha Won Lee, Seoul, Korea
B.S., Pohang University of Science and Technology, 2003
Yunjong Lee, Seoul, Korea
B.S., Seoul National University, 2004
Sachin Mohan, Lucknow, India  
M.B.B.S., University of Lucknow - K.G. Medical College - India, 2001

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

Annan Yang, Beijing, China  
B.S., China Agricultural University, 2004

CANDIDATES FOR THE DEGREE OF MASTERS OF ARTS

HISTORY OF MEDICINE
Ellen K. Silbergeld, Baltimore, MD²  
A.B., Vassar College, 1967

MEDICAL AND BIOLOGICAL ILLUSTRATION
Shizuka Naomi Aoki, Ontario, Canada  
B.F.A., Queen’s University (Canada), 2007

Jodi Elise Chapman, Oviedo, FL  
B.A., Florida State University, 2008

Bona Kim, Suwon, Korea  
B.S., Seoul National University, 2007

Beatriz Martin Villalba, Galapagar, Spain  
M.B.B.S., Universidad Complutense de Madrid, 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  

Stephanie DePalma Sadler, Elkins Park, PA  
B.A., Arcadia University, 2008

Joseph Carl Samson, St. Louis, MO  
B.F.A., Fontbonne University, 2005

Suzanne Frances Slattery, Philadelphia, PA  
B.F.A., School of Visual Arts, 1992

Brielyn Hope Strauch, Athens, GA  
B.F.A., University of Georgia, 2007

Inna-Marie Strazhnik, Cranford, NJ  
B.F.A., School of the Art Institute of Chicago, 2002

Elizabeth Nicole Weissbrod, Columbus, OH  
B.F.A., Columbus College of Art & Design, 2004

CANDIDATES FOR THE DEGREE OF MASTERS OF SCIENCE

HEALTH SCIENCES INFORMATICS
Naima Lexi Carter-Monroe, Gwynn Oak, MD²  
B.S.E., University of Maryland (Baltimore County), 1997

Eric Kai Hong Chow, Toronto, Canada  
B.A.S., University of Toronto, 2008

Jean-Paul Chretien, Kensington, MD²  
B.S., United States Naval Academy, 1996

Pammy Renee Crawford, Baltimore, MD  
B.A., University of Southern California, 1996

Octavis Denise Lampkin, Germantown, MD²  
B.A., Tougaloo College, 1997  
M.A., George Washington University, 2001

Laurent Laor, New York, NY²  
B.A., New York University, 2004

Henry Li, Suwanee, GA  
B.S., Georgia Institute of Technology, 2009

Yair G. Rajwan, Burke, VA  
B.Sc., University of Bridgeport, 1991

M.A., George Washington University, 2001

HEALTH SCIENCES INFORMATICS
Applied Health Sciences Informatics
Elyse Lasser, Hartford, CT  
B.A., Smith College, 2006

