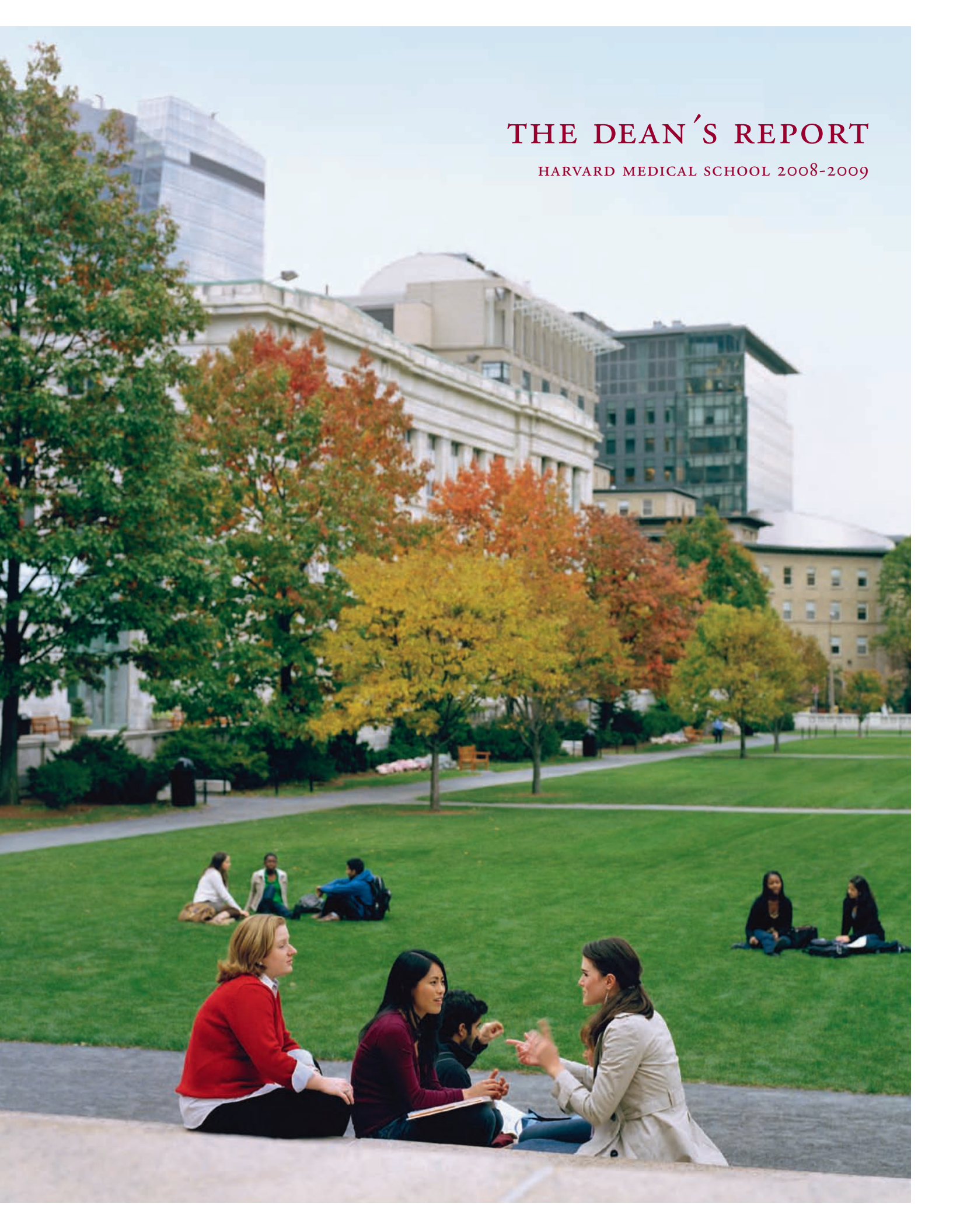


# THE DEAN'S REPORT

HARVARD MEDICAL SCHOOL 2008-2009







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# Re-envisioning the Harvard Medical Community

The Harvard medical community, centered on the Quadrangle and extending to our 18 affiliated hospitals and institutes, is truly remarkable, with faculty, staff, and students who demonstrate excellence across the spectrum of biomedical education, research, and clinical care. Our mission is to serve society by training clinicians and scientists and by making discoveries and translating them into better healthcare. We thereby improve the lives of people in this country and around the world. All of our efforts are founded on this mission.

Launched in November 2007, our Strategic Planning Initiative is one of our major ongoing efforts. It has required that we not only excel in meeting our individual goals at the School, but work together toward a broader purpose. Our hope in embarking on this initiative was to create a vision for a vital, interconnected, discovery- and education-oriented community that creates a 21st century environment for scholarship and service to human health. I believe that after the work of this past year, we now have a vision for such a community.

The strategic planning process identified five main priorities: revitalizing the educational mission of the School; seizing opportunities in biomedical research to increase human well-being; lowering institutional barriers to collaboration; creating a more unified, supportive, and inclusive community; and increasing and coordinating strategic investments in tools and technologies.

As we end the first phase of the planning process and move into implementation, we

will need to make some difficult decisions about priorities and the programs that bring them to fruition. It is a challenge that I welcome whole-heartedly: our responsibility is to ensure that we leave to the next generation a Medical School and community that are stronger and healthier than those we inherited.

In parallel with our Strategic Planning Initiative and strongly aligned with our commitment to the translation of science into medicine, HMS successfully applied for a major grant from the National Institutes of Health (NIH) to create a clinical and translational science center, now called the Harvard Catalyst. The application was mandated by a shift in NIH priorities, which forced our academic healthcare centers to consolidate previously separate NIH-funded clinical research centers, with HMS playing the leadership role. The effort required a commitment to a broad and compelling vision of clinical and translational research at the University and an unprecedented level of collaboration among faculty and staff across our community. A wide range of

leaders came together to plan and design the center, whose research will involve teams of investigators from across disciplines, departments, and institutions. The Harvard Catalyst will be a critical structure for accelerating our basic and social science research into improved patient care and healthcare delivery.

A key motivation for engaging in an ambitious strategic planning process was the need to play a significant role in planning at both the University and our affiliated academic healthcare centers. These efforts include University planning for the Allston campus and for science more broadly, such as the work of the Harvard University Science and Engineering Committee, which promotes cross-University programs. Harvard President Drew Faust has been a strong supporter during these discussions. The Strategic Planning Initiative has enabled me to represent the views of our faculty in University-wide planning and to ensure that the School's scientific priorities align to the greatest possible extent with other University interests. Organizationally



and financially, the Medical School has a substantial stake in the success of these efforts.

The enormity of our research enterprise sometimes threatens to overshadow the core educational mission of HMS. An equally important part of our mandate is providing MD, DMD, and PhD students the best possible educational programs to prepare them for careers as practitioners, innovators, and leaders. Because the discoveries of today shape the medicine and science of tomorrow, it is impossible to separate teaching and learning from research and practice. Among the critical steps we have taken to enhance education is reducing medical student indebtedness. It is crucial that the School not be out of reach to a broad segment of undergraduate students, and it is equally imperative to avoid burdening families with a new round of debt shortly after a child has finished college. Leaders in education at the School are also reorganizing the support structure for graduate student teaching and providing better ways to identify synergies and gaps in the science curricula.

Our outstanding community is already an active and recognized participant in the new biomedical future. This year, among the many honors our community received was an Albert Lasker Basic Medical Research Award shared by one of our genetics faculty members and a MacArthur “genius” grant awarded to an HMS neurobiologist. In addition, five faculty members received NIH Director’s Awards, a Pioneer Award and four New Innovator Awards. We were further honored when a 1977 graduate of our Division of Medical Sciences was named a co-recipient of the 2008 Nobel Prize in Chemistry. We had a second connection to the Nobels when weeks after we celebrated our Alpert Prize, one of the winners also shared the Nobel Prize in Physiology or Medicine. Insights generated by these and our other world-class researchers offer great promise for better understanding of biology and disease and for meaningful advances in patient care.

Because successes like these require the entire community, I am fully committed to nurturing our faculty, staff, and



students; our departments; and our partner institutions, as well as to working with our remarkable friends and donors. It has been my great pleasure to collaborate closely with many wonderful individuals in the past year and see them rise to the extraordinary challenges we have faced. I am deeply grateful to all those who contributed their ideas, time, energy, good will, and support to our many initiatives. This year, I believe that we have developed a richer, more nuanced and informed understanding of the best the School can offer and the best it might be.

A handwritten signature in black ink that reads "Jeffrey S. Flier". The signature is written in a cursive, flowing style.

Jeffrey S. Flier, MD

Dean of the Faculty of Medicine



## FROM THE SCHOOL

The HARVARD MEDICAL SCHOOL mission: To create and nurture a diverse community of the best people committed to leadership in alleviating human suffering caused by disease.

From left, Jeffrey Flier, dean of the Faculty of Medicine; Nancy Oriol, dean for students; Joshua Boger, vice chair of the Board of Fellows; and Thomas Michel, dean for education



Harvard Medical School has taken a leap forward in the past year by coming together as a community to pursue big ideas requiring broad collaboration and the best efforts of its faculty, staff, and students. The process has generated new plans, programs, and enormous momentum to make further strides in science and education, and in re-envisioning the Harvard medical community. These efforts aim to position HMS as a world leader in biomedicine well into the 21st century. They also enrich collaboration on the local, regional, national, and global fronts. Many of the people and programs driving these advances are described on the following pages.



#### THE STRATEGIC PLANNING INITIATIVE

Begun by Dean Jeffrey Flier in September 2007 and officially launched two months later, the Strategic Planning Initiative at HMS has required taking a collective break from business as usual and shining a bright light on the School's scientific and educational efforts, culture, and organizational structures. The first phase of the initiative—the investigation and self-examination—has identified shortcomings as well as strengths and provided a foundation of information and insight for making decisions about the School's priorities for the future.

The work of strategic planning was distributed across four teams: the Strategic Advisory Group on Education, led by Thomas Michel and Orah Platt; the Biomedical Research Advisory Group, led by Bruce Spiegelman and Christine Seidman; the Social Sciences and Global Health Advisory Group, headed by Jim Yong Kim and Barbara McNeil; and the Tools and Technologies Advisory Group, led by Stephen Harrison and Elazer Edelman. Each team was made up of



distinguished junior and senior faculty members from the HMS Quadrangle, the HMS-affiliated academic healthcare centers, and the broader Harvard community. The initiative was led by the Strategic Planning Steering Committee, headed by Dean Flier and composed of the advisory-group chairs and other thought leaders from across the School and the University. In all, more than 100 faculty and numerous staff members from HMS, the University, and the affiliated healthcare centers have participated in the process.

A strategic planning website (<http://hms.harvard.edu/public/strategy/index.shtml>), including an interactive comments function, and other outlets made the deliberations broadly accessible. The site includes all of the recommendations from the advisory groups and a discussion of the priorities that are heading into implementation.

To further air the planning efforts, Dean Flier met with multiple leadership groups, including the HMS Board of Fellows, the Harvard University Visiting Committee, the University Academic Planning Group,

the Allston Development Group, the Harvard Medical School/Harvard School of Dental Medicine Joint Committee on the Status of Women, and others. These meetings afforded participants the chance to ask questions and provide feedback.

Five priorities emerged from the process: revitalizing the educational mission of the School; seizing rapidly expanding opportunities in biomedical research to increase human well-being; lowering institutional barriers to collaboration; creating a more unified, supportive, and inclusive community; and increasing and coordinating strategic investments in tools and technologies. Other areas of importance that arose include aging research, social sciences and global health, and disease-specific investigation. All of these strategic priorities are intertwined with two parallel efforts, the establishment of the Harvard clinical and translational science center, called the Harvard Catalyst, and the University's expansion of the Allston campus.

#### CROSS-UNIVERSITY PROGRAMS

In parallel to the Strategic Planning Initiative and supporting translation of science into medical practice, the School successfully applied for a major grant from the National Institutes of Health (NIH) to create the Harvard Catalyst (see page 11). The award was announced in May 2008. The Catalyst is a pan-University collaborative organization committed to harnessing the human, technological,

**A strategic planning meeting; in the close-up are (from right), Donald Coen, professor of biological chemistry and molecular pharmacology, and Joan Brugge, chair of the Department of Cell Biology.**



and fiscal resources of Harvard and its academic healthcare centers with the aim of reducing the burden of human illness. Directed by Lee Nadler, dean for clinical and translational research, the Catalyst draws members of the faculty, postdoctoral fellows, clinical trainees, and graduate students from across the University. Their expertise includes biology, engineering, chemistry, and physics focused on deciphering the mechanisms of disease, developing diagnostics, and formulating strategies and agents to improve human health.

The Catalyst brings together the 10 schools of Harvard and the 18 HMS-affiliated academic healthcare centers, since many of the new challenges and opportunities will require interaction with colleagues in the law, business, government, divinity, and education schools in addition to those in the healthcare institutions. The Catalyst provides a web portal (<http://catalyst.harvard.edu>), research navigators, and pilot grants to catalyze connectivity among participating members of the community. All Harvard faculty and students—regardless of their institutional affiliations—have access to these resources.

The University's Allston expansion is another example of a cross-cutting initiative with major opportunities and challenges. A consensus that has emerged from planning both at HMS and the

University is that if the Allston campus is to be a net gain for HMS and Harvard, it must have a compelling scientific theme and be self-sufficient and integrated with the existing science campuses. The Medical School's opportunity to expand into Allston therefore requires a concerted effort to plan internally and externally with partners across the University. Harvard's current effort to build a world-class science facility in Allston taps three programs integral to the Medical School, the Department of Stem Cell and Regenerative Biology (jointly based at HMS and the Harvard Faculty of Arts and Sciences), the Department of Systems Biology, and the Institute for Biologically Inspired Engineering. The colocation of these three units is particularly synergistic in terms of possible shared cores, cross-departmental faculty collaboration, and an orientation toward applied and translational research. These changes also demand that the School increase its faculty, space, core facilities, teaching and research activities, and administrative capacity.

#### STRATEGIC PRIORITIES

The Medical School's planning process has called for further transformative change, and the School has begun moving forward on many of the recommendations in each of the priority areas. In education, to ensure that the major initiatives are effectively carried out, Dean Flier

created the position of dean for education and appointed Thomas Michel, who is co-director of the Leder Program in Human Biology and Translational Medicine. Michel is leading implementation of the far-reaching recommendations, including the requirement, beginning in 2010, for medical students to complete a scholarly project and the establishment of a Master of Medical Science track, called the Program for Research in Medicine (HMS-PRIME), for those medical students wishing to pursue an additional year of research (see page 29).

To address the needs of graduate students, Michel and his education group colleagues recommended reorganizing the support structure for graduate teaching and providing ways to refine the science curricula. Improving support for postdoctoral clinical and research fellows, including assistance with career and professional development, is also an important goal, as is revitalizing the educational opportunities available to residents and clinical fellows.

A related goal in the area of education is creating and fostering a culture of excellence in teaching. Recommendations from the education group include rigorously implementing the new criteria for academic promotion (see page 31) and engaging senior leadership at HMS, including both Quad- and healthcare

The home page of the Harvard Catalyst website

Community members displaced by a hydroelectric dam that flooded their property now live along highway 3 in Cange, Haiti, which is served by a hospital run by Partners in Health. This organization is one of the core international programs led by HMS faculty and staff.



center-based department chairs, in rewarding teaching through academic promotion and compensation.

The Medical School also moved forward in other areas of education such as reducing student indebtedness (see page 29). Beginning in 2008–09, HMS reduced the financial contribution expected from the parents of medical students by eliminating this cost entirely for families earning \$120,000 or less with assets typical of this income group. Building on this change, the School also decided to exclude from its determination of student financial need the income that families set aside each year for retirement. This new method will allow a larger number of families, extending to the upper-middle class, to qualify for greater financial support. These steps, in combination with funding to cover increases in the cost of attendance, resulted in the awarding of an additional \$3 million in HMS scholarship funds in 2008–09, a nearly 40 percent increase over the previous funding levels. The School is also pursuing other ambitious ways to reduce student debt even further.

#### HUMAN-CENTERED RESEARCH

HMS itself is at a tipping point with regard to human-centered research. The School benefits from the talents, energy, and momentum of some of the world's most brilliant basic scientists, and it also has extraordinary disease-oriented investigators and clinicians. This talent and expertise mean that the School is well positioned to take decisive leadership in moving the revolution in science toward advances in human health, providing there is adequate investment in the engines of discovery and the bridges to medical innovation.

The preclinical departments at HMS are the core of the School's biomedical enterprise, nurturing many leaders and serving as centers for scientific innovation, education, and faculty development. The guidance of the department chairs in shaping the vision of HMS, attracting world-class faculty, and cultivating

exceptional working groups within the larger HMS community is critically important to the health and vitality of the School. In the future, the impact of these Quad-based faculty and departments can be even greater if they are connected more effectively to the broader vision of the School to improve human health.

The Biomedical Research Advisory Group identified several key areas, at crucial junctures in their development, that have the potential to connect fundamental science with clinical applications. Specifically, the committee recommended several cross-cutting fields as high priorities—human genetics, therapeutic discovery, neuroscience, immunology and microbial sciences, and bioengineering—in addition to the School's existing commitments to stem cell and regenerative biology and systems biology.

As a result, the dean is working with David Altshuler, a professor of genetics and of medicine at Massachusetts General Hospital and HMS and a founding member of the Broad Institute, and in close consultation with Clifford Tabin, chair of the HMS Department of Genetics, in organizing a new initiative in human genetics. It is an area in which HMS already leads, but also one in which the School has not realized its potential. Harvard-wide in scope, but centered at HMS, the proposed initiative would bring together faculty from across the academic healthcare centers and the University to build a world-class curriculum and provide leadership, focus, and resources that would aid in drawing more top talent in human genetics to the HMS community.

The School has also convened outstanding scientists and thought leaders from across the University, the affiliated healthcare centers, other universities, the pharmaceutical industry, and business to blaze a path toward a therapeutics program that would re-energize the discipline and close the gap between basic research and drug development. The task is to mount a focused effort to bring the expertise of the community to bear on new ways

to understand, identify, target, test, and deliver therapeutics, as well as new ways to understand how the approach affects individuals and populations. HMS is in a particularly good position to undertake such an effort, due to the community's extraordinary strength in basic and clinical research, the expanding efforts in translational research (now bolstered by the Harvard Catalyst), and the continuing endeavors of the faculty.

To lead the School's efforts in neuroscience, Dean Flier recruited Michael Greenberg, director of the neurobiology program at Children's Hospital Boston, to become the new chair of the HMS Neurobiology Department (see page 39). Neuroscience may well be the area in which the largest breakthroughs are made in this century. Advances in understanding the nervous system and neurological diseases, ranging from Alzheimer's to depression, have enormous potential to be translated into new and important therapeutics. As with human genetics, this is an area in which the University and its faculty already excel, but in which HMS may need to make additional investments in order for the community to thrive. Greenberg's charge is to foster even greater collaboration in the field and to build a broad and deep initiative in neuroscience across the University.

Research on the interrelated areas of immunity, mechanisms of inflammation, and microbial science and infectious diseases is of enormous consequence for human health. Harvard has a very strong immunology program, structured as the Committee on Immunology, which has been functioning as a collaborative program for more than 10 years. This interdisciplinary, interinstitutional entity involves nearly 90 highly regarded faculty members from throughout the Harvard community, including HMS, the affiliated healthcare centers, the Faculty of Arts and Sciences, and the Broad Institute. In addition, the growing University-wide Microbial Sciences Initiative, officially launched in 2004, is providing an avenue for collaborative research and

interdisciplinary courses, and the new Allston campus promises to add even more opportunities in this area.

Bioengineering, too, is an exciting field that is critical to the translation of biomedical science into a variety of applications. Although many Harvard faculty work in this area, including in the academic healthcare centers and in the Harvard–MIT Division of Health Sciences and Technology, the numbers are not sufficient for the breadth of the field. An extraordinary effort in bioengineering requires deep collaboration between HMS and the Harvard School of Engineering and Applied Sciences (SEAS), and in a first step, the two schools established a joint committee to address ways of moving forward. The committee submitted a report to Dean Flier and the former SEAS dean, Venkatesh Narayanamurti, recommending substantial new investments. A proposal for a Harvard Institute for Biologically Inspired Engineering—in which the educational and research opportunities are extraordinary—has also been under discussion. A major boost to research in this area came in October 2008 with a gift to the University that was the largest individual donation the University had ever received (see page 15).

#### LOWERING BARRIERS

Though the breadth and depth of biomedical expertise in the Harvard medical community may be unparalleled anywhere in the world, the community is spread across many different institutions both in the Longwood area and beyond, each with separate organizational and financial structures. This situation has created unintended barriers that fragment the faculty. HMS has begun to analyze these obstacles and to identify areas for improvement. Faculty and staff at the Harvard Catalyst, for example, have made remarkable progress in lowering barriers to interaction, including early efforts to streamline the processes of multiple institutional review boards. In addition, the Catalyst web portal serves an important function of matchmaking among

scientists, which makes it easier to identify core facilities, researchers' areas of interest, and data that exist across the entire system. Further lowering of barriers will be a challenge that requires support from the University's central administration and involvement of key leaders and administrators in partner institutions.

Barriers to collaboration at HMS are not only institutional. One of the most difficult challenges identified in the planning process is the need for shifts in the culture of HMS, which in broad terms means becoming less insular and more inclusive. The School is giving special attention to improving the diversity and gender balance of the faculty; making a stronger commitment to mentoring and actively supporting junior faculty of all backgrounds; and creating an environment in which people can identify with a larger community than just their own particular niche. Achieving this goal is essential to the future of the School and to the success of the goals in education and research that were articulated in strategic planning.

