

JOHNS HOPKINS
MEDICINE

FACTS &
FIGURES

2001-2002

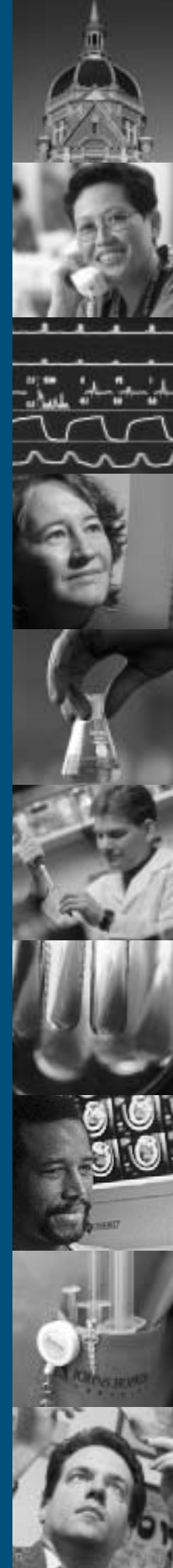


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JOHNS HOPKINS MEDICINE has provided international leadership in the education of physicians and medical scientists, in biomedical research, and in the application of medical knowledge to sustain health since the opening of The Johns Hopkins Hospital in 1889. Today, Hopkins Medicine brings together the faculty physicians and scientists of The Johns Hopkins University School of Medicine with the organizations, community physicians, nurses and other professionals of The Johns Hopkins Health System to continue that mission.



To our colleagues and friends:

This booklet tells the story of Johns Hopkins Medicine in a way that many people find easy to grasp: through a compilation of facts and figures. Not only can you learn what we've been up to over the past year, but also how we are organized and what makes up this collaboration called Johns Hopkins Medicine.

You will find information on the governance of our institutions; a financial and statistical profile; a synopsis of the key components that make up our integrated health-care delivery system; milestones and honors; and research highlights over the past half-century.

Johns Hopkins Medicine is a growing, evolving, \$2.7 billion health-care enterprise with more than 22,000 employees. In recent months we unveiled a master plan for our East Baltimore campus to guide us in developing the hospital of the future. We dedicated the Sidney Kimmel Comprehensive Cancer Center and celebrated Mr. Kimmel's \$150 million gift to Hopkins. We joined with Baltimore Mayor Martin O'Malley in the city's plan to move forward on a major biotech research park and community redevelopment effort north of The Johns Hopkins Hospital. And we completed major redevelopment at Howard County General Hospital with the opening of a new emergency room and labor & delivery facilities.

Our executive vice dean, Elias Zerhouni, was selected by President George W. Bush to run the nation's major research engine, the National Institutes of Health. Another eminent colleague, geneticist Victor McKusick, received the country's highest scientific honor, the National Medal of Science. And once again, Johns Hopkins was named the No.1 hospital in the United States, and our School of Medicine was named one of the two best medical schools in the nation and ranked No.1 in receipt of NIH research dollars.

But despite all this good news, the past year was dominated by two terrible tragedies, one local and one national—the death of a research volunteer and, of course, 9/11. Both provided the catalyst for change. We redoubled our efforts to protect people participating in research, reorganizing the infrastructure and increasing staff devoted to this vast enterprise. More important, we embarked on a culture change that places safety above all else. With the establishment of the Center for Innovations in Quality Patient Care, we extended the emphasis on protection of patients to all of our clinical activities.

The attack on our country and requests for help that came to us from Washington strengthened our determination to be ready always to serve in such a leadership capacity. Since 9/11, all Hopkins components have worked together to achieve a new level of preparedness. The new institution-wide Critical Event Preparedness and Response group (CEPAR) is coordinating with civil defense efforts at federal, state and local levels.

With all of this, we remain focused, as always, on our groundbreaking research, teaching and clinical practices. We are producing tomorrow's doctors and tomorrow's cures while delivering the best and most compassionate care. That has long been the mission of Johns Hopkins Medicine and what makes this place so very special.

Sincerely,

Edward D. Miller, M.D.



GOVERNANCE

Several years ago, the trustees of The Johns Hopkins University and the Johns Hopkins Health System concluded that total collaboration in governance and management between the School of Medicine and the Health System was necessary to ensure their continued preeminence in education, discovery and patient care.

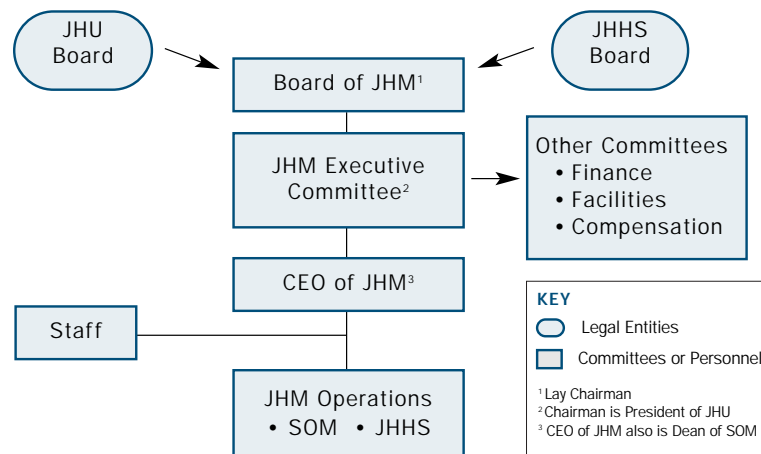
Collaboration

To give life and force to their conclusion, the trustees of the University and Health System delegated significant powers to a new board representative of each parent organization. They also vested leadership authority in one individual. The resulting “Johns Hopkins Medicine” provides a vehicle for internal operational coordination and a united voice for external initiatives. These distinct yet interdependent corporations are now able to respond in an integrated fashion to opportunities and pressures.

Uniting the faculty physicians and scientists of the School of Medicine with the organizations, health professionals and facilities of the Health System, Johns Hopkins Medicine now is a \$2.7 billion enterprise with three acute care hospitals—The Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center and Howard County General Hospital—as well as all other aspects of an integrated health care delivery system: long-term care, home care and outpatient care. The Hopkins brand name in medicine also has opened the door to significant international collaboration.

Hopkins scientists receive more federal research funding than faculty at any other medical school. By forming new companies and entering into licensing agreements, Hopkins Medicine speeds discoveries to market in order to benefit patients everywhere.

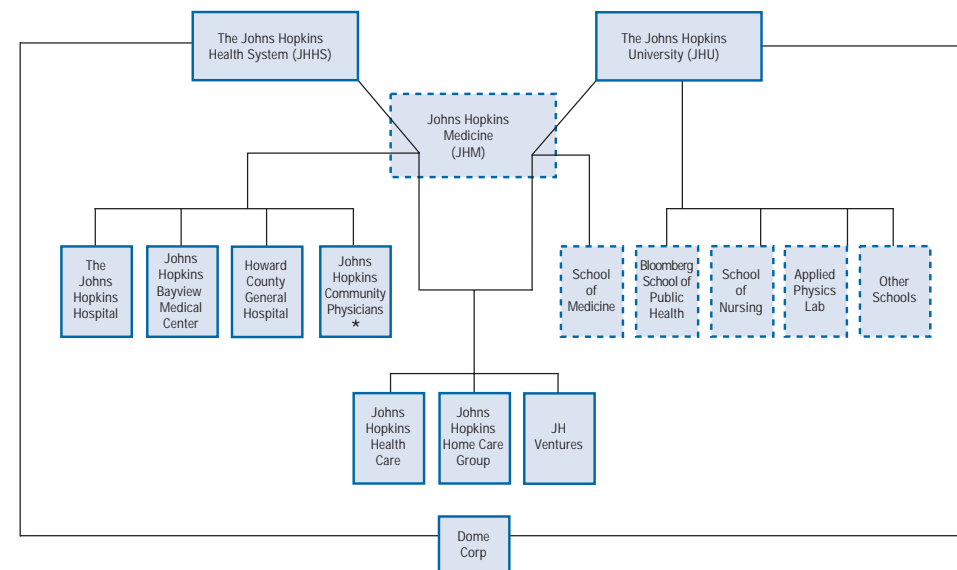
Johns Hopkins Medicine Governance



Johns Hopkins Medicine Mission

- To provide the highest quality care and service for all patients in the prevention, diagnosis and treatment of human illness.
- To provide international leadership in the education of physicians and medical scientists, in biomedical research, and in the application of medical knowledge to sustain health.
- To attract and support physicians and other health care professionals of the highest character and greatest skill.
- To provide services, facilities and amenities that promote the highest quality care, afford solace and enhance the community.

Johns Hopkins Medicine Organizational Structure



NOTE: Dotted lines indicate the unincorporated divisions of JHU and the unincorporated board with delegated powers from JHHS and JHU. Various trusts supporting JHHS and JHU are not shown separately.

* Legal Name: Johns Hopkins Medical Services Corporation

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STATISTICAL AND FINANCIAL PROFILE

Academic Activities 2001–2002

Faculty

Full-Time Faculty ¹	2,085
Part-Time Faculty ²	1,244

Students

House Staff	676
Graduate Students ³	509
Medical Students	474
Fellows ⁴	1,163

¹ FT faculty: core sciences 218, clinical program 1,867

² PT faculty: core sciences 33, clinical program 1,211

³ Ph.D. candidates 496, M.A. candidates (Art as Applied to Medicine) 13

⁴ Fellows in basic science departments 221, in clinical departments 942

Human Resource Information Fiscal Year 2002 (By Entity)

	SOM	JHH	JHBMC ¹	HCGH	JHHS ²	JHCP	JHHCG	TOTAL
Total Employees ³	7,798	7,889	3,257	1,511	1,019	710	382	22,566
Total FTEs ³	7,538	7,037	2,897	1,008	1,006	616	319	20,421
Medical Staff ⁴	–	1,826	742	640	–	113	–	3,321
Registered Nurses ⁵	225	2,287	817	528	50	82	100	4,089

¹ Acute Care Hospital and Johns Hopkins Geriatrics Center

² Includes JHHC employees

³ For hospitals, excludes Medical Staff and House Staff; includes RNs. For SOM, includes FT faculty and House Staff listed above

⁴ Active, Courtesy, Associate Staff at hospitals. Includes some shared appointments

⁵ Includes RNs and Nurse Practitioners

See page 12 for key to organizations.