Mwa-Mur Ntayingi, Kinshasa, Congo

¹ Combined Degree Program M.D.-Ph.D. or other  
² On Leave of Absence
<table>
<thead>
<tr>
<th>COLLEGES ATTENDED†</th>
<th>CANDIDATES FOR THE DEGREES OF DOCTOR OF PHILOSOPHY, MASTERS OF ARTS, AND MASTERS OF SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aga Khan Medical College - Aga Khan University - Karachi - Pakistan</td>
<td>1</td>
</tr>
<tr>
<td>Albany State University</td>
<td>1</td>
</tr>
<tr>
<td>American University</td>
<td>2</td>
</tr>
<tr>
<td>American University of Beirut*</td>
<td>1</td>
</tr>
<tr>
<td>Amherst College</td>
<td>4</td>
</tr>
<tr>
<td>Amirkabar University of Technology*</td>
<td>1</td>
</tr>
<tr>
<td>Andrews University</td>
<td>1</td>
</tr>
<tr>
<td>Anna University</td>
<td>1</td>
</tr>
<tr>
<td>Arcadia University</td>
<td>1</td>
</tr>
<tr>
<td>Arizona State University</td>
<td>4</td>
</tr>
<tr>
<td>Asbury College</td>
<td>1</td>
</tr>
<tr>
<td>Augusta College</td>
<td>3</td>
</tr>
<tr>
<td>Bangalore University*</td>
<td>3</td>
</tr>
<tr>
<td>Barnard College</td>
<td>2</td>
</tr>
<tr>
<td>Bates College</td>
<td>3</td>
</tr>
<tr>
<td>Beijing University of Aeronautics and Astronautics - Beijing *</td>
<td>1</td>
</tr>
<tr>
<td>Berea College</td>
<td>1</td>
</tr>
<tr>
<td>Bharatiarrah University</td>
<td>1</td>
</tr>
<tr>
<td>Bilkent University</td>
<td>1</td>
</tr>
<tr>
<td>Bombay College of Pharmacy (Mumbai) *</td>
<td>1</td>
</tr>
<tr>
<td>Boston College</td>
<td>4</td>
</tr>
<tr>
<td>Boston University</td>
<td>5</td>
</tr>
<tr>
<td>Bowdoin College</td>
<td>5</td>
</tr>
<tr>
<td>Brandeis University</td>
<td>3</td>
</tr>
<tr>
<td>Brigham Young University</td>
<td>4</td>
</tr>
<tr>
<td>Brooklyn College of the City University of New York</td>
<td>2</td>
</tr>
<tr>
<td>Brown University</td>
<td>3</td>
</tr>
<tr>
<td>Bucknell University</td>
<td>2</td>
</tr>
<tr>
<td>California Institute of Technology</td>
<td>3</td>
</tr>
<tr>
<td>California State University (Dominguez Hills)</td>
<td>2</td>
</tr>
<tr>
<td>California State University (Fresno)</td>
<td>2</td>
</tr>
<tr>
<td>California State University (Fullerton)</td>
<td>1</td>
</tr>
<tr>
<td>California State University (Long Beach)</td>
<td>1</td>
</tr>
<tr>
<td>California State University (Northridge)</td>
<td>3</td>
</tr>
<tr>
<td>Calvin College</td>
<td>1</td>
</tr>
<tr>
<td>Cameron University</td>
<td>1</td>
</tr>
<tr>
<td>Capital University of Medical Sciences - Beijing *</td>
<td>2</td>
</tr>
<tr>
<td>Carleton College</td>
<td>2</td>
</tr>
<tr>
<td>Carnegie Mellon University</td>
<td>5</td>
</tr>
<tr>
<td>Case Western Reserve University</td>
<td>6</td>
</tr>
<tr>
<td>Cedar Crest College</td>
<td>2</td>
</tr>
<tr>
<td>Chang Gung University College of Medicine *</td>
<td>4</td>
</tr>
<tr>
<td>China Agricultural University</td>
<td>1</td>
</tr>
<tr>
<td>China Medical University *</td>
<td>2</td>
</tr>
<tr>
<td>Chulalongkorn University</td>
<td>1</td>
</tr>
<tr>
<td>Citadel Military College</td>
<td>1</td>
</tr>
<tr>
<td>City College of New York, The</td>
<td>1</td>
</tr>
<tr>
<td>Clark University</td>
<td>1</td>
</tr>
<tr>
<td>Clarkson University</td>
<td>2</td>
</tr>
<tr>
<td>Clemson University</td>
<td>7</td>
</tr>
<tr>
<td>Colby College</td>
<td>2</td>
</tr>
<tr>
<td>College of Notre Dame</td>
<td>2</td>
</tr>
<tr>
<td>College of the Holy Cross</td>
<td>2</td>
</tr>
<tr>
<td>College of William and Mary</td>
<td>4</td>
</tr>
<tr>
<td>College of Wooster</td>
<td>1</td>
</tr>
<tr>
<td>Colorado College</td>
<td>1</td>
</tr>
<tr>
<td>Colorado State University</td>
<td>3</td>
</tr>
<tr>
<td>Columbia University</td>
<td>5</td>
</tr>
<tr>
<td>Columbus College of Art &amp; Design</td>
<td>1</td>
</tr>
<tr>
<td>Cornell College</td>
<td>1</td>
</tr>
<tr>
<td>Cornell University</td>
<td>13</td>
</tr>
<tr>
<td>Dartmouth College</td>
<td>2</td>
</tr>
<tr>
<td>Davidson College</td>
<td>2</td>
</tr>
<tr>
<td>Dickinson College</td>
<td>1</td>
</tr>
<tr>
<td>Drexel University</td>
<td>1</td>
</tr>
<tr>
<td>Duke University</td>
<td>10</td>
</tr>
<tr>
<td>Duquesne University</td>
<td>1</td>
</tr>
<tr>
<td>Eastern Michigan University</td>
<td>1</td>
</tr>
<tr>
<td>Eastern Washington University</td>
<td>2</td>
</tr>
<tr>
<td>Elon College</td>
<td>1</td>
</tr>
<tr>
<td>Emory University</td>
<td>3</td>
</tr>
<tr>
<td>Erskine College</td>
<td>1</td>
</tr>
<tr>
<td>Evergreen State College</td>
<td>2</td>
</tr>
<tr>
<td>Ewha Women's University - College of Medicine - Seoul - South Korea *</td>
<td>1</td>
</tr>
<tr>
<td>Florida Atlantic University</td>
<td>1</td>
</tr>
<tr>
<td>Florida Institute of Technology</td>
<td>2</td>
</tr>
<tr>
<td>Florida Memorial University</td>
<td>1</td>
</tr>
<tr>
<td>Florida State University</td>
<td>2</td>
</tr>
<tr>
<td>Fontbonne University</td>
<td>1</td>
</tr>
<tr>
<td>Franklin and Marshall College</td>
<td>3</td>
</tr>
<tr>
<td>Fudan University</td>
<td>10</td>
</tr>
<tr>
<td>Fujen Catholic University *</td>
<td>1</td>
</tr>
<tr>
<td>Furman University</td>
<td>1</td>
</tr>
<tr>
<td>Geneva College</td>
<td>1</td>
</tr>
<tr>
<td>George Mason University</td>
<td>2</td>
</tr>
<tr>
<td>George Washington University</td>
<td>6</td>
</tr>
<tr>
<td>Georgetown University</td>
<td>3</td>
</tr>
<tr>
<td>Georgia Institute of Technology</td>
<td>3</td>
</tr>
<tr>
<td>Gettysburg College</td>
<td>1</td>
</tr>
<tr>
<td>Goucher College</td>
<td>2</td>
</tr>
<tr>
<td>Grand Canyon University</td>
<td>1</td>
</tr>
<tr>
<td>Grinnell College</td>
<td>1</td>
</tr>
<tr>
<td>Gustavus Adolphus College</td>
<td>1</td>
</tr>
<tr>
<td>Hampton University</td>
<td>2</td>
</tr>
<tr>
<td>Harvard University</td>
<td>6</td>
</tr>
<tr>
<td>Harvard University School of Public Health</td>
<td>2</td>
</tr>
<tr>
<td>Harvey Mudd College</td>
<td>2</td>
</tr>
<tr>
<td>Haverford College</td>
<td>1</td>
</tr>
<tr>
<td>Henan Medical University *</td>
<td>1</td>
</tr>
<tr>
<td>Hong Kong University of Science and Technology *</td>
<td>1</td>
</tr>
<tr>
<td>Hope College</td>
<td>1</td>
</tr>
<tr>
<td>Howard University</td>
<td>3</td>
</tr>
<tr>
<td>Hunter College</td>
<td>1</td>
</tr>
<tr>
<td>Imperial College of Science, Technology and Medicine</td>
<td>1</td>
</tr>
<tr>
<td>Indian Institute of Technology (Bombay) *</td>
<td>8</td>
</tr>
<tr>
<td>Indian Institute of Technology (Delhi) *</td>
<td>1</td>
</tr>
<tr>
<td>Indian Institute of Technology (Kharagpur) *</td>
<td>2</td>
</tr>
<tr>
<td>Indian Institute of Technology (Madras) *</td>
<td>3</td>
</tr>
<tr>
<td>Indiana University (Bloomington)</td>
<td>1</td>
</tr>
<tr>
<td>Iowa State University of Science and Technology</td>
<td>1</td>
</tr>
<tr>
<td>Isfahan University of Technology *</td>
<td>1</td>
</tr>
<tr>
<td>Ithaca College</td>
<td>1</td>
</tr>
<tr>
<td>James Madison University</td>
<td>1</td>
</tr>
<tr>
<td>Johns Hopkins Bloomberg School of Public Health</td>
<td>1</td>
</tr>
<tr>
<td>Johns Hopkins University</td>
<td>47</td>
</tr>
<tr>
<td>Johns Hopkins University School of Medicine</td>
<td>3</td>
</tr>
<tr>
<td>Juniata College</td>
<td>2</td>
</tr>
<tr>
<td>College/St.</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Kalamazoo College</td>
<td></td>
</tr>
<tr>
<td>Kangwon National University</td>
<td></td>
</tr>
<tr>
<td>Keio University</td>
<td></td>
</tr>
<tr>
<td>Keio State University</td>
<td></td>
</tr>
<tr>
<td>Kenyon College</td>
<td></td>
</tr>
<tr>
<td>Kings College</td>
<td></td>
</tr>
<tr>
<td>Korea Advanced Institute of Science and Technology - Taejon</td>
<td>4</td>
</tr>
<tr>
<td>Korea University (Seoul)</td>
<td></td>
</tr>
<tr>
<td>Lafayette College</td>
<td></td>
</tr>
<tr>
<td>Lebanese American University</td>
<td></td>
</tr>
<tr>
<td>Lehigh University</td>
<td></td>
</tr>
<tr>
<td>Lewis and Clark College</td>
<td></td>
</tr>
<tr>
<td>Long Island University</td>
<td></td>
</tr>
<tr>
<td>Louisiana State University (Baton Rouge)</td>
<td></td>
</tr>
<tr>
<td>Louisiana State University Medical Center School of Graduate Studies</td>
<td>1</td>
</tr>
<tr>
<td>Loyola College</td>
<td></td>
</tr>
<tr>
<td>Macalester College (St. Paul)</td>
<td></td>
</tr>
<tr>
<td>Massachusetts Institute of Technology</td>
<td>24 Masters College</td>
</tr>
<tr>
<td>Mayo Graduate School</td>
<td></td>
</tr>
<tr>
<td>McGill University</td>
<td></td>
</tr>
<tr>
<td>Mercyhurst College</td>
<td></td>
</tr>
<tr>
<td>Messiah College</td>
<td></td>
</tr>
<tr>
<td>Miami University</td>
<td></td>
</tr>
<tr>
<td>Michigan State University</td>
<td></td>
</tr>
<tr>
<td>Michigan State University School of Veterinary Medicine - E. Lansing</td>
<td>2</td>
</tr>
<tr>
<td>Middle East Technical University</td>
<td></td>
</tr>
<tr>
<td>Millersville University</td>
<td></td>
</tr>
<tr>
<td>Minnesota State University (Mankato)</td>
<td></td>
</tr>
<tr>
<td>Minnesota State University (Moorhead)</td>
<td></td>
</tr>
<tr>
<td>Mississippi State University</td>
<td></td>
</tr>
<tr>
<td>Monmouth University</td>
<td></td>
</tr>
<tr>
<td>Montana State University</td>
<td></td>
</tr>
<tr>
<td>Montclair State University</td>
<td></td>
</tr>
<tr>
<td>Morehouse College</td>
<td></td>
</tr>
<tr>
<td>Morgan State University</td>
<td></td>
</tr>
<tr>
<td>Mount Holyoke College</td>
<td></td>
</tr>
<tr>
<td>Mount Saint Mary's College - Los Angeles</td>
<td></td>
</tr>
<tr>
<td>Nanjing University</td>
<td></td>
</tr>
<tr>
<td>Nanuk University</td>
<td></td>
</tr>
<tr>
<td>Nanyang Technological University</td>
<td></td>
</tr>
<tr>
<td>National and Kapodistrian University of Athens</td>
<td></td>
</tr>
<tr>
<td>National Cheng Kung University</td>
<td></td>
</tr>
<tr>
<td>National Chiao Tung University</td>
<td></td>
</tr>
<tr>
<td>National Taiwan Normal University</td>
<td></td>
</tr>
<tr>
<td>National Taiwan University</td>
<td></td>
</tr>
<tr>
<td>National Tsing Hua University</td>
<td></td>
</tr>
<tr>
<td>National University of Singapore</td>
<td></td>
</tr>
<tr>
<td>National Yang-Ming University</td>
<td></td>
</tr>
<tr>
<td>New Jersey Institute of Technology</td>
<td></td>
</tr>
<tr>
<td>New York University</td>
<td></td>
</tr>
<tr>
<td>North Carolina Central University</td>
<td></td>
</tr>
<tr>
<td>North Carolina State University</td>
<td></td>
</tr>
<tr>
<td>North Carolina State University College of Veterinary Medicine</td>
<td></td>
</tr>
<tr>
<td>Northeastern University</td>
<td></td>
</tr>
<tr>
<td>Northern Arizona University</td>
<td></td>
</tr>
<tr>
<td>Northern Kentucky University</td>
<td></td>
</tr>
<tr>
<td>Northwestern University</td>
<td></td>
</tr>
<tr>
<td>Novosibirsk University</td>
<td></td>
</tr>
<tr>
<td>Oakwood College</td>
<td></td>
</tr>
<tr>
<td>Oberlin College</td>
<td></td>
</tr>
<tr>
<td>Occidental College</td>
<td></td>
</tr>
<tr>
<td>Ohio State University</td>
<td>4</td>
</tr>
<tr>
<td>Oklahoma Baptist University</td>
<td></td>
</tr>
<tr>
<td>Oregon State University</td>
<td></td>
</tr>
<tr>
<td>Osmania Medical College - Osmania University</td>
<td></td>
</tr>
<tr>
<td>Hyderabad - A P - India</td>
<td></td>
</tr>
<tr>
<td>Osmania University</td>
<td></td>
</tr>
<tr>
<td>Oxford University Medicine School - Oxford</td>
<td></td>
</tr>
<tr>
<td>Peking Union Medical College</td>
<td></td>
</tr>
<tr>
<td>Peking University</td>
<td>16</td>
</tr>
<tr>
<td>Pennsylvania State University</td>
<td></td>
</tr>
<tr>
<td>Pohang University of Science and Technology</td>
<td></td>
</tr>
<tr>
<td>Princeton University</td>
<td></td>
</tr>
<tr>
<td>Purdue University</td>
<td></td>
</tr>
<tr>
<td>Queen's University (Canada)</td>
<td></td>
</tr>
<tr>
<td>Quinnipiac College</td>
<td></td>
</tr>
<tr>
<td>Radboud University Nijmegen</td>
<td></td>
</tr>
<tr>
<td>Radcliffe College</td>
<td></td>
</tr>
<tr>
<td>Rajiv Gandhi University of Health Sciences</td>
<td></td>
</tr>
<tr>
<td>Reed College</td>
<td></td>
</tr>
<tr>
<td>Rensselaer Polytechnic Institute</td>
<td></td>
</tr>
<tr>
<td>Rhodes College</td>
<td></td>
</tr>
<tr>
<td>Rice University</td>
<td></td>
</tr>
<tr>
<td>Ringling College of Art &amp; Design</td>
<td></td>
</tr>
<tr>
<td>Roanoke College</td>
<td></td>
</tr>
<tr>
<td>Rochester Institute of Technology</td>
<td></td>
</tr>
<tr>
<td>Rutgers University</td>
<td></td>
</tr>
<tr>
<td>Saint John's University</td>
<td></td>
</tr>
<tr>
<td>Saint Olaf College</td>
<td></td>
</tr>
<tr>
<td>Salisbury University</td>
<td></td>
</tr>
<tr>
<td>San Diego State University</td>
<td></td>
</tr>
<tr>
<td>School of the Art Institute of Chicago</td>
<td></td>
</tr>
<tr>
<td>School of Visual Arts</td>
<td></td>
</tr>
<tr>
<td>Seoul National University</td>
<td></td>
</tr>
<tr>
<td>Seton Hall University</td>
<td></td>
</tr>
<tr>
<td>Shahed University</td>
<td></td>
</tr>
<tr>
<td>Shandong University</td>
<td></td>
</tr>
<tr>
<td>Shanghai Institute of Biological Sciences</td>
<td></td>
</tr>
<tr>
<td>Shanghai Jiao Tong University</td>
<td></td>
</tr>
<tr>
<td>Shanghai Second Medical University</td>
<td></td>
</tr>
<tr>
<td>Sharif University of Technology</td>
<td></td>
</tr>
<tr>
<td>Shippensburg University of Pennsylvania</td>
<td></td>
</tr>
<tr>
<td>Sichuan University</td>
<td></td>
</tr>
<tr>
<td>Skagit Valley College</td>
<td></td>
</tr>
<tr>
<td>Skidmore College</td>
<td></td>
</tr>
<tr>
<td>Smith College</td>
<td></td>
</tr>
<tr>
<td>Sogang University</td>
<td></td>
</tr>
<tr>
<td>Sri Venkateswara College</td>
<td></td>
</tr>
<tr>
<td>St. Louis University</td>
<td></td>
</tr>
<tr>
<td>St. Mary's College of Maryland</td>
<td></td>
</tr>
<tr>
<td>St. Mary's University of Minnesota</td>
<td></td>
</tr>
<tr>
<td>Stanford University</td>
<td></td>
</tr>
<tr>
<td>State University of New York - Upstate Medical University, Clinical Campus at Binghamton</td>
<td>1</td>
</tr>
<tr>
<td>State University of New York (Albany)</td>
<td></td>
</tr>
<tr>
<td>State University of New York (Binghamton)</td>
<td></td>
</tr>
<tr>
<td>State University of New York (Buffalo)</td>
<td></td>
</tr>
<tr>
<td>State University of New York (Geneseo)</td>
<td></td>
</tr>
<tr>
<td>State University of New York (Oswego)</td>
<td></td>
</tr>
<tr>
<td>State University of New York (Stony Brook)</td>
<td></td>
</tr>
<tr>
<td>Stonehill College</td>
<td></td>
</tr>
<tr>
<td>Sun Yat-sen University</td>
<td></td>
</tr>
<tr>
<td>Sungkyunkwan University</td>
<td></td>
</tr>
<tr>
<td>Susquehanna University</td>
<td></td>
</tr>
<tr>
<td>Swarthmore College</td>
<td></td>
</tr>
<tr>
<td>Syracuse University</td>
<td></td>
</tr>
</tbody>
</table>