To facilitate communication, Dean Flier is establishing three new councils—on education, on research, and on faculty development and diversity—to be led by deans in each of these areas. The deans will be charged with convening key stakeholders and thought leaders at HMS and across the University, with the goal of sharing information and ideas and integrating planning efforts. Flier will have direct contact with each of these councils through the newly formed Dean's Cabinet, which includes, among other members, three academic deans—the dean for education, interdisciplinary research (the newest of these positions), and academic and clinical affairs—and the dean for clinical and translational research. Not only will these structures support more effective communication but greater inclusiveness across the community. As the dean for academic and clinical affairs, Nancy Tarbell has taken on the task of integrating and expanding the School's efforts in faculty development and diversity (see page 39), and she will chair the council in this area.



If the School is to retain its leadership position in biomedical research and education, recruit the highest-quality scientists, and support a wide range of research, it must invest in cutting-edge technologies and computational support and innovation. In the strategic planning process, faculty members often cited new investments in computational biology and advanced imaging—ranging from atoms to human beings—as critical to their ability to carry out discovery research. The report of the Tools and Technologies advisory group also makes a compelling case for more systematic investments in frontier research in the technologies that eventually enable discoveries across many fields. This is an area in which the whole School must come together to plan and identify new directions. Central to this challenge is the development of core facilities to make established technologies available to the wider community. Other issues include recruiting, evaluating, and rewarding technology innovators among the faculty and research staff.

HMS has a significant emerging community focused on aging, in the areas of both basic and social science. The School enjoys particular strengths in the biology of aging and in the arenas of policy and quality of care for the elderly population. Research on aging is becoming increasingly important given the demographics in the United States and many other parts of the world. HMS is poised to become a leader in this field.

Harvard President Drew Faust and Dean Jeffrey Flier at a March 2008 strategic planning meeting



More broadly, the School is taking a leading role in cross-University efforts to improve health through better understanding of social, economic, and access factors that affect healthcare, both in this country and overseas. One recommendation that emerged from the Social Sciences and Global Health Advisory Group was to mount a cross-University planning activity in social sciences, akin to the role that the Harvard University Science and Engineering Committee plays for the basic sciences. Ultimately, the goal would be to merge strengths in both social science and biomedicine, making the bench researchers' discoveries more effective through the knowledge of healthcare delivery that the social scientists provide. The importance of extending these practical efforts beyond the United States is reflected in the 2008 name change of the Department of Social Medicine to the Department of Global Health and Social Medicine (see page 31).

#### CHALLENGES

Leaders of the School have high aspirations for HMS. The biggest challenges are organizational and financial. Science is expensive, with the need to attract and retain the best faculty, give them the tools to succeed, and support them in a vigorous and exciting environment. Foremost among the challenges that the School faces is securing the financial resources required to support the initiatives it seeks to implement as well as the existing core programs. The issues include the financing of ongoing programs like the cornerstone initiatives for the Systems Biology Department and the Department of Stem Cell and Regenerative Biology, expanding support of educational programs, and ensuring that the promise of existing faculty can be realized. These funding challenges are particularly demanding in these unstable economic times. They have been exacerbated by the shrinking NIH resources available for research universities and the increased costs associated with expanding faculty commitments to teaching across the curriculum and the

University. In parallel with planning for departments and new initiatives, as well as for the Allston campus, the School must anticipate and address the major costs of investment in tools and technologies.

Although embracing a more interdisciplinary, interinstitutional model of cutting-edge research will make the School even more competitive for limited sponsored funding and for gifts from selective donors, the administrative costs of supporting such collaboration are significant. As an institution, the School has the fiduciary responsibility to ensure the fiscal health of the research departments, educational programs, and general administration. Yet in committing to initiatives that expand beyond institutional boundaries, the School becomes more exposed to decisions that put the interests of the collaboration first. Although these interests are aligned with those of HMS, the School has to pay careful attention to the financial implications for the bottom line.

#### THE BROADER COMMUNITY

Amid the transformative change and daunting challenges of the current environment, the School retains its focus on outreach to the local, regional, national, and global communities. HMS has vital programs overseas that support discovery research and scientific exchanges. It offers medical-education programs for local to international audiences. The School also has been reaching out to its immediate neighbors for many years in an effort to improve their health and increase their understanding of medical issues. The 2008 Longwood Seminars, which took place in the new research building, attracted about 1,200 people over the four evening sessions, giving insight into personal health and trends in biomedical research and medical care. The School's Family Van treats 6,000 people a year in low-income areas throughout Boston. On a more focused level, the Office of Enrichment Programs launched a course in spring 2008 that so far has trained 25

students to counsel people in Boston and Worcester who are at high risk for HIV infection. A few months later, the office sent 11 students to Costa Rica to acquaint them with the challenges of medical practice among Spanish-language speakers (see page 37).

One of the premier outreach programs at the School is Project Success, initiated in 1992 by Joan Reede, now dean for diversity and community partnership. The program brings minority students from Boston and Cambridge to research laboratories at HMS for summer internships. Many graduates of the program have gone on to earn science, medical, or public health degrees. One outstanding example is Joyce Imahiyerobo-Ip (see page 35). As a student at Boston Latin School in 1996, she completed a Project Success internship at Children's Hospital. In 2008, after studying at Harvard College, Cambridge University, and Cornell Medical School, she returned to the Harvard medical community as an intern at Cambridge Hospital. Her path to residency demonstrates the importance of pipeline programs that engage disadvantaged young people as early as possible and give them the support and encouragement they need to raise their sights both personally and professionally.

Project Success would fail without the cooperation of HMS, the School of Public Health, and the academic healthcare centers in the Harvard medical community. The program illustrates a larger point, that the community is most effective when it works together toward a common purpose. Whether the collaboration is within the structure of the Harvard Catalyst, the teams of the Strategic Planning Initiative, the Committee on Immunology, or other groups that span departments and institutions, the community has the capability to better marshal its talents toward a goal that is shared by all. ■

## RESOURCES

Foremost among the challenges that the School faces is securing the financial resources required to support the initiatives it seeks to implement as well as the existing core programs. We are profoundly grateful to all of our friends and donors for the extraordinary contributions they have made, which have enabled much of our progress over the past year. ✦

On the move: Dean Jeffrey Flier leads members of the Board of Fellows past Gordon Hall to the Tosteson Medical Education Center.



## GRANT WILL GALVANIZE TRANSLATIONAL SCIENCE

HMS was awarded a five-year Clinical and Translational Science Award from the National Institutes of Health (NIH) to launch a center that will transform patient-oriented research and create an unprecedented level of collaboration across the Harvard schools and affiliated academic healthcare centers. With the award, announced in May 2008, the University joins a consortium of Clinical and Translational Science Centers (CTSCs) around the country.

HMS will receive \$23.5 million per year over five years. In addition, \$15 million per year for this period was committed by the Harvard University Science and Engineering Committee, HMS, the Harvard School of Public Health, and the HMS-affiliated academic healthcare centers. The NIH grant that established the Harvard clinical and translational science center—named the Harvard Catalyst—is administered through HMS.

The Harvard Catalyst is directed by Lee Nadler, the Virginia and D.K. Ludwig professor of medicine at Dana–Farber Cancer Institute and HMS, and co-directed by Steven Freedman, associate professor of medicine at Beth Israel Deaconess Medical Center. They became, respectively, the dean and associate dean for clinical and translational research. “This is an extraordinary moment for our University, Harvard Medical School, and all of the hospitals and institutes that make up the Harvard medical community,” said Jeffrey Flier, dean of the Faculty of Medicine. “The CTSC application required an unprecedented level of collaboration among faculty and staff, as well as a commitment to a broad and compelling vision of clinical and translational research at Harvard.” Flier was instrumental in bringing together leaders from Harvard and its affiliated institutions to plan and design the center.



According to Nadler, the Harvard Catalyst will not only build the University-wide infrastructure necessary to support clinical and translational research but will also alter the culture by creating structured and effective methods to connect and support individual investigators and cross-disciplinary teams at Harvard.

One of the key strategies of the new initiative is to improve communication across different parts of the University and to help clinical investigators locate tools, equipment, collaborators, and expertise throughout the Harvard system. To achieve these goals, the Harvard Catalyst is using its web portal (<http://catalyst.harvard.edu>), research navigators, and pilot grants to catalyze connectivity.

## SCIENTISTS WHO LINKED HPV WITH CERVICAL CANCER WIN 20TH ANNUAL ALPERT PRIZE

Two scientists who discovered that specific types of human papillomavirus, or HPV, cause cancer of the cervix received the 20th annual Warren Alpert Foundation Scientific Prize in September 2008.

The foundation recognized Harald zur Hausen, professor emeritus, and Lutz Gissmann, professor—both at the German Cancer Research Center in Heidelberg—for work in cloning and characterizing the most prevalent virus types in cervical cancer, HPV 16 and HPV 18.

Lee Nadler (left) and Steven Freedman head the Harvard Catalyst.



In 1983, zur Hausen, Gissmann, and their colleagues identified HPV 16 in precursor lesions of genital cancer and, in 1985, revealed the genetic organization of HPV DNA in cervical cancer cells and the active transcription of HPV in these cells. The foundation divided the \$150,000 award between the winners.

HPV 16 and HPV 18 are responsible for 70 percent of cervical cancer worldwide. From a global perspective, the disease ranks second in cancer incidence among women, responsible for approximately 270,000 deaths annually.

Each year the Warren Alpert Foundation receives 30 to 50 nominations for the Alpert Prize from scientific leaders around the world. Prize recipients are selected by the foundation's scientific advisory board, now chaired by Jeffrey Flier, dean of the Faculty of Medicine.

## MARCUS GRANT ADVANCES NATURAL PRODUCT RESEARCH

An initial \$17.9 million three-year grant from the Marcus Foundation is enabling two HMS researchers to build a library of authenticated and contaminant-free botanical extracts, which will be analyzed and manipulated in a new medicinal chemistry laboratory along with other natural products. The goal is to characterize herbs used in traditional Asian medicine and to create new biological probes for basic medicinal science, as well as to maximize the possibility of creating new treatments based on medicinal herbs.

Dean Jeffrey Flier (left) congratulates Harald zur Hausen (center) and Lutz Gissmann at the September 2008 Alpert Symposium. Weeks later, zur Hausen went on to share the Nobel Prize in Physiology or Medicine.

## ENDOWED CHAIRS

### ARMENISE FOUNDATION FUNDS CHAIRS IN NEUROLOGY AND BASIC RESEARCH

Acknowledging Count Giovanni Auletta Armenise, who established the Giovanni Armenise–Harvard Foundation, Dean Jeffrey Flier thanked him and the foundation for endowing two new chairs. Addressing the count at the April 2008 celebratory reception, Flier praised the “extraordinary scientists from HMS who will bear the chairs in your name.”

Stephen Harrison became the first incumbent of the Giovanni Armenise–Harvard Professorship in Basic Biomedical Sciences, and Verne Caviness the first incumbent of the Giovanni Armenise–Harvard Foundation Professorship in Neurology, in conjunction with Massachusetts General Hospital.

Introduced by Ed Harlow, the head of the Department of Biological Chemistry and Molecular Pharmacology, as a man who is “really smart, totally driven, and has fantastic taste,” Harrison turned his attention to the count and his family and to former HMS dean Daniel Tosteson. He said the event celebrates these two for their vision in creating the foundation and its mission of supporting multidisciplinary research.

David Torchiana, chair and CEO of the Massachusetts General Physicians Organization, introduced Verne Caviness, calling him “a dual threat in research and clinical care.” Then Caviness expanded on Harrison’s remarks about the Armenise Foundation, offering that the foundation must compose in and of itself one of the remarkable chapters in the history of HMS.

Count Armenise closed the speaking program with some personal reflections and fond words about the Medical School and hospital for their devotion to science and patient care.

### CHANDLER PROFESSORSHIP CENTERS ON CLINICAL TEACHING

Dean Jeffrey Flier opened the December 2007 celebration of the Paul Austin Chandler Professorship of Ophthalmology recognizing the chair namesake as a “model clinician-teacher” in the Harvard medical community. Chandler graduated from HMS in 1924, completed his residency at the Massachusetts Eye and Ear Infirmary, and became an associate clinical professor at HMS and MEEI. Among his achievements was establishing the Glaucoma Consultation Service at MEEI.

President of MEEI John Fernandez remarked that in addition to Chandler’s accomplishments, the professorship highlights medical education. “Most importantly,” he said, “we’re celebrating Simmons Lessell,” the first incumbent.

In expressing his gratitude for the professorship, Lessell also turned to the theme of medical education. He averred that Chandler’s impact was not as a researcher but primarily as a teacher. Going a step further, Lessell said that his appointment to the professorship by leaders at HMS may reflect “the increasing value that they have placed on clinical teaching.”

### COTRAN PROFESSORSHIP RECOGNIZES WORLD-CLASS CONTRIBUTIONS

The December 2007 reception honoring the Ramzi S. Cotran Professorship in Pathology was introduced by Brigham and Women’s president Gary Gottlieb, who said the chair honors the memory of Ramzi Cotran, whom he called the most renowned leader of pathology in the latter half of the 20th century. Joseph Martin, dean emeritus of the Faculty of Medicine and the Edward R. and Anne G. Lefler professor of neurobiology at HMS, and Eugene Braunwald, the Hersey distinguished professor of the theory and practice of physic (medicine) at HMS, extended the praise of Cotran as the foremost academic pathologist in the world.

Braunwald also recognized the achievements of the first incumbent, Michael Gimbrone. “Ramzi’s pride and pleasure would overflow if he could witness the creation of the Ramzi S. Cotran Chair in Pathology and the designation of Michael Gimbrone as the first Ramzi S. Cotran professor,” Braunwald said.

Gottlieb presented Gimbrone as the “founder of the modern field of vascular biology.” Following a resounding ovation, Gimbrone expressed his profound appreciation, noting that the chair and Cotran’s legacy are now permanently linked to two great institutions, HMS and Brigham and Women’s Hospital.

### PEDIATRICS GROWS WITH EZEKOWITZ CHAIR

Following opening remarks by Peter Slavin, president of Massachusetts General Hospital, and Jules Dienstag, HMS dean for medical education, the former president of Partners HealthCare System, Sam Thier, took the podium at the June 2008 reception for the R. Alan Ezekowitz Professorship in Pediatrics at MGH. Directing himself to Ezekowitz, Thier said, “This is as close to immortality as you will achieve.” And, above the laughter, he told the incumbent, Howard Weinstein, that the chair is a measure of what his colleagues think of him.

In his remarks, chair namesake Ezekowitz, who headed the Department of Pediatrics at MGH for 11 years before leaving in 2006, focused on the importance of pediatrics, explaining that it is often the benchmark by which people judge a society.

He praised pediatric practice at the hospital, saying, “Howard Weinstein to me epitomizes all that is special about this place.”

In his turn at the mike, Weinstein praised his mentors and thanked his patients: “My patients and their families have given me strength to do my work,” he said.

### EDUCATION AND MEDICINE LINKED IN FOSTER ACADEMY CHAIR

The May 2008 celebration of the Gerald S. Foster Academy Professorship in Medicine was a tribute to excellence in both patient care and education. HMS dean Jeffrey Flier began by stressing the importance of Academy professorships. He then introduced Peter Slavin, president of Massachusetts General Hospital, who thanked Foster on behalf of the hospital for more than 50 years of service.

Daniel Federman, the Carl W. Walter distinguished professor of medicine at HMS and BWH, underscored the value of the relationship between the hospitals and HMS that the Academy chair represents, describing Foster, formerly the faculty associate dean of admissions, as “the person who obliterated the three-mile distance between [HMS and MGH] with one giant stride.”

Two donors and patients, Steve Swensrud and Bill Harris, confirmed the devotion and compassion Foster has for his patients. “You’ve taken better care of me than I thought anyone possibly could have,” said Swensrud.

### HENDREN CHAIR SHINES LIGHT ON SURGICAL INNOVATION

Opening the January 2008 gathering in honor of the W. Hardy Hendren Professorship in Surgery, Dean Jeffrey Flier praised the chair namesake as the “father of pediatric urology.” Based at Children’s Hospital Boston and HMS, the chair honors Hendren, who, in a career spanning 50 years, founded the Division of Pediatric Surgery at Massachusetts General Hospital and served as chief of surgery at Children’s; there he “developed and led a world-renowned service for over two decades,” Flier said.

Speaker James Mandell, president and CEO of Children’s, described Hendren’s career as what happens when “courage and passion meet creativity and determination.” He quipped that Hendren was so innovative in pediatric urology that he created a lot of work for publishers.

When Hendren addressed the assembly, he acknowledged several of his former patients in the audience, describing their progress with evident warmth and pride. He also said that he





David Eisenberg and Jon Clardy—with co-investigators at several research centers, including the Beijing University of Chinese Medicine—will systematically authenticate, screen, and characterize the botanicals to ensure purity of the specimens that are kept in the library and used in the new facility for medicinal chemistry, called the Marcus Natural Product Laboratory. “Our aim is to leverage state-of-the-science technologies to systematically evaluate commonly used medicinal herbs. We want to strategically assess their effects on biological systems and explore their potential to be used as reproducible therapeutic interventions,” said Eisenberg, the Bernard Osher associate professor of medicine. He said that the head of the Marcus Foundation, Home Depot cofounder Bernard Marcus, is a trained pharmacist with a special interest in the therapeutic potential of herbs and other dietary supplements.

In addition to embracing rigorous scientific research on botanicals and other natural products, the two Marcus Foundation–sponsored projects will help advance translational research at HMS, a strategic priority of Dean Jeffrey Flier. All researchers and students at HMS and its affiliated healthcare centers will have access to the resources of the library and to the medicinal chemistry laboratory. 📍

**From left, Jon Clardy, David Eisenberg, and Bernard Marcus at a Medical School reception honoring Marcus**

#### **BROAD INSTITUTE GAINS ENDOWMENT GIFT OF \$400M**

Los Angeles-based philanthropists Eli and Edythe Broad gave an additional \$400 million to the Broad Institute of Harvard and MIT in September 2008, increasing the total amount of their support for the institute to \$600 million. The most recent funding will convert the institute into a permanent biomedical research organization aimed at transforming medicine. The commitment is the largest for biomedical research activity at a university anywhere in the world.

As a result of the Broads’ endowment, the institute will transition to a permanent nonprofit organization, with both universities continuing to help govern it. The mission and collaborative research by scientists from across Harvard and MIT will continue to be at the heart of the Broad.

“To fully realize the benefits of the genomic sciences, scientific research must transcend the boundaries of disciplines, departments, and even institutions,” said Harvard President Drew Faust, adding that she looked forward to continuing the University’s partnership with the Broad.

Shortly before the announcement of the Broads’ gift, the institute received word of a six-year, \$86 million grant from the National Institutes of Health to identify and develop small molecules that can probe the proteins, signaling pathways, and cellular processes that are crucial to human health and disease. The grant designates the Broad Institute as one of four Comprehensive Screening Centers in the Molecular Libraries Probe Production Centers Network. 📍

#### **HUSEC CREATES SEED FUND FOR CROSS-FACULTY COLLABORATION**

The Harvard University Science and Engineering Committee (HUSEC) announced a new seed-funding program, the HUSEC Seed Fund for Interdisciplinary Science. Established to support collaborative interactions between faculty members,

the program will promote research and educational activities at the interface of two or more scientific disciplines. Such cross-faculty collaborations could include time-delimited research projects, courses, small-scale conferences, and working groups. Details of the program are available on the HUSEC website at <http://harvardscience.harvard.edu/directory/programs/husec>. 📍

#### **DUBAI HARVARD FOUNDATION FORGES INTERNATIONAL COLLABORATIONS**

The Dubai Harvard Foundation for Medical Research (DHFMR) held its second annual Partners in Research conference in May 2008. The conference gave candidates competing for the next year’s DHFMR Collaborative Research Center Awards the opportunity to make presentations to the foundation’s scientific advisory committee. These awards, with funding available for up to five years, are made annually and support research collaborations in basic and translational science between Harvard-based labs or research centers and colleagues in the Middle East.

In 2008, the foundation gave awards to two collaborative research initiatives. One established a collaboration between a laboratory at American University in Beirut and the lab of Susan Cotman, instructor in neurology at Massachusetts General Hospital, to investigate Batten disease. The other connected the lab of Christopher A. Walsh, a Howard Hughes investigator and chief of genetics at Children’s Hospital Boston, to laboratories at UAE University Faculty of Medicine in the United Arab Emirates and at the King Faisal Specialist Hospital and Research Center in Riyadh, Saudi Arabia, to investigate the genetic causes of autism.

These partnerships will be known as DHFMR Collaborative Research Centers, and two more will be added in 2009. In addition, the foundation has announced its Seed Grant Award Program, which also intends to support collaborative research initiatives. 📍

was "thrilled" with the selection of Tom Jaksic as the first incumbent. In his remarks, Jaksic likened Hendren's extraordinary talent to make things happen to that of *Star Wars* Jedi master Obi-Wan Kenobi. And coming down to Earth, he said that being named to the chair "is an enormous honor."

#### **ENDOWED CHAIR ESTABLISHED IN EATING DISORDERS**

Jeffrey Flier, dean of the Faculty of Medicine, opened the February 2008 celebration of the Professorship in Psychiatry with praise for the first incumbent, David Herzog. Calling Herzog an "outstanding clinician," Flier explained that the chair doubly honors him since upon his retirement the professorship will take his name. Director of the Harris Center for Education and Advocacy in Eating Disorders at Massachusetts General Hospital, Herzog "has served as the principal investigator in the longest running longitudinal study for eating disorders," Flier said.

Herzog thanked contributors to the Harris Center and spoke about the importance of the chair in raising visibility for eating disorders and in supporting research. "We need to understand the causes," he said. He also read from a letter written by the parents of a patient he had cared for but who ultimately died of anorexia. "I'm sure that you feel her loss as much as we do," the letter said. The parents were in the audience.