Clinical Activities Fiscal Year 2002 (By Location)

	JHH	JHBMC	HCGH	JHCP	JHCG	SOM	TOTAL
Acute Care Beds							
Licensed	977	336	179	-	-	-	1,492
Opened ¹	892	317	167	-	-	-	1,376
% of Occupancy	79.3	70.5	81.0	-	-	-	
Discharges	42,466	18,757	12,705	-	-	-	73,928
Deliveries	1,890	1,217	3,044	-	-	-	6,151
Days	256,385	82,536	43,939	-	-	-	382,860
Average Length of Stay (Days)	6.0	4.6	3.9	-	-	-	Average
Daily Census	700	237	135	-	-	-	1,072
Outpatient Visits/Encounters ²	732,475	212,789	25,842	358,235	-	656,338	1,546,547
Emergency Visits	87,630	48,109	57,713	-	-	-	193,452
Operating Room Cases	46,629	6,276	14,844	-	-	-	67,749
Inpatient ³	19,818	2,957	3,511	-	-	-	26,286
Outpatient ⁴	26,811	3,319	11,333	-	-	-	41,463
Home Care Visits	-	-	-	-	70,437	-	70,437

1 For JHH: excludes newborn nursery

2 For JHH: visits="hospital regulated visits"

For JHBMC: visits="hospital regulated visits," some of which are also counted by the SOM

For SOM: visits=visits at JHH, JHBMC, JHOC, SKCCC, GSS, and WM

3 For HCGH: includes IP endoscopy

4 For HCGH: includes OP endoscopy and stereotactic procedures

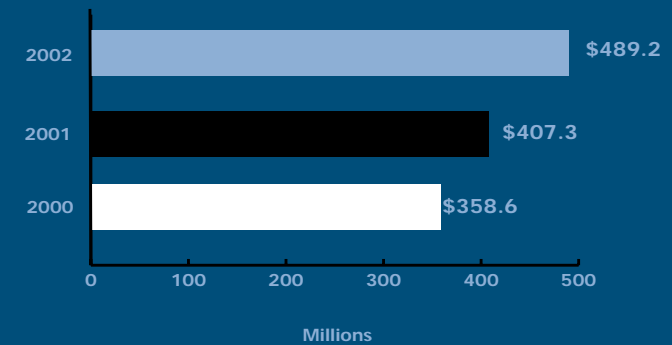
See page 12 for key to organizations.

Managed Care Activities Fiscal Year 2002

	JHHC	JHCP	HCGH	TOTAL
Enrollees at Risk	133,329	55,795	-	189,124
Discounted FFS Contracts	36	22	31	89
Global Fee Services	201	-	-	201
Workers Compensation Program				
Contracts	-	-	-	600
Lives	-	-	-	136,000

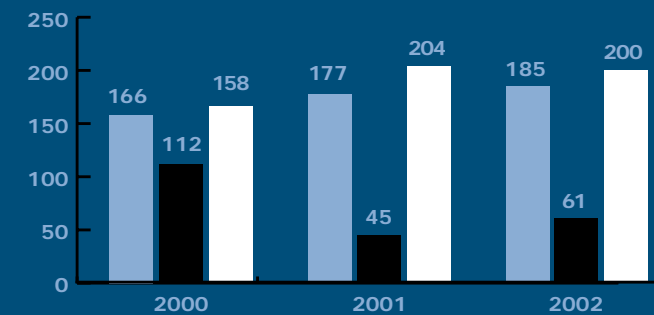
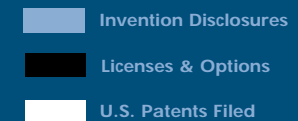
Research Activities 2000-2002

Grants, Contracts and Other Sponsored Programs



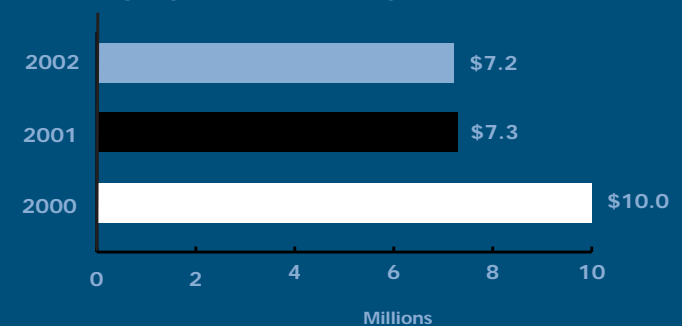
School of Medicine ranked #1 in NIH funding since 1991.

Technology Transfer



More than 25 new companies have started around School of Medicine technologies.

Royalty Income Summary



Operating Results for Fiscal Year 2002 (Millions)

	SOM	JHH	JHBMC	HCGH	OTHER ¹	TOTAL
Net Revenue	\$1,048.0	\$871.6	\$314.8	\$115.4	\$360.0	\$2,709.8
Expenses	1,028.0	831.1	312.7	113.9	371.0	2,656.7
Excess of Revenues over Expenses	\$ 20.0	\$ 40.5	\$ 2.1	\$ 1.5	(11.0)	\$ 53.1
Uncompensated Care	\$ 41.2	\$ 64.8	\$ 31.5	\$ 5.6	\$ 1.2	\$ 144.3

¹ OTHER includes JHHC, JHHCG, JHHS, JHCP, JHI

Financial Position at June 30, 2002 (Millions)

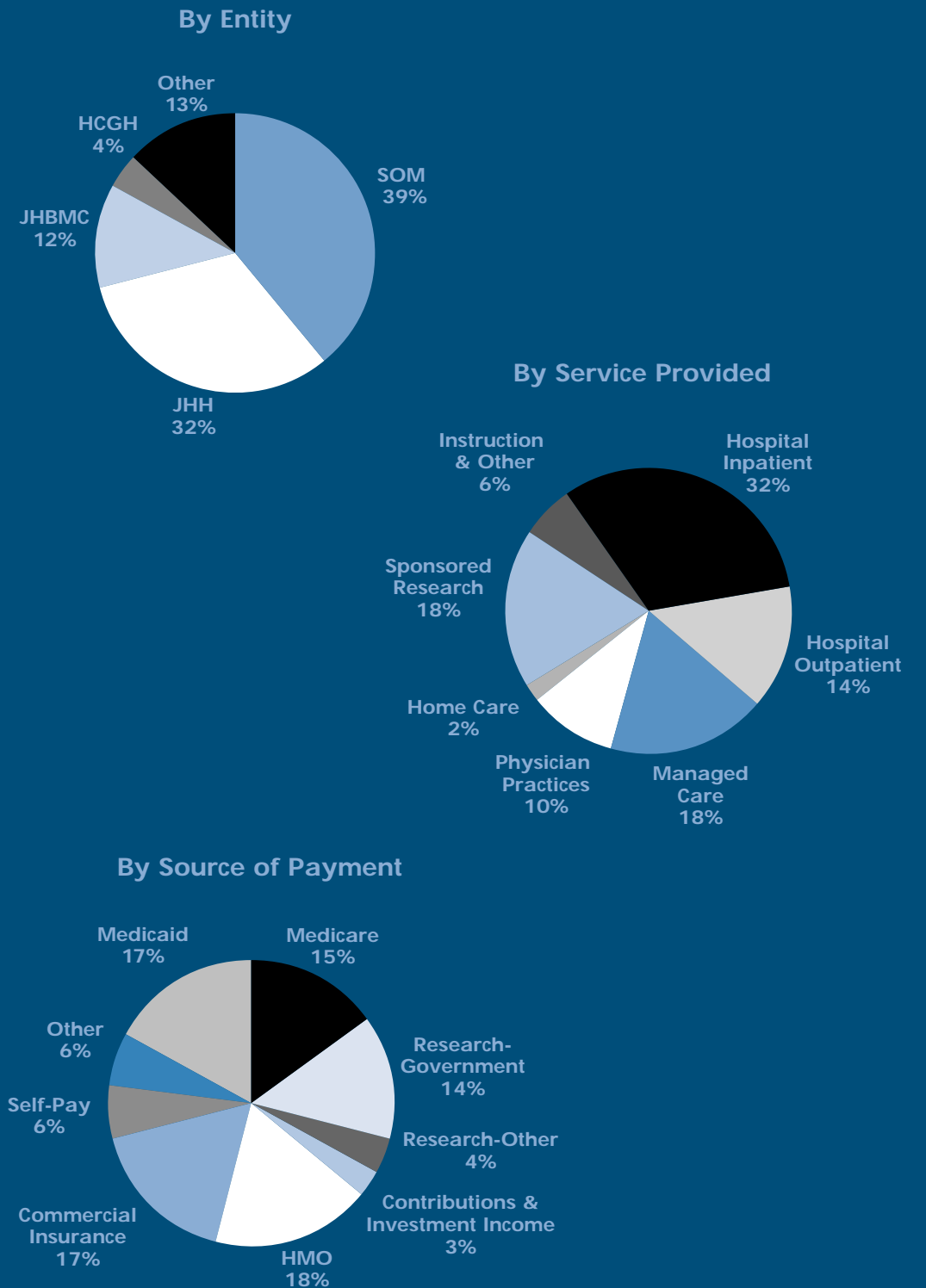
	SOM	JHH	JHBMC	HCGH	OTHER ¹	TOTAL
Current Assets	\$ 320.5	\$257.9	\$ 86.4	\$ 38.0	\$ 149.3	\$ 852.1
Other Assets	1,219.5	651.5	186.4	124.1	147.0	2,378.5
Total Assets	\$1,540.0	\$909.4	\$272.8	\$162.1	\$296.3	\$3,230.6
Current Liabilities	\$ 132.3	\$157.2	\$ 55.6	\$ 26.2	\$ 170.1	\$ 541.4
Long-Term Liabilities	327.4	368.9	109.9	131.0	52.3	989.5
Total Liabilities	459.7	526.1	165.5	157.2	222.4	1,530.9
Total Net Assets	1,130.3	383.3	107.3	4.9	73.9	1,699.7
Total Liabilities & Net Assets	\$1,540.0	\$909.4	\$272.8	\$162.1	\$296.3	\$3,230.6