**STUDENTS:** 481
<table>
<thead>
<tr>
<th>University Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taipei Medical University</td>
<td>1</td>
</tr>
<tr>
<td>Tennessee Temple University</td>
<td>1</td>
</tr>
<tr>
<td>Texas A&amp;M University</td>
<td>6</td>
</tr>
<tr>
<td>Texas A&amp;M University College of Medicine - College Station</td>
<td>1</td>
</tr>
<tr>
<td>Thayer School of Engineering</td>
<td>1</td>
</tr>
<tr>
<td>Tohoku University</td>
<td>1</td>
</tr>
<tr>
<td>Tougaloo College</td>
<td>1</td>
</tr>
<tr>
<td>Towson University</td>
<td>5</td>
</tr>
<tr>
<td>Trinity College</td>
<td>1</td>
</tr>
<tr>
<td>Tsinghua University</td>
<td>36</td>
</tr>
<tr>
<td>Tufts University</td>
<td>3</td>
</tr>
<tr>
<td>Tulane University</td>
<td>5</td>
</tr>
<tr>
<td>United States Naval Academy</td>
<td>2</td>
</tr>
<tr>
<td>Universidad Central de Venezuela *</td>
<td>1</td>
</tr>
<tr>
<td>Universidad Complutense de Madrid *</td>
<td>1</td>
</tr>
<tr>
<td>Universidad de Antioquia - Facultad de Medicina - Medellin *</td>
<td>2</td>
</tr>
<tr>
<td>Universidad de Chile *</td>
<td>1</td>
</tr>
<tr>
<td>Universidad Peruana Cayetano Heredia - Lima *</td>
<td>1</td>
</tr>
<tr>
<td>Universidad Politecnica de Madrid *</td>
<td>1</td>
</tr>
<tr>
<td>Universidade Federal De Pernambuco *</td>
<td>1</td>
</tr>
<tr>
<td>Universita Degli Studi di Roma “La Sapienza” *</td>
<td>1</td>
</tr>
<tr>
<td>University for Health Sciences, Medical Informatics and Technology *</td>
<td>1</td>
</tr>
<tr>
<td>University of Alabama</td>
<td>1</td>
</tr>
<tr>
<td>University of Arizona</td>
<td>3</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>1</td>
</tr>
<tr>
<td>University of Bridgeport</td>
<td>1</td>
</tr>
<tr>
<td>University of Bucharest</td>
<td>2</td>
</tr>
<tr>
<td>University of Calcutta *</td>
<td>1</td>
</tr>
<tr>
<td>University of Calgary *</td>
<td>1</td>
</tr>
<tr>
<td>University of California (Berkeley)</td>
<td>10</td>
</tr>
<tr>
<td>University of California (Davis)</td>
<td>1</td>
</tr>
<tr>
<td>University of California (Irvine)</td>
<td>6</td>
</tr>
<tr>
<td>University of California (Los Angeles)</td>
<td>8</td>
</tr>
<tr>
<td>University of California (Riverside)</td>
<td>2</td>
</tr>
<tr>
<td>University of California (San Diego)</td>
<td>9</td>
</tr>
<tr>
<td>University of California (Santa Barbara)</td>
<td>2</td>
</tr>
<tr>
<td>University of California (Santa Cruz)</td>
<td>1</td>
</tr>
<tr>
<td>University of Cambridge - School of Clinical Medicine -</td>
<td>1</td>
</tr>
<tr>
<td>Cambridge *</td>
<td>1</td>
</tr>
<tr>
<td>University of Cambridge *</td>
<td>6</td>
</tr>
<tr>
<td>University of Chicago</td>
<td>1</td>
</tr>
<tr>
<td>University of Colorado</td>
<td>1</td>
</tr>
<tr>
<td>University of Connecticut</td>
<td>3</td>
</tr>
<tr>
<td>University of Delaware</td>
<td>2</td>
</tr>
<tr>
<td>University of Delhi *</td>
<td>1</td>
</tr>
<tr>
<td>University of Denver</td>
<td>1</td>
</tr>
<tr>
<td>University of Florida</td>
<td>9</td>
</tr>
<tr>
<td>University of Georgia</td>
<td>5</td>
</tr>
<tr>
<td>University of Guelph</td>
<td>1</td>
</tr>
<tr>
<td>University of Hong Kong *</td>
<td>1</td>
</tr>
<tr>
<td>University of Houston</td>
<td>2</td>
</tr>
<tr>
<td>University of Idaho</td>
<td>1</td>
</tr>
<tr>
<td>University of Illinois (Urbana)</td>
<td>13</td>
</tr>
<tr>
<td>University of Illinois College of Medicine (Urbana)</td>
<td>1</td>
</tr>
<tr>
<td>University of Kansas</td>
<td>3</td>
</tr>
<tr>
<td>University of Kentucky</td>
<td>2</td>
</tr>
<tr>
<td>University of Kerala *</td>
<td>1</td>
</tr>
<tr>
<td>University of Louisville</td>
<td>2</td>
</tr>
<tr>
<td>University of Lucknow - K.G. Medical College - Lucknow - U P</td>
<td>2</td>
</tr>
<tr>
<td>University of Madras *</td>
<td>1</td>
</tr>
<tr>
<td>University of Maine</td>
<td>1</td>
</tr>
<tr>
<td>University of Maryland (Baltimore County)</td>
<td>18</td>
</tr>
<tr>
<td>University of Maryland (College Park)</td>
<td>14</td>
</tr>
<tr>
<td>University of Maryland (Eastern Shore)</td>
<td>3</td>
</tr>
<tr>
<td>University of Massachusetts (Amherst)</td>
<td>4</td>
</tr>
<tr>
<td>University of Massachusetts (Amherst)</td>
<td>4</td>
</tr>
<tr>
<td>University of Michigan (Ann Arbor)</td>
<td>3</td>
</tr>
<tr>
<td>University of Michigan</td>
<td>2</td>
</tr>
<tr>
<td>University of Minnesota (Twin Cities)</td>
<td>5</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 Mysore *</td>
<td>1</td>
</tr>
<tr>
<td>University of Nevada</td>
<td>1</td>
</tr>
<tr>
<td>University of New Hampshire</td>
<td>2</td>
</tr>
<tr>
<td>University of New Mexico</td>
<td>1</td>
</tr>
<tr>
<td>University of North Carolina (Chapel Hill)</td>
<td>9</td>
</tr>
<tr>
<td>University of Notre Dame</td>
<td>2</td>
</tr>
<tr>
<td>University of Oklahoma (Norman)</td>
<td>2</td>
</tr>
<tr>
<td>University of Oregon (Eugene)</td>
<td>1</td>
</tr>
<tr>
<td>University of Oxford *</td>
<td>2</td>
</tr>
<tr>
<td>University of Pennsylvania</td>
<td>14</td>
</tr>
<tr>
<td>University of Pittsburgh</td>
<td>8</td>
</tr>
<tr>
<td>University of Puerto Rico (Mayaguez Campus)</td>
<td>1</td>
</tr>
<tr>
<td>University of Puerto Rico (Rio Piedras)</td>
<td>1</td>
</tr>
<tr>
<td>University of Puget Sound</td>
<td>2</td>
</tr>
<tr>
<td>University of Rochester</td>
<td>7</td>
</tr>
<tr>
<td>University of Science and Technology of China *</td>
<td>5</td>
</tr>
<tr>
<td>University of Scranton</td>
<td>1</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>4</td>
</tr>
<tr>
<td>University of Tennessee</td>
<td>5</td>
</tr>
<tr>
<td>University of Texas (Arlington)</td>
<td>2</td>
</tr>
<tr>
<td>University of Texas (Austin)</td>
<td>5</td>
</tr>
<tr>
<td>University of Texas (Dallas)</td>
<td>1</td>
</tr>
<tr>
<td>University of Texas (San Antonio)</td>
<td>1</td>
</tr>
<tr>
<td>University of the Philippines</td>
<td>1</td>
</tr>
<tr>
<td>University of Tokyo *</td>
<td>1</td>
</tr>
<tr>
<td>University of Toronto *</td>
<td>7</td>
</tr>
<tr>
<td>University of Tulsa *</td>
<td>1</td>
</tr>
<tr>
<td>University of Utah</td>
<td>2</td>
</tr>
<tr>
<td>University of Vermont</td>
<td>1</td>
</tr>
<tr>
<td>University of Vienna *</td>
<td>1</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>15</td>
</tr>
<tr>
<td>University of Washington</td>
<td>1</td>
</tr>
<tr>
<td>University of Waterloo *</td>
<td>4</td>
</tr>
<tr>
<td>University of Wisconsin (Eau Claire)</td>
<td>1</td>
</tr>
<tr>
<td>University of Wisconsin (Madison)</td>
<td>5</td>
</tr>
<tr>
<td>University of Wisconsin (Whitewater)</td>
<td>4</td>
</tr>
<tr>
<td>Ursinus College</td>
<td>1</td>
</tr>
<tr>
<td>Vanderbilt University</td>
<td>2</td>
</tr>
<tr>
<td>Vanderbilt University School of Medicine</td>
<td>1</td>
</tr>
<tr>
<td>Vassar College</td>
<td>2</td>
</tr>
<tr>
<td>Victor Babes University of Medicine and Pharmacy</td>
<td>1</td>
</tr>
<tr>
<td>Vietnam National University</td>
<td>1</td>
</tr>
<tr>
<td>Virginia Commonwealth University</td>
<td>1</td>
</tr>
<tr>
<td>Virginia Polytechnic Institute and State University</td>
<td>4</td>
</tr>
<tr>
<td>Virginia-Maryland Regional College of Veterinary Medicine</td>
<td>1</td>
</tr>
<tr>
<td>Visvesvariah Technological University *</td>
<td>1</td>
</tr>
<tr>
<td>Wagner College</td>
<td>1</td>
</tr>
<tr>
<td>Wake Forest University</td>
<td>1</td>
</tr>
<tr>
<td>Washington University in St. Louis</td>
<td>6</td>
</tr>
<tr>
<td>Wellesley College</td>
<td>3</td>
</tr>
<tr>
<td>Wesleyan University (Connecticut)</td>
<td>1</td>
</tr>
<tr>
<td>West Virginia University</td>
<td>1</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>1</td>
</tr>
</tbody>
</table>
Western Washington University ....................... 1
Wheaton College ........................................... 2
Whitman College ........................................... 1
William Smith College ..................................... 1
Wellesley College ........................................... 2
Wittenberg University ...................................... 1
Worcester Polytechnic Institute (Worcester) ....... 3
Wuhan University * ........................................... 3
Xinyang Teachers’ College * .............................. 1
Yale University .............................................. 13
Yale University School of Medicine .................... 1
Yonsei University * ......................................... 4
York University (Canada) * ............................... 1
Zhejiang University * ........................................ 1