As the ceremony was ending, the father, Karsten Windeler, was so moved that he took the mike and, addressing Herzog, gave an impromptu blessing: "May your work answer all our and your patients' prayers," he said.

#### **FUND CREATED FOR KOLOKOTRONES UNIVERSITY PROFESSORSHIP**

In June 2008, a gift of \$5 million from Wendy and Theo Kolokotronis established an endowed fund supporting the Kolokotronis University Professorship. Though the first incumbent has not been named, the professorship will support "an eminent scholar" who is a full-time faculty member in a Quad-based basic sciences department. The incumbent will be appointed by the president of Harvard in consultation with the HMS dean.

#### **ORMANDY PROFESSORSHIP STRENGTHENS ORTHOPEDICS**

Celebrated in May 2008, the Catharina Ormandy Orthopedic Professorship will advance orthopedic research at HMS and Children's Hospital Boston as it honors the memory of Catharina and Laszlo Ormandy, who funded the chair, and first incumbent Matthew Warman. In his opening remarks, HMS dean Jeffrey Flier recounted Laszlo Ormandy's emigration to the United States from Hungary and his service

at both Massachusetts General Hospital and Children's. "Laszlo and Catharina's ties to Harvard Medical School and Children's Hospital Boston will forever remain with the creation of this chair and the important work to be carried on by Dr. Warman and future incumbents," Flier said.

After talks by Warman and James Kasser, chair of the Children's Department of Orthopedic Surgery, Flier presented a Revere bowl to Roberta Klein and Dolores Neumann, nieces of the Ormandys, in recognition of their family's gift.

#### **FIELD OF RHEUMATOLOGY MOVES AHEAD WITH RIEDMAN PROFESSORSHIP**

Jeffrey Flier, dean of the Faculty of Medicine, opened the April 2008 celebration of the John R. and Eileen K. Riedman Professorship in Medicine in the Field of Rheumatology thanking the eponymous donors for their contribution that created the chair, the first in rheumatology at Brigham and Women's Hospital. Brigham president Gary Gottlieb said, "This endowed chair is certain to have a transformational effect on clinical care."

After remarks by Joseph Loscalzo, the Hersey professor of the theory and practice of physics (medicine), who lauded first incumbent Michael Weinblatt, K. Frank Austen, the AstraZeneca professor of respiratory and inflammatory diseases, suggested that research in the field should move into genomic analysis to uncover the DNA basis of etiology as well as toxicity.

At the lectern, Weinblatt thanked Austen for his mentorship and praised the Riedmans for being generous, direct, and honest. Weinblatt said that when the call came in from John Riedman about his support for the professorship, there was no pretense or fanfare. As Weinblatt described it, Riedman simply said, "No problem. I talked to Eileen; we're going to fund the chair."

#### **SCHUKNECHT PROFESSORSHIP ANNOUNCED IN HEARING RESEARCH**

A reception was held at Massachusetts Eye and Ear Infirmary in April 2008 to celebrate the appointment of M. Charles Liberman as the first incumbent of the Harold F. Schuknecht Professorship of Otolaryngology and Laryngology. Head of otology and laryngology at HMS from 1961 to 1987 and chief of otology at MEEI from 1961 to 1984, Schuknecht was an early innovator in otology and enhanced MEEI's reputation as a world leader in otology research. Liberman is the director of the Eaton-Peabody Laboratory (EPL) at the hospital.

Joseph Nadol Jr., chief of otolaryngology at MEEI and chairman of the Department of Otolaryngology at HMS, emceed the program, and Jeffrey Flier, dean of the Faculty of Medicine, was the special guest.

Liberman expressed his gratitude for the honor of being the chair's first incumbent. He described his career at the EPL, which started when he was an undergraduate at Harvard. He said the staff was made up of "great minds with ordinary egos," which, he added, is fairly rare in either academic or medical settings, let alone at an institution that combines the two.

#### **MGH SPOTLIGHTS SHIPLEY CHAIR IN RADIATION ONCOLOGY**

HMS and Massachusetts General Hospital celebrated the Jenot W. and William U. Shipley Professorship in Radiation Oncology in October 2007 under the Bulfinch tent at MGH. The tent was fitting, since in his talk, first incumbent Anthony Zietman juggled gravitas and humor with the aplomb of a ringmaster. Introduced by Nancy Tarbell, the C.C. Wang professor of radiation oncology, who singled out his work "in transforming our residency program," Zietman recounted the events that brought him from England to the United States. He said it was a mentor who had originally routed him to Boston. He thought at first that the destination was fine, Boston being a town north of London. He had never seriously considered going to the States, since he didn't like hot dogs, and Americans didn't play soccer. Referring to the title character of a popular British TV series, Zietman said he became the "Mr. Bean of academic medicine ... here by a random accident."

Zietman's point then unfolded: "Life doesn't go as planned," he said, and it is therefore essential to take advantage of opportunity. He lauded William Shipley, the Andres Soriano professor of radiation oncology, as a mentor who had taken him under his wing and enabled him to grow professionally. "If I do nothing else in my career, I'd like to give the residents what Bill has given me, the Big G, generosity," Zietman said.

In his remarks, William Shipley said of his longtime relationship with Zietman, "I was smart enough to step aside and let him flourish." A portrait of William and Jenot Shipley was unveiled to complete the program.

#### **SMITH PROFESSORSHIP CONNECTS HARVARD, CHILDREN'S, HMS**

Introduced by Jeffrey Flier, dean of the Faculty of Medicine, Harvard provost Steven Hyman gave remarks at the January 2008 celebration of the Robert and Dana Smith Professorship, based in the Harvard Faculty of Arts and Sciences and at Children's Hospital Boston. He thanked donors Robert and Dana Smith and their family, saying that the gift ties together FAS, Children's, and HMS. "This is not a trivial matter anymore," he said, since research can rarely be done today in a single location.



### ENTREPRENEUR GIVES \$125M TO HARVARD FOR BIOENGINEERING INSTITUTE

Engineer, entrepreneur, and philanthropist Hansjörg Wyss, MBA '65, has given Harvard University \$125 million to create the Hansjörg Wyss Institute for Biologically Inspired Engineering.

Investigators at the institute will strive to uncover the engineering principles that govern living things and use this knowledge to develop technology solutions for the most pressing healthcare and environmental issues facing humanity. This donation from Wyss (pronounced "Vees") is the largest individual gift in the University's history.

"I am deeply grateful to Hansjörg Wyss for this gift, which will allow Harvard to make a transformational investment in powerful, collaborative science," said Harvard President Drew Faust. "The Wyss Institute for Biologically Inspired Engineering will form the bedrock for Harvard's emerging efforts in this critical area."

The Wyss Institute will be a collaborative enterprise bringing together experimentalists, theoreticians, and clinicians with expertise in engineering, biology, chemistry, physics, mathematics, computer science, robotics, medicine, and surgery from Harvard's schools and affiliated hospitals, as well as from neighboring universities. The multidisciplinary effort will build on many elements of the Harvard Institute for Biologically Inspired Engineering. The locus of the new institute will be in the first science



complex currently under construction on Harvard's Allston campus. Donald Ingber, the Judah Folkman professor of vascular biology at Children's Hospital Boston and HMS, and professor of bioengineering at the Harvard School of Engineering and Applied Sciences, will serve as the Wyss Institute's founding director.

"I am humbled to have the opportunity to contribute in a meaningful way to efforts that I firmly believe will change the future course of science and medicine," Wyss said.

One of the key proposals of Dean Jeffrey Flier's Strategic Planning Initiative, complementary to the efforts of the Wyss Institute, is for a University-wide bioengineering initiative that would help define the field for the 21st century.

The strategic advisory group on tools and technologies has envisioned an initiative that would be a global focal point of pedagogy and collaborative and translational research, involving life scientists and engineers working together. 🐾

### MODELL IMMUNOLOGY CENTER OPENS ON QUAD

The opening of the Jeffrey Modell Immunology Center at HMS was commemorated with a daylong series of events in November 2007, including a symposium and ribbon-cutting ceremony. The center was established by the Jeffrey Modell Foundation and is named for the son of Fred and Vicki Modell, who died at age 15 from a primary immunodeficiency. Located on the Quad, the new center has space for teaching, seminars, and offices, and is designed to foster collaboration among faculty and student immunology researchers from HMS, Harvard science programs, and the affiliated hospitals. It is also home to the Robert A. Good Library and the Fred S. Rosen Lecture Hall. 🐾

Building on this theme, Drew Faust, president of Harvard, said, "This is a particularly opportune time to advance and support the life sciences." And she called the Smiths "truly a uniting force in this city." Faust praised first incumbent James Mandell, the president and CEO of Children's, as one "who believes in the promise of a shared vision."

Following remarks by Children's chairman Stephen Karp, Mandell expressed his appreciation for the professorship, which he described as "the first chair that directly links FAS to Children's." Donor Robert Smith then said that he and his wife, Dana, feel it is their responsibility "to see that the hopes and dreams of the world are served." He said that in talking with Mandell, it became clear that one way to do that is to invest in the quality of education.

**At the ribbon-cutting for the Jeffrey Modell Immunology Center are (from left) Fred Alt, the Charles A. Janeway professor of pediatrics at HMS and Children's Hospital Boston; Vicki Modell; Fred Modell; former HMS dean Joseph Martin; current medical dean Jeffrey Flier; and K. Frank Austen, the AstraZeneca professor of respiratory and inflammatory diseases in the Department of Medicine at HMS and Brigham and Women's Hospital.**

## GIFT REPORT

HARVARD MEDICAL SCHOOL'S ongoing success is a direct result of the generosity of donors who support its students, faculty, and programs. We extend our deepest thanks to the many people who, over the past academic year, have sustained our efforts in realizing the School's mission to alleviate human suffering caused by disease. Your philanthropy helps us secure a healthier tomorrow by continuing to foster the collaboration and education of some of the world's brightest minds.



From left, Board of Fellows members Christoph Westphal and Maurice Pechet at the September 2008 board meeting; both earned an MD at HMS, Westphal in 1996 and Pechet in 1948.



The 2007-2008 Honor Roll of Donors gratefully acknowledges gifts and pledges of \$1,000 or more made by individuals, corporations, and foundations to HARVARD MEDICAL SCHOOL between July 1, 2007, and June 30, 2008. This publication recognizes pledges in their entirety only in the year they were committed. Any subsequent installments of those pledges are acknowledged at the gift level relevant to payments made that year.

We sincerely thank you for your continued support in building a community that promises to improve the future of medicine for all.

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 Frank M. Weiser, MD '57  
 Mark E. Williams, MD  
 Stephen F. Wintermeyer, MD '85  
 Cynthia Yock  
 Paul G. Yock, MD '79  
 Benjamin D. Zander  
 David S. Zimmon, MD '58  
 Dorothy S. Zinberg, PHD '66  
 Robert B. Zufall, MD '47

**\$2,000-\$4,999**

N. Scott Adzick, MD '79  
 Marshall B. Allen Jr., MD '53  
 Laura Alpern  
 Louis M. Alpern, MD '74  
 Mrs. Joel J. Alpert  
 Joel J. Alpert, MD '56  
 Jason A. Arkin  
 Lori H. Arkin  
 Hugh Auchincloss Jr., MD '76  
 Karl F. Austen, MD '54  
 Craig B. Barger  
 Elaine Barger  
 Henrietta R. Barnes, MD  
 Robert C. Bast Jr., MD '69  
 Barbara E. Bierer, MD '80  
 Gianna F. Biondi  
 Enid Blaymore  
 Lee M. Blaymore  
 Doris Blinks  
 John R. Blinks, MD '55  
 Alexander Blum Jr., MD '47  
 Dr. Andrew G. Bodnar,  
 David H. Bor, MD '75  
 Suzanne C. Boulter, MD '68  
 Helen M. Bouscaren, MD '85  
 Georgiana S. Boyer, MD '55  
 John T. Boyer, MD '55  
 Terence Boylan  
 Mrs. John T. Brennan  
 John T. Brennan, MD '50  
 Todd F. Brennan  
 Arnold M. Brier, MD '68  
 Judith Brier  
 Rufus K. Broadway, MD '50  
 Peter F. Brown  
 Frederick Buechner  
 Judith M. Buechner  
 John D. Bullock, MD '68  
 Thomas E. Bump, MD '76  
 William N. Campbell Jr., MD '38

Paul J. Cannon, MD '58  
 Dr. Lewis C. Cantley Jr.  
 Ching-Yen J. Chang, MD '89  
 David C. Chin, MD '75  
 Mark W. Clark, MD '74  
 Mary D. Clark  
 Martin J. Cline, MD '58  
 Jonathan J. Cohen, MD '75  
 Frank V. Colombo, MD '53  
 John W. Copeland III  
 John F. Cramer III, MD '74  
 Martha H. Crowninshield  
 Kevin J. Cullen, MD '83  
 Pete Curran, MD



Gary Davis  
 Zara N. Day  
 Judy I. Dienstag  
 Jules L. Dienstag, MD  
 Barbara B. Ebert  
 Dr. Leon Eisenberg  
 John B. Emans II, MD '70  
 S. Jean H. Emans, MD '70  
 Charles J. Epstein, MD '59  
 Lois B. Epstein, MD '59  
 Daniel D. Federman, MD '53  
 Elizabeth Federman  
 Philip J. Ferrone, MD '89  
 Richard I. Fisher, MD '70  
 Robert H. Fletcher, MD '66  
 Suzanne W. Fletcher, MD '66  
 Gerald S. Foster, MD '51  
 Harriet B. Freedberg  
 Leonard E. Freedberg, MD '71  
 Milton S. Freedberg  
 Alan J. Friedman, MD '59  
 Mrs. Stephen J. Galli  
 Stephen J. Galli, MD '72  
 Shirley M. Gallup, MD '49  
 Robert H. Glassman, MD '87

**Chair of the Alumni Association, George Thibault, MD '69 (right), presents an award to Daniel Federman, MD '53, for his contributions to HMS and the Alumni Fund.**





Melvin J. Glimcher, MD '50  
 Robert M. Goldwyn, MD '56  
 Tatyana Goldwyn  
 Susan Gradman  
 Wayne S. Gradman, MD '68  
 William L. Green, MD '54  
 Jack J. Greenberg, MD '56  
 Katherine L. Griem, MD '82  
 Randolph H. Guthrie Jr., MD '61  
 Margaret A. Hamburg, MD '83  
 Harley A. Haynes, MD '63  
 Stephen J. Healey III, MD '58  
 Howard H. Hiatt, MD '48  
 Mark S. Hochberg, MD '73  
 Elizabeth A. Hodapp, MD '75  
 Lynne P. Hofer  
 Myron A. Hofer II, MD '58  
 Ellen G. Hoffman  
 Stephen G. Hoffman  
 Kate Horgan  
 Robert W. Horgan  
 Victor C. Hou, PHD  
 John P. Howe III, MD  
 David S. Howell, MD '47  
 Peter M. Howley, MD '72  
 Daniel B. Hrды, MD '76  
 Sarah B. Hrды, PHD  
 Richard E. Hughes, MD '53  
 Edward M. Hundert, MD '84  
 Jon A. Hupp, MD '83  
 Joseph K. Hurd Jr., MD '64  
 Steven E. Hyman, MD '80  
 Dr. William R. Jarvis  
 Janine M. Jason, MD '75  
 Houston Johnson Jr., MD '75  
 Randall D. Johnson, MD '76  
 Gary J. Jones, MD '79  
 Charles R. Jorgensen, MD '62  
 Adolf W. Karchmer, MD '64

Beth Y. Karlan, MD '82  
 Scott R. Karlan, MD '82  
 Samuel L. Katz, MD '52  
 Katherine A. Keeley, MD '94  
 Jenny E. Kemps  
 John H. Kemps  
 Cynthia N. Kettyle, MD '71  
 William M. Kettyle, MD '71  
 Benjamin N. Kightlinger, MD '55  
 Lionel Kinney  
 Vilma Kinney  
 Mrs. Richard J. Kitz  
 Richard J. Kitz, MD  
 Kevin Klose  
 Lisa G. Kohn  
 Martin S. Kohn, MD '72  
 Betty LaBranche  
 James LaBranche  
 Mark E. Langfan  
 Mrs. Steve Lawrence  
 Steve Lawrence  
 Janice S. Lee, MD '97  
 Sidlee W. Leeper, MD '55  
 Edwin D. Leonard  
 Judith S. Leonard  
 Frederick H. Levine, MD '68  
 David E. Levy, MD '68  
 Jane L. Lewit  
 Robert T. Lewit, MD '63  
 Peter S. Liebert, MD '61  
 Matt J. Likavec, MD '74  
 Irving M. London, MD '43  
 Seymour B. London, MD '40  
 John N. Lukens Jr., MD '58  
 Isabel W. Malkin  
 Peter L. Malkin  
 Victor A. Marcial, MD '49  
 Karen R. McAlmon, MD '83  
 Marion D. McClure, MD '54

Robert L. McDowell Jr., MD '74  
 Suzanne R. McDowell  
 C. Noel Bairey Merz, MD '81  
 Robert H. Merz, MD '81  
 Katayoun F. Meyer, MD '88  
 Basil M. Michaels  
 Antonio Miguel  
 Leonard B. Miller, MD  
 Michael B. Millis, MD '70  
 Robert C. Moellering Jr., MD '62  
 A. Peter Monaco  
 Sarah Rueppel Monaco  
 Mrs. Kiumars Movassaghi  
 Kiumars K. Movassaghi, MD '95  
 Robert P. Murray, MD '86  
 Lee M. Nadler, MD '73  
 Anthony B. Nesburn, MD '60  
 Carla A. Newbern-Thomas,  
 MD '82  
 Kwame Ofori-Asante  
 Rodney S. Omachi, MD '68  
 M. Patrick O'Meara, MD '50  
 Sharron S. O'Meara  
 Daniel K. Onion, MD '68  
 Roslyn W. Orkin, PHD '73  
 Stuart H. Orkin, MD '71  
 Mrs. William C. Osborn  
 William C. Osborn  
 Gilbert R. Panzer, MD '55  
 Martha L. Parker  
 Thomas G. Parker, MD '49  
 Stephen G. Pauker, MD '68  
 Susan P. Pauker, MD  
 Marie Pavlik  
 R. J. Pavlik  
 Alan S. Pearlman, MD '70  
 Taine T. Pechet, MD '92  
 Robert L. Peterson, MD '82  
 Donald S. Pierce, MD '57

Janet T. Pierce  
 Paula Pinkston, MD '88  
 Thomas D. Pollard, MD '68  
 Donald O. Pollock, MD '55  
 Alfred Pope, MD '41  
 Suzanne T. Poppema, MD '74  
 Robert L. Post, MD '45  
 Thaddeus E. Prout, MD '48\*  
 Amy A. Pruitt, MD '74  
 DeWayne M. Pursley, MD '82  
 James M. Rabb, MD '70  
 Prof. Melinda A. Rabb  
 John M. Richardson, MD '70  
 Elizabeth W. Richter  
 Tor Richter, MD '51  
 Christine F. Ristaino  
 Theodore P. Ristaino  
 Diana Rose  
 Jonathan Rose  
 Fred R. Rosenberg  
 Peter S. Ross, MD '73  
 Alan J. Sarokhan, MD '77  
 Carol T. Sarokhan, MD '77  
 Vicki L. Sato, MD  
 Beth K. Scharfman, MD '86  
 Stefan C. Schatzki, MD '56  
 Stephen C. Schoenbaum, MD '66  
 Peter H. Schur, MD '58  
 Debra Segal  
 Michael J. Segal  
 Uri R. Shabto, MD '86  
 Albert L. Sheffer, MD  
 James H. Shelton, MD '70  
 Jenise Shipley  
 William U. Shipley, MD '66  
 Steven Shulman  
 Warden B. Sisson, MD '63  
 Karen L. Sobol  
 John D. Stoeckle, MD '47

**Alumni Council member Joseph Hurd, MD '64 (right), and HMS student Dayron Rodriguez celebrate the alumni volunteer accomplishments at the recognition dinner.**

**From left, Alumni Fund chair Mark Hughes, MD '86, with Delia Sang and former Alumni Fund chair Daniel Federman, MD '53**

Andrea Stryer  
 Lubert Stryer, MD '61  
 Susan W. Sullivan  
 William H. Sullivan, MD '58  
 Donald W. Sutherland, MD '57  
 Dr. Roslyn E. Sutherland  
 Mary Belliveau Swanson  
 Richard S. Swanson, MD '80  
 Morton N. Swartz, MD '47  
 Barbara K. Sweet  
 Cyrus B. Sweet III  
 Alan A. Tan Lim, MD  
 Cleophus Thomas Jr.  
 Mrs. William H. Thomas  
 William H. Thomas, MD '61  
 Jeremiah G. Tilles, MD '58  
 Jerry A. Tomlinson, MD '63  
 Barbara T. Trelstad  
 Robert L. Trelstad, MD '65  
 Sanford Ullman, MD '71  
 C. Robert Valeri, MD '58  
 Lorraine H. Vickery  
 Luis Villa Jr., MD '70  
 Armand Viscosi  
 Patricia A. Viscosi  
 Mrs. Coolidge S. Wakai  
 Coolidge S. Wakai, MD  
 Michael T. Watkins, MD '80  
 Rita M. Watson, MD '76  
 Neill K. Weaver, MD '44  
 Herbert G. Weiss  
 Joyce A. Di Bona Weiss  
 Robert H. Weiss  
 Ruth S. Weiss, MD '51  
 George F. Welsh, MD '66  
 Karin E. Wetmore, PHD  
 Dorothy I. Whitmer, MD '78  
 Isaac Wiener, MD '74  
 Catherine M. Wilfert, MD '62  
 Katharine C. Wolf, MD '63  
 Anna K. Wolff, MD '57  
 Judy Y. Wong Lim  
 Thomas D. Wu, MD '88  
 Alan C. Yeung, MD '84