¹ OTHER includes JHHC, JHHCG, JHHS, JHCP, JHI

KEY:

GSS	Green Spring Station
HCGH	Howard Country General Hospital
JHBMC	Johns Hopkins Bayview Medical Center
JHH	Johns Hopkins Hospital
JHHC	Johns Hopkins HealthCare LLC
JHHCG	Johns Hopkins Home Care Group
JHHS	Johns Hopkins Health System
JHCP	Johns Hopkins Community Physicians
JHI	Johns Hopkins International
SKCCC	Sidney Kimmel Comprehensive Cancer Center
SOM	School of Medicine
WM	White Marsh

Distribution of Revenue for Fiscal Year 2002



PROFILE: HEALTH CARE DELIVERY SYSTEM

JOHNS HOPKINS MEDICINE provides an integrated health care delivery system organized to meet patients' needs throughout the continuum of care, as well as serve referring physician and managed care interests. In addition to three acute care hospitals—The Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center and Howard County General Hospital—Johns Hopkins Medicine includes long-term care at the Johns Hopkins Geriatrics Center, home care delivered by the Johns Hopkins Home Care Group, and outpatient care at locations throughout Maryland, including the Johns Hopkins Outpatient Center, Johns Hopkins at Green Spring Station (the largest freestanding physician office facility in Maryland), at White Marsh and at Cedar Lane, and the 18 facilities of Johns Hopkins Community Physicians.



Johns Hopkins Medicine's physicians practice in two large groups, one for specialty care and one for primary care, both strengthened through integration over the past two years. In FY2002, the faculty physicians of Johns Hopkins Bayview Physicians Professional Association merged with their colleagues at the East Baltimore Medical Campus. The Johns Hopkins School of Medicine's 1,700 full-time faculty clinicians now all are part of the Johns Hopkins Clinical Practice Association. Similarly, in FY2001, Johns Hopkins Medical Services Corporation's full-time physicians and Bayview Physicians' primary care practices consolidated to form Johns Hopkins Community Physicians, a statewide network with 108 physicians. Employment of this many physicians differentiates Hopkins Medicine from any other delivery system in the Maryland/District of Columbia area.

SERVING PATIENTS



The Johns Hopkins Hospital and Outpatient Center

The Johns Hopkins Hospital and Outpatient Center

Rated best hospital in the nation year after year for excellence in every specialty, this flagship of Hopkins Medicine includes such renowned centers as the Brady Urological Institute, the Wilmer Eye Institute, the Sidney Kimmel Comprehensive Cancer Center and the Johns Hopkins Children's Center. A treatment magnet for patients from around the world, Hopkins Hospital also provides more charity care than any other hospital in Baltimore.

Located across from the hospital and connected to it by an underground concourse, the Johns Hopkins Outpatient Center includes facilities for diagnostic testing and imaging and outpatient surgery.

Johns Hopkins Bayview Medical Center

This full-service, community teaching hospital is home to one of Maryland's most comprehensive neonatal intensive care units, a sleep disorders center, an area-wide trauma center, the state's only regional burn center, and a geriatrics center that enjoys a national reputation in the field of aging. A state-of-the-art outpatient center offers extensive clinical programs and technologies. The

medical center shares its 130-acre, park-like campus with the Johns Hopkins Asthma & Allergy Center and two of the National Institutes of Health's clinical research centers.

Howard County General Hospital

Strategically located between Baltimore and Washington, D.C., Howard County General Hospital in Columbia became a member of Johns Hopkins Medicine in 1998, giving this community hospital resources to improve access and expand services for the communities and physicians it serves. The new emergency room and labor and delivery facilities are the most recent improvements to this medical center, which offers a full range of health care services.

Johns Hopkins Home Care Group

To maintain continuous high-quality care to patients beyond the walls of Johns Hopkins Medicine's hospitals, Johns Hopkins Home Care Group (JHHCG) offers a range of services and products for adults and children throughout Central Maryland.

In addition to visits by nurses, physical, occupational and speech therapists, home health aides and social workers, JHHCG can furnish a complete line of durable medical and respiratory equipment and supplies, home infusion therapy and pharmaceuticals. Access to a home hospice program allows patients with life-limiting illness to spend their last days in their homes.



Johns Hopkins Bayview Medical Center

Johns Hopkins Community Physicians

Johns Hopkins Community Physicians (JHCP) serves primary medical care needs through a network of 18 health centers statewide. This kind of community-based health care is convenient and affordable for diverse groups of patients: those with private commercial insurance, medical assistance, or who are part of a unique contract for military beneficiaries through the Department of Defense called the US Family Health Plan. JHCP provides internal medicine, family practice, pediatrics and Ob/Gyn practitioners, as well as a wide range of other primary care services to over 350,000 patients annually.

Priority Partners

Priority Partners, a managed care organization for medical assistance beneficiaries formed by Johns Hopkins Medicine and a group of community health centers, has locations statewide and demonstrates Hopkins' commitment to its mission of providing health care to the sick and injured, regardless of the patient's financial status.

Satellite Ambulatory Centers

Johns Hopkins at Green Spring Station, White Marsh and Cedar Lane

In 1994, Johns Hopkins opened a satellite facility at Green Spring Station for both full-time faculty and part-time faculty physicians in private practice. The conveniently located suburban center offers an urgent-care center as well as an array of diagnostic and treatment services. The Green Spring Station facility proved so successful it expanded into a second pavilion and led to similar suburban centers in eastern Baltimore County (White Marsh) and in Howard County (Cedar Lane).



Howard County General Hospital

Patient First

Five of a planned multi-site network of urgent medical care centers for Central Maryland, developed in conjunction with Patient First Corporation, are open at Green Spring Station, Perry Hall, Bel Air, Laurel and Owings Mills. Patients can use these facilities for routine injuries and illnesses on a non-appointment basis, 8 a.m. to 10 p.m., 365 days a year.

Johns Hopkins International & Johns Hopkins USA

Patients from afar can access Hopkins care through two special programs, Johns Hopkins International and Hopkins USA. Anticipating the added stress of coming to a strange country for care, International Services assists patients and families from foreign countries with physician appointments, lodging and transportation, interpreter services, financial arrangements, day-care centers, even sightseeing. A similar service is provided by Hopkins USA to patients from cities in this country.

Johns Hopkins Singapore

Johns Hopkins Singapore (JHS) brings to Southeast Asia the Hopkins model of medicine, combining research, teaching and patient care. The result of an agreement between Johns Hopkins Medicine and the Singapore government, JHS opened its clinical facility and research center in 1999. Activities focus on diseases endemic to Southeast Asia.



Johns Hopkins at Green Spring Station

SERVING PHYSICIANS, EMPLOYERS AND PAYERS

Johns Hopkins HealthCare (JHHC)

JHHC develops and manages contractual relationships with managed care organizations, employers, hospitals, physicians and other health care providers. Services and support include eligibility database management, member-physician services, claims adjudication, care management, patient outreach programs, decision support matrices, client-focused product development and physician/facility network development and management. JHHC oversees all of the managed care contracting and payer relations functions for all Johns Hopkins Medicine provider entities.

Office of Referring Physician Services

The Office of Referring Physician Services supports programs designed to improve communications between Johns Hopkins Medicine and its referring physicians, such as:

Hopkins Access Line (HAL), a 24-hour-a-day, seven-day-a-week physician consultation and referral service created in response to the growing needs of physicians to reach Hopkins doctors quickly. HAL provides opportunities for referring physicians and faculty to assist one another in the diagnosis and care of patients, and facilitates patient transport.

Physician Liaison Service, staffed by experienced physicians, answers questions about services and deals with any problems, issues or concerns physicians might have.

Electronic Patient Record. Admission notices and discharge summaries are transmitted automatically to referring and personal physicians. Referring physicians are provided the opportunity for access to the electronic patient record (EPR) of their patients hospitalized at The Johns Hopkins Hospital through WEB-EPR.



Employer Health Programs (EHP)

EHP contracts with self-insured employer sponsors to develop point-of-service and other health benefit plans for their employees. EHP is administered by Johns Hopkins HealthCare and offers to its employer sponsors and their members convenient, community-based care with appropriate access to Johns Hopkins Medicine, centered around the physician-patient relationship.

Johns Hopkins Center for Occupational Health

The Johns Hopkins Center for Occupational and Environmental Health provides industry, business and public agencies with a Managed Workers' Compensation Care Plan, offering quality medical care to injured employees. Through this service, employees can regain their health and return to work as soon as possible, thereby reducing medical costs and time lost on the job.