*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 2009

NEVINE DIA ALI
Department of Psychiatry
New York University School of Medicine
N-10-5 Deans Office
550 First Ave
New York, NY 10016

HAASSAN MOHAMED ALOSH
Department of Orthopedic Surgery
Hospital of the University of Pennsylvania
Office of Graduate Medical Education
3600 Spruce Street, 1 Maloney
Philadelphia, PA 19104

MICHAEL ALPEROVICH
Department of Plastic Surgery
New York University School of Medicine
N-10-5 Deans Office
550 First Ave
New York, NY 10016

FRANK JOSEPH ATTENELLO III
Department of Neurological Surgery
University Of Southern California
LAC+USC Medical Center
1200 North State St, Room 1102
Los Angeles, CA 90033-1084

SONYA BABAR
Transitional Year Program
Albert Einstein Medical Center
Levy 8 West
5501 Old York Rd
Philadelphia, PA 19141-3098

*SIGNATURE

CHRISTOPHER CAMPBELL
Laboratory of Medicinal Chemistry
Center for Cancer Research
National Cancer Institute
376 Boyles Street, Building 376
Frederick, MD 21702

ANTHONY ROBERT CARLINO
Department of Psychiatry
Hospital of the University of Pennsylvania
Office of Graduate Medical Education
3600 Spruce Street, 1 Maloney
Philadelphia, PA 19104

ERIC TIMOTHY CARROLL
Department of Pediatrics
University of Pittsburgh Medical Center
Graduate Medical Education
Suite 300 Iroquois Building
3600 Forbes Avenue
Pittsburgh, PA 15213

MARGARET WELSH CAVANAUGH-HUSSEY
Johns Hopkins Bayview Medical Center
Department of Medicine A 1 West
4940 Eastern Ave B-1-North
Baltimore, MD 21224

*Department of Dermatology
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

JENNIFER KYLIE CHEN
Department of Medicine
Johns Hopkins Bayview Medical Center
4940 Eastern Ave B-1-North
Baltimore, MD 21224

*SIGNATURE

JENNIFER CHENG
Department of Neurosurgery
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

ANDREW SANGMIN CHI
Department of Medicine
Lankenau Hospital
100 Lancaster Avenue
Medical Education
Wynnewood, PA 19096

*RHONTHOLY OF RADIOLABY
Thomas Jefferson University
Gibbon Building Suite 2170
111 South 11th Street
Philadelphia, PA 19107-5096

RYAN EDWIN CHILDERS
Department of Medicine
Johns Hopkins Bayview Medical Center
4940 Eastern Ave B-1-North
Baltimore, MD 21224

EUNPI CHO
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

EDWARD CHU
Department of Emergency Medicine
UCLA Medical Center
Room 17-320-CHS
10833 Le Conte Avenue
Los Angeles CA 90095-6932

NATHAN WILLIAM COLEMAN
Department of Orthopedic Surgery
Univ. of Washington Affiliate Hospitals
Health Sciences Building A 300
Box 356340
Seattle, WA 98195-6340

JOSEPH GARFIELD CROMPTON
Department of Surgery
UCLA Medical Center
Room 17-320-CHS
10833 Le Conte Avenue
Los Angeles CA 90095-6932

484
LOUIS TUONG CHINH DANG  
Department of Pediatrics  
University of Michigan Hospitals  
2500 Green Road  
Suite 700, Box 0748  
Ann Arbor, MI 48105-0748

MELISSA NICOLE DATTALO  
Department of Medicine  
Johns Hopkins Bayview Medical Center  
4940 Eastern Ave B-1-North  
Baltimore, MD 21224

NEAL ARLEDGE DEJONG  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

MORGAN KRISTEN DOOLEY  
Department of Medicine  
University of Maryland  
Mercy Medical Center  
301 St Paul Street Suite 300T  
Baltimore, MD 21202-1665

JEFFERY COLEMAN DUBOIS  
Department of Anesthesiology  
Stanford University  
GME Office HC 435  
300 Pasteur Drive  
Stanford, CA 94305-5207