**\$1,000-\$1,999**

Anonymous (4)  
 Howard R. Abel, MD '62  
 John R. Adler Jr., MD '80  
 Cary W. Akins, MD '70  
 Bolanile Akinwale, MD '81  
 Claudia M. Alleyne, MD '81  
 Morton A. Alterman, MD '61  
 Linda M. Ameri, MD '82  
 Aaron P. Appiah, MD '82  
 Andrew Arkin

Madeleine Arnow  
 Elissa B. Arons, MD '70  
 Erle H. Austin III, MD '74  
 Robert L. Bahr, MD '71  
 Charles F. Barbarisi, MD '56  
 Mrs. A. Clifford Barger  
 Walter L. Barker, MD '53  
 John S. Barlow, MD '53\*  
 Joseph S. Barr Jr., MD '60  
 James C. Beck, MD '63  
 Beryl R. Benacerraf, MD '76  
 David C. Benson, MD '85  
 Scott I. Berkenblit, MD '96  
 Cheston M. Berlin Jr., MD '62  
 Sheila B. Blume, MD '58  
 William P. Boger III, MD '71  
 Paula M. Botstein, MD '69  
 Bruce J. Brener, MD '66  
 Irene F. Briggin, MD '63  
 Eric S. Brondfield, MD '70  
 Benjamin R. Brooks, MD '69  
 Barton A. Brown, MD '58  
 Robert H. Brown Jr., MD '75  
 Carl N. Brownsberger, MD '55  
 Louis P. Bucky, MD '86  
 Ann B. Bull  
 Mary K. Burack  
 Jean B. Burnett, PHD  
 Harold J. Bursztajn, MD '76  
 Paul A. Buttenwieser, MD '64  
 Sheldon M. Buzney, MD '72  
 Edmund B. Cabot, MD '72  
 Doris Cadoux  
 Hugh G. Calkins, MD '83  
 Herbert L. Cantrill III, MD '72  
 Henry G. Carleton, MD '47  
 Alan F. Carpenter, MD '55  
 Douglas M. Cassel, MD '78  
 David F. Chang, MD '80  
 Laura R. Chasin  
 Benjamin W. Chaska, MD '83  
 John K. Chin, MD '79  
 William W. Chin, MD '72  
 Walter K. Clair, MD '81  
 William D. Cochran, MD '52  
 Robert C. Coe, MD '50  
 Cecil H. Coggins, MD '58  
 David E. Cohen, MD '87, PHD '87  
 Norman R. Cohen, MD '61  
 Sandra K. Cohen, MD '78  
 John J. Coleman III, MD '73  
 Richard L. Conn, MD '62  
 Dr. David H. Conney  
 David U. Cookson, MD '56  
 Michelle Copeland, MD '77  
 Alice M. Cort, MD '80



Dale H. Cowan, MD '63  
 Jean I. Cox  
 Dr. Luis D. Crespo  
 Richard V. Cronk, MD '65  
 Elizabeth de Cuevas  
 Sheldon W. Culver  
 Wesley A. Curry Jr., MD '76  
 Victor T. Curtin, MD '51  
 Dan L. Cvetanovich, Esq.  
 David W. Dain, MD '62  
 Harold Dash, MD '74  
 William H. Daughaday, MD '43  
 Jon R. Davids, MD '85  
 Dr. Barry A. Davidson  
 William E. Decker  
 Ralph A. DeFronzo Jr., MD '69  
 Margo A. Denke, MD '81  
 Roman W. DeSanctis, MD '55  
 Orrin Devinsky, MD '82  
 Donald E. Dickerson, MD '57  
 Andrew K. Diehl, MD '72  
 Mark F. Ditmar, MD '83  
 Richard B. Dobrow, MD '62  
 Dr. Patricia K. Donahoe, MD  
 William C. Donahue, MD '62  
 Magruder C. Donaldson, MD '71  
 Douglas B. Dorner, MD '67  
 Cheryl L. Dorsey, MD '91  
 Lois W. Dow, MD '68  
 Franklin M. Draper Jr., MD '54  
 Michael J. Droller, MD '68  
 Barry P. Duel, MD '90  
 Frederick J. Duffy Jr., MD  
 John R. Edwards, MD '58  
 Donald H. Eldredge Jr., MD '46\*  
 Rafael A. Escribano Jr., MD '87  
 Lloyd K. Everson Jr., MD '69  
 William R. Eyler, MD '43  
 George C. Fareed, MD '70  
 David S. Feingold, MD '58  
 Bradley W. Fenton, MD '76

Ruth P. Fields  
 David S. Fischer, MD '55  
 Fred N. Fishman  
 Robert F. Fox Jr.  
 Kenneth W. Franklin, MD '78  
 Stanley S. Franklin, MD '56  
 Daveed D. Frazier, MD '90  
 Albert R. Frederick Jr., MD '61  
 Dr. Alan P. Freedberg\*  
 Charlotte Freedberg  
 Paul Friedmann, MD '59  
 Richard M. Fulks, MD '72  
 Christopher H. Fung, MD '64  
 James B. Gabriel, MD '49  
 G. Gregory Gallico III, MD '72  
 John G. Ganske, MD  
 Homero R. Garza, MD '75  
 Alan B. Gazzaniga, MD '61  
 Thomas D. Gelehrter, MD '63  
 Renee L. Gelman, MD '50  
 David M. Gibson, MD '48  
 Edward B. Gilmore, MD '65  
 Mark J. Girard, MD '86  
 Alfred R. Glancy III  
 Laurie H. Glimcher, MD '76  
 Ira J. Goldberg, MD '75  
 Stacy P. Salob Goldman, MD '88  
 Philip L. Goldsmith, MD '67  
 William H. Goodson III, MD '71  
 Gilad S. Gordon, MD '83  
 Mary Beth E. Gordon, MD '03  
 Daniel L. Gornel, MD '57  
 Jane Grayson, MD '73  
 Winslow W. Green, MD '62  
 James A. Greene Jr., MD '55  
 Martin L. Greene, MD '65  
 Richard W. Greene, MD '42  
 Judson S. Griffin, MD '45  
 Ruth L. Griffin  
 Peter J. Grillo, MD '69  
 Roy R. Grinker Jr., MD '52

**Maurice Pechet, MD '48, and Kitty Pechet (front), along with their children and grandchildren, at the dedication of the Pechet Family Conference Room in the new research building in February 2008**



Chul S. Ha, MD '86  
Sheila Hafter Gray, MD '58  
Stephen V. Hall, MD '69  
William K. Hall, MD '42  
Audrey M. Hamilton, MD '83  
Reid H. Hansen, MD '75  
Alvin H. Harris, MD '55  
Edward D. Harris Jr., MD '62  
Alan C. Hartford, MD '88  
James M. Hartsuck, MD '62  
Harold B. Hawkins, MD '66  
Peter B. H'Doubler Sr., MD '55  
Ralph A. Heising, MD '55

John T. Kelly, MD '79  
Stephen H. Kidder  
Samuel H. Kim, MD '62  
Robert A. King, MD '68  
Dr. Mohandas M. Kini  
William S. Kiyasu, MD '48  
Allan Kliman, MD '58  
Jan Koch-Weser, MD '54  
Laurence N. Kolonel, MD '68  
Anthony L. Komaroff, MD  
John Y. Koo, MD '81  
William Kornfeld, MD '54  
Thomas R. Kuhns, MD '59

Kilmer S. McCully, MD '59  
Paul McKeon  
Barbara J. McNeil, MD '66,  
PHD '72  
David M. Mego, MD '86  
Ronald J. Messer, MD '58  
Roger E. Meyer, MD '62  
George Miller, MD '62  
Dr. Robert A. Miller  
Anne J. Miller-Breslow, MD '82  
Anthony P. Monaco Sr., MD '56  
Roberta A. Monson, MD '67  
Barbara L. Moore  
Burness E. Moore, MD '38  
Walter H. Moran Jr., MD '55  
Clarence L. Morgan, MD '58  
Arthur J. Moss, MD '57  
Robert S. Munford III, MD '70  
Gerald Nash, MD '63  
Frederick J. Neher, MD '52  
James A. Nelson, MD '65  
Robert N. Nishimura, MD  
Heather Nissen  
Daniel J. O'Connor Jr., MD '57  
Dorene A. O'Hara, MD '83  
Richard S. O'Hara, MD '56  
Barrie Oringer  
Nancy E. Oriol, MD '79  
Stephen A. Pap, MD  
Albert C. Parker Jr., MD '58  
Jane R. Parnes, MD '76  
Geoffrey R. Paul, MD '56  
Marguerite Paul  
Douglas D. Payne, MD '66  
David L. Pearle, MD '68  
Daniel Perschonok, PHD  
John A. Peters, MD '54  
Ervin Philipps, MD '60  
Theodore G. Phillips, MD '83  
May C. M. Pian-Smith, MD  
Constance S. Pittman, MD '55  
Joseph G. Pittman, MD '59  
Richard O. Poe, MD '61  
John T. Porvaznik Jr., MD '58  
Malcolm R. Powell, MD '56  
Tony Raizes  
Susan E. Rapple  
Kenneth R. Ratzan, MD '65  
Vincent F. Reale, MD '68  
May J. Reed, MD '86  
Frank E. Reilly, MD '68  
Robert H. Resnick, MD '55  
Philip J. Rettig, MD '72  
Stephen L. Reynolds, MD '59  
Timothy C. Reynolds, MD '79  
David W. Richardson, MD '51

Richard E. Rieselbach, MD '58  
Jose G. Rigau-Perez, MD '75  
Ernestine Ritter  
Howard T. Robertson II, MD '68  
John B. Rodgers Jr., MD '59  
Grant V. Rodkey, MD '43  
Benson B. Roe, MD '43  
Malcolm P. Rogers, MD '69  
Jean O. Roiphe, MD '83  
Lewis J. Rose, MD '78  
Howard S. Rubenstein, MD '57  
Marc S. Sabatin, MD '94  
Lynn R. Sackett  
Richard J. Sampson, MD '63  
Bruce J. Sams Jr., MD '55  
Thomas S. Sappington Sr., MD '41  
George A. Sarosi, MD '64  
Andrew Satlin, MD '79  
Jean Sawtelle  
Nell Scovell  
Janet B. Serle, MD '80  
Robert C. Shamberger, MD '75  
Klaudia S. Shepard  
Stephen A. Sherwin, MD '74  
Mark C. Shields, MD '75  
Neil S. Shore, MD '63  
Frederick H. Sillman, MD '62  
David J. Silver, MD '67  
Michael J. Simchik  
Albert A. Simkus, MD '48  
Charles F. Simmons Jr., MD '80  
Robert W. Sloane Jr., MD '68  
Lloyd H. Smith Jr., MD '47  
Peter J. Snyder, MD '65  
Richard L. Soffer, MD '58  
Charles Solow, MD '58  
P. Frederick Sparling, MD '62  
Allen M. Spiegel, MD '71  
John B. Stanbury, MD '39  
Rodman D. Starke, MD '58  
R. Dennis Staton, PHD '69  
John M. Stein, MD '61  
Roger F. Steinert, MD '77  
Bruce W. Steinhauer, MD '59  
Lawrence Steinman, MD '72  
Ralph M. Steinman, MD '68  
Claire M. Stiles, MD '56  
Ralph W. Stoll, MD '65  
Jeffrey D. Stone, MD '73  
Jennifer P. Stone, MD '86  
Stephen F. Sullivan, MD '71  
Stephen T. Sweriduk Jr., MD '82  
Chester P. Swett Jr., MD '66  
Swee L. Tan, MD '88  
Ann E. Taylor, MD '83  
Simeon I. Taylor, MD '73, PHD '74



Chester E. Herrod, MD '49  
James T. Higgins, MD '74  
David S. Hirschfeld, MD '67  
Irene E. Hoge  
Edward S. Horton, MD '57  
Jed L. Howard, MD '58  
Robert B. Howe, MD '62  
Pedro E. Huertas, MD '93, PHD '93  
Helen M. Hunt  
Kathleen M. Husted  
Kenneth K. Ishizue, MD '83  
Ron Israeli, MD  
Norman A. Jacobs  
Lewis P. James Jr., MD '58  
Plas T. James, MD '86  
Paul C. Janicki, MD '71  
Alfred Jaretzki III, MD '44  
David G. Johnson, MD '67  
Jesse D. Johnson  
Gregory C. Juarez, MD '92  
James B. Kahn, MD '67  
Andrew H. Kang, MD '62  
Steven R. Kanner, MD '69  
Richard A. Kaslow, MD '69  
Lucien C. Kavan, MD '42  
Richard R. Kelley, MD '60  
Douglas G. Kelling Jr., MD '72

Nathaniel B. Kurnick, MD '40  
Frederic W. Lafferty, MD '56  
John Laszlo, MD '55  
John M. Lawrence, MD '70  
Mark A. Lawrence, MD '65  
Robert S. Lawrence, MD '64  
Son P. Le, MD '84  
Lucian L. Leape, MD '59  
Wei-Ping Andrew Lee, MD  
David E. Leith, MD '57  
Stanley M. Levenson, MD '41  
Sheldon M. Levin, MD '50  
Norman D. Levine, MD '56  
David C. Lewis, MD '61  
Randall J. Lewis, MD '69  
Keith M. Lindgren, MD '63  
Mortimer Lorber, MD '52  
Sidney B. Luria, MD '43  
Christopher T. Maloney Jr., MD  
Mary E. Manning, MD '83  
Peter B. Mansfield, MD '62  
Alfred S. Margulies, MD '74  
Alexander R. Margulis, MD '50  
R. Ralph Margulis, MD '48  
Dr. Kenneth A. Marshall  
John J. McArdle III  
David P. McCallie Jr., MD '81

**Ezekiel Hersey Council members (from left) Mary Ellen and Richard O'Hara, MD '56, Joseph Hurd Jr., MD '64, and Don (MD '57) and Janet Pierce enjoy a reception preceding the council's annual dinner, which in 2008 featured a concert by members of the Longwood Symphony Orchestra.**



Charles H. Thorne, MD  
 Robert L. Timmons, MD '53  
 Kenneth A. Tollackson, MD '58  
 George L. Tucker, MD '56  
 John F. Tulenko, MD '58  
 Dr. Gregory A. Turowski  
 David J. Twardy, MD '78  
 Yong Uahwatanasakul, MD '63  
 Linda A. Waldman, MD '81  
 Beau J. Walker Toy, MD '87  
 Paul D. Walter, MD '71  
 Yang Wang, MD '52  
 Virginia G. Watkin  
 Karol E. Watson, MD '88  
 Hugh G. Watts, MD '60  
 Susan C. Weil Dreyfuss, MD '74  
 Steven E. Weinberger, MD '73  
 Lewis R. Weintraub, MD '58  
 Gordon C. Weir, MD '67  
 Melissa B. Welch, MD '85  
 Walter A. Wichern Jr., MD '45  
 James W. Wiggin Jr., MD '58  
 Gordon H. Williams, MD '63  
 Alphonso Willis, MD '77  
 Stanley H. Wishner, MD '65  
 Granger B. Wong, MD  
 Francis C. Wood Jr., MD '54  
 Dr. John E. Woods  
 Howard E. Wulsin, MD '48  
 William Z. Yahr, MD '61  
 Lowell S. Young, MD '64  
 David J. Zaleske, MD '75  
 Rosamund Zander  
 Donald P. Zangwill, MD '53

**ORGANIZATIONS**

**\$1,000,000 OR MORE**

Anonymous (1)  
 American Cancer Society  
 Beth Israel Deaconess  
 Medical Center

Brigham and Women's Hospital  
 Children's Hospital Boston  
 Commonwealth Fund  
 Dana-Farber Cancer Institute  
 Estate of Eben S. Draper  
 Ellison Medical Foundation  
 Foundation for Research  
 in Cell Biology & Cancer  
 Google  
 Robert Wood Johnson Foundation  
 Josiah Macy Jr. Foundation  
 Juvenile Diabetes Foundation  
 International  
 Leukemia Society of America  
 The Lynch Foundation  
 Massachusetts Eye  
 and Ear Associates  
 Massachusetts Eye  
 and Ear Infirmary  
 Massachusetts General Hospital  
 W. M. Keck Foundation

**\$100,000-\$999,999**

Anonymous (2)  
 A.W. Baldwin Charitable  
 Foundation  
 Adelson Medical Research  
 Foundation  
 Adenoid Cystic Carcinoma  
 Research Foundation  
 Alexander & Margaret Stewart  
 Trust  
 Alfred P. Sloan Foundation  
 American Heart Association  
 Arnold & Mabel Beckman  
 Foundation  
 Arthritis Foundation  
 Autism Consortium  
 Beckman Laser Institute  
 Biomedical Science  
 Career Program

Blue Cross & Blue Shield  
 of Massachusetts  
 Breast Cancer Research  
 Foundation  
 The Brookdale Foundation  
 Burroughs Wellcome Fund  
 California Endowment  
 Cancer Research Institute  
 Charles A. King Trust  
 Charles H. Hood Foundation  
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**Jeannette Corwin, MD '58, and Howard Corwin, MD '58, attend the Annual Volunteer Leadership Dinner as co-chairs of the Reunion Gift Committee.**

**From left, Eric Feins, MD '08 (winner of the 2007 Hollis L. Albright Award), Nile Albright, Dean Jeffrey Flier, and Tenley Albright, MD '61, at the 2007 Hollis L. Albright Symposium**

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In 1772, Dr. Ezekiel Hersey made a bequest of £1,000, which soon led to the establishment of HARVARD MEDICAL SCHOOL. Through this single generous act of giving, he helped found a medical school that has since become world-renowned for its physicians, researchers, and medical leaders. He left a truly remarkable legacy. In so doing, Dr. Hersey not only became the Medical School's first benefactor, he also became its first "planned" giver.

Alumni and friends who make a bequest provision or other life income gift to HARVARD MEDICAL SCHOOL are invited to join the Ezekiel Hersey Council. We gratefully acknowledge our council members for their foresight and generous contributions.

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**Dean Jeffrey Flier (right) presents Jerry Foster, MD '51, with a glass Revere bowl in celebration of the establishment of the Gerald S. Foster Academy Professorship in May 2008.**



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 Danka Rodakowska  
 Mr. Irving W. Rabb  
 George J. Rabstajnek  
 Mrs. Jennifer B. Radford  
 Lynne M. Reid, MD  
 Elizabeth C. Reyer  
 Peter R. Richards  
 Marilyn Griggs Riley  
 Mr. and Mrs. Douglas E. Rogers  
 Vance C. Roy, MD  
 Ms. Beverly B. Rutstein  
 Drs. Edwin and Nancy Salzman  
 Linda Santopietro  
 Ram Sasisekharan

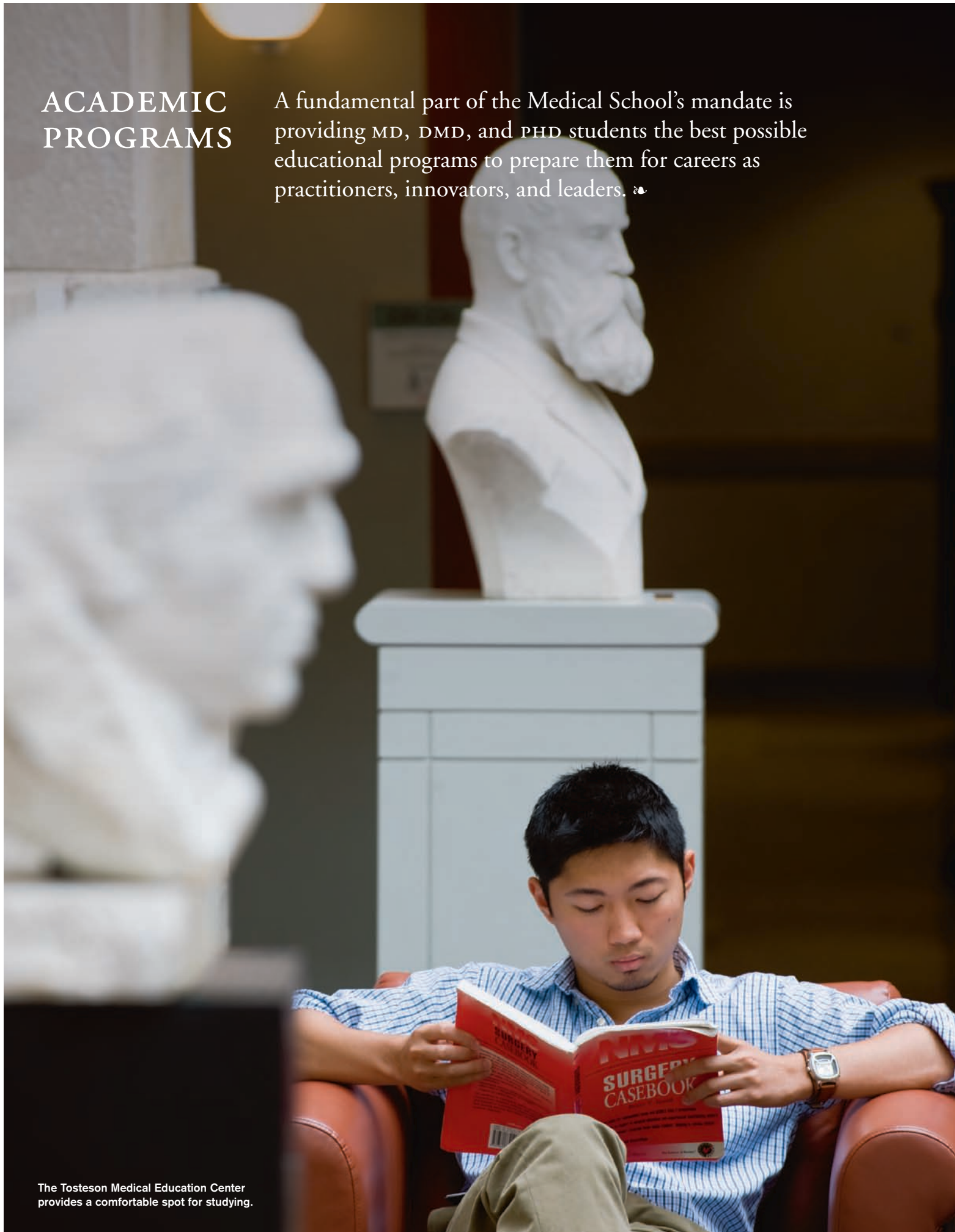
Karen M. Schaich, MD  
 John J. and Jolyon D. Schilling, MD  
 Paul R. Schloerb, MD  
 Mrs. Arnold L. Segel  
 Eileen C. Shapiro  
 Margaret J. Shapiro  
 Ms. Nancy R. Shapiro  
 William R. Shelton, MD  
 Martin H. Slobodkin  
 Mrs. Claire A. Socarides  
 Mariot F. Solomon  
 Norton Spritz, MD, JD\*  
 Thomas G. Stemberg  
 Jean H. Stewart  
 Eleanor Stickney  
 Mrs. James Stillman  
 Marvin A. Stolberg  
 Peter B. Strong  
 Drs. Herman D. and Joan C. Suit  
 Sumeth Sukapanpotharam  
 James A. Survis, MD  
 Mrs. William H. Sweet  
 Anne P. Talbot\*  
 William M. Taylor  
 Marilyn L. Thomas  
 Harriet S. Toibin  
 Meta S. Tomasch  
 Margaret M. Tse  
 Leonard Tucker  
 Mr. and Mrs. Arthur Ullian  
 Barbara Dublin Van Cleve  
 Dr. Richard Van Praagh  
 Louis R. Wanner  
 Kathleen Warren  
 Mrs. Joseph B. Watrous Jr.\*  
 Kay L. Watts  
 Mrs. Andrew G. Webster  
 Mary T. Welland, MD  
 Anthony Welters  
 Mrs. Eugene A. White  
 Mrs. Alice Williams  
 Mrs. Dean F. Winn Jr.  
 Joshua W. Wood  
 Mr. Ming S. Wong  
 Stella B. Yen, MD\*  
 Paul W. Zarutskie  
 Geraldine W. Zetzel  
 Dorothy S. Zinberg, MD

\* Deceased

## ACADEMIC PROGRAMS

A fundamental part of the Medical School's mandate is providing MD, DMD, and PHD students the best possible educational programs to prepare them for careers as practitioners, innovators, and leaders. 🌟

The Tosteson Medical Education Center provides a comfortable spot for studying.