AWARDS & HONORS 2001-2002



- For 12 consecutive years, *U.S. News & World Report's* annual ranking of American hospitals places **The Johns Hopkins Hospital** No. 1 in the nation. In 2002, the hospital ranked in the top ten in ear/nose throat, gynecology, urology, eye care, digestive disorders, geriatrics, rheumatology, cancer, hormonal disorders, neurology/neurosurgery, respiratory disorders, pediatrics, psychiatry, orthopedics, heart/ heart surgery and kidney disease.
- For 12 consecutive years, **The Johns Hopkins University School of Medicine** is ranked one of the top two medical schools in the nation by *U.S. News & World Report*.
- For 10 straight years, the National Institutes of Health ranks The Johns Hopkins University **School of Medicine** as top recipient of federal research dollars.
- For seven straight years, **Hopkins Hospital** receives the Consumer Choice Award for the Baltimore region from the National Research Corporation. Hopkins also ranks No. 1 among consumers in the Washington, D.C., region.
- **Wilmer Eye Institute** is named best overall ophthalmology program in the country by *Ophthalmology Times* for seven straight years.
- President Bush selects **Elias A. Zerhouni**, executive vice dean and director of the Department of Radiology, as director of the National Institutes of Health.
- **The Johns Hopkins Hospital** is named one of health care's "most wired" institutions by *Hospitals & Health Networks (HHN)*, a publication of the American Hospital Association.
- **Victor A. McKusick**, widely acknowledged as the father of genetic medicine, receives the country's highest scientific honor, the National Medal of Science, from President George W. Bush in ceremonies at the White House. The National Marfan Foundation gives McKusick the foundation's Lifetime Achievement Award and honors **Johns Hopkins** with its first award to an institution.
- George W. Bush appoints **Paul R. McHugh** to the President's Council on Bioethics, which advises the president on ethical and social issues related to biomedical and scientific research.
- **D.A. Henderson**, founding director of the Johns Hopkins Center for Civilian Biodefense, is one of 12 recipients of the Presidential Medal of Freedom, the nation's highest civilian honor.
- **John T. Little** is presented with the 2001 American Association of Geriatric Psychiatry/Eli Lilly Clinical Scholars Award for his study of regional brain activation in geriatric depression.
- **Joseph Handler** wins the Robert W. Berliner/Abbott Laboratories Award for Excellence in Renal Physiology for lifetime contributions to the field.
- **James N. Campbell** wins the 2001 John and Emma Bonica Public Service Award from the American Pain Society.
- **James Hildreth** receives Minority Access Alumnus Role Model award.
- **Patrick Walsh** receives the Valentine Medal from the New York Academy of Medicine for his contributions to the science and art of urology.
- **Katrin Andreasson** receives the Paul Beeson Physician Faculty Scholarship from the American Federation for Aging Research and the Alliance for Aging Research for her research on protecting brain cells during the treatment of Alzheimer's disease.
- **Charles Eberhart** receives a Burroughs Wellcome Fund Career Award in Biomedical Sciences to study the biology of the most common malignant childhood brain tumors.
- **Joseph Califano** receives the 2001 Damon Runyon-Walter Winchell Foundation Clinical Investigator Award, sponsored by Eli Lilly and Company.
- Oncologist **Jonathan Powell** is selected as a V Foundation Scholar for his identification of novel T-cell receptor-induced genes used as targets to induce tumor immunity.
- **Lillie Shockney**, director of outreach and education for the Breast Center, receives the 2001 Lane A. Adams Award for Excellence in Caring from the American Cancer Society.
- **Bert Vogelstein** receives the 2001 Harvey Prize from the American Technion Society for his research on tumor formation and progression.
- **Louis Kavoussi** is elected to the American Association of Genitourinary Surgeons, an elite international society recognizing those who have made significant contributions to urologic surgery.
- **Philip A. Beachy** is elected to the National Academy of Sciences.
- **Linda P. Fried, Bert Vogelstein** and **David Valle** are elected to the National Academy of Sciences' Institute of Medicine.

- **Kay Redfield Jamison** and **Geraldine Seydoux** are named MacArthur Fellows, the so-called "genius awards," by the John D. and Catherine T. MacArthur Foundation.
- **Morton Goldberg** receives the 2001 Fight For Sight/Mildred Weisenfeld Lifetime Achievement Award for vision research.
- **Solomon H. Snyder** receives the Institute of Medicine's Rhoda and Bernard Sarnat International Prize in Mental Health for his research in molecular neuroscience, as well as an honorary degree from Israel's Technion Institute of Technology for "groundbreaking discoveries" and "outstanding contributions to molecular neuroscience and...the development of new types of medications."
- **John R. Burton** is selected as a Master of the American College of Physicians, the highest distinction bestowed by the group.
- **Richard Wahl** is honored with the Distinguished Scientist Award from the Academy of Molecular Imaging for his research with positron emission tomography.
- **Donald S. Coffey** receives an award from the American Urological Association for his lifetime accomplishments in urology.
- **John K. Niparko** receives the Scientist of the Year Award from the Deafness Research Foundation for his efforts in the laboratory and examining room and for educating the public about hearing loss and health.
- **Jeffrey Rothstein** receives the first annual Diamond Award from the Muscular Dystrophy Association and the Lois Pope LIFE Research Award in recognition of his work on amyotrophic lateral sclerosis (Lou Gehrig's disease).
- **Marshall S. Bedine** receives the Outstanding Clinician Award from the American Gastroenterology Association.
- **Russell Margolis** receives the Lieberman Award from the Hereditary Disease Foundation, its highest recognition, for his work on Huntington's disease.
- AIDS researcher and immunologist **Robert F. Siliciano** is named one of 12 new Howard Hughes Medical Institute investigators.
- **Arnall Patz**, director emeritus of the Wilmer Eye Institute, is elected to the Hall of Fame of the American Society of Cataract and Refractive Surgery.
- **Michael Shamblo** receives the first Mary Tyler Moore and S. Robert Levine, M.D., Clinical Research Award from the Juvenile Diabetes Research Foundation for his stem cell work.
- **Chloe Thio** receives a 2002 Investigator in the Pathogenesis of Infectious Disease Award from the Burroughs Wellcome Fund.
- **Oliver Schein** receives the Alcon Research Institute's research award for 2002 for his accomplishments in ophthalmology/visual science.
- **Paul Ladenson**, chief of the Division of Endocrinology, is elected president of the Association of Subspecialty Professors.
- **Richard Clatterbuck** receives the Galbraith Award, the highest honor given for vascular neurosurgery by the Congress of Neurological Surgeons.
- **Richard D. Semba** receives the John M. Kinney-Nestle Pediatric Nutrition Award in recognition of his work on vitamin A and carotenoids from the European Society for Parenteral and Enteral Nutrition.
- **Stanley A. Klatsky** receives the distinguished service award from the American Society for Aesthetic Plastic Surgery, an award given only eight times in the society's 35-year history.
- **John Bartlett** is one of three physicians to receive the International Association of Physicians in AIDS Care "Hero in Medicine" award.
- **Saeed Khan** is given the Howard Temin Award by the National Cancer Institute to develop novel prostate cancer drugs.
- **Esteban Mezey** receives a distinguished service award from the American Association for the Study of Liver Diseases.
- **Levi Watkins** is honored by his alma mater, Vanderbilt University School of Medicine, which established a professorship in his name.
- *Popular Science Magazine* recognizes **Eduardo Marban's** work to develop a biological pacemaker with a 2002 "Best of What's New" award.
- **William Baumgartner** is elected president of the Society of Thoracic Surgeons.
- **Chi V. Dang** is elected president of the American Society of Clinical Investigators (ASCI).
- American Chemical Society names sulforaphane, a molecule discovered by **Paul Talalay** and **Gary Posner**, "molecule of the week."
- **Daniel Ashby** is elected president of the American Society of Health System Pharmacists.
- **Patrick Onyango** is selected as Eminent Scientist of the Year 2002 by the World Scientists Forum of the International Research Promotion Council (IRPC).
- **Stephanie Reel** is awarded a CIO 20/20 Vision Award by *CIO Magazine* and elected to the inaugural board of directors of NAHIT, the National Alliance for Health Information Technology.
- **Charles Reuland** is elected president of the Administrators of Internal Medicine.
- **Murray Sachs** is elected to the National Academy of Engineering.

From the top: Victor McKusick and President George W. Bush, James Hildreth, Geraldine Seydoux, Levi Watkins, Kay Redfield Jamison, Elias A. Zerhouni and President Bush, Morton Goldberg, Lillie Shockney, Bert Vogelstein and Paul Ladenson.



MILESTONES 2001–2002

JANUARY 2001

- With a \$58.5 million gift from an anonymous donor, a pace-setting Institute for Cell Engineering is launched to focus on selecting, modifying and reprogramming human cells, and molding them into therapeutic transplants for a variety of disorders ranging from Parkinson's, ALS, and diabetes to heart failure, stroke and spinal cord injury.
- Emergency medicine researchers find that pilot error is a decreasing cause of major airline crashes in the United States.
- Scientists find a way to block the action of specific enzymes that have a pivotal role in triggering cancers, hardening of the arteries and certain autoimmune diseases.
- A nationwide study finds that a healthier diet and less salt dramatically lower blood pressure in people with and without high blood pressure.

FEBRUARY 2001

- For the ninth year in a row, the National Institutes of Health's annual summary of grants to medical schools ranks The Johns Hopkins University School of Medicine No. 1 in the United States.
- **Jeffrey Rothstein** receives the Lois Pope LIFE Research Award for his significant medical breakthroughs in ALS (Lou Gehrig's disease).
- Gastroenterologist **Kathleen Schwarz** receives a \$1 million research grant from the National Institute on Drug Abuse to study viral hepatitis in the children of injection drug users.
- Children's Center researchers discover a genetic defect associated with lung disease in infants and adults.
- Alcohol use has a stronger effect on bicyclists than on automobile drivers, emergency medicine researchers find. One in three fatal bike accidents is linked to alcohol consumption.

- Twenty percent of people with peanut allergies may outgrow them, pediatric researchers find.
- A study shows a simple lab test for the human papilloma virus, combined with a visual inspection of the cervix, can identify pre-cancerous lesions and reduce false positives among women at high risk for cervical cancer in developing countries.