ELIZABETH W DZENG  
Department of Medicine  
NYP Hospital  
Columbia University Medical Center  
Columbia Campus  
180 FT Washington Ave HP FL 1  
New York, NY 10032-3784

ALLEN OMID EGHRARI  
Transitional Program  
St. Francis Hospital Evanston  
355 Ridge Avenue  
Evanston, IL 60202-3399

ANDREA ESTRADA  
Department of Pediatrics  
Stanford University Programs  
GME Office HC 435  
300 Pasteur Drive  
Stanford, CA 94305-5207

SHARIFEH FARASAT  
Transitional Program  
St. Joseph Mercy  
GME RHB 2111  
5301 E Huron River Drive  
Ann Arbor, MI 48106

*Department of Anesthesiology  
Stanford University  
GME Office HC 435  
300 Pasteur Drive  
Stanford, CA 94305-5207

JEFFREY PETER FIORENZA  
Department of Medicine  
Brigham & Women’s Hospital  
Office of Graduate Medical Education  
75 Francis Street Floor PBB RM B3  
Boston, MA 02115

GIANNINA LISSA GARCES-AMBOSSI  
Department of Neurosurgery  
Massachusetts General Hospital  
GME Office  
7 Whittier Place, Suite 108  
Boston, MA 02114

SRAVANYA GAVINI  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

MICHAEL DAVID GEORGE  
Department of Medicine  
Hospita of the University of Pennsylvania  
Office of Graduate Medical Education  
3600 Spruce Street, 1 Maloney  
Philadelphia, PA 19104

TED AVI GERSTENBLITH  
Department of Psychiatry  
Massachusetts General Hospital – GME Office  
7 Whittier Place, Suite 108  
Boston, MA 02114

HUSSAM HASHIM GHALIB  
Department of Medicine  
University of Michigan Hospitals  
2500 Green Road  
Suite 700, Box 0748  
Ann Arbor, MI 48105-0748

KASEY LYNN GILDERSLEEVE  
Department of Neurology  
Baylor College of Medicine – Houston  
Room 222D  
One Baylor Plaza  
Houston, TX 77030-3498

SERGIO ALEJANDRO GLAIT  
Department of Orthopedic Surgery  
New York University School of Medicine  
N-10-5 Deans Office  
550 First Avenue  
New York, NY 10016

SETH DANIEL GOLDSTEIN  
Department of Surgery  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824
PHILLIP JOHN GRAY
Department of Medicine
Massachusetts General Hospital – GME Office
7 Whittier Place, Suite 108
Boston, MA 02114
*Department of Radiation Oncology
Brigham & Women’s Hospital
Office of Graduate Medical Education
75 Francis Street Floor PBB RM B3
Boston, MA 02115

SOPHIE CHARLOTTE GRISWOLD
Department of Surgery
UC San Francisco – East Bay
Surgery Department
1411 East 31st Street
Oakland, CA 94602-1018

ROZALINA GRUBINA
Department of Medicine/Ci Research
Mayo School of Graduate Medical Education
200 First Street SW
Siebens 5
Rochester, MN 55905

SHANNON KATHLEEN GUST
Department of Emergency Medicine
Maricopa Medical Center
Administration Bldg 2nd Floor
2601 E Roosevelt Street
Phoenix, AZ 85008

TIMOTHY JAMES HARRIS
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

*Department of Radiology
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

GREGORY THOMAS HAVLENA
Department of Medicine
Franklin Square Hospital MD
9000 Franklin Square Drive
Baltimore, MD 21237-3998

*Department of Radiology
Stanford University Programs
GME Office HC 435
300 Pasteur Drive
Stanford, CA 94305-5207

TAMMY MARIE HOLM
Department of Surgery
Brigham & Women’s Hospital
Office of Graduate Medical Education
75 Francis Street Floor PBB RM B3
Boston, MA 02115

DAVID PAUL HOROWITZ
Department of Medicine
Washington Hospital Center
110 Irving ST NW RM POB 121
Washington, DC 20010

*Department of Radiation Oncology
NYP Hospital
Columbia University Medical Center
Columbia Campus
180 Ft Washington Ave HP FL-1
New York, NY 10032-3784

REMEALLE ALMA HOW
Department of Surgery
UPMC Graduate Medical Education
Suite 300 Iroquois Building
3600 Forbes Avenue
Pittsburg, PA 15213

DAVID LEIGHTON HOWARD
Department of Obstetrics-Gynecology
NYP- Hospital-Weill Cornell Medical Center
New York-Cornell Campus
525 East 68th Street Room F-172
New York, NY 10021

STEVEN HSU
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

SAMEER KAISER
Department of Surgery
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

JESSE WADE KELLER
Department of Medicine
UC San Francisco
MU 250 East
500 Parnassus Avenue
San Francisco, CA 94143-0474

GARGI DIVYA KHARE
Department of Medicine
Brigham & Women’s Hospital
Office of Graduate Medical Education
75 Francis Street Floor PBB RM B 3
Boston, MA 02115

*Department of Ophthalmology
Veterans Affairs Medical Center
243 Charles Street
Boston, MA 02114

ABTIN HAJILOO KHOSRAVI
Department of Surgery
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824
ALENA KLIMAVA  
Department of Medicine  
UC Davis Medical Center – Sacramento  
Medical Education Building, Suite 4202  
4610 X Street  
Sacramento, CA 95817  
*Department of Ophthalmology  
University of California Davis Medical Center  
4860 Y Street Suite 2400  
Sacramento, CA 95817

FANG SARAH KO  
Transitional Program  
Harbor Hospital Center  
3001 South Hanover Street  
Baltimore, MD 21225-1290  
*Department of Ophthalmology  
Johns Hopkins-Wilmer, GBMC  
600 N Wolfe Street – Wilmer B20  
Baltimore, MD 21287

MATTHEW CHRISTOPHER KONERMAN  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

ALI KOOSHKABADI  
Department of Neurosurgery  
UPMC Medical Education Program  
Suite 300 Iroquois Building  
3600 Forbes Avenue  
Pittsburgh, PA 15213

ELIZABETH KIRSTEN LAVERRIERE  
Department of Pediatrics  
Children’s Hospital of Philadelphia  
34th Street & Civic Center Blvd  
Pediatric Residency – Room 9557  
Philadelphia, PA 19104-4399

ADREA SHIHYUN LEE  
Department of Emergency Medicine  
University of Maryland Medical Center  
22 South Green Street  
Baltimore, MD 21201

JOHNSON CHEN-SHING LEE  
Department of Plastic Surgery  
Albany Medical Center Hospital  
Graduate Medical Education MC-50  
43 New Scotland Avenue  
Albany, NY 12208

HANNA BETH LEMERMAN  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

JORDAN STEWART LEYTON-MANGE  
Department of Medicine  
Massachusetts General Hospital – GME Office  
7 Whittier Place, Suite 108  
Boston, MA 02114

DAVID MICHAEL LOFTUS  
Department of Medicine  
Duke University Medical Center  
M148 Davison Building  
BOX 3951  
Durham, NC 27710

ANKIT MAHADEVIA  
25 Crescent St #227  
Waltham, MA 02453

MICHAEL ARMANDO MARCHETTI  
Department of Medicine  
The Mount Sinai Hospital  
1 Gustave Levy Place  
New York, NY 10029-6574  
*Department of Dermatology  
University of Virginia  
McKim Hall, Room 4008  
Jefferson Park Avenue  
Charlottesville, VA 22908

JO MARIN MARTIN  
Department of Medicine  
University of Maryland/Mercy Medical Center  
301 St Paul Place Suite 300T  
Baltimore, MD 21202-2165  
*Department of Dermatology  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

COURTNEY GOODWIN MASEAR  
Department of Anesthesiology  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

BRYANT VINCENT MCIVER JR  
Department of Surgery  
Emory University SOM  
1648 Pierce Drive, NE Suite 327  
Atlanta, GA 30322

MIRAS EILEEN MEYER  
Department of Surgery  
Mayo School of Graduate Medical Education  
200 First Street SW – Siebens 5  
Rochester, MN 55905  
*Department of Urology  
College of Medicine, Mayo Clinic  
Rochester Methodist Hospital  
200 First Street SW  
Rochester, MN 55905

DANIEL LYMAN MILLER  
Department of Surgery  
University of Michigan Hospitals  
2500 Green Road  
Suite 700, Box 0748  
Ann Arbor, MI 48105-0748  
*Department of Urology  
University of Michigan & Health Center  
Veterans Affairs Medical Center  
1500 East Medical Center Drive  
TC 3875 SPC 5330  
Ann Arbor, MI 48109

PAYAM MOHASSEL  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824
RYAN WILLIAM MONROE  
Department of Medicine  
Providence Portland Medical Center  
Department of Medical Education  
5050 NE Hoyte Street Suite 540  
Portland, OR 97213-2967

VINH-TUNG PHUOC NGUYEN  
Department of Medicine  
The Mount Sinai Hospital  
1 Gustave Levy Place  
New York, NY 10029-6574

TIMOTHY MICHAEL NIESSEN  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

JESSICA OPOKU-ANANE  
Department of Obstetrics-Gynecology  
Brigham & Women’s Hospital  
Office of Graduate Medical Education  
76 Francis Street Floor PBB RM B3  
Boston, MA 02115

NISHANT DINESH PATEL  
Department of Surgery  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

SUSAN MARIE PETERSON  
Department of Emergency Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