### CURRICULUM CHANGES ADVANCE STUDENT SCHOLARSHIP

In June 2008, Dean Jeffrey Flier named Thomas Michel the School's first dean for education. As dean, Michel chairs the newly formed HMS Education Council, which brings together leaders of educational programs across Harvard and is charged with coordinating activities and developing new programs across the University to enhance student engagement in all aspects of the art of medicine and the science of medical discovery.

To increase opportunities for scholarly activity during medical training, two new programs are being implemented: a required scholarly project, called the Scholars in Medicine Program, and the new HMS Program for Research in Medicine (dubbed HMS-PRIME). Michel has appointed a task force to plan the details of implementing the scholarly project requirement, scheduled to take effect in 2010. The medical students' projects will span the broad range of academic activities being pursued by HMS faculty. HMS-PRIME is designed to provide medical students with new opportunities to spend a full year doing research, fulfill specific course requirements, and prepare and defend a master's thesis that will allow them to earn a Master of Medical Science degree (MMSc). Students in the Scholars in Medicine Program and in HMS-PRIME will be engaged in many of the scholarly activities that are part of the Harvard Catalyst, the University's clinical and translational science center, based at HMS.

"A key goal of these new programs is to inculcate the spirit of discovery in our medical students," Michel said. He also proposes to increase the number of MD-PHD students at HMS and to build on the two cross-campus life science courses now being offered to advanced undergraduates at the college and to HMS graduate students. These efforts are supported by the appointment of David Golan as the first dean for graduate education (see page 41). Golan will lead the newly formed HMS Program in Graduate Education, which brings together faculty from the numerous graduate programs and departments that are engaged in graduate education at HMS. 🐾

### FIRST STEP TAKEN TO REDUCE MEDICAL STUDENT DEBT

Jeffrey Flier, dean of the Faculty of Medicine, announced in March 2008 that the Medical School is taking steps to reduce the cost of a four-year medical education by an average of \$50,000 for families with incomes of \$120,000 or less.

"The issue of student debt is of great concern to me, which is why I feel particular satisfaction with this first step toward making HMS more affordable," Flier wrote in a letter to the HMS community. "It is important that the School not be out of reach to a broad segment of undergraduate students and their families. It is equally imperative to avoid burdening families with a new round of debt shortly after a child has finished college."

The new policy, benefiting just over one third of current HMS students, comes at a time when starting salaries in medicine are lagging behind increases in student debt. "Minimizing debt is also essential for eliminating a potential barrier for students in making career choices," said Jules Dienstag, dean for medical education. "This way students will not have to take debt into account or feel pressured to enter into higher-paying specialties after graduation. They can go into whatever field it is that inspired them to study medicine in the first place."

This effort to lower student debt grows out of the ongoing strategic planning process begun by Dean Flier and is the work of the Strategic Advisory Group on Education, the HMS Program in Medical Education, and the HMS Committee on Financial Aid. 🐾

### HEALTH CARE POLICY DEPARTMENT TURNS 20, CONTINUES TO REPAIR THE SYSTEM

"Changing the healthcare system is the work of a generation—not just one president."

These words, spoken by Henry Aaron, senior fellow at the Brookings Institution and keynote speaker at the Department of Health Care Policy's 20th anniversary symposium in April 2008, summarized the day-long event. The primary message was clear: fixing policy is long, hard work. Another message was equally clear: the

**Thomas Michel, the first dean for education at the School, is bringing together leaders from across the University to enrich and refine educational programs in biomedicine.**



## A LOOK AT THE DEPARTMENTS

### MOLECULAR FORMS ILLUMINATE FUNCTION

Faculty of the Department of Biological Chemistry and Molecular Pharmacology (BCMP), chaired by Ed Harlow, explore the fundamental principles of molecular, chemical, and structural biology.

Uncovering structures, in particular, relies heavily on computing power since vast amounts of data have to be processed to yield a molecular "image." The revealed form has substantial value since it suggests function in health and disease. To better illuminate molecular structures, researchers in the department, led by structural biologist Piotr Sliz, an assistant professor of pediatrics, have developed an extensive computer grid that integrates multiple applications and distributes computing power across local and national computing resources. It serves about 100 labs in the United States and a few foreign countries. The great majority of the BCMP group's efforts are concentrated on HMS, but the outside labs are having their computational capacity transformed nonetheless.

Zeroing in on molecular behavior, George Daley and Richard Gregory, associate and assistant professor, respectively, of biological chemistry and molecular pharmacology at Children's Hospital Boston, have been studying microRNAs. These are small strands of RNA in the cell that modulate the amount of protein a gene produces. The scientists discovered an inhibitor that binds to a family of microRNAs that is instrumental to organism development. During this process, embryonic stem cells differentiate into all the cell types that form the organism. The researchers found that these microRNAs are largely absent from stem cells and certain tumor cells and that this inhibitor is abundant in stem cells. The work raises the possibility of using the inhibitor to manipulate the microRNA pathway, which could facilitate reprogramming stem cells or in slowing cancer growth.

### CELLS WITHIN CELLS MAY HAVE ROLE IN CANCER

The death of human cells is a common occurrence, but the way they die may hold implications for medical treatment. A team in the Department of Cell Biology, led by chair Joan Brugge, discovered one of these fatal processes.

The researchers call it *entosis*, from the Greek word for *within*. When human cells wander outside of their normal niches and are free of their usual attachments, many of them invade other cells, only to be subsumed. Though some invaders break free from this captive state, most of them die.

Postdoctoral researcher Michael Overholtzer did not realize the implications of his observations until he talked them over with Andrea Richardson,

a pathologist at Brigham and Women's Hospital. Pathologists had observed this cell-into-cell phenomenon for years in several different types of cancer, but had not known how it developed.

The next step is to determine whether entosis helps or hinders cancer development. "Our first instinct is that entosis inhibits tumor progression by killing 'homeless' cancer cells," Overholtzer said.

### UNDERSTANDING THE SAFETY AND EFFECTIVENESS OF DRUGS AND VACCINES

The safety of drugs and vaccines has become a significant concern around the world. The Department of Ambulatory Care and Prevention, headed by Richard Platt, is a leader in developing methods to use routinely collected clinical and administrative electronic health information for early identification of the risks and benefits of therapeutic agents.

Faculty members including Platt and Tracy Lieu, a professor in the department, have worked with the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration to use this data while protecting patient privacy. The department is home to the coordinating center for a national program that prospectively evaluates new vaccines after they enter clinical use. In the beginning of 2008, this surveillance system identified an excess risk of seizures in very young children who received the MMRV (measles, mumps, rubella, and varicella) vaccine. As a result, the CDC Advisory Committee on Immunization Practices said it could no longer give preference to the combined vaccine over separate inoculations. This active surveillance system is a model for national networks for safety and effectiveness now being developed.

### INTERNATIONAL STUDY EXTENDS GENETIC MAP OF DIABETES

An international team including David Altshuler, a professor in the Department of Genetics who is based at Massachusetts General Hospital, has identified six more genetic variants involved in type 2 diabetes. The findings increase to 16 the number of common genetic risk factors associated with the disease, nine of which were first discovered by Altshuler and his colleagues in the last year. The HMS department is headed by Clifford Tabin.

The latest analysis, published in *Nature Genetics*, combined data from more than 70,000 people and involved the collaboration of 90 scientists in Europe and North America. The study may eventually lead to precisely targeted anti-diabetes drugs based on new knowledge of the disease causes.

Each individual genetic variant contributes only a small difference to the risk of developing the

disease, but researchers believe that taken together, particularly as the genes are further characterized, more significant differences are likely to emerge. Altshuler, senior author of the paper, said that in the future it will be possible to identify people at particularly high or low risk for type 2 diabetes, but he added, "Until we know how to use this information to prompt beneficial changes in people's treatment or lifestyle, widespread genetic testing would be premature."

### PROJECT IN GLOBAL HEALTH SEEKS TO DELIVER

Jim Yong Kim, chair of the Department of Global Health and Social Medicine, and University Professor Michael Porter of Harvard Business School have created an initiative to improve the performance of the healthcare system in poor countries. The first course in the program met in summer 2008 at the School of Public Health. An undergraduate course at Harvard College began the following fall.

Most educational programs in global health focus on clinical training and take a casual approach to the way that care is delivered. The Global Health Delivery Project uses case studies to develop a curriculum emphasizing the total value of the care given to the bulk of the population. By looking at both quality of treatment and the system in which care is made available, Kim and Porter aim to maximize favorable outcomes for every dollar spent. This approach may also prove useful for the fragmented U.S. healthcare system.

### SOCIAL NETWORKS MAY UNDERLIE HEALTH

At the Department of Health Care Policy, chaired by Barbara McNeil, Nicholas Christakis, professor of medical sociology, has focused on how health-related behaviors spread among people in complex social networks. In a paper he co-authored in *The New England Journal of Medicine*, he found that people were more likely to become obese if their siblings or friends became obese. These patterns were present even if the friends or relatives lived far away. Moreover, people were influenced by the weight behaviors of others who were up to three degrees of separation from them (their friends' friends' friends)—people, in other words, whom they were not in direct contact with and whom they did not even know.

In another article he co-authored in the same journal, he found that people are more likely to quit smoking if a spouse, friend, or coworker has already done so. The remaining smokers are more likely to cluster in tight social networks as their friends or relatives abandon the addiction, and they move to the margins of their social networks.

These studies, he said, "provide a rationale for the claim that health is not only an individual but also a



Department of Health Care Policy has spent the last 20 years at the forefront of trying to change the system, and has a lot to show for it.

The event began with Barbara McNeil, founding head of the department, summarizing how it grew from a small group of four policy experts to its current size of 27 faculty members. She said the department has graduated 177 doctoral students and, in the last three years, had more than 40 enrollees in its MD–MBA program.

Three sessions followed McNeil's opening remarks: Quality of Care, Financing of Care, and Mental Health. In the first two sessions, professors of health care policy Sharon-Lise Normand, Michael Chernew, and Joseph Newhouse discussed approaches to improving the efficiency of healthcare delivery—something that does not necessarily entail lowering costs.

The third session, on mental health, included presentations by researchers Richard Frank, the Margaret T. Morris professor of health care policy, and Ronald Kessler, professor of health care policy. Kessler began with some sobering statistics. According to the World Health Organization, depression is the leading cause of disability worldwide. The toll that these conditions take not only on the individuals but on their families, friends, and coworkers is profound.

Frank reviewed the last half century of mental healthcare in a talk titled “Mental Health Since 1950: Progress

and Unfinished Business.” According to Frank, the last five decades have seen a marked improvement in how we deal with psychological disabilities. Still, less than 1 percent of the GDP is spent on mental health.

Henry Aaron concluded the event by pointing out that any effort to fix the healthcare system through magic bullets—like malpractice reform—will fail to yield real change. Instead, we need to systematically reshape the way we pay for and deliver healthcare. Easy to say, but Herculean to carry out, which is precisely why this is the work of a generation. 🍷

#### **SOCIAL MEDICINE GOES GLOBAL**

Prior to the start of the 2008–2009 academic year, the Department of Social Medicine, headed by Jim Yong Kim, was formally renamed the Department of Global Health and Social Medicine. This change reflects the growing international orientation of the department and acknowledges the work being conducted around the world by many of the department's faculty members.

In the ongoing Strategic Planning Initiative, the global health advisory group recommended identifying a central institutional structure within HMS to assist in organizing global health activities, which will now officially fall within the scope of the renamed department. While the specific responsibilities of the department will evolve over time, the new name

**Barbara McNeil, founding head of the Department of Health Care Policy**



demonstrates the rapid growth of interest in global health among students and faculty, as well as the School's commitment to ensuring that its impact on health and medicine will, indeed, have a global reach.

This realignment at the Medical School coincides with a similar move by the Harvard School of Public Health, which renamed its Department of Population and International Health, the Department of Global Health and Population. These changes at HMS and HSPH accompany the University's effort to strengthen institution-wide global health activities in the interfaculty Harvard Initiative for Global Health, which is dedicated to increasing opportunities for educating the next generation of global health leaders. 🍷

#### **NEW PROMOTION CRITERIA ROLLED OUT TO FACULTY**

In January 2008, Dean Jeffrey Flier hosted the inaugural presentation of the new criteria for faculty appointment and promotion at HMS and the School of Dental Medicine, which included a presentation by Ellice Lieberman, dean for faculty affairs. The presentation was the first of a series of events to introduce the new criteria to faculty prior to implementation in the spring.

The new criteria represent the culmination of a year of work by a faculty task force that Lieberman chaired, and they introduced several innovations. Under

**Ronald Kessler (left) and Richard Frank present a global and historical perspective on mental health policy.**

collective phenomenon." His lab has received an \$11 million grant to continue this work on social contagion and social networks.

#### VACCINE WORKS ITS WAY TOWARD CLINIC

Genital herpes is one of the most widespread sexually transmitted viruses on Earth. A vaccine against herpes developed in the lab of David Knipe, the Higgins professor in the Department of Microbiology and Molecular Genetics, which is chaired by John Mekalanos, is undergoing preclinical testing. The hope is that it will prevent the illness and relieve the symptoms of those already infected.

A British company licensed the vaccine through the Harvard Office of Technology Development and anticipates conducting clinical trials in 2009.

Knipe's team based its vaccine on a live strain of the herpes simplex virus 2 that has two genes deleted so it cannot replicate. Studies in mice and guinea pigs showed that the vaccine can protect against infection and greatly reduces the severity of recurrence. It also provides protection against herpes simplex 1, which causes mouth and lip sores.

Herpes infections now are treated with antiviral medication, which suppresses symptoms without curing the disease.

#### FAULTY BRAIN WIRING MAY CAUSE AUTISM

A collaboration between Michael Greenberg, recently appointed chair of the Neurobiology Department, and Christopher A. Walsh, a Howard Hughes investigator and chief of genetics at Children's Hospital Boston, has sparked an important discovery about autism. Walsh and his team, working with Greenberg, published a path-finding article about the genetic causes of the disease, which appeared in the journal *Science*. Greenberg followed with a related study in *Nature*.

A co-author on the first paper, Greenberg had independently theorized that autism might arise from genetic defects underlying the brain's neural connections. He shared his thinking with Walsh at a chance meeting in London. Walsh applied this insight to a study of autistic children in 104 Middle Eastern families.

The researchers discovered mutations in genes not previously identified as associated with autism. The mutations might interfere with the brain's ability to create connections normally sculpted by a child's early experiences. Walsh's team found that the genes may be disabled, not destroyed. This finding gives the researchers hope that treatment could be devised to reverse the defects.

#### IMMUNE SCAVENGER'S ROUTINE CAUGHT ON CAMERA

Lymph nodes prevent the spread of pathogens, such as viruses, that infect tissues after penetrating the body's surface barriers. But researchers in the Department of Pathology, which is chaired by Peter Howley, have puzzled over how these pathogens are destroyed.

A team led by Ulrich von Andrian, the Edward Mallinckrodt Jr. professor of immunopathology in that department, has become a leader in creating video visualizations to illustrate the mechanisms for clearing these invaders from the body. In an article in *Nature*, the researchers describe how a specialized subset of macrophages, a type of scavenging immune cell, captures viruses and then presents them to B cells to induce protective antibodies. When the researchers deleted lymph node macrophages in the experiment, B cell activation was severely compromised.

This newly discovered mechanism for capture and presentation is an unexpectedly complex role for macrophages in response to viral infections. The function provoked such a strong immune response that von Andrian says the process might eventually be exploited to develop vaccines that target the master regulators of antiviral immunity.

#### CELLS REPROGRAMMED TO SERVE NEW ROLES

Stem Cell and Regenerative Biology is the first department to span Harvard schools, being based at both HMS and the Faculty of Arts and Sciences. Departmental researchers announced two major advances in August and September 2008.

Douglas Melton, department co-chair, and postdoctoral fellow Qiao Zhou reprogrammed adult pancreatic cells in mice to become rare insulin-producing cells. This breakthrough offers hope that eventually researchers will grow replacement pancreatic tissue to treat diabetes, but more work is required before the finding can yield human therapies.

A few weeks later, a team led by Konrad Hochedlinger, an assistant professor of medicine and of stem cell and regenerative biology at Massachusetts General Hospital, reported that they had reconfigured adult cells in mice so the cells mimicked embryonic stem cells, without causing dangerous side effects. Previously, other researchers had found a way to transform the adult cells, but the procedure caused tumors. The Melton and Hochedlinger findings bypass the political controversy engendered by the use of stem cells from human embryos, but the scientists assert that these cells are still crucial to regenerative research. The department's other co-chair is David Scadden.

#### CELL GROWS IN SOFTWARE

Protein behavior in the cell is difficult to study—it is far more complex than the action of DNA. Researchers in the Systems Biology Department are coping with this reality by devising a computer program that can mimic the dynamics of these cellular molecules.

Aneil Mallavarapu, a cell biologist, computer scientist, and research associate in the department, developed a computer language, Little b, that forms the basis of the program (the effort earned him an innovation award from the Council for Systems Biology in August 2008). Mallavarapu is leading the project along with Jeremy Gunawardena, senior lecturer on systems biology and director of the department's Virtual Cell Program. The department is chaired by Marc Kirschner.

"Little b introduces a new paradigm, in which the computer starts building things on your behalf," Gunawardena said.

Little b provides a programming language that can assemble a mathematical description of a biological system incrementally out of simpler parts. The ultimate goal is a shared language for biology that will enable scientists across the world to work together to overcome the overwhelming molecular complexity found in biological systems. "It's a long way off," Gunawardena said, "but we're getting there."

#### LAB LINKS DISCOVERY TO HEALTH CARE MARKET

At the School of Dental Medicine, Winston Patrick Kuo leads the Laboratory for Innovative Translational Technologies, established in 2007 to bridge the innovation gap between academia and industry.

The laboratory enables Dental School and HMS researchers to have access to new genomic and proteomic technologies in one central location. The lab also helps researchers connect to companies who might be able to turn their work into useful products. The laboratory, researchers, and companies commit themselves to keeping in frequent communication regarding evaluation, potential publications, and ownership of intellectual property.

The laboratory has established collaborative arrangements with the institutions of the Harvard medical community, other national and international institutions and universities, and more than 18 companies. Kuo sees the laboratory, with its central location and interaction between industry and researchers, as one potential model as the Dental School, whose dean is R. Bruce Donoff, and the Harvard medical community rethink the way they conduct translational research.



the former criteria, faculty members were evaluated as either clinician-teachers or investigators. With the new guidelines, individuals are not categorized into a single set of criteria. Rather, there is a flexible structure that provides a menu of options, allowing assembly of a profile that reflects the unique combination of activities and accomplishments of each faculty member. The criteria also recognize the broad range of faculty contributions that support the academic mission, including administrative leadership and service to the community. This structure allows the total of an individual's achievements to be considered in the evaluation for promotion.

“If Harvard Medical School and Harvard School of Dental Medicine are to continue to attract and retain the best scientists, clinical experts, and teachers in the world, it is essential that the contributions of faculty to new paradigms of research, clinical care, and education be rewarded by promotion,” Flier said. “These new promotion criteria are an important element in achieving this goal.”

Although the structure of the criteria has changed, many of the fundamental principles remain the same. The new criteria, for example, maintain the expectation of excellence in the faculty member's major area of academic activity. In addition, the criteria maintain a scholarship requirement for promotion to all ranks, except for promotion to assistant professor by longer service criteria.