MARCH 2001

- For the 11th consecutive year, The Johns Hopkins University School of Medicine ranks as one of the top two medical schools in the nation, according to *U.S. News & World Report*.
- **Douglas Kerr**, director of the nation's first Transverse Myelitis Center, establishes an international consortium of centers of excellence for research and treatment of this often-paralytic neurological disease.
- Oncology Center targets breast cancer research to aid minorities and the poor with a \$2.2 million gift from Avon Products Foundation.
- Scientists discover how the gene for Huntington's disease kills nerve cells in a key part of the brain and are able to reverse impending cell death in laboratory cultures.
- Researchers conclude that hospitals with a shortage of "intensivists" to treat patients in intensive care units could benefit from having such experts monitor their patients offsite via computer.
- Researchers develop the first color-coded tracking system to see how receptors on a living cell transmit signals to the cell's interior. This could significantly accelerate the search for drugs.
- Clinical trials show that an experimental drug may reverse the stiffening of the cardiovascular system that occurs with aging.
- Researchers develop the first genetic profile for Crohn's disease and ulcerative colitis, two types of inflammatory bowel disease.

- **John T. Little** is presented with the American Association of Geriatric Psychiatry/Eli Lilly Clinical Scholars Award for his study of regional brain activation in geriatric depression.
- **Joseph Handler** wins the Robert W. Berliner/Abbott Laboratories Award for Excellence in Renal Physiology for lifetime contributions to the field.
- **James N. Campbell** wins the John and Emma Bonica Public Service Award from the American Pain Society.
- **James Hildreth** receives the Minority Access Alumnus Role Model award.

APRIL 2001

- U.S. Surgeon General David Satcher speaks at the 15th annual symposium sponsored by the Johns Hopkins Affective Disorders Clinic and the Depression and Related Affective Disorders Association.
- Hopkins launches a database and point-of-care support system designed to give office and hospital-based physicians free information on antibiotics and their proper use.
- Children's Center scientists find the strongest evidence yet that a virus may contribute to some cases of schizophrenia.

MAY 2001

- Johns Hopkins and leading medical societies establish the MedBiquitous Consortium to create technology standards and education software.
- **Russell A. Nelson**, former president of The Johns Hopkins Hospital, dies May 19 in Naples, Fla., at the age of 88.
- Heat-related illnesses are the most common health-care problem for costumed mascots at professional games, a sports medicine study finds.
- A study finds that older people who are more fit and have less body fat also have a better outlook on life than their less active counterparts.



- Spending more time and money up front to keep injection drug users with latent tuberculosis on strict, anti-TB regimens improves patient outcomes, researchers report.
- Pulmonary specialists report one in five older people misuses asthma drugs, and that doctors fail to manage their care aggressively or give them enough information to manage symptoms on their own.
- Researchers discover the gene involved in causing Crohn's disease, a major inflammatory bowel disease that affects nearly 500,000 Americans.
- Investigators prove that distracting patients during and after bronchoscopy with the gurgle of a brook and a colorful panorama of a tranquil meadow improves pain control.
- Researchers report promising results in tests of a new prostate cancer drug that delayed progression of advanced prostate cancer with few side effects in men no longer responding to hormone therapy.
- An eight-year study shows that combining chemotherapy and radiation treatment offers patients with advanced cancer of the larynx better hope of preserving their voice.

JUNE 2001

- For the first time, in fiscal year 2000, Hopkins is the top earner of AIDS research funding from the National Institutes of Health.

- The McKusick-Nathans Institute of Genetic Medicine holds its first Symposium on Human Genetics and Genomics.
- **Joseph Califano** receives the 2001 Damon Runyon-Walter Winchell Foundation Clinical Investigator Award, sponsored by Eli Lilly and Company.
- **Lillie Shockney**, director of outreach and education for the Breast Center, receives the Lane A. Adams Award for Excellence in Caring from the American Cancer Society.
- **Bert Vogelstein** receives the Harvey Prize from the American Technion Society for his research on tumor formation and progression.
- **Patrick Walsh** receives the Valentine Medal from the New York Academy of Medicine for his contributions to the science and art of urology.
- **Robert M. Heysel**, 72, former president of The Johns Hopkins Hospital, founder and first CEO of the Johns Hopkins Health System, and chief architect of the institution's emergence as a diversified, modern health care delivery enterprise, dies June 13.
- Department of Nuclear Medicine installs the first commercially available combination PET/CT scanner in a U.S. hospital.
- Usually reliable bee sting allergy tests are not 100 percent accurate, a study finds.

- Researchers announce a joint program with Toshiba Corporation Medical Systems Company to develop new, minimally invasive procedures using combinations of CT scans and fluoroscopy.
- Hispanics over the age of 40 are twice as likely to have diabetes as non-Hispanic whites and are at high risk for developing diabetic retinopathy, a leading cause of blindness, researchers report.
- A new measure of blood cholesterol can predict if a person is likely to die of heart disease, according to Hopkins researchers.
- Department of Radiology takes part in the first major study assessing the value of digital mammography versus standard mammography.
- Children's Center researchers report success in treating sickle cell disease in mice with a modified bone marrow transplant.
- A study shows that an automated camera developed at the Wilmer Eye Institute is as effective in identifying potentially blinding disease among diabetics as the more expensive favored technique.
- A study of latex allergy skin reactions in patients prompts Hopkins scientists to encourage the Food and Drug Administration and drug makers to convert to synthetic rubber for all medicine bottle stoppers.

- Neurosurgeons perform the 100th hemispherectomy at Johns Hopkins, a procedure first attempted at Hopkins in the 1920s and refined in the 1980s by **Benjamin S. Carson**, director of pediatric neurosurgery.
- Researchers find that resistance training burns calories for more than an hour after a workout and may be as important as aerobic exercise for women in the fight against fat.

JULY 2001

- For the 11th consecutive year, *U.S. News & World Reports* annual ranking of American hospitals places The Johns Hopkins Hospital at the top of the list.
- President George Bush comes to Johns Hopkins Hospital to make a policy speech regarding Medicare reform.
- Office for Human Research Protections (OHRP) shuts down for a few days all human research at the School of Medicine in the wake of the tragic death of a research volunteer. After a plan is put in place to re-review all protocols, enhance training of all investigators and expand the number and quality of institutional review boards that approve human subjects research, OHRP provisionally reinstates most research.
- Howard County General Hospital opens its new Intensive Care Unit as part of the hospital's \$31.5 million expansion and renovation project.
- Oncologists develop gene-based therapy that could make a lethal type of adult leukemia treatable.
- Researchers discover that removing cholesterol from a cell's membrane blocks infection, providing new opportunities to stop HIV transmission.
- Investigators find the absence of the protein aquaporin-1 interferes with the body's ability to regulate its water levels and the normal functioning of the kidney.
- Persistent levels of HIV-1 virus in the blood of children and adults undergoing combination drug therapy do not necessarily indicate the virus is becoming resistant to these medications, infectious disease researchers report.

- The care of asthmatic African-Americans falls short of many recommendations contained in national guidelines, researchers find.
- **Geraldine Seydoux** receives an Investigator Award from the Kirsch Foundation for her research on the molecular genetics of germline stem cells.

AUGUST 2001

- Comprehensive Transplant Center establishes a paired kidney exchange program to help patients get a kidney when they have a willing, designated donor whose blood type is incompatible.
- Church-based nutrition and exercise programs can move African-American women to adopt healthier habits, according to a research study.
- Oncologists discover that a link between two genes that trigger skin cancers could serve as early diagnostic markers.
- One in five food-allergic children will have an allergic reaction while in school, and teachers may not know how to handle an attack properly, a study finds.

SEPTEMBER 2001

- The Johns Hopkins Hospital and Health System, including Bayview Medical Center and Howard County General Hospital, activate disaster emergency plans at the request of the Secretary of Health and Human Services in response to the catastrophic September 11 events in New York City and Washington, D.C.
- Urban Health Institute awards its first community-based participatory research grants to four programs designed to fight substance-abuse in East Baltimore.
- Hopkins opens the first of four community computer labs in East Baltimore.
- For the sixth straight year, Hopkins Hospital receives the Consumer Choice Award for the Baltimore region from the National Research Corporation. Hopkins also ranks No. 1 among consumers in the Washington, D.C., region.

- **J. Brooks Jackson**, an internationally recognized researcher in HIV diagnostics, prevention and treatment, becomes director of the Department of Pathology.
- Cardiologists find that a blood pressure reading taken during exercise is a more accurate test for early heart disease than one taken at rest.
- Gene therapy may help to halt or prevent the overgrowth of blood vessels in the eye that blinds patients with macular degeneration and diabetic retinopathy, according to two studies. Clinical trials are planned.
- An experimental drug may reverse stiffening of the cardiovascular system that occurs with aging, researchers find.

OCTOBER 2001

- **Myron L. Weisfeldt**, a past president of the American Heart Association, returns to Hopkins as William Osler Professor and director of the Department of Medicine.
- **Joseph R. Coppola** is promoted to the newly created post of vice president of Corporate Security for Johns Hopkins Medicine.
- Patients undergoing high-risk surgeries are more likely to have post-operative complications if the intensive care unit isn't sufficiently staffed by nurses, according to a study of Maryland hospitals.
- Growing fat cells and nerve cells in the same dish produces what is believed to be the first demonstration of two-way communication between the cell types.
- First distribution from the State of Maryland's settlement with cigarette manufacturers funds more than \$2 million in cancer research projects.
- **Kay Redfield Jamison** and **Geraldine Seydoux** are named MacArthur Fellows, the so-called genius awards, by the John D. and Catherine T. MacArthur Foundation.
- **Linda P. Fried** and **Bert Vogelstein** are elected to the National Academy of Sciences' Institute of Medicine.
- A study identifies an important link between the two main inherited forms of Parkinson's disease.

- Ophthalmologists find that antioxidant vitamins and zinc may reduce the impact of age-related macular degeneration.
- Researchers report sustained, treatment-free remissions in studies of a novel drug therapy approach to treating aplastic anemia.
- Neurologists find that a rigorously high-fat, low-carbohydrate diet not only reduces seizures in children but keeps the frequency of attacks lower years after the diet is stopped.