RORY JAMES PETTEYS  
Department of Neurosurgery  
Georgetown University Hospital  
3800 Reservoir Road, NW LLC-PHC  
Washington, DC 20007-2113

EMILY CAROL PFEIL  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

MARC DAVID RICKS  
Department of Pediatrics  
Cleveland Clinic Foundation  
NA 23  
9500 Euclid Avenue  
Cleveland, OH 44195-5242

RICHARD BRANDON SCHARTZ  
417 D Street NW  
Miami, OK 74354

AHMAD REZA SEDAGHAT  
Department of Otolaryngology  
Mass Eye and Ear Infirmary  
243 Charles Street  
Boston, MA 02114-3095

MICHAEL WALLACE SENTOME  
1472 East 57th St  
Brooklyn NY 11234

CATHERINE SEO  
Department of Emergency Medicine  
Brigham & Women’s Hospital  
Office of Graduate Medical Education  
75 Francis ST Floor PBB RM B3  
Boston, MA 02115

AMIT RAHMAN  
Department of Emergency Medicine  
SUNY Upstate Medical University  
UH-1814  
750 E Adams Street  
Syracuse, NY 13210

PUSHPA VANI RAJA  
Department of Psychiatry  
UCLA Semel Institute for Neuroscience  
NPI C8-852  
760 Westwood Plaza  
Los Angeles, CA 90024-1759

FATEMeh RAJAlI  
Department of Medicine  
University of Maryland/Mercy Medical Center  
301 St Paul Place Suite 300T  
Baltimore, MD 21202-2165

RABIA RAFI RAZI  
Department of Medicine  
University of Chicago Medical Center  
5841 Maryland Ave B-126 MC1052  
Chicago IL 60637-1470

ALISON PAYNE REID  
Department of Pediatrics  
Cleveland Clinic Foundation  
NA 23  
9500 Euclid Avenue  
Cleveland, OH 44195-5242

SARAH INMAN ROGERS  
Department of Pediatrics  
Mayo School of Graduate Medical Education  
200 First Street SW Siebens 5  
Rochester, MN 55905
SANGINI BHADRIK SHAH  
Department of Obstetrics & Gynecology  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

SOPHIA FONTANILLA SHAKUR  
Department of Neurosurgery  
University of Chicago Medical Center  
5841 Maryland Avenue B-126 MC 1052  
Chicago, IL 60637-1470

ZITA JEH-IH SHIUE  
Department of Medicine  
University of Washington Affil Hosp  
Health Science Building A 300  
Box 356340  
Seattle, WA 98185 6340

KARL ANTON CHRISTOPHER SODERLUND  
Transitional Program  
National Naval Medical Center  
Office of Graduate Med Education  
8901 Wisconsin Avenue  
Bethesda, MD 20889

*Department of Radiology  
National Naval Medical Center  
Department of Radiology  
6900 Georgia Avenue, NW  
Washington, DC 20307

DANIEL BROOKNER STEIN  
Department of Medicine  
Brigham & Women's Hospital  
Office of Graduate Medical Education  
75 Francis ST Floor PBB RM B3  
Boston, MA 02115

BRADLEY CHARLES STRUNK  
Department of Medicine  
Johns Hopkins Bayview Medical Center  
4940 Eastern Avenue  
Baltimore, MD 21224

MICHAEL RAPHAEL TADROSS  
Department of Biomedical Engineering  
Johns Hopkins University School of Medicine  
Ross 713  
720 Rutland Avenue  
Baltimore, MD 21205

ERIC WAN TAN  
Department of Orthopedic Surgery  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

MARIETTA TAN  
Department of Otolaryngology  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

SARAH RUTH TEMPLE  
Department of Emergency Medicine  
University of South Florida  
College of Medicine  
12901 Bruce B Downs Blvd, MDC 2  
Tampa, FL 33612-4799

MONICA ARLENE TINCOPA  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

GEOFFREY HUANG TISON  
Department of Medicine  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

KENNETH SHEINJUE TSENG  
Department of Surgery  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

JONATHAN HENG TZU  
Department of Medicine  
Franklin Square Hospital Center  
9000 Franklin Square Drive  
Baltimore, MD 21237-3998

JANA LYNN VANDEGRIFT  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824

JIOVANI MIRANDA VISAYA  
Department of Otolaryngology  
NYP Hospital Columbia & Cornell  
622 West 168th Street  
New York, NY 10032

AMIT NAVIN VORA  
Department of Medicine  
Brigham & Women's Hospital  
Office of Graduate Medical Education  
75 Francis ST Floor PBB RM B3  
Boston, MA 02115

PAUL RAVI WALDRON  
Department of Medicine  
Johns Hopkins Bayview Medical Center  
4940 Eastern Avenue  
Baltimore, MD 21224

DARCY KATE WEIDEMANN  
Department of Pediatrics  
Johns Hopkins Hospital  
Administration 324  
600 N Wolfe Street  
Baltimore, MD 21287-1824
SASRUTHA RASIKA WICKRAMASINGHE
Department of Medicine
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

LAURA DELONG WOOD
Department of Pathology
Johns Hopkins Hospital
Administration 324
600 N Wolfe Street
Baltimore, MD 21287-1824

LAUREN FANG XU
Department of Pathology
University of Maryland Medical Center
22 South Green Street
Baltimore, MD 21201

JUSTIN SHU YANG
Department of Orthopedic Surgery
Barnes-Jewish Hospital
One Barnes Hospital Plaza
St. Louis, MO 63110

MARK JASON YOUNG
Department of Medicine
Union Memorial Hospital
Medical Education Department
201 East University Parkway
Baltimore, MD 21218
*Department of Anesthesiology
Massachusetts General Hospital – GME Office
7 Whittier Place, Suite 108
Boston, MA 02114

MICHELLE RIBEIRO YOUNG
Department of Medicine
North Shore University Hospital
300 Community Drive
Mansasset, NY 11030

*Department of Radiology
UCLA Medical Center
Room 17-320-CHS
10833 Le Conte Avenue
Los Angeles, CA 90095-6932

KAN KARL ZHANG
Department of Surgery
Union Memorial Hospital
Medical Education Department
201 East University Parkway
Baltimore, MD 21218
*Department of Radiology
Rochester General Hospital
Medical Education Department
1425 Portland Avenue Box 267
Rochester, NY 14621

JESSICA ZHOU
Department of Medicine
St. Joseph Mercy Ann Arbor
GME RHB 2111
5301 E Huron River Drive
Ann Arbor, MI 48106

*Department of Radiology
University of Michigan Hospitals
2500 Green Road
Suite 700 Box 0748
Ann Arbor, MI 48105-0748

RYAN MICHAEL ZIMMERMAN
Department of Orthopedic Surgery
Massachusetts General Hospital – GME Office
7 Whittier Place, Suite 108
Boston, MA 02114

JENNIFER LYNN ZISKIN
7219 Procopio Circle
Columbia, MD 21046

* 2nd 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 is 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 foregoing 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 foregoing 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.
Alphabetical List of Names