The new framework recognizes the increasing importance of multidisciplinary research and the goal of translating basic research from bench to bedside and back. The criteria reward the intellectual contributions of faculty to collaborative research, including contributions by individuals from diverse fields such as biostatisticians and physicists, who bring unique expertise to the biomedical research team.

Another hallmark of the new criteria is the expectation that all faculty, with rare exceptions, will participate in the HMS teaching mission. As part of the evaluation for promotion, the criteria also explicitly consider community service and programs that increase diversity. 🎓

#### DENTAL SCHOOL WINS FIRST GIES VISION AWARD

The American Dental Education Association's ADEA Gies Foundation awarded the Harvard School of Dental Medicine the William J. Gies Outstanding Vision Award for an academic dental institution. It is named after the founder of the *Gies Report*, which consists of descriptions and evaluations of dental schools in the United States and Canada. The honor recognizes contributions to dental education and global oral health and is given to institutions and individuals who are carrying forward Gies's mission. This was the inaugural year for the awards, and they were presented in March 2008 during the ADEA's 85th Annual Session. 🎓

#### HST SOCIETY RENAMED FOR FOUNDING DIRECTOR

The Harvard–MIT Division of Health Sciences and Technology (HST) renamed the HST Society at HMS, the Irving M. London Society of the Harvard–MIT Division of Health Sciences and Technology, honoring Irving London, professor emeritus of medicine and founding director of HST. HMS dean Jeffrey Flier announced the change at the June 2008 HST graduation ceremony, at which London delivered the keynote address.

London, who celebrated his 90th birthday during the summer of 2008, helped plan and establish the HST program nearly 40 years ago. His vision for the integration of interdisciplinary biomedical research, education, and medical practice, along with the desires of both Harvard and

MIT to create a partnership, melded the strengths of both institutions to form the HST Division. Over the years, HST has taken a leadership role in the application of engineering to medicine and in the training of physician-scientists with the quantitative skills that have positioned them at the forefront of biomedical research.

London served as director from HST's inception in 1971 until 1985. Still an active member of the HST community, he continues to direct Molecular Medicine, a popular course that he initiated. London's achievements in medical research and education have been recognized by awards and honors, among which are election to the National Academy of Sciences and the American Academy of Arts and Sciences, and selection as a founding member of the Institute of Medicine.

“Irving London is a constant source of inspiration for the HST community,” said David Cohen, co-director of the division. “This new name not only honors his many contributions to HST, but it also perpetuates his vision for generations of students to come.” 🎓



Irving London was the first director of the Harvard–MIT Division of Health Sciences and Technology.

## OUTREACH

Amid the transformative change and daunting challenges of the current environment, the School retains its focus on outreach to the local, regional, national, and global communities. 🌍



Joyce Imahiyero-Ip is an intern at Cambridge Hospital.



### PROJECT SUCCESS FORMS CRITICAL PATH TO MEDICINE

The motto for Project Success, a program for high school students sponsored by the Office for Diversity and Community Partnership, is “Opening the Door to Biomedical Careers.” The program did just that for Joyce Imahiyero-Ip, who recently received her medical degree from Cornell University and is spending her intern year at Cambridge Health Alliance. But, more importantly, she credits the program with providing her with the tools to seize opportunities that she may have otherwise let pass her by.

Project Success is a summer program for high school juniors and seniors in Boston and Cambridge that exposes them to many facets of biomedical sciences through hands-on research, visits to hospitals and biotechnology firms, and classes and seminars.

Growing up in Roslindale and Hyde Park, as the oldest of six children, Imahiyero-Ip said she was “groomed for medicine” by her parents, who are Nigerian immigrants. Her father is a pharmacist and her grandfather was a traditional Nigerian healer. Imahiyero-Ip describes herself as a “smart, hard-working girl” with an aptitude for science and an interest in medicine, who was seeking ways to gain practical experience and a better understanding of what a career in medicine actually looks like. Project Success fit the bill.

While the research and education portions of the program allowed her to develop useful skills such as writing scientific papers and making scientific presentations, it was the time she spent in hospitals that was the most formative for Imahiyero-Ip. Working with the late neonatologist Douglas Richardson at Beth Israel Deaconess Medical Center inspired her to pursue a career that combines clinical medicine with social policy research.

The program also provided the Boston Latin student with resources and networking opportunities that she thinks played an important role in her acceptance at Harvard College. Without Project Success, Imahiyero-Ip said, “I don’t think I would have been able to get the mentorship I did, as well as some of the letters of recommendation that I got.” In addition to degrees from Harvard and Cornell, Imahiyero-Ip has a master’s degree from Cambridge University in the U.K. Her accomplishments paved the way for her siblings, each of whom also has an Ivy League education. Furthermore, her brother, Thomas Imahiyero, who graduated from HMS in 2008, served as a scientific adviser for the Project Success Program.

The research and networking resources are some of the most valuable benefits that programs like Project Success provide, according to Imahiyero-Ip, and are the reason that institutions like Harvard should continue reaching out to talented students of modest means. “Had I not been given these opportunities, I would still be the same smart girl, who wasn’t able to get as far as I have. That is a missing link.”

### ARMENISE FOUNDATION HOSTS SYMPOSIUM ON CANCER GENOMICS AND THERAPEUTICS

More than 80 participants converged on Stresa, Italy, for the 12th Annual Symposium of the Giovanni Armenise–Harvard Foundation, held in June 2008 at the Grand Hotel Bristol. The theme for this year was “Cancer: From Genes and Proteins to Pathways and Therapeutics.”

The program grouped 21 oral presentations into three sessions: basic findings about pathways and mechanisms involved in tumor development, insights from model systems, and news about drug development and cancer treatment. “This meeting is about how basic science moves



us closer to the clinic,” said Ed Harlow, head of the Department of Biological Chemistry and Molecular Pharmacology at HMS, who presented an overview of the conference during the closing session. Twenty-three poster presentations covered similar ground.

Harlow said the conference talks were much like the excellent meals enjoyed by the participants: a series of courses, showcasing many flavors and combinations, which sparked lively conversations.

Recurring themes included gene discovery, cell metabolism, systems-level analysis of complex phenomena, epigenetic control of gene activity, using genetic information to improve treatment, and evolving perspectives on the stem cell theory of cancer.

On hand for the proceedings were Count Giovanni Auletta Armenise and HMS dean Jeffrey Flier, participating in his first Armenise–Harvard symposium since being named dean in July 2007. Members of the foundation’s board of trustees, scientific advisory board, and Italian Scholarship Advisory Committee also participated.

U.S. scientific delegates came from HMS and three affiliated hospitals in Boston. Italian delegates traveled from 13 Italian universities and research institutes, some as close as Milan and others as far south as Naples and Palermo. Senior scientists from multinational pharmaceutical companies were also present.

Count Giovanni Auletta Armenise at a celebration of two chairs endowed by the Armenise–Harvard Foundation



Speakers and delegates included young scientists who have benefited from Junior Faculty Grants and Career Development Awards supported by the foundation. Since last year's symposium, four HMS junior faculty have received new support: Chenghua Gu, Tom Bernhardt, Monica Colaiacovo, and Johan Paulsson. Past grant recipients Marcia Haigis and Adrian Salic presented posters at this year's conference.

Two new Career Development Awards, which help outstanding young Italian researchers establish independent laboratories following postdoctoral training abroad, have been made to Rosa Bernardi and Nico Mitro. Bernardi joined six other Career Development Awardees for dinner with Count Auletta during the Stresa gathering.

In addition to promoting scientific research in Italy, the foundation has also supported extraordinary reporting opportunities for Italian journalists who cover the science beat. Alice Andreoli and Silvia Bencivelli, who report for broadcast and print outlets, are the latest recipients of the annual Science Writer Fellowships. They participated in the symposium, joined previous winners for a science writing workshop in Milan, and later traveled to Boston to research stories of their choosing at HMS.

#### REFLECTION IN ACTION STEPS UP ON STAGE

In April 2008, students, parents, teachers, artists, and health leaders came together to celebrate the sixth annual Reflection in Action program, sponsored by the HMS Office for Diversity and Community Partnership. The program invites sixth-, seventh-, eighth-, and ninth-graders from Boston and Cambridge to submit a visual, written, or performance piece responding to health topics prevalent in urban communities. This year, the themes included heart, lung, and blood disease; sleeping disorders; oral health; and urban health disparities. At the event, the winners display or perform their projects.



Nearly 300 entries from 371 students were submitted to the 2008 contest.

The second annual Ruth M. Batson Social Justice Award was also presented at the event. John Auerbach, commissioner of the Massachusetts Department of Public Health, received the honor partly for work in his former position as executive director of the Boston Public Health Commission, where he implemented initiatives on public health issues such as tobacco control, emergency preparedness, and health disparities.

#### MINORITY HEALTH POLICY AS AVENUE FOR CHANGE

The presentations at the 2008 annual minority health policy meeting, which took place in May, each provided a window on areas of inequality in the national healthcare system, from the barriers to care faced by Portuguese speakers in Boston to the continuing mental health needs of Hurricane Katrina survivors. Taken together, the talks depicted a troubling landscape of healthcare disparities across the nation, affecting multiple groups and regions.

The talks were given by current fellows and alumni from the Commonwealth Fund/Harvard University Fellowship, the California Endowment Scholars Program, and the Joseph L. Henry Oral Health Fellowship. The meeting was capped by a keynote address from Thomas Perez, the

secretary of labor, licensing, and regulation in Maryland and a professor in the Department of Health Policy at George Washington University.

Two fellows discussed linguistic barriers to healthcare. Monica Hau Hien Le, a California Endowment Scholar, in an effort to understand the “chasm between the first roadblock of access and actually reaching quality care,” studied the provision of cultural and linguistic services in California. Keila Lopez, a Commonwealth Fund/Harvard University fellow, studied gaps in health coverage and care for Portuguese speakers in the Boston area, particularly under the new Massachusetts healthcare reform law.

In his keynote address, Perez said that he wanted to focus on only one question in his talk: “What does it mean to be a change agent?” He elaborated on what he thought were the “core competencies” of a change agent, which included not shying away from creating tension. He cited Martin Luther King’s “Letter from a Birmingham Jail.” In the letter, King suggests that tension is a critical component of productive change.

“If you are going to cause change, you have to be willing to create tension in your communities,” said Perez.

The program also included poster presentations by Dana–Farber/Harvard Cancer Center junior investigators. The event was sponsored by the HMS Office for Diversity and Community Partnership, directed by Joan Reede, dean for diversity and community partnership.

#### CONFERENCES SHINE LIGHT ON SCIENCE, DRAW HUNDREDS TOWARD HEALTH CAREERS

The April 2008 New England Science Symposium showcased the work of postdoctoral fellows, medical and dental students, and undergraduate and graduate students studying biomedical and health-related sciences. Cosponsored by the HMS

**A group of students from the Jackson/Mann K–8 School in Allston, known as the Young Fly Steppers, perform their winning dance routine during the Reflection in Action program.**

Minority Faculty Development Program and the Biomedical Science Careers Program, the symposium provided 323 participants, including 12 oral presenters and 115 poster presenters, an opportunity to share their work and exchange ideas. The participants, many of whom were African-American, Hispanic, or Indian/Alaska Native, represented 120 institutions.

The Ruth and William Silen, MD, Awards were presented to the first-, second-, and third-place winners of both the oral and poster presentations. The winners in the oral presentation category were Vadim Villarroel, first place; Eydith Comenencia Ortiz, second place; and Theophelus Hill, third place. In the poster presentation category, they were Bryan Webb, first place; Sara Tribune, second place; and Escar Kusema, third place. The keynote speaker at the program was Marc Kirschner, the Carl W. Walter professor of systems biology at HMS and head of that department.

During that weekend, the Minority Faculty Development Program and the Biomedical Science Careers Program also sponsored the annual Biomedical Science Careers Student Conference, which was attended by almost 900 students and fellows from New England and featured workshops and panel presentations geared toward students—from middle schoolers to postdocs—interested in science-related careers. 📍

#### CONTINUING MEDICAL ED EXTENDS NATIONALLY, GLOBALLY

Established almost four decades ago, the HMS Department of Continuing Education has seen remarkable growth in the number of its courses and total enrollment. Currently, more than 90,000 clinicians receive over two million credits each year.

In addition to offering more than 260 courses annually and more than 375 regularly held conferences within the 18 HMS-affiliated hospitals, the department

collaborates with CME offices at six other academic institutions—Baylor University, Columbia University College of Physicians and Surgeons, Johns Hopkins Medical School, the University of Miami, Northwestern University, and UCLA—in offering an annual three-day course titled Current Clinical Issues in Primary Care Medicine. The course at each institution is attended by 4,000 to 8,000 clinicians and presents between 50 and 60 clinical lectures with themes such as adult and geriatric medicine, pediatric and adolescent medicine, women's health, gastroenterology, cardiology, neurology, and infectious disease.

The CME online initiative has also grown exponentially. The department currently offers 50 courses and another 50 are under development, and more than 18,000 physicians from 110 countries have participated. In 2008, the department piloted a program in which all of the online courses are offered without charge to physicians in Africa. 📍

#### STUDENTS TAKE PLUNGE INTO SPANISH-LANGUAGE CARE

Now in its 15th year, the HMS Summer Spanish Language and Community Service Program continues to attract medical students interested in both a crash course in medical Spanish and the opportunity to practice and improve their new language skills at community health care centers serving Spanish speakers.

In 1994, when Guillermo Herrera-Acena, a lecturer on ambulatory care and prevention, started the summer language program in partnership with the HMS Office of Enrichment Programs, students between their first and second years of medical school took the Spanish immersion classes in Boston. Then they volunteered primarily in Boston and other U.S. cities. Since that time, the annual seven-week program has migrated to Latin America, where students take intensive Spanish classes, live with a local family,

and immerse themselves in the culture of their host country—Chile, Costa Rica, or Guatemala.

Second-year student Brandon Auerbach said his goal to become fluent in Spanish and his interest in global health prompted him to participate in the 2008 program. Auerbach and ten classmates, all with varying degrees of proficiency in Spanish, took crash courses in the language at the International Health Institute of Central America in Costa Rica. Some then accompanied social workers from the National Children's Hospital in San José on a day-long series of home visits to patients with spina bifida. Others worked on peer-to-peer health education projects for adolescents with chronic illnesses. They also teamed up with a senior Costa Rican medical student to learn how to conduct a patient interview in Spanish and did mock interviews, followed by critiques. These simulated cases provided a low-pressure setting to practice medical interview skills in Spanish while reinforcing skills learned in the Patient–Doctor I course at HMS.

“The experience definitely has had an impact on my medical training and career,” Auerbach said. “I now see many global health issues at play in the United States, especially surrounding immigrants and migrant workers.” 📍



Brandon Auerbach spent seven weeks learning medical Spanish in Costa Rica.



# PEOPLE

The talent and expertise of its people mean that HMS is well positioned to take decisive leadership in moving the revolution in science toward advances in human health. 🌱



Men and women at work in Countway Library



## New Appointments

### CHAIR ANNOUNCED FOR NEUROBIOLOGY

Michael Greenberg was appointed the next chair of the Department of Neurobiology, and in that position, he also holds the Nathan Marsh Pusey Professorship.

“A renowned molecular neurobiologist and award-winning teacher, Dr. Greenberg is uniquely suited to lead the department at a time when the understanding of the nervous system at a molecular, cellular, and physiological level will begin to have substantial influence on the treatment of neurologic and psychiatric disease,” said HMS dean Jeffrey Flier.

Greenberg’s own research has expanded understanding of the molecular basis of the major events in neural development, the neural responses to injury and disease, and the potential for intervention, treatment, or cure. His research also has explored the molecular biology and genetics of autism spectrum disorders. He had been a professor in the HMS Department of Neurobiology and director of the F.M. Kirby Neurobiology Center at Children’s Hospital Boston.

In his role as department chair, Greenberg is a core adviser to Dean Flier in implementing the recommendations on neuroscience from the School’s ongoing Strategic Planning Initiative.

“I am excited and extremely honored to be entrusted with the leadership of this distinguished department and look forward to working with my talented colleagues during this promising and exciting time for neuroscience,” Greenberg said. 🐾



Michael Greenberg

### PROFESSOR BECOMES ACADEMIC AND CLINICAL DEAN

Nancy Tarbell, the c.c. Wang professor of radiation oncology at Massachusetts General Hospital, became the dean for academic and clinical affairs at HMS in July 2008. She succeeded Raphael Dolin, the Maxwell Finland professor of medicine (microbiology and molecular genetics) at HMS and Brigham and Women’s Hospital. Dolin stepped down to devote more time to his research and clinical activities.

Tarbell served as chief of pediatric radiation oncology at MGH, where she also directed the Center for Faculty Development since 2005 and the Office for Women’s Careers since 1997. She is considered an international authority in pediatric radiation oncology with special expertise in pediatric neuro-oncology. In recognition of her academic achievements, she was elected to the Institute of Medicine of the National Academy of Sciences in 2002.

As dean for academic and clinical affairs, her responsibilities include promoting, coordinating, and supporting the academic and clinical activities of the HMS faculty, with an emphasis on faculty development and diversity. She conducts clinical department reviews and administers affiliation agreements. Tarbell also oversees the Office of Faculty Affairs, the Office of Faculty and Research Integrity, the Office for Diversity and Community Partnership, the Department of Ambulatory Care and Prevention, and many HMS-wide centers and divisions. Tarbell will continue to spend a portion of her time in clinical practice at MGH for the duration of her appointment. 🐾



Nancy Tarbell

### FIRST DEAN FOR EDUCATION NAMED AT HMS

Thomas Michel, professor of medicine at Brigham and Women’s Hospital, was appointed the first dean for education at HMS (see photo on page 29). In his new position, he holds the Federman Chair for Medical Education and is a key adviser to Dean Jeffrey Flier on the broader aspects of education at HMS. He also works with the School’s existing educational leadership, including Jules Dienstag, dean for medical education, as well as other HMS leaders in graduate, global, and continuing medical education.

Michel chairs a newly formed HMS Education Council, which brings together leaders of educational programs across Harvard, including the masters of the HMS academic societies, directors of the HMS graduate programs, hospital-based physician-educators, directors of the Health Sciences and Technology and MD–PHD programs, and leading educators from Harvard College and the School of Engineering and Applied Sciences. Under his leadership, the Education Council will coordinate activities and develop new programs across Harvard University.

Michel has served as leader of the Strategic Advisory Group on Education within the School’s Strategic Planning Initiative. At BWH, his laboratory studies signal transduction pathways in the cardiovascular system, and he sees patients as a practicing cardiologist and clinician–teacher at the Brigham. Michel has been active for many years in teaching undergraduates and graduate students at Harvard and is co-director of the Leder Program in Human Biology and Translational Medicine. 🐾

#### **BIOLOGIST LEADS ORAL MEDICINE AT DENTAL SCHOOL**

The Harvard School of Dental Medicine announced that Roland Baron was appointed chair of the Department of Oral Medicine, Infection, and Immunity; Baron also holds a position at HMS within the Endocrine Unit at Massachusetts General Hospital. He is an internationally renowned scientist and leader in the field of bone biology and diseases.

Trained as a dentist at Paris Medical School, he earned postgraduate certificates in oral biology and periodontology, as well as a PhD in oral biology. He is known for his groundbreaking advances in bone biology, and his research is the basis for the development of novel therapies to prevent bone loss, such as that in arthritis and osteoporosis.

Baron and his lab moved to HSDM from the Yale University School of Medicine, where he was a professor of orthopedics and of cell biology for more than 30 years. His laboratory is focused on signal transduction and control of cell differentiation and function. The lab's major research is the study of skeletal development and remodeling as a model system.

Baron, who has more than 260 publications, is editor-in-chief and founder of the journal *Bone* and associate editor of the *Journal of Cellular Physiology*. He has won numerous professional honors, including the L. Avioli Founders Award from the American Society for Bone and Mineral Research in 2002, and in 2005, the D. Harold Copp Award in Basic Research from the International Bone and Mineral Society. 🐾



**Roland Baron**

#### **DEVELOPMENT DEAN APPOINTED**

Susan Rapple, who served as associate vice president of development at Dana–Farber Cancer Institute, was named the new dean of the Office of Resource Development. She joined HMS in May 2008.

At Dana–Farber, Rapple oversaw the implementation of a \$1 billion fund-raising campaign, the largest in the institute's history, and managed an operation with more than 75 staff members in the Division of Development and the Jimmy Fund, which raises over \$200 million each year. She previously worked in development at the Harvard School of Public Health and Dartmouth Medical School. At HMS, she leads the development effort that will help fulfill the objectives that are part of the Strategic Planning Initiative, and she will collaborate in the Harvard University–wide fund-raising campaign.

She succeeded Richard Cosnotti, who had served as interim dean for the department since January 2007. 🐾

#### **NEW DEAN TAPPED FOR RESEARCH INTEGRITY**

Dean Jeffrey Flier announced that Gretchen Brodnicki was named dean for faculty and research integrity at HMS.

The new dean is a longtime member of the HMS “family.” In her previous position as director of research compliance for the Partners HealthCare System, she worked with faculty and administration at four affiliated teaching hospitals, Brigham and Women's, Massachusetts General, McLean, and Spaulding. Before joining Partners,



**Susan Rapple**



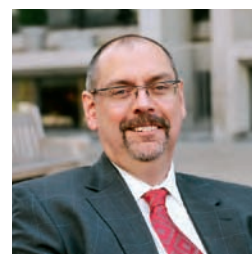
**Gretchen Brodnicki**

she served as director of research compliance for Beth Israel Deaconess Medical Center. Prior to this, she practiced law privately in the areas of civil litigation and health care, representing clients in intellectual property disputes as well as in corporate, regulatory, and transactional matters with an emphasis on fraud prevention, practice integration, and risk management.