NOVEMBER 2001

- Sidney Kimmel, founder and chairman of Jones Apparel Group, donates \$150 million for cancer research and patient care—the largest single gift ever to Hopkins.
- **Michael J. Klag** is named to the newly created position of vice dean for clinical investigation, underscoring an enhanced commitment to excellence in clinical investigation and the safest possible conduct of human subjects research.
- The new Johns Hopkins Day Care Center, with 13 classrooms, crafts room, conference room and kitchen, opens at the Church Home Professional Building on Broadway.
- A protein involved in muscle-wasting diseases plays a role in moving water in and out of brain cells, researchers find, opening new avenues of inquiry for treating brain swelling from injury and stroke.
- **Morton Goldberg** receives the 2001 Fight For Sight/Mildred Weisenfeld Lifetime Achievement Award for vision research.
- **Solomon H. Snyder** receives the Institute of Medicine's Rhoda and Bernard Sarnat International Prize in Mental Health for his research in molecular neuroscience.
- Mothers who have had a herpes simplex virus type 2 (HSV-2) infection at the time of giving birth are more likely to have children who develop schizophrenia or other psychotic disorders, Children's Center scientists find.
- Hematologists discover a mechanism that may account for the paradoxical effects of arsenic, which is both a treatment for cancer and a carcinogen.

- Some depressed heart attack survivors are so convinced they'll never be healthy again that their belief becomes a self-fulfilling prophecy, a study demonstrates.
- A team of scientists dramatically improves "gene chip" technology, for the first time making it a practical method for rapidly sequencing genetic building blocks.
- A medication commonly used for gout holds possibilities for the treatment of heart failure, cardiology researchers report.

DECEMBER 2001

- For the sixth straight year, the **Wilmer Eye Institute** is named the best overall ophthalmology program in the country by *Ophthalmology Times* magazine.
- Researchers find that bone defects associated with a classic bladder disorder are more extensive than previously thought.
- **David A. Nagey** receives the 2001 Distinguished Maryland Health Professional Award from the Maryland Chapter of the March of Dimes.
- Suppressing the immune system is one way to treat autoimmune diseases, but researchers find this is probably not the best approach.
- Scientists find the brain's "nose plug"—the switch that lets us stop smelling something, even though the odor is still there.

JANUARY 2002

- Coretta Scott King delivers keynote speech at the 20th Martin Luther King Jr. Commemoration.
- Faculty physician groups at Bayview Medical Center and the Hopkins East Baltimore campus complete their merger.
- The W.M. Keck Center for the Rational Design of Biologically Active Molecules is created through a \$1.8 million grant from the W.M. Keck Foundation.
- George W. Bush appoints **Paul R. McHugh** to the President's Council on Bioethics.
- **Richard Wahl** is honored with the Distinguished Scientist Award from the Academy of Molecular Imaging for his research with positron emission tomography.

- **Donald S. Coffey** receives an award from the American Urological Association for his lifetime accomplishments in urology.
- A team of researchers finds that male babies born with a condition called "micropenis" are more likely to achieve psychological and sexual well-being in adulthood if raised male.
- Women with thyroid disease are more likely to give birth to babies with heart, brain and kidney defects even if the thyroid function tests are normal during pregnancy, report researchers.
- Panic disorders and manic depressive illness are not separate diseases but different forms of a shared and complex biological condition, psychiatrists conclude.
- Scientists report that defects in a hormone sensitivity gene are responsible for a disease that causes rice-size bone fragments to form under the skin and inside internal organs.

FEBRUARY 2002

- **J. Raymond DePaulo Jr.**, a world-renowned expert in the study and treatment of mood disorders, becomes director of the Department of Psychiatry and Behavioral Sciences. He replaces Paul R. McHugh, who led the department for a quarter century.
- Department of Surgery opens \$3.5 million training laboratory for surgeons to learn and perfect new minimally invasive techniques.
- **John K. Niparko** receives the Scientist of the Year Award from the Deafness Research Foundation for his efforts in the laboratory and examining room and for educating the public about hearing loss and health.
- Oncology scientists develop a safe and reliable stool test that can detect the earliest, curable stages of colon cancer.
- Biomedical scientists find a gene that influences fat storage in mice. The gene may be a target to prevent or treat obesity and diabetes.
- Using genetically engineered mice, researchers show for the first time that a single kind of cell in the retina detects light for the body's internal clock, or circadian rhythm.

- Hypoglycemia, or low blood sugar, may have a long-term, detrimental effect on activity patterns in a newborn's brain, conclude Children's Center researchers.
- Persistent mistrust of doctors and hospitals, and religious misconceptions may explain why minorities do not become blood and organ donors, researchers report.
- A study indicates that millions of Americans at high risk for type 2 diabetes can dramatically lower their chances of getting the disease through diet and simple exercise.

MARCH 2002

- For the 10th straight year, the National Institutes of Health ranks The Johns Hopkins University School of Medicine as the top recipient of federal research dollars.
- Hopkins initiates an aggressive campaign to contact all of its patients who have been exposed to bacteria due to defective bronchoscopes that are part of a national recall by the manufacturer.
- Modest coffee drinking is associated with a small increase in blood pressure, investigators find, but not enough to substantially increase the risk of hypertension.
- Two studies strongly affirm the value of treadmill exercise tests in diagnosing heart disease in middle-aged women and men before symptoms occur.
- The Genetics and Public Policy Center, a component of the Johns Hopkins Bioethics Institute, opens in Washington, D.C., with a three-year, \$9.9 million grant from the Pew Charitable Trusts.
- Wilmer Eye Institute researchers find that two competing methods of correcting a mild form of children's amblyopia—"lazy eye"—are equally effective.
- "Hayfever" victims may get substantially more effective control of their allergic problems with just six shots in six weeks of a new form of vaccine, based on a clinical study.
- Specialists develop a way to locate the right vessels to seal off arteriovenous malformations surgically, greatly reducing the risk of causing inadvertent damage to vital brain tissue.

APRIL 2002

- For the 12th consecutive year, The Johns Hopkins University School of Medicine is ranked one of the top two medical schools in the nation by *U.S. News & World Report*.
- President Bush nominates **Elias A. Zerhouni**, executive vice dean and director of the Department of Radiology, as director of the National Institutes of Health.
- Pulitzer Prize-winning author William Styron and pediatric neurosurgeon Benjamin Carson speak at the annual symposium sponsored by the Johns Hopkins Affective Disorders Clinic and the Depression and Related Affective Disorders Association.
- Increasing manganese in cells can halt HIV's unusual ability to process its genetic information backwards, providing a good target for developing new drugs against HIV, a team of scientists reports.
- Young men who react to stress with anger are three times more likely to develop premature heart disease and five times more likely to have an early heart attack, researchers find. The findings are part of a long-term study of School of Medicine alumni.
- Oncology researchers identify a new genetic culprit—with dietary links—in the initiation of prostate cancer.
- Heart attack patients may be better off with balloon angioplasty to open blocked blood vessels than with clot-busting drugs, even if their hospital lacks a cardiac surgery program, researchers conclude.
- Scientists unravel the complicated genetics of an inherited intestinal disease, opening the door to complete genetic pictures of other complex chronic diseases.
- The earliest stages of prostate cancer may develop in lesions associated with chronic inflammation and might be reversible with anti-inflammatory drugs and dietary supplements, scientists suggest.
- A research study finds that glaucoma is the leading cause of blindness among U.S. Hispanics, while cataracts are the leading cause of visual impairment for that group.

- Oncology researchers conclude that the anti-inflammatory drug sulindac may not have the colon cancer prevention properties once hoped for.

MAY 2002

- "The Johns Hopkins Campaign: Knowledge for the World" sets \$2 billion fund-raising goal for all campuses. Johns Hopkins Medicine's goal is \$1 billion, part of which will support five new buildings—a children's and maternal hospital; a cardiovascular disease and critical care tower; two research buildings; and completion of the Broadway Research Building.
- Johns Hopkins dedicates the Sidney Kimmel Comprehensive Cancer Center, named in honor of the man who contributed \$150 million to the center.
- The Johns Hopkins Hospital starts work on a \$4.5 million gamma knife center to provide advanced treatment for brain tumors and other neurological conditions.
- Johns Hopkins Bayview Medical Center and Howard County General Hospital are designated Level III+ Perinatal Referral Centers for newborns in need of intensive care or women diagnosed with a high-risk pregnancy.
- Johns Hopkins Community Physicians celebrates 20th anniversary of legislation allowing uniformed services beneficiaries and their families to receive medical care at Wyman Park Medical Center as part of the military's first managed-care program, now called the Uniformed Services Family Health Plan.
- Sir David Weatherall, Emeritus Regius Professor of Medicine at Oxford University, delivers the first McKusick Lecture, established to honor **Victor McKusick's** contributions to science, medicine, teaching and patient care.
- **Marshall S. Bedine** receives the 2002 Outstanding Clinician Award from the American Gastroenterology Association.

- **Jeffrey Rothstein**, director of the Center for ALS Research, receives the first Diamond Award from the Muscular Dystrophy Association in recognition of his work on amyotrophic lateral sclerosis.
- **Russell Margolis** receives the Lieberman Award from the Hereditary Disease Foundation, its highest recognition, for his work on Huntington's disease.
- **Philip A. Beachy** is elected to the National Academy of Sciences, which advises the government on scientific matters.
- Immunologist **Robert F. Siliciano** is named one of 12 new Howard Hughes Medical Institute investigators.
- **D. A. Henderson**, first director of the U.S. Office of Public Health Preparedness and Dean Emeritus of the School of Public Health, speaks at the School of Medicine's commencement exercises.
- Scientists discover that sulforaphane, a compound found in broccoli and broccoli sprouts, kills the bacterium responsible for the vast majority of stomach cancers.
- An implantable pump that delivers slow-release pain medication directly into the spinal fluid can greatly improve the quality of life and survival for cancer patients living in pain, according to a research study.
- Preliminary study finds no advantage to adding chemotherapy to radiation after surgery for treating patients with advanced head and neck cancer.
- Kimmel Cancer Center scientists discover that an enzyme in a tumor cell's energy center has a special relationship with a gene controlling cancer cell growth and death, offering a possible road map to anti-cancer therapies.
- A study by the Center for Hearing and Balance discovers how tiny cells in the inner ear change sound into an electrical signal that the brain can understand. These findings could improve the design and programming of hearing aids and cochlear implants.