Abadir, Peter M. ........................................ 165, 358
Abayazyan, Bagrat .................................... 142
Abbas, Foz M. ........................................... 152, 392
Abbott, Patricia A. .................................. 155, 418
Abd Elmageed, Zakaria Abdel-Ghaffar Youssef .... 429
Abdelhalim, Riaa Zuhdi ............................... 160, 392
Abdelrehim, Ola Abdelrehim Ahmed ................ 431
Abdullah, Fizan ........................................ 285, 358
Abdullah, Lubna Qazi ................................ 440
Abemethy, Darrell R .................................. 150, 251, 305, 321
Abougergis, Marwan Samir ......................... 165, 358
Aboumatar, Hanan J. ................................. 165, 358
Abraham, Alison ....................................... 145
Abraham, Anil Thomas ............................... 120, 405
Abraham, Jennifer Alphonso .......................... 440
Abraham, John M ...................................... 165, 358
Abraham, Maria Roselle ................................ 165, 358
Abragam, Guruka ....................................... 127, 435
Abraham, Theodore P ................................ 162, 341
Abramowitz, Andrew .................................. 242, 358
Abrams, Donald A ..................................... 225, 358
Abrams, Lisa S .......................................... 225, 358
Abramson, Lauren ....................................... 262, 305, 358
Abuav, Rachel .......................................... 139, 306, 358
Achere, Simmer ........................................ 201, 415
Achanta, Pragathi ...................................... 432
Acharya, Soumyadipta .................................. 465
Acharya, Veena Kalmajane ............................ 431
Achuff, Stephen C ...................................... 159, 321
Ackerman, Christopher Michael ...................... 474
Acquavita, Shauna Prendergast ....................... 442
Adams, Hadie .......................................... 159, 321
Adams, Kirstie Anne-Merreya ......................... 439
Adamur Lanka ............................................ 256, 358
Adams, Meredith Claire Brandt ....................... 424
Adams, Robert J .......................................... 192, 312, 317, 341
Adams, Todd C .......................................... 443
Adger, Hoover ........................................... 239, 309, 321
Adhanom, Teamrat Araia ............................. 427
Adhikari, Durga Dhot .................................. 335
Adkinson, N Franklin Jr ............................... 159, 316, 321
Adler, Richard Alan ................................. 225, 358
Adomaityte, Jurga ...................................... 427
Adorf-Korak, Gustavo Alex ............................ 169
Afework, Yohannes .................................... 276, 409
Aftab, Blake Tolu ........................................ 477
Aganga, Qutunburuk Olukoyede ....................... 423
Agarwal, Amit .......................................... 434
Agarwal, Nisheeth ...................................... 430
Agarwal, Rachana ...................................... 172, 409
Agbahiwe, Harold C ................................... 443
Agbor-Enoh, Sean Tabi ................................ 427
Aggarwal, Manisha ..................................... 465
Aggarwal, Neil Raj ...................................... 431
Aggarwal, Nisha ......................................... 426
Aggarwal, Pooja ........................................ 447
Aggarwal, Vikram ...................................... 485
Aghasei-Fard, Masoud ................................ 437
Agnelli, Giuliolo ....................................... 428
Agniew, William Scott ................................ 258, 321
Agranovich, Anna V .................................... 442
Agrawal, Amit .......................................... 440
Agrawal, Gaurav ........................................ 276, 392
Agrawal, Jay Paul ....................................... 427
Agrawal, Nishant ....................................... 216, 291, 358
Agrawal, Yurii .......................................... 438
Age, Peter C ........................................... 123, 309, 310, 418
Aguet, Modoue Veronique ............................ 425
Aguelar-Oliveira, Manuel H ......................... 173, 416
Agwu, Allison Lorna ................................... 173, 425, 359
Ahad, Rooman ......................................... 434
Ahiawat, Rajnees ........................................ 430
Ahiwuwa, Kulwant S ................................... 245, 358
Ahmad, Abdullah Shafique ......................... 120, 392
Ahmad, Haseeb ......................................... 120, 392
Ahmed, Iftikhar ........................................ 453
Ahmed, Rubaiyat ....................................... 428
Ahmed, Sameer ........................................ 451
Ahmed, Shabina Roohi ............................... 429
Ahmed, Syed Mustafa ................................... 431
Ahn, Edward S .......................................... 287, 308, 359
Ahn, Hye S ............................................. 278, 341
Ahn, Young-Hoon ...................................... 411
Ahsan, Sama Farheen ................................ 440
Ahuja, Nita ............................................. 216, 283, 316, 359
Alba, Tlakeha ........................................... 426
Ali, Michael C .......................................... 286, 288, 341
Aina, Abimbola J ....................................... 151, 358
Alken, Colin Echeverria ............................... 424
Aja, Susan M ............................................ 262, 359
Ajiboye, Atunuke Seun ................................ 477
Ajuba-Iwuji, Chimwe Chi Chi ......................... 423
Akar, Fadi G ............................................ 165, 359
Akasupu, Karunakar .................................... 428
Akca, Alger .............................................. 444
Akhaun Malayeri, Ashkan A .......................... 443
Akimov, Sergey Sergeyevich ......................... 442
Akontola, Akintunde A ................................ 264, 342
Akhtate, Bradley Chun-Yee ........................... 424
Akki, Ashwin Sivappa .................................. 428
Akman, Andrew Stephen ............................. 444
Akman, Samuel Robert ................................ 152, 359
Akpek, Emen Karamursel ............................. 224, 341
Akulian, Jason Atticus ................................ 431
Albawaya, Frank C .................................... 407
Al Qassim, Said ......................................... 464
Alaichak, Nada .......................................... 169, 392
Alia, Hamid R ........................................... 463
Aliaish, Samuel M ...................................... 285, 359
Alamelumangapuram, Chidambaram Bharath ...... 433
Alammar, Lina .......................................... 463
Alani, Rhonda M ....................................... 139, 194, 214, 314, 341
Alapat, Daisy Varunni ................................. 439
Alavi, Reza ............................................... 430
Alber, Lavinia .......................................... 433
Albert, Catherine Michelle ........................... 440
Albert, Marilyn S ....................................... 197, 203, 260, 314, 321
Albesiano, Emilia ....................................... 218, 409
Albrecht, Charles R III ............................... 165, 315, 359
Alcheikh, Elie ........................................... 429, 430
Alder, Jonathan Kimball .............................. 436
Alderman, George C ................................... 291, 390
Aldrich, Eric Matthew .................................. 198, 257, 341
Alejandro, Eii ........................................... 169, 392
Allen, James ............................................ 275, 392
Allison, David C ....................................... 153, 319
Allen, Robert Harry .................................. 245, 392
Allman, Melissa Jane .................................. 440
Almashat, Sammy Jafar ............................... 431
Almeida, Andre Luiz Cerequeira ..................... 440
Almeida, Deepak Vinay Gregory .................... 430
Alonso, Carolyn Dehlen ............................... 430
Aloqir, Ravi Kumar .................................... 286, 392
Alosh, Hassan Mohamed .............................. 484
Aliph, Mehran Serdar ................................. 437
Alperovich, Michael ................................... 437
Altemus, Anne Reed ................................... 48, 359
Alter, Blanche Pearl ................................... 239, 321
Dihosha, Sharon ........................................... 170, 395
Do, David ................................................ 142, 452
Do, Diana Van ........................................... 225, 309, 365
Do, Michael Tri Hoang ................................ 434
Doan, Betty Nhu-Huong ................................ 434
Doberman, Danielle .................................... 166, 365
Dobrosielski, Devon A .................................. 170, 395
Dob, Adrian .............................................. 169, 212, 314, 396
Dockinger, Beth .......................................... 314
Doddaanapalya Somashekar, Geetha ............ 428
Dodpapanian, Vankanth ............................... 428
Dodd-O, Jeffrey M ........................................ 117, 283, 344
Dodge, Rachel Anne Barnes ......................... 242, 365
Dodson, Jennifer L ...................................... 294, 365
Doering, Kimberly Rae ................................. 204, 365
Doetz, Angelika ........................................... 204, 365
Doheny, Kimberly Floy .................................. 242, 365
Doherty, Mer, Caroline .................................. 165, 365
Doherty, Paul James ..................................... 447
Doi, Akiko ................................................ 469
Dokey, Adrian Tae-Won ................................. 450
Donaldson, Abigail A .................................... 440
Dondlinger, Graham ..................................... 427, 435
Donehower, Ross C ....................................... 319
Dong, Amina .............................................. 165, 365
Dong, Xiaobo ............................................. 450
Dong, Xinzhong ........................................... 204, 365
Dong, Yi ................................................... 475
Donham, Robert T ....................................... 117, 283
Donnelly, Jeffrey ......................................... 319
Donohue, Pamela K ....................................... 242, 365
Donohue, Sean Richard ................................. 444
Donowitz, Michael ....................................... 129, 313, 324
Dooher, Julie E ............................................. 436
Dooley, Kelly Elise ........................................ 429
Dooley, Monica, Kristen .................................. 486
Dorafshar, Amir H ........................................ 445
Doraissamy, Anupama .................................... 427
Doran, Timothy F ......................................... 242, 365
Doratota, Danna ........................................... 431
Dore, Sylvain .............................................. 117, 251, 344
Dorfman, Todd Andrew ................................. 430
Dorman, Susan Elizabeth .............................. 163, 311, 344
Dorman, Todd ........................................... 117, 173, 282, 306, 312, 325
Doroslova,incia ............................................ 477
Dorsey, James H ........................................... 152, 390
Dorsi, Michael Joseph .................................. 432
Doshi, Vishal Kiritank ................................... 427
DosReis, Susan ............................................ 262, 365
Doty, Christina ............................................ 311
Douglas, Andrew S .................................... 127, 419
Douville, Renee Nicole ................................. 153, 433
Downing, Stephanie Rae .............................. 430
Doye, Brian James ....................................... 427
Doye, Jefferson James .................................. 426, 470
Doye, Laura .............................................. 262, 365
Doye, Maire E ............................................. 172, 410
Drachman, Daniel B .................................... 197, 203, 325
Drager, Luciano Ferreira ................................ 431
Drake, Charles .......................................... 164, 214, 294, 344
Drake, Kelly Lynn ....................................... 443
Draper, Frances Murphy ............................... 316
Draper, Robert F .......................................... 289, 395
Dray, Xavier ............................................. 166, 365
Drehman, Bethany Joy .................................. 472
Dresher, James T Jr ..................................... 317, 318
Dresselaers, Eric Christine ............................ 462
Dressman, Devin Charles ............................... 435
Drew, Ina R ................................................ 350
Drewes, Julia Lynn ....................................... 436
Dreyfus, Albert E ......................................... 262, 393
Driscoll, Iran .............................................. 294
Drobick, Anthony J ....................................... 264, 395
Drummond, Michael Bradley ......................... 431
Drummond, Michael, Al-Jamal ........................ 456, 470
Druskin, Malcolm S ..................................... 166, 365
Du, Yong ................................................... 278, 410
Duan, Rui .................................................. 432
Duan, Wenli ............................................. 262, 393
Duan, Yukun .............................................. 436
Duan-Porter, Wei D ...................................... 262, 393
Dube, Niharika ............................................ 170, 395
Dubin, Marc G ............................................ 365
Dubois, Gwen ............................................ 170, 395
Dubois, Jeffrey .......................................... 242, 365
Ducic, Jennifer Ann ..................................... 440
Ducker, Thomas B ........................................ 425
Duckworth,0rganic ...................................... 429
DuCoin, Caroline Gilpin ............................... 440
Dudas, Robert A .......................................... 427, 308, 365
Goggin, Bernadette Cullen ......................................................... 262, 368
Goggin, Michael ................................................................. 54, 160, 212, 229, 326
Goh, Alvina ................................................................. 466
Goh, Brian Chun Kim .......................................................... 454
Goi, Andrew Joseph .......................................................... 475
Gok, Hayriye Beril ............................................................. 444
Gokaslan, Ziya L .............................................................. 212, 286, 288, 309, 327
Golchin, David ................................................................. 275, 368
Golberg, Harry R .............................................................. 127, 155, 307, 308, 368
Golberg, Helene S ............................................................. 265, 406
Golberg, Michael .............................................................. 262, 368
Golberg, Monica Vanina ..................................................... 436
Golberg, Morton F ........................................................... 224, 327
Golberg, Nelson H ............................................................ 285, 327
Golberg, Stephen ............................................................. 264, 396
Golden, Archie S .............................................................. 241, 346
Golden, David B K ........................................................ 163, 346
Golden, Erin Jennifer ......................................................... 475
Golden, Sherita Hill ........................................................... 163, 346
Golden, William Christopher ............................................. 243, 368
Golden, Edward ............................................................... 225, 368
Goldman, Jeremy ............................................................ 226, 396
Goldman, Lynn R ............................................................ 412, 419
Goldman, Michael H ......................................................... 170, 396
Goldner, Brian Wayne ....................................................... 454
Goldschmidt, Hansa Leah ................................................ 464
Goldschmidt, Harold M ..................................................... 119, 368
Golub, Elizabeth ............................................................... 145
Golub, Jonathan E ........................................................... 166, 368
Gomella, Mary P .............................................................. 470
Gomez, Carlos ................................................................. 470
Gomez, Juan Fernando ...................................................... 444
Gong, Nee R ................................................................. 284, 407
Gong, Gary Xin ............................................................... 277, 368
Gonzaga, Anna Marie ....................................................... 264, 396
Gonzales, Denise A .......................................................... 170, 396
Gonzalez, Melissa Luke ..................................................... 440
Gonzalez-Fernandez, Marlis ............................................... 256, 309, 368
Goode, Diana Joyce ........................................................ 474
Goode, Victoria ............................................................... 308
Goodin, Martha Noelle ..................................................... 425
Goodman, David W ........................................................ 262, 368
Goodman, David O ........................................................ 262, 368
Goodman, Steven N ......................................................... 212, 239, 327
Goodrich, Amy Lynne ....................................................... 219, 411
Goodrich, Charlie D ........................................................ 316
Goodspeed, Elizabeth ....................................................... 308
Goodwin, Amy K ............................................................ 262, 312, 368
Goodwin, Andrew J ........................................................ 43
Goodwin, Courtney Rory ................................................... 447, 475
Gooi, Zhen ................................................................. 445
Gorbatskin, Chad Samuel ................................................ 454
Gorbounov, Mikhail Mikhailovich .................................... 452
Gordes, Leon ................................................................. 144, 239, 327
Gordon, Amy H ............................................................. 166, 368
Gordon, Barry ................................................................. 192, 491
Gordon, Helen Minifie ..................................................... 170, 396
Gordon, Judith ............................................................... 431
Gordon, Tania A ............................................................. 292, 436
Gore, Steven D ............................................................... 212, 327
Goring, Kim Lesley ........................................................ 170, 396
Gorzynski, David Uscher ................................................... 316
Gorman, Linda ............................................................... 316
Gorospe, Emmanuel Cruz ................................................ 427
Goss, Adam R ............................................................... 166, 368
Goswami, Dheeraj .......................................................... 424
Gou, Vincent L .............................................................. 284, 339
Gottesman, Rebecca F ..................................................... 199, 308, 368
Gouw, Anvin ................................................................. 477
Gouw, Ashul ................................................................. 427
Gouvdan, Priyaanka ........................................................ 466
Gower, Adam ............................................................... 236, 316
Gower, Emily W ............................................................ 236, 316
Gower, William Adam .................................................... 440
Goyal, Jatinnder ............................................................. 446
Goyal, Madhav .............................................................. 149, 368
Gozu, Aysegul ............................................................... 166, 368
Grab, Dennis John ......................................................... 231, 241, 346
Grace, Nancy ................................................................. 262, 368
Grader-Beck, Thomas ..................................................... 166, 368
Grady, Jeremy David ...................................................... 163, 346
Grados, Marco A ........................................................... 262, 368
Grady, Helene ............................................................... 237, 317
Graham, David R M ........................................................ 166, 192, 368
Graham, Ernest Marshall .................................................. 151, 346
Graham, Erin Jennifer ...................................................... 475
Graham, Lauren Elizabeth ................................................ 447
Graham, Thomas J ........................................................ 285, 345
Gramatikov, Boris L ........................................................ 225, 368
Gramatikova, Aneta Petrova ............................................. 427
Gramps, Morgan Erika ..................................................... 431
Grant, Kenneth ............................................................... 312, 317
Grant, Lisa ................................................................. 438
Grant, Michael P ........................................................... 225, 368
Gratz, Edward S ............................................................ 190, 368
Gravit, Patti ................................................................. 144, 219, 419
Gray, Jeffrey J ............................................................... 220, 419
Gray, Lawrence Wilson .................................................. 478
Gray, Phillip John Jr ....................................................... 186
Gray, Ryan S ................................................................. 424
Grayson, Warren L ......................................................... 127, 368
Green, Ariel Ruth .......................................................... 348
Green, Brian Michael ...................................................... 432
Green, David ................................................................. 226, 411
Green, Deanna Marie ...................................................... 340
Green, Gene E ............................................................... 170, 396
Green, Israel C .............................................................. 152, 308, 368
Green, Jordan D ........................................................... 127, 368
Green, Melva Isadora ...................................................... 264, 396
Green, Rachel ............................................................... 194, 308, 314, 327
Green, Whitney Morgen .................................................. 450
Green, William R ........................................................ 224, 299, 339
Greenbaum, Adena Hope ................................................ 426
Greenberg, Kathleen Elizabeth ........................................... 470
Greenberg, Keiko Ishwara ............................................... 426
Greenberg, Robert S ...................................................... 118, 311, 346
Greenberg, Sanford D ..................................................... 305
Gonzalez, Tasha Zemrus .................................................... 452
Grenblatt, Sarah Merin ................................................... 470
Greene, Carlton C ........................................................ 170, 396
Greene, Erik ................................................................. 470
Greene, Peter Schuyler ................................................... 155, 284, 307, 316, 346
Greenuh, William B III ..................................................... 160, 327
Greenspan, Joel D .......................................................... 192, 491
Greenwald, Elliot Howard ................................................ 466
Greenwald, Lark Julie ...................................................... 452
Greg, Lydia June ............................................................ 241, 411
Gregory, Anthony Charles II ............................................. 450
Greider, Carol Wisden ................................................... 477
Grimm, Cordelia T .......................................................... 311, 327
Grinnalds, Jack ............................................................ 307, 317
Grippe, Somer Nikishka ................................................... 425
Grisitkis, Inna V ............................................................ 452
Griswold, Benjamin H IV ................................................ 465
Griswold, Sophie Charlotte ............................................. 486
Grochow, Louise B ......................................................... 163, 215, 346
Grogan, Kelly ............................................................... 163, 348
Grofhar, Patrick Joseph ................................................... 436
Groopman, John D ........................................................ 219, 420
Gross, Deborah ............................................................ 233, 444
Gross, Richard J ............................................................ 163, 346
Grosset, Jacques H ........................................................ 160, 327
Grosset, Stephen J ........................................................ 305, 310
Grossman, Rachel ........................................................ 432
Grossman, Stuart A ......................................................... 160, 212, 286, 327
<table>
<thead>
<tr>
<th>Name</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zollars, Eric Stafford</td>
<td>427</td>
</tr>
<tr>
<td>Zollinger, Raymond H</td>
<td>171, 405</td>
</tr>
<tr>
<td>Zong, Jinchiao</td>
<td>219, 416</td>
</tr>
<tr>
<td>Zonies, Seth Aaron</td>
<td>463</td>
</tr>
<tr>
<td>Zordan, Rebecca Elizabeth</td>
<td>432</td>
</tr>
<tr>
<td>Zorowitz, Richard David</td>
<td>256, 357</td>
</tr>
<tr>
<td>Zou, Beiyan</td>
<td>435</td>
</tr>
<tr>
<td>Zou, Gang-Ming</td>
<td>438</td>
</tr>
<tr>
<td>Zou, Jizhong</td>
<td>425</td>
</tr>
<tr>
<td>Zu, Lingyun</td>
<td>428</td>
</tr>
<tr>
<td>Zubair, Sania</td>
<td>425</td>
</tr>
<tr>
<td>Zuberi, Jamshed A</td>
<td>284, 405</td>
</tr>
<tr>
<td>Zucker, Peter K</td>
<td>152, 390</td>
</tr>
<tr>
<td>Zuckerman, Rhonda L</td>
<td>120, 153, 390</td>
</tr>
<tr>
<td>Zuidema, George</td>
<td>284, 409</td>
</tr>
<tr>
<td>Zukin, Stephen R</td>
<td>260, 279, 339</td>
</tr>
<tr>
<td>Zumbar, Zachary Matthew</td>
<td>423</td>
</tr>
<tr>
<td>Zuroverse, Edward Lee</td>
<td>160, 390</td>
</tr>
<tr>
<td>Zweier, Jay L</td>
<td>162, 275, 339</td>
</tr>
</tbody>
</table>
Notes
Notes