Brodnicki graduated from Gannon University in Erie, Pa., where she received a BS in business administration, and from Suffolk University Law School in Boston, where she received her JD in 1996. She began in July 2008, succeeding Margaret Dale, who retired in May.

#### **DEAN FOR OPERATIONS TAKES HELM**

Richard Mills became dean for operations and business affairs in September 2007, having administrative responsibilities for Information Technology, Countway Library, the Center for Biomedical Informatics, Harvard Health Publications, Continuing Medical Education, Facilities, Physical Planning, Campus Operations, Human Research Subject Protection, Animal Research Subject Protection, and Microbiological Safety. Previously, Mills was associate dean for facilities and planning at HMS. Before coming to Harvard in 2005, he was the principal of a strategic consulting firm, and previously he worked as a department director and as senior staff counsel at the Massachusetts Water Resources Authority. Mills began his career as a litigation attorney at the Boston firm of Posternak, Blankstein & Lund. He received his AB from Hamilton College and JD from Boston University. 🐾



**Richard Mills**

### FIRST DEAN FOR GRADUATE EDUCATION BEGINS ROLE

In November 2008, David Golan became the first dean for graduate education at HMS. The new position was the result of recommendations from the Strategic Planning Initiative along with recognition of the need for better communication, coordination, and partnership among the many different graduate programs at HMS and across Harvard. Golan works closely with Thomas Michel, dean for education, and Jules Dienstag, dean for medical education, to bring together graduate students, medical students, trainees, and faculty in shared education and research activities throughout the broad spectrum of biomedical investigation at Harvard.

Golan directs the newly formed Program in Graduate Education, which convenes leaders of graduate education across Harvard, including graduate program directors, chairs of Quadrangle departments, hospital-based scientists, graduate curriculum fellows, and other leading educators in the Harvard medical community. Under Golan's leadership, the Program in Graduate Education will coordinate activities and develop new programs across the University to enhance graduate students' engagement in all aspects of biomedical discovery.

As dean for graduate education, Golan continues his leadership of the Harvard Catalyst Research Education Program. In this role, he coordinates the design, development, implementation, and oversight of the master's degree programs at HMS. He also acts as special adviser on global programs to Dean Jeffrey Flier.



David Golan

Golan has served for many years as a leading scientist and educator at the Medical School. He is a professor in the Department of Biological Chemistry and Molecular Pharmacology, where his lab applies biophysical and cell-imaging methodologies to the study of membrane-targeted proteins in blood cells and the vascular endothelium. He is also a professor of medicine at HMS and a physician in the Department of Medicine at Brigham and Women's Hospital, where he continues to see patients as a practicing hematologist and clinician-teacher.

After earning his AB summa cum laude in chemistry at Harvard College, Golan received his PhD in molecular biophysics and biochemistry and his MD degree from Yale University, followed by clinical training in internal medicine and in hematology at BWH. He is the principal author of the best-selling textbook *Principles of Pharmacology*. In addition to his many awards and honors for discoveries in red blood cell biophysics and cellular imaging, Golan received the Robert J. Glaser Distinguished Teacher Award from the Association of American Medical Colleges in 2005. He is a founding Scholar of the Academy at Harvard Medical School. 🐾

### DIRECTOR NAMED FOR DUAL-DEGREE PROGRAM IN SOCIAL SCIENCES

In April 2008, Anne Becker was appointed director for the MD–PHD social sciences program, succeeding Allan Brandt, who became dean of the Harvard Graduate School of Arts and Sciences. Becker, an associate professor of medical anthropology in the Department of Global Health and Social Medicine and of psychiatry in the Department of Psychiatry, is an



Anne Becker

associate psychiatrist at Massachusetts General Hospital. There she is director of the Eating Disorders Clinical and Research Program.

The central focus of Becker's teaching and research has been the integration and application of cross-disciplinary perspectives from psychiatry, anthropology, and epidemiology toward understanding the impact of the social environment on mental illness. Her ethnographic expertise involves ethnic Fijians in Fiji, a small indigenous population that is undergoing rapid social transition. The fast but heterogeneous exposure to economic development within a culturally homogeneous population has provided novel insights into the risk for eating disorders and obesity in the Pacific and beyond. Her teaching has reflected a commitment to promoting the visibility and application of social sciences to maximize their impact on public health.

Becker's first book, *Body, Self, and Society: The View from Fiji*, was published in 1995. She is completing her second book, which addresses adolescent mental health through the lens of her work in Fiji. 🐾

### ASSOCIATE DEAN SELECTED FOR PHYSICAL PLANNING AND FACILITIES

Richard Shea, vice president for facilities at Dana–Farber Cancer Institute, joined HMS as associate dean for physical planning and facilities in May 2008.

Shea directs all administrative functions relating to campus facilities planning, maintenance, and management; capital budget preparation; and campus operations, including parking, security,



Richard Shea



and food service. He also serves as an HMS representative on community and University planning groups.

During his tenure at Dana–Farber, Shea oversaw the design of the 275,000-square-foot Yawkey Center for Cancer Care; opened the Harbor Campus; and developed the concept for a multicampus system, leasing over 400,000 square feet offsite and linking satellites with a new transportation service. 📍

#### ASSOCIATE DEAN APPOINTED FOR PUBLIC AFFAIRS

Gina Vild, formerly director of marketing and communications for cancer and women’s health at Massachusetts General Hospital, was appointed the new associate dean for public affairs at HMS, effective November 2008. She succeeded Robert Neal, who had served as acting associate dean of the department since February.

Vild came to HMS with more than 20 years of experience in public affairs, marketing communications, and government relations. She has particular expertise in positioning organizations through data-driven planning, media relations, web-focused marketing, and internal and external communications. She also brought with her a wealth of knowledge in crisis and issue management.

At MGH, Vild was recognized for crafting research-based strategies that contributed to increased growth and recognition for the Cancer Center. She was responsible for strengthening and extending the Cancer Center community through enhanced internal communications and the development of publications and web strategies that support patients, physicians,

researchers, and donors. She was also a core member of the MGH Web Redesign Planning Group.

Vild previously served as director of public affairs for Dana–Farber Cancer Institute and the Jimmy Fund and consulted for MIT and Deaconess Hospital and their network affiliates, as well as Lahey Clinic and the University of Chicago Medical Center. 📍

#### BOARD OF FELLOWS SEES CHANGE IN LEADERSHIP

Dean Jeffrey Flier named a new chair and vice chair of the HMS Board of Fellows at the April 2008 meeting.

The new board chair, Beck Gilbert, is also the chair of Megadata Corporation, a provider of air traffic software. Though he has had a long career in business, he audited classes at Cornell Medical School from 2000 to 2002 and was made an honorary member of the Class of 2004. Two years later, he earned his Master of Science degree in immunology at Rockefeller University and has completed the coursework toward a PHD.

New vice chair Joshua Boger is founder, chair, president, and CEO of Vertex Pharmaceuticals, which has an HIV protease inhibitor on the market in collaboration with GlaxoSmithKline. His company is developing treatments for hepatitis C and cystic fibrosis and is collaborating with Merck on a cancer therapy.

Outgoing board chair Jack Connors was recognized and thanked for his leadership of the Board of Fellows since 2004. 📍

## Honors and Awards

#### MGH RESEARCHER SHARES LASKER AND GAIRDNER AWARDS FOR MICRORNA DISCOVERY

Gary Ruvkun, professor of genetics at Massachusetts General Hospital, has been named a corecipient of the 2008 Lasker Award for Basic Medical Research. Ruvkun, along with collaborators Victor Ambros of the University of Massachusetts Medical School and David Baulcombe of the University of Cambridge (U.K.), was recognized for his role in the discovery of micRNAs—tiny molecules of RNA that bind to regulatory segments of their target genes’ RNA and block gene expression.

The Lasker Awards recognize outstanding contributions in medical research. In addition to the award for basic medical research, prizes are awarded in the categories of clinical medical research and special achievement in medical science. Called “America’s Nobels,” the Lasker Awards are considered one of the greatest honors in medical research. Ruvkun and colleagues shared the \$300,000 prize.

Ruvkun was also honored with a 2008 Gairdner Award for his role in the discovery of micRNAs; he shared the prize with collaborator Victor Ambros. The prestigious award is presented by the Gairdner Foundation of Canada and recognizes outstanding contributions by medical scientists whose work will significantly improve the quality of life. 📍



Gina Vild



From left, Dean Jeffrey Flier, Joshua Boger, and Beck Gilbert



Gary Ruvkun

### HMS NEUROBIOLOGIST WINS MACARTHUR 'GENIUS' AWARD

Rachel Wilson, assistant professor of neurobiology, was one of 25 recipients awarded the prestigious MacArthur Fellowship by the John D. and Catherine T. MacArthur Foundation.

Sometimes referred to as “genius grants,” the fellowships include \$500,000 in no-strings-attached support over five years.

Wilson has expanded on her initial training in neuropharmacology to develop a systems-level approach to understanding sensory physiology. In early work, she focused on the activity of nonclassical neurotransmitters in the mammalian hippocampus, a structure associated with long-term memory.

A key question in memory formation is how the activity of target neurons influences the strength of synaptic inputs; Wilson used electrophysiologic measurements to show that receptors for a class of neurotransmitters, endocannabinoids, play a key role in modulating inhibitory inputs in neurons associated with learning.

More recently, she took on the challenge of understanding how the brain distinguishes different smells. In both vertebrates and invertebrates, primary olfactory neurons specialize in detecting single odorant types; the task of integrating their information for higher-order processing falls to a single level of intermediate neuron. 🐾



Rachel Wilson

### HMS RESEARCHER TAKES 'KOREAN NOBEL'

Charles Lee, assistant professor of pathology at Brigham and Women's Hospital, won the 2008 Ho-Am Prize in Medicine. Often referred to as the “Korean Nobels,” the prizes recognize achievements in science, engineering, the arts, and community service in addition to medicine. Lee, who at age 38 is the youngest Ho-Am Laureate in Medicine, was honored for his work in human structural genomic variation. In 2004 Lee discovered that the human genome, once thought to be nearly identical from person to person, actually varies significantly among healthy individuals. Lee went on to cofound an international research consortium, with scientists from Sick Children's Hospital, Toronto, and the Sanger Center Institute (U.K.) to develop a map of copy number variants (CNVs) for the human genome. Now scientists are exploring the relationship of CNVs to increased susceptibility to AIDS, autoimmune diseases, and some forms of cancer. 🐾

### FORMER GRAD STUDENT RECEIVES CHEMISTRY NOBEL

Martin Chalfie, who received his doctorate in physiology from the Division of Medical Sciences at HMS in 1977, was named one of three winners of the 2008 Nobel Prize in Chemistry “for the discovery and development of green fluorescent protein, GFP.” He is currently chair of the Department of Biological Sciences at Columbia University.

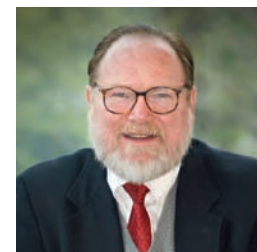
“We were thinking globally about how to develop ways to solve problems from the perspective of the whole organism,



Charles Lee



Martin Chalfie



Ronald Kessler



Anjana Rao

without being tied to a particular technology, while everyone else thought of things reductively,” said Dennis Vaccaro, chairman of the Division of Medical Sciences Alumni Committee and a doctoral student in the former HMS physiology department at the same time as Chalfie.

“I can't tell you how proud I am that someone from DMS at that time—and from the physiology department in particular—was chosen,” Vaccaro said. “It's exciting that someone from this old discipline is being recognized in this new era.” 🐾

### FOUR FROM HMS JOIN NAS

The National Academy of Sciences (NAS) named 72 new members, four of whom are HMS faculty members. The NAS is a private organization of scientists and engineers dedicated to the progress of science. New members are chosen in recognition of their achievements in original research.

The new NAS members from HMS are Michael Greenberg, Ronald Kessler, Anjana Rao, and Gary Ruvkun.

The laboratory of Greenberg (see photo on page 39), chair of the Department of Neurobiology, has identified a genetic program by which experience promotes the development and maturation of synapses in the brain.

Kessler, a professor of health care policy, is a sociologist whose research deals broadly with the structural determinants and social consequences of mental disorders.

Research by Rao, professor of pathology at the Immune Disease Institute, has focused on the molecular mechanisms of signal

transduction and gene expression in T cells and other immune cells.

Ruvkun, professor of genetics at Massachusetts General Hospital, played a central role in the discovery of microRNA. His lab also investigates longevity and fat storage.

#### HMS FACULTY ELECTED TO IOM

Two HMS faculty members were among the 65 new members and five foreign associates elected to the Institute of Medicine for 2008. The IOM, part of the National Academy of Sciences, is an advisory group that completes studies, issues reports, and provides analysis on health policy issues.

The newly named members from HMS are Raju Kucherlapati and Marsha Moses.

Kucherlapati is the Paul C. Cabot professor of genetics and professor of medicine at Brigham and Women's Hospital. His lab has been involved in the mapping and sequencing of human and mouse genomes using yeast artificial chromosomes and bacterial artificial chromosomes. In collaboration with the Genome Center at Baylor College of Medicine, his group sequenced human chromosome 12 and took part in mapping and cloning several human disease genes on this chromosome, including Noonan syndrome, Darier disease, Cornea plana, and Holt–Oram syndrome.

Marsha Moses, professor of surgery at Children's Hospital Boston, focuses on the biochemical and molecular regulation of angiogenesis, particularly during early tumor establishment, progression, and metastasis. She has discovered and characterized several endogenous angiogenesis

inhibitors. To complement this work, she established a proteomics initiative in her laboratory that has led to the discovery and validation of a panel of urinary cancer biomarkers that predict disease status and stage in cancer patients.

#### HHMI SELECTS FACULTY FOR PATIENT-CENTERED RESEARCH

The Howard Hughes Medical Institute has appointed four faculty members as patient-oriented researchers from a competition specifically aimed at physician-scientists who divide their time between research and patient care. There were only 15 appointments nationwide. The program, which began in 2002, reflects HHMI's commitment to ensuring that basic research is translated into treatments.

The four new Howard Hughes investigators are George Daley, Elizabeth Engle, Daniel Haber, and S. Ananth Karumanchi.

The focus of research by Daley, an associate professor of biological chemistry and molecular pharmacology at Children's Hospital Boston, is the hematopoietic stem cell, which gives rise to progenitors of all the differentiated specialized blood cells.

Engle, associate professor of neurology at Children's, identified a series of congenital disorders that prevent normal control of eye movement.

Haber, the Laurel Schwartz professor of medicine at Massachusetts General Hospital, studies cancer genetics, with a focus on Wilms' tumor, a cancer of the kidney that usually occurs in children.

And Karumanchi, associate professor of medicine at Beth Israel Deaconess Medical Center, studies preeclampsia, a rare but dangerous condition that affects the kidneys and blood pressure of women in late-term pregnancy.

#### FOUR FACULTY MEMBERS BECOME HOWARD HUGHES INVESTIGATORS

The Howard Hughes Medical Institute selected 56 new investigators, including four faculty members from HMS. Because HHMI does not use the program to fund particular projects, Howard Hughes investigators are free to use the funding to pursue whatever kind of research they choose.

The new investigators from HMS are Danesh Moazed, David Pellman, Bernardo Sabatini, and Thomas Walz.

Moazed, professor of cell biology, focuses on understanding how RNA- and protein-based epigenetic mechanisms regulate gene expression and chromatin structure.

An associate professor of pediatrics at Dana–Farber Cancer Institute and Children's Hospital Boston, Pellman and his colleagues use a combination of genetics, biochemistry, and live-cell imaging to study cell division and the maintenance of genome stability in yeast and animal cells.

The Sabatini laboratory investigates the mechanisms of synapse regulation in the mammalian brain and how perturbations of synaptic transmission contribute to neurological diseases.

Walz, professor of cell biology, uses high-resolution electron microscopy combined with digital-image processing to determine



Marsha Moses



Raju Kucherlapati



protein structures. In particular, electron crystallography is used to solve the structure of integral membrane proteins and single-particle electron microscopy to visualize the structures of macromolecular complexes. 📌

#### SCHWARTZSTEIN WINS AAMC'S GLASER AWARD

The Association of American Medical Colleges has honored Richard Schwartzstein, professor of medicine at Beth Israel Deaconess Medical Center, with the Alpha Omega Alpha Robert J. Glaser Distinguished Teacher Award. The award is given for significant contributions to medical education.

Schwartzstein has devoted much of his professional time to medical education. A perennial favorite as an instructor, Schwartzstein has won 13 student-voted teaching awards at HMS. He serves as course director of the first-year human physiology course and teaches the respiratory component. In addition, he is the faculty associate dean for medical education at HMS, the vice president for education at BID, and the executive director of the hospital's Carl J. Shapiro Institute of Education and Research. He is the clinical director of Beth Israel's Division of Pulmonary Medicine. 📌

#### NEW GRAD SCHOOL DEAN RECEIVES BANCROFT PRIZE

Appointed dean of the Harvard Graduate School of Arts and Sciences, effective January 2008, Allan Brandt shortly thereafter was awarded the 2008 Bancroft Prize from Columbia University. His winning

book was *The Cigarette Century: The Rise, Fall, and Deadly Persistence of the Product that Defined America*. The Bancroft Prize, including an award of \$10,000, is given by the trustees of Columbia University to authors of books of "exceptional merit" on topics of history, biography, and diplomacy. Brandt's book, one of three winners, was selected from a total of 200 nominees.

Brandt is also the Amalie Moses Kass professor of the history of medicine in the Department of Global Health and Social Medicine at HMS and studies social and ethical aspects of health, disease, and medical practice in the 20th century United States. *The Cigarette Century* provides a history of the tobacco industry in the U.S. and a discussion of Big Tobacco's imminent incursion into the global market. 📌

#### SURGERY HEADS RECOGNIZED FOR ADVANCEMENT OF WOMEN

The 2008 Joseph B. Martin Dean's Award for the Advancement of Women Faculty was presented in May 2008 at a meeting of the Faculty of Medicine. The award recognizes faculty or staff members who have demonstrated commitment to the recruitment, retention, and advancement of women at HMS and the School of Dental Medicine. Established by Martin, former HMS dean, in 1998, the award is cosponsored by the dean of the Faculty of Medicine and the Joint Committee on the Status of Women. The 2008 winners were Michael Zinner, the Moseley professor of surgery at HMS and Brigham and Women's Hospital and head of the Department of Surgery at the Brigham, and Andrew Warshaw, the W. Gerald Austen professor

of surgery at HMS and Massachusetts General Hospital and head of the Department of Surgery at MGH. 📌

#### FIRST FELLOW ANNOUNCED IN FOLKMAN PROGRAM

The LAM Treatment Alliance (LTA) has launched a new fellowship, the LTA Folkman Fellowship. The program is open to scientists conducting basic, clinical, or translational research that advances the alliance's mission of finding an effective treatment for lymphangioliomyomatosis (LAM), a rare, multisystem disease that most often affects women in their mid-30s in which clumps of cells and cysts grow throughout the lungs and other body systems and organs. Over time, these cells destroy the normal lung tissue, block the flow of air, and reduce oxygen intake. The fellowship is named for the late Judah Folkman, who served on the LTA's scientific advisory board and who encouraged the creation of LAM fellowships. Not long before his death, Folkman expressed his desire to create LAM fellowships to attract the most innovative, compassionate, creative individuals committed to multidisciplinary solutions to clinical challenges like LAM.

The inaugural fellow is Sima Zacharek, a research associate in genetics. Zacharek is seeking the cell of origin in LAM, which would allow for the development of an animal model of the disease.

The LTA is also planning to provide fellowships for students in the Harvard-MIT Division of Health Sciences and Technology. 📌



Richard Schwartzstein



From left, Dean Jeffrey Flier, Michael Zinner, and Andrew Warshaw

## NIH DIRECTOR'S AWARDS HONOR HMS SCIENTISTS

Five researchers from HMS received National Institutes of Health (NIH) Director's Awards, which support innovative approaches to biomedical and behavioral sciences. The grants are part of the NIH's Roadmap for Medical Research Initiative, designed to address fundamental knowledge gaps, develop transformative tools and technologies, and foster innovative approaches to complex problems, with the goal of decreasing the time it takes to translate research from the bench to the bedside.

Ann Hochschild received a Pioneer Award, which provides \$2.5 million in direct costs over five years. Pioneer Awards support scientists at any stage in their careers who are taking a creative approach to research that has potential to have a high impact on the field. Hochschild, professor of microbiology and molecular genetics, uses bacterial systems to study prions.

Four additional HMS investigators received New Innovator Awards. Samara Reck-Peterson, assistant professor of cell biology, couples genetics with biophysics to discover biomedically important molecules that control how molecular motors deliver diverse cargo within cells; William Shih, assistant professor of biological chemistry and molecular pharmacology at Dana-Farber Cancer Institute, develops tools for atomic-resolution imaging of membrane proteins to enable structure-based drug design; Amy Wagers, assistant professor of pathology at Joslin Diabetes Center, studies the mechanisms by which

aging impairs blood cell function and develops strategies to prevent or reverse these age-acquired defects; and Sean Wu, instructor in medicine at Massachusetts General Hospital, employs mechanisms of embryonic development to engineer functional tissues for organ regeneration using pluripotent stem cells from different species. The New Innovator Awards fund early-career researchers who have not received an NIH regular research grant or similar NIH grant. 📌

## HMS PSYCHOLOGIST NAMED YOUNG GLOBAL LEADER

The World Economic Forum named Daniel Shapiro, assistant professor of psychology in the Department of Psychiatry, a 2008 Young Global Leader. The honor recognizes leaders in a variety of fields from all over the world who are age 40 or younger for professional accomplishments, commitment to society, and potential to contribute to shaping the future of the world.

Shapiro was honored for his work in negotiation and conflict management. He is founder and director of the International Negotiation Initiative at Harvard and associate director of the Harvard Negotiation Project. He has also trained key negotiators in the Middle East, China, the former Yugoslavia, and elsewhere. Through funding from the Soros Foundation, he developed a conflict management program that now reaches more than one million people across 30 countries. 📌

## HIATT RECEIVES IOM'S LIENHARD AWARD

Howard Hiatt, professor of medicine at Brigham and Women's Hospital and former dean of the Harvard School of Public Health, won the Institute of Medicine's 2007 Gustav O. Lienhard Award, which recognizes individuals for outstanding achievement in improving healthcare services in the United States. Hiatt founded the Harvard Medical Practice Study, a highly regarded investigation of medical malpractice that has resulted in the publication of two reports. He had a key role in the development of the Division of Social Medicine and Health Inequalities at the Brigham. Hiatt also played a part in the growth of Partners in Health, which forms relationships with healthcare providers in poor countries to lower disease rates, and the Institute for Healthcare Improvement, an organization that works to accelerate the improvement of healthcare. The award includes a medal and \$25,000. 📌

## SYSTEMS BIO INNOVATION AWARDS GO TO HARVARD SCIENTISTS

The Council for Systems Biology in Boston (CSB<sup>2</sup>) named the winners of its 2008 Innovation Awards, which went to two Harvard researchers. CSB<sup>2</sup> is a Boston-area association of academic, clinical, and industrial groups active in the areas of systems biology and systems pharmacology and is based in the HMS Department of Systems Biology.

The Merrimack-CSB<sup>2</sup> Prize was awarded to Aneil Mallavarapu, a senior research scientist in the HMS Virtual Cell Program, for his work on Little b, an open-source



Ann Hochschild



Samara Reck-Peterson



William Shih



Amy Wagers



Sean Wu

LISP-based language for building modular, shareable, and scalable models of biological systems. The Merrimack–CSB<sup>2</sup> Prize is awarded annually to a young scientist for exceptional contributions to the development and application of innovative modeling and computational methods as judged by technical quality, broad utility, and fundamental theoretical insight.

The Pfizer–CSB<sup>2</sup> Prize was awarded to Gavin MacBeath, associate professor of chemistry and chemical biology at Harvard University, for the development of new protein microarray methods applicable to the study of signal transduction, disease, and targeted therapy in humans. 🍷

#### DEVELOPMENTAL BIO PRIZE RECOGNIZES GENE SCIENTIST

The March of Dimes awarded the Prize in Developmental Biology to Clifford Tabin, the George Jacob and Jacqueline Hazel Leder professor of genetics and chair of that department at HMS, for his research leading to the understanding of how hedgehog genes guide anatomical organization. He shared the \$250,000 prize with Philip Beachy of Stanford University, who also researches hedgehog genes. 🍷

#### DIABETES AWARD HONORS MEDICAL DEAN FLIER

Dean Jeffrey Flier received the American Diabetes Association's Albert Renold Award, which recognizes outstanding contributions to the training of diabetes research scientists and the facilitation of diabetes research. Flier's work has produced major insights into the molecular mechanism of insulin action and of insulin resistance in human disease and into the molecular pathophysiology of obesity. He has also contributed to the understanding of the hormone leptin and the pathways it regulates. His proposal that leptin serves as a switch from the fed to the starved state has shaped the discourse of the field. 🍷

#### ARTS AND SCIENCES ACADEMY NAMES MED SCHOOL MEMBERS

Seven HMS faculty members were elected as American Academy of Arts and Sciences fellows for 2008, out of a total of 212. They are Rakesh Jain, the A. Werk Cook professor of radiation oncology (tumor biology) at HMS and Massachusetts General Hospital; Kevin Struhl, the David Wesley Gaiser professor of biological chemistry and molecular pharmacology; Timothy Mitchison, the Hasib Sabbagh professor of systems biology; Norbert Perrimon, professor of genetics; Judy Lieberman, professor of pediatrics at the Immune Disease Institute; Leonard Zon, the Grousbeck professor of pediatrics at HMS and Children's Hospital Boston; and Jerome Groopman, the Dina and Raphael Recanati professor of medicine at HMS and Beth Israel Deaconess Medical Center. The new fellows were inducted in October 2008 at the academy's Cambridge headquarters. 🍷

#### FACULTY MEMBERS NAMED AAAS FELLOWS

The American Association for the Advancement of Science (AAAS) named 417 fellows for 2007, nine of them from HMS. The new fellows, who were selected for their efforts toward advancing scientifically or socially distinguished science applications, were presented with certificates at the AAAS annual meeting in Boston in February 2008.

Appointed to the section on medical sciences were Joan Brugge, the Louise Foote Pfeiffer professor of cell biology and head of that department at HMS; Felton Earls, professor of social medicine; Jeffrey Gelfand, clinical professor of medicine at Massachusetts General Hospital; Jerome Groopman, the Dina and Raphael Recanati professor of medicine at HMS and Beth Israel Deaconess Medical Center; Tomas Kirchhausen, professor of cell biology at the Immune Disease Institute;

Thomas Rapoport, professor of cell biology; and George Tsokos, professor of medicine at BID. Elected to the section on biological sciences was James Gusella, the Bullard professor of neurogenetics in the Department of Genetics at HMS and MGH. And elected to the section on statistics was Emery Brown, Massachusetts General Hospital professor of anesthesia at HMS and MGH. 🍷

#### AMOS PORTRAIT UNVEILED

The Harvard Foundation unveiled a portrait of Harold Amos, the first African American to chair a department at HMS, in a ceremony on the Quad in October 2007. Amos, the Maude and Lillian Presley professor emeritus of microbiology and molecular genetics, passed away in 2003 at the age of 84 after a career at the School that spanned nearly 50 years. In addition to twice chairing the Department of Microbiology and Molecular Genetics, Amos was a popular teacher and mentor at both HMS and the Faculty of Arts and Sciences. The framed oil-on-canvas portrait, painted by Harvard alumnus Stephen Coit, '72, makes its permanent home outside the Armenise amphitheater. The portrait is part of the Minority Portraiture Project, started with a \$100,000 gift to the Harvard Foundation from then president Lawrence Summers. 🍷



At the Amos portrait unveiling are, from left, Chester Pierce, professor emeritus of education and psychiatry in the Faculty of Medicine and School of Education; artist Stephen Coit; and Allen Counter, head of the Harvard Foundation.



## Students

### MATTHEW ALTMAN

*Cannon Society*

They may lack the shock value of cancer and HIV/AIDS, but illnesses such as heart disease and type 2 diabetes take an enormous toll on people worldwide. Their impact is often needless, since many cases could be prevented. These facts put the disorders in Matthew Altman's sights.

"Beyond any medical intervention, prevention is the best medicine, and among the best preventions are eating well and exercising," said Altman. "It's less glorious work than intervention or procedures, where there's a quick fix, but the greatest medical advances have come in prevention." And although we know that permanent residence on the couch and munching processed food from boxes are bad for our hearts, the precise biochemical mechanisms remain incompletely understood, he said.

Altman earned a master's in biology from Cambridge University last year and expects his MD in 2009. At Harvard, under Vamsi Mootha, he researches mitochondria, the energy generators of the cell. Altman and his co-researchers identify mitochondrial enzymes involved in energy metabolism.

"Mitochondria play a role in many disease states, with growing evidence they are involved in heart disease and diabetes," he said. "Better understanding energy production in mitochondria will, hopefully, lead to a fuller understanding of preventive measures and targeted therapies. While we've found great cures to many other diseases, it's clear that these illnesses,

among others, are culturally created. I'd like to work toward better understanding them and also driving social change—finding ways to live healthier lives."

Altman's biography forged his interest in food and fitness. As a child visiting his mother's family farm, he saw healthy, homegrown produce. "I'm very much interested in organic, local food systems as opposed to mass, industrial agriculture, which is fueling simultaneously the destruction of our environment and heart disease and diabetes," he said. He volunteers with The Food Project, a Boston nonprofit that grows sustainable produce for food shelters. 🍌

### STEVEN FLAVELL

*Neuroscience Program  
Division of Medical Sciences*

Steven Flavell has loved tinkering ever since he was a kid. It has been a handy trait in Michael Greenberg's neurobiology lab, where Flavell's explorations of the brain may help illuminate what happens in autistic and epileptic patients.

"Unlike a lot of organs, the brain's development isn't totally specified by genetics," said Flavell, who is receiving his PhD in 2008–09. "A lot of its development that takes place after birth relies on activity within the brain. For example, the development of our visual system relies critically on visual experiences we have the first several years after birth."

His research with Greenberg centered on *MEF2*, a gene that is expressed in neurons. Using mice and cell culture models, he and his colleagues mapped some of the biochemical mechanisms by which sensory

experience turns on the gene. As important, they learned why it must be turned on: *MEF2* restrains the number of synapses in the brain from forming excessively.

Collaborating with Christopher A. Walsh's lab, Flavell and Greenberg hypothesized that *MEF2* may not be doing its regulatory job in patients with epilepsy and autism, and so the genes it controls may be disrupted in those patients. "We need more experiments where we look in vivo in mice and manipulate *MEF2* levels to see if that gives rise to epileptic mice," Flavell explained.

"So much remains poorly understood" about the brain's workings, he said. "Now is an unprecedented time in terms of techniques and information to help us understand the brain. As somebody who loves to figure things out, it's a perfect area to go into." He is a gifted tinkerer, one of just 13 recipients nationwide of the 2008 Harold M. Weintraub Graduate Student Award.

Born in London to a British immunologist and Dutch math teacher, Flavell moved to the Boston area with his family at age 3. He came to Harvard because of its reputation in neuroscience and because his girlfriend lived here. His synapses in that case were working perfectly. She is now his wife. 🍌

### INGRID GANSKE

*Castle Society*

In architecture, lines sometimes curve. The same was true of Ingrid Ganske's circuitous path to HMS by way of a brief, first career as an architect, which fulfilled another of her passions.



Matthew Altman



Steven Flavell



Ingrid Ganske

Not that a life in medicine and public service was much in doubt; it's a family heirloom. Ganske, who expects both her MD and a Kennedy School master's in public policy in 2009, is the daughter of doctors, one of whom, her dad, served as an Iowa Congressman. He also did plastic surgery on children in developing nations. She said that after watching films of children whose cleft palates he had repaired, "I decided I wanted to do something that was truly benefiting people. Architecture reinforced the fact that I want to work with people instead of computers." (Watching her mother juggle her family practice and household while her father was in Washington inspired her, too.)

She has been readying for a dual career as practicing doctor and international public health administrator at HMS. Supervised by her mentor, Health Care Policy chair Barbara McNeil, Ganske was a co-director of ImproveHealthCare.org, founded by HMS students to make health policy information available to medical students and physicians. "All medical students ought to have some basic education in practical health policy issues before entering the hospitals as young doctors," she said.

She also was a teaching assistant for Training the Eye, HMS's class to foster physical examination skills by having students make observations at the Museum of Fine Arts. As the recipient of a Zuckerman Fellowship, awarded by the Kennedy School, she met with Boston civic and political leaders to hone her leadership skills. Her application essay for the fellowship dealt with her personal pivot from architecture to medicine and how they meshed.

In her spare time, she rock-climbs, but only indoors. "As I've gotten older, I've gotten more in touch with my human fragility," she said. At the advanced age of 28, she ran her first Boston marathon in 2008. "It was a great way to see the city." 🐾

**JOHN HANNA**  
*MD–PhD Program*

John Hanna spent the first decade of the 21st century studying at HMS so he could better understand neurological diseases like Alzheimer's and Parkinson's. He also has studied six languages, including ancient Greek and Coptic, and pursued Shakespeare and Oriental studies at Oxford in the 1990s.

Those two interests may seem unrelated. In fact, they are the seamless whole of his passion. While shadowing physicians during his undergraduate days at Stanford, Hanna grieved especially for patients whose distinctive human traits—language, creativity—had been corroded by nervous system disorders. "Those aspects of humanity are among the most impressive—the ability to create literature and art," he said. "I've been writing fiction the entire time I've been at Harvard, for my own satisfaction and for entertaining my friends. That interest is tied up with wanting to do something about those particular diseases."

He expects his MD in 2009 and got his PhD two years ago after research in Daniel Finley's lab. Investigators had previously homed in on misshapen proteins as a likely factor in neurological illness. Cells have the ability to flag these potentially dangerous proteins with a marker,

ubiquitin, and then to destroy them with a multiprotein machine, the proteasome, which carves up the disfigured protein while preserving the ubiquitin; the ubiquitin tag is essential to many cellular processes.

"Studies have suggested that when this pathway stops functioning, things go awry and that this is related to how neurodegenerative diseases proceed," said Hanna. His own work uncovered how a particular enzyme, Ubp6, enables the proteasome to preserve high levels of ubiquitin. Coincidentally, researchers elsewhere confirmed Ubp6's role in motor control, and hence its likely importance in neurological illness.

Hanna plans to treat patients while devoting himself to a career of research. "The diseases I'm interested in remain such a mystery," he said, "that it's natural to pursue them first in the laboratory." 🐾

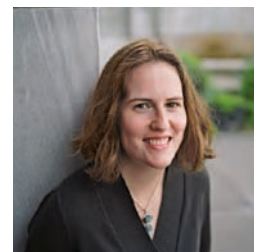
**SARAH HENRICKSON**  
*Immunology Program*  
*Division of Medical Sciences*

Medicine's potential has always been personal for Sarah Henrickson. While in high school, moved by her grandfather's trouble when his wheelchair rolled backwards on inclines, she co-invented and patented a brake system. Just weeks before she began medical school, her mother died after a decades-long battle with an immunological disorder, spurring Henrickson's interest in immunology.

She received her PhD in that discipline in 2008 and expects her MD in 2011. Her mother's illness sowed dual career interests in pursuing research and caring for the



**John Hanna**



**Sarah Henrickson**

sick. “You get the benefit of interacting with patients as well as the long-term potential benefit of working in the lab to change the frontiers of medicine,” she said.

Her doctoral research yielded insights into how infection-fighting T cells find and combat invading antigens. Working in Ulrich von Andrian’s lab, she used intravital imaging to observe how immune cells interact in the lymph nodes of anesthetized mice. She explored what variables control the decision by T cells about whether and how fast to respond to an antigen.

“Immunology is about balance,” she said. “If you have too little immune activation, you have problems like infection. If you have too much activation, you have problems like autoimmunity,” with the immune system attacking the body’s own tissues. “You want to be somewhere in the middle.” Her research showed “there is a very small window” between the amount of antigen a T cell ignores and the amount that stimulates a rapid activation of the immune system, giving the system exquisite sensitivity. Down the road, this finding might help doctors calibrate the amount of antigen to put in vaccines and to decide which cells to target with the antigen as they prod the immune system to do its job.

Besides researching and caring for patients, Henrickson also enjoys teaching medicine. She was given an award by MIT for her work as a teaching assistant in immunology and biochemistry classes.

If her family’s past made her determined to fight disease, its future stokes that passion. She and her husband keep busy with son Ryan, age 1. 🐾

#### **DIANA LIBUDA**

*Biological and Biomedical Sciences Program  
Division of Medical Sciences*

“Yeast is actually a lot like humans,” says Diana Libuda. No, the aspiring researcher does not need a refresher course in biology. With several awards testifying to her prowess in the lab, she is making a scientific point: cellular processes in people and yeast are similar. Her research in this area may someday lead to better cancer therapies.

Libuda received her PhD in genetics in 2008 after working in Fred Winston’s laboratory. Using the same yeast that goes into bread and beer, she studied how cells can regulate their levels of histone proteins. Yeast has two copies of the histone genes. It was known that one copy could compensate for the deletion of the other, but the reverse did not seem to be true—until Libuda discovered that the second copy can, indeed, make up for the other’s loss, by making a new chromosome of itself.

Some cancers can create new chromosomes in a similar fashion, to harmful effect. No one knows why this happens. But understanding how the process works in yeast might yield clues and ultimately enable researchers to suppress the harmful replication in cancer patients, Libuda explains.

The native Californian is moving on as a Stanford postdoctoral fellow, though she once planned a music career; she started formal music training at age 9 and has competed on the flute in various young artist competitions. But she found it was not her driving passion. She became fascinated by a high school molecular

biology class that led to a biology major at UCLA. She nabbed a highly competitive National Science Foundation Graduate Fellowship, supporting her Harvard tuition in addition to providing her with a \$30,000 stipend. She came east for both Harvard’s educational caliber and the Renaissance people it attracts as students.

“A special characteristic of most Harvard PhD students is that they make a conscious effort to do things outside of science,” she said. For a woman who still loves to express herself by playing with several orchestras, that was important. Genetics is fascinating; still, she jokes, “Humans are just a larger, slower organism” than yeast. 🐾

#### **THEODORE NYAME**

*Holmes Society*

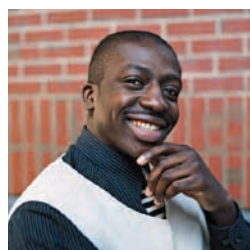
On a church-sponsored trip to his native Ghana last year, Theodore Nyame watched helplessly as a teenage girl who had had a self-induced abortion was turned away from a resource-starved hospital, its doctors lacking antibiotics to treat her pelvic inflammation. The episode resurrected Nyame’s own childhood memory of a neighbor dying during childbirth.

On the brink of a surgeon’s career, Nyame has not forgotten the poverty of his youth, both in Ghana and, later, the Bronx, where his mother supported their relocated family as a hotel maid. He hopes to work in an academic hospital that will allow him to treat medically underserved people in the States while devoting time to training medical students in Ghana.

His mother always wanted Nyame and his brother to have the comforts that she



**Diana Libuda**



**Theodore Nyame**



never did, which meant that “there were three career choices—either a lawyer, doctor, or architect,” he said. His love of science and remembrance of people like that woman in Ghana set his life’s course. “The opportunity to congratulate a family who has just had a child or comfort one who has just lost a child is something I enjoyed about medicine.”

The desire to help the helpless informed his work with David Golan at HMS on sickle cell anemia. Misshapen, sicklelike red blood cells clump together in blood vessels and retard blood flow, causing agonizing pain in patients. Nyame looked at the role of a particular protein in that process. It is basic science that someday might help clinicians inhibit the biochemical triggers of blood vessel blockage.

The cost of his Harvard studies was eased by a scholarship from his Cornell fraternity, Omega Psi Phi—that is what a 4.0 GPA for five of eight undergraduate semesters can get you—and a National Medical Fellowship grant. These fruits of academic prowess brought some material assistance that the tough circumstances of his birth could not. As Nyame puts it, quoting a line from Langston Hughes, “Life for me ain’t been no crystal stair.”

#### SHANE TRASK

*Virology Program  
Division of Medical Sciences*

Shane Trask’s quarry is a near-universal pestilence of childhood: the rotavirus, which infects almost every child on Earth by age 5 and kills a half million kids each

year. The leading cause of serious diarrhea in children, the virus and its mechanics remain something of a mystery.

Enter Trask, who received his PhD from the Virology Program in 2008 after investigating how this virus, which unlike some has no membrane, punches its way into host cells to infect them. First in Philip Dormitzer’s lab and then in Stephen Harrison’s, Trask manufactured a capsid, or outer protein shell, for mild, noninfectious particles of the virus, thereby making them infectious. (Normally, the virus assembles its own capsid once it has entered a cell.) Manipulating the proteins “allows you to diagnose the conditions under which the virus is assembling,” he said.

“You can take a noninfectious particle and recode it with the outer capsid of a virulent strain. As a vaccination strategy, Phil [Dormitzer] called it a sheep in wolf’s clothing, because it looks like a dangerous virus from the outside. If you’re vaccinating children, it would raise the antibodies to combat a pathogenic strain.” That application is down the road.

A native Coloradan, Trask got interested in viruses in his undergraduate classes at Johns Hopkins. He won both Ryan and Merck Fellowships while at Harvard to support his research.

Trask is bound for a rotavirus researcher’s job at the National Institutes of Health. His nonscience interests (aside from his wife, who was a classics major at Hopkins) include Japanese martial arts. Unlike the body’s antiviral protections, which follow the search-and-destroy principle, Trask’s

hobby stresses self-defense while inflicting minimal harm on an attacker. “It came out of Buddhist thought. I appreciate the philosophy of having the strength while, at the same time, being humane about it. You’re able to control someone but not go any further.”

#### ESTEE WANG

*School of Dental Medicine*

Wanderlust defines Estee Wang. California-born and Berkeley-educated before Harvard, she came to Boston for her graduate work because “I was pretty tired of California. I really wanted to see something else.”

That desire for new experiences washes over into her studies. She majored in molecular and cell biology as well as French literature. And while Wang is to graduate from the School of Dental Medicine in 2009, she used a Howard Hughes fellowship to step outside of dentistry and do genetics work with neurologist Christopher A. Walsh at Children’s Hospital Boston.

She identified the gene responsible for the plight of an Israeli family whose several babies, born with underdeveloped heads and mental retardation, died within their first year. “Knowing more about this gene and others, we will better understand how neurons behave, and in the future, we might be able to regenerate neurons for Alzheimer’s and Parkinson’s patients and those with similar illnesses.”



Shane Trask



Estee Wang

Her work with Walsh demonstrates both her academic skills (she receives a scholarship through Harvard's Presidential Scholars program) and public service ethic. Wang is co-director of Project Bridge, where she volunteers for four hours a week. This Boston community dental clinic was founded by Harvard students to give exams, cleanings, and fillings to troubled and runaway children. "I don't have to save someone's life," she said. "I just want to make their lives better."

She hopes to work ultimately as an academic hospital orthodontist, treating patients with regular needs as well as complex syndromes, some of which require craniofacial and other surgeries. "I want to manage their long-term treatment in terms of their dental and facial development."

Orthodontics especially will accommodate her fascination with the processes of life.

"Watching kids grow and mature excites me," she said. "I've always been interested in development, from small cells to humans growing from