JUNE 2002

- **John D. Gearhart**, a pioneering stem cell expert, and bioethicist **Ruth Faden** receive a grant from the Greenwall Foundation to develop recommendations on a "second generation" of ethical questions about stem cell research.
- **Arnall Patz**, director emeritus of the Wilmer Eye Institute, is elected to the Hall of Fame of the American Society of Cataract and Refractive Surgery.
- **Michael Shamblo** receives the first Mary Tyler Moore and S. Robert Levine, M.D., Clinical Research Award from the Juvenile Diabetes Research Foundation for his stem cell work.
- **Solomon H. Snyder** receives an honorary degree from Israel's Technion-Institute of Technology.
- **Victor A. McKusick**, widely acknowledged as the father of genetic medicine, receives the country's highest scientific honor, the National Medal of Science, from President George W. Bush in ceremonies at the White House.
- Using brain cells from rats, scientists manipulate a molecular "stop sign" so the injured nerve cells regenerate, offering potential pathway to treating spinal cord injury.
- Scientists find that an antibiotic ointment smeared inside the nose up to five days before an operation reduces by half the surgical-wound and hospital-based infections from *Staphylococcus aureus*.
- **Lenox D. Baker Jr.**, president of Mid-Atlantic Cardiothoracic Surgeons, Ltd., in Norfolk, Va., is named chairperson of the Johns Hopkins Medicine Board of Trustees, as well as of boards of The Johns Hopkins Hospital and Health System. A JHU and School of Medicine alumnus, Baker was co-chair of the successful Johns Hopkins Initiative campaign.
- Eye drops used to reduce elevated pressure inside the eye may delay the onset of glaucoma among people at high risk, researchers conclude.
- Interventional radiologists demonstrate that cement can be injected into the spine for stabilization without prior, potentially dangerous dye studies.

- A new drug blocks the impact of a cancer-causing gene mutation found in a common and lethal form of leukemia, according to researchers at the Johns Hopkins Kimmel Cancer Center.

JULY 2002

- Office of Critical Event Preparedness and Response (CEPAR) is established to integrate the resources and expertise of the Johns Hopkins Institutions to deal with terrorism and other disasters.
- Howard County General Hospital opens a state-of-the-art emergency department triple the size of the old one, which experienced a 15.5 percent increase in patients over the previous year. Staffed by Johns Hopkins Emergency Medicine physicians, the new facility is divided into three separate areas: acute care, urgent care and pediatric care.
- **Oliver Schein** receives the Alcon Research Institute's research award for his accomplishments in ophthalmology/visual science.
- **Paul Ladenson**, chief of the Division of Endocrinology, is elected president of the Association of Subspecialty Professors for 2003-2004.
- For the 12th consecutive year, *U.S. News & World Report's* annual ranking of American hospitals places The Johns Hopkins Hospital No. 1 in the nation.
- Division of Health Sciences Informatics starts a postdoctoral program—one of only 19 nationwide—for health professionals and others with information or computer science backgrounds.
- Center for ALS Research changes its name to honor the late Robert Packard, in recognition of a \$5 million commitment from The Robert Packard Foundation.
- Community Hospices, part of The Washington Home, a non-profit, Washington, D.C.-based health care facility, signs agreement with the Johns Hopkins Home Care Group to provide hospice services to patients of the Johns Hopkins Health System.
- Researchers identify and successfully test in animals a potential new treatment for liver cancer.

- Mild anemia in elderly women, often dismissed as “innocent,” might create a significant risk of mobility problems, physicians report.
- School of Medicine researchers develop the first solid evidence that genes in human pluripotent stem cells and their progeny work normally.
- Men who start playing tennis in their youth and are good at it are likely to continue playing the sport for years, thereby keeping heart disease at bay well into middle age, according to the latest results from a long-term study of Hopkins School of Medicine graduates.

AUGUST 2002

- National Marfan Foundation gives **Victor A. McKusick** the foundation's Lifetime Achievement Award and honors Johns Hopkins with its first award to an institution.
- Scientists determine the 3-D structure of part of a protein called HER3, which should speed efforts to design new drugs that interfere with abnormal growth and forms of cancer.
- Study shows potentially treatable psychiatric problems are common in patients with degenerative brain diseases affecting movement and coordination.
- Laboratory experiments reveal “jumping genes” create dramatic rearrangement in the human genome when they move from chromosome to chromosome.
- Scientists find a gene defect that seems to lead to leukemia in children with Down syndrome.
- Praising Hopkins for a “markedly enhanced” human subject protection system, the Office for Human Research Protections (OHRP) removes all remaining restrictions on the School of Medicine's Multiple Project Assurance, the certification needed by all institutions to conduct publicly supported research.
- **Richard Clatterbuck** receives the Galbraith Award, the highest honor given for vascular neurosurgery by the Congress of Neurological Surgeons.

- **Richard D. Semba** receives the John M. Kinney-Nestle Pediatric Nutrition Award in recognition of his work on vitamin A and carotenoids from the European Society for Parenteral and Enteral Nutrition.
- Sulforophane, a molecule jointly discovered by **Gary Posner** and **Paul Talalay**, is named the molecule of the week by the American Chemical Society.
- Scientists demonstrate that interfering with the response to Hedgehog, a crucial signaling protein that tells other cells what to become during an embryo's development, may be useful in treating medulloblastoma, the most common brain cancer in children.

SEPTEMBER 2002

- Physicians report an extraordinarily high success rate for kidney transplants after use of plasmapheresis to filter antibodies from blood of patients traditionally considered ineligible for the surgery.
- Working with guinea pigs, scientists create what is believed to be the first biologic pacemaker for the heart, paving the way for a genetically engineered alternative to implanted electronic pacemakers.
- Researchers implicate mutations in a “heart disease gene” in hereditary prostate cancer, offering new evidence that some cases of prostate cancer may begin with an infection and inflammatory response.
- Johns Hopkins Community Physicians reopens the East Baltimore Medical Center after a \$5 million renovation. Extensive upgrades include a new Ob/Gyn and pediatric unit and an enlarged Care Plus After Hours department that provides urgent care for local residents after hours and on weekends.
- The Johns Hopkins Hospital again earns the Consumer Choice Award for both the Washington and Baltimore regions from the National Research Corporation (NRC).

- Agency for Healthcare Research and Quality (AHRQ) renews Johns Hopkins' status as one of its 13 Evidence-based Practice Centers in the United States and Canada.
- Howard County General Hospital opens its new labor and delivery facility and level III+ neonatal intensive care unit. HCGH ranks fifth in the state of Maryland for number of births.
- International Center for Orthopaedic Advancement opens at Johns Hopkins Bayview Medical Center, allowing surgeons and engineers to collaborate on developing new orthopedic implants and surgical techniques.

OCTOBER 2002

- National Heart, Lung and Blood Institute (NHLBI) gives Hopkins a seven-year, \$18 million contract to create one of 10 centers nationwide dedicated to the study and application of proteomics.
- **David Valle** is elected to the National Academy of Sciences' Institute of Medicine.
- Scientists find that disease-causing genetic mutations in sperm increase with men's age.
- **Barbara G. Cook** is named president of Johns Hopkins Community Physicians.
- Study suggests that coils inserted into burst aneurysms in the brain decrease by 25 percent the risk of patient death and disability during the first year after the procedure.
- Researchers at the McKusick-Nathans Institute for Genetic Medicine receive funding to participate in an international effort to catalogue human genetic variation in a “haplotype map,” a project crucial in the hunt for genes involved in such common diseases as asthma, heart disease and diabetes.
- Study shows that patients in an intensive care unit (ICU) whose care is managed by “intensivists”—physicians specially trained in critical care medicine—have a greater chance of survival and a shorter hospitalization.
- Institute for Cell Engineering holds its inaugural symposium.

RESEARCH HIGHLIGHTS

1952–2002

Johns Hopkins Medicine scientists have:

- Co-developed an improved rat model of Lou Gehrig's disease, a discovery that should speed understanding of this neurodegenerative disorder and possible treatments (2002).
- Developed a safe and reliable stool test based on a genetic marker that detects the earliest, curable stages of colon cancer (2002).
- Showed for the first time that a single kind of cell in the retina seems to detect light both to set the body's internal “clock” and to bring vision to the brain (2002).
- Discovered how tiny cells in the inner ear change sound into an electrical signal the brain can understand, a finding that could greatly improve the design of hearing aids and cochlear implants to restore hearing (2002).
- Demonstrated that putting a dab of antibiotic ointment inside the nose of patients prevents at least half of all surgical wound and hospital-based infections caused by *Staphylococcus aureus* (2002).
- Found what is believed to be the first solid evidence that genes in human pluripotent stem cells and their offspring work normally, a finding that adds hope that therapies using these cells will be safe and effective in humans (2002).
- Demonstrated that interfering with the response to Hedgehog, a crucial signaling protein that tells other cells what to become during an embryo's development, may be useful in treating medulloblastoma, the most common brain cancer in children (2002).
- Unraveled the complicated genetics of an inherited intestinal disorder called Hirschsprung disease that is responsible for severe disability in 1 in 5,000 live births, a feat that opens the door to sorting out the genes responsible for a host of other multi-gene disorders (2002).
- Developed the first biologic pacemaker for the heart, paving the way for a genetically engineered alternative to implanted electronic pacemakers (2002).
- Co-discovered 170 genes involved in both Crohn's Disease and ulcerative colitis, a finding that led to the first genetic profile for these two inflammatory bowel diseases and to progress in developing new treatments for them (2001).
- Discovered a novel method of genetically modifying allergy-causing agents such as ragweed, experiments that may lead to faster, safer and more effective vaccines for preventing and treating asthma and hay fever (2001).
- Provided some of the first clear evidence that transplanted bone marrow stem cells can not only make new bone marrow, but also play a role in healing other tissues and organs (2001).
- Helped discover the first gene directly involved in causing Crohn's disease, one of the two major bowel diseases affecting nearly 500,000 Americans (2001).
- Successfully used a modified form of bone marrow transplants to treat sickle cell anemia in animals, adding support to human tests of the treatment under way (2001).
- Led a team that discovered how precancerous moles progress to melanomas, the most deadly skin cancer, a finding that could serve as an early and simpler diagnostic test for the disease (2001).
- Demonstrated that a special high-fat, low-carbohydrate diet cuts in half the number of seizures in half of children with severe seizure disorders, and allows many of these children to eliminate the use of anti-seizure drugs altogether (2001).
- Demonstrated that a particular aquaporin (the proteins that help regulate cells' balance of water) helps preserve the blood brain barrier but also contributes to brain swelling, opening new avenues of inquiry for treating potentially lethal brain swelling from injury and stroke (2001).



- Identified a gene defect linked to interstitial lung disease, a common and dangerous disorder in premature infants (2001).
- Identified a key enzyme in the brain that forms a hallmark of Alzheimer's disease (2000).
- Used stem cell grafts to restore movement to limbs of paralyzed animals, a major advance in efforts to overcome paralysis in humans (2000).
- Discovered that a genetic mutation linked to cystic fibrosis may also predispose people to sinus infections (2000).
- Discovered a new family of genes that contributes to aggressive forms of childhood cancer, as well as cancers of the prostate, ovaries, lung and breast (2000).
- Identified a compound called C57 that rapidly and temporarily turns off appetite and causes weight loss in test animals (2000).
- Implicated a sexually transmitted virus called HPV in the development of cancers of the head and neck (2000).
- Developed a new way of using mechanical ventilators to treat patients with severe lung injuries, dramatically reducing deaths among patients with acute respiratory distress syndrome (2000).
- Developed a technology that makes it possible to detect accurately—nearly 100 percent of the time—genetic alterations linked to inherited diseases (2000).
- Identified the molecular abnormality responsible for the sudden heart failure that strikes after open heart surgery, opening the door to prevention (2000).
- Reduced vision loss in macular degeneration patients via photodynamic therapy and translocation surgery (1999).
- Identified a new and unusual nerve transmitter, as well as its biological source, in the human brain, work that promises rapidly to advance drug treatments for stroke (1999).
- Identified a single gene variation that may explain some of the key individual differences in pain sensitivity (1999).
- Developed an inexpensive, safe and effective drug regimen for preventing HIV transmission from an infected mother to her newborn (1999).
- Identified a drug that stops the growth of abnormal blood vessels in the eye, an advance that could have sight-saving implications for millions of people with blinding complications of diabetes (1999).
- Discovered a genetic “switch” that can at least temporarily quiet firing nerve cells, a finding with implications for treating epilepsy, heart rhythm disturbances and severe pain (1999).

- Isolated and cultivated human embryonic stem cells, the primordial cells from which human life is formed (1998).
- Discovered the genetic alteration linked to common forms of colon cancer in normal cells, potentially offering a means of predicting as many as 40 percent of new colon cancers before they actually begin (1998).
- Identified genetic mutations heavily involved in more than half of all cases of amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease), speeding development of a diagnostic test and earlier treatments (1998).
- Discovered the gene that regulates other genes critical for normal photoreceptor development in the retina, and showed that mutations in this gene cause several human retinal diseases, including retinitis pigmentosa (1998).
- Developed a test that spots adrenoleukodystrophy (ALD) carriers with 99 percent accuracy (1998).
- Started testing gene therapy for early heart disease (1998).
- Mapped the first major cancer gene to the X chromosome, thus explaining how prostate cancer can be passed through the mother (1998).
- Provided first reliable evidence of genetic susceptibility to schizophrenia (1998).
- Discovered the unique molecular defect that now can simplify diagnosis of polycythemia vera, the blood disorder first described by Sir William Osler (1998).
- Confirmed with long-term evidence that a 70-year-old unconventional diet helps many children with epilepsy, especially those who do not respond to medicines (1998).
- Confirmed a gene related to manic-depressive psychosis is located on chromosome 18 (1997).
- Genetically engineered mice to grow herculean muscles, a finding with implications for treating muscular dystrophy and other muscle-wasting diseases (1997).
- Mapped the first specific prostate cancer gene to chromosome 1 (1996).
- Discovered the first inherited blood cell risk factor in platelets for “silent” heart disease in young adults (1996).
- Developed an effective new treatment for brain tumors using biodegradable polymer implants (1996).
- Identified a form of low blood pressure as the probable cause of chronic fatigue syndrome (1995).
- Helped develop the first effective treatment for sickle cell anemia (1995).
- Identified the gene that causes most forms of polycystic kidney disease, the most common inherited kidney disease (1995).



- Developed a computer model that helps to predict how complicated proteins “fold,” a technology that will help in recognizing the function of newly discovered genes (1995).
- Identified a chemical in broccoli and other cruciferous vegetables that appears to inhibit the development of cancer (1993).
- Identified a gene responsible for a widespread form of colon cancer (1993).
- Isolated hypoxia-inducible factor 1 (HIF-1), a protein in all cells that regulates oxygen homeostasis and adaptation to oxygen deprivation, and plays a role in development of nutrient-supplying blood vessels necessary for tumor growth (1992).
- Isolated the gene known as “Hedgehog,” which carries the blueprint for a crucial signalling protein that tells other cells what to become during an embryo's development (1991).
- Identified aquaporin, a protein that controls passage of water into and out of red blood cells and kidney cells, spawning research that now seems likely to impact treatment of brain swelling and certain lung and kidney diseases (1991).
- Synthesized a new form of vitamin D, with possible future application as an anti-cancer drug (1990).
- Induced apparently normal human brain cells to multiply in the test tube, opening the possibility that such cells could be used in treating neurological diseases (1990).
- Discovered how the brain “hears”—how bioelectrical signals from the inner ear to the brain are encoded—findings with important implications not only for understanding the hearing process but also for how the brain operates (1989).
- Identified the brain receptor for cocaine, a key step in developing potential treatments for cocaine addiction (1987).
- Invented a pill-size ingestible electronic capsule to telemeter deep-body temperatures (1987).
- Discovered that E. coli, a bacterium found in the human gastrointestinal tract, can repair its own DNA when damaged by ultraviolet light, thus providing a method for the investigation of DNA-repair proteins in molecular and cell biology (1987).
- Discovered that Oltipraz, a compound found in cruciferous vegetables (cabbage, brussels sprouts, cauliflower), offered protection from the effects of radiation therapy (1983).
- Discovered that pennies-worth of vitamin A supplements administered to Indonesian children as part of a blindness prevention program were accompanied by a dramatic drop in infant death rates, leading to similar vitamin treatments for thousands of children in developing countries (1983 – 86).
- Developed nerve-sparing radical prostatectomy surgery that allows men to main quality of life (1982).
- Developed a heat-shrinkable polymer used as a sleeve, which took the place of sutures in vascular surgery (1981).
- Identified a protein that controls assembly and disassembly of structures responsible for shape and movement of living cells, a major contribution to understanding fundamental mechanisms of cell motility, one of the most important problems in cell biology (1980).
- Discovered that ketoacids as a substitute for dietary protein were useful in forestalling dialysis in kidney failure and in treating protein depletion or intolerance (1976).
- Developed the first successful treatment to desensitize people against bee stings (1975).
- Provided the first successful demonstration of the effect of a planned health education program in decreasing morbidity and mortality from a chronic disease (hypertension) (1975).
- Invented the first microcomputer-controlled, implantable medication delivery system (1975).
- Developed the first method for routinely visualizing the choroidal blood vessels of the eye (1973).
- Identified the sites where heroin and other opiates act in the brain, a discovery that has important implications for the treatment of drug addicts and for the screening and development of new and potentially nonaddictive pain-killing drugs (1972).
- Invented the first implantable, rechargeable pacemaker for cardiac disorders (1972).
- Discovered restriction enzymes, the “biochemical scissors,” and showed that they cut DNA at specific nucleotide sequences and could be used to analyze DNA, thus giving birth to the entire new field of genetic engineering (1969–70). The discoverers were awarded the Nobel Prize in 1978 for their achievement.
- Developed the first clinically useful argon photocoagulator, providing ophthalmologists with a technique for repairing damaged retinal vasculature (1969).
- Assigned the first gene—the Duffy blood group—to a specific chromosome, setting off worldwide interest in gene mapping (1968).
- Described the structure and function of the complement system, a complex set of enzymes that play an important role in human immunological defenses against cancer, bacteria and viruses (1961).
- Developed oral rehydration therapy, which replaces food and electrolytes lost from the body during diarrheal disease (1960s).
- Developed CPR, cardiopulmonary resuscitation, the technique of closed-chest cardiac massage to keep inert or fibrillating hearts pumping blood (1958).
- Linked a single gene defect to symptoms of Marfan syndrome (1957).
- Showed that retrolental fibroplasia, which causes blindness in premature infants, was related to high concentrations of oxygen used in babies' incubators (1954).
- Immunized chimpanzees with inactivated vaccines, essential to the development of the first widely used polio vaccine and a major step toward the prevention of poliomyelitis in human beings (1947-52).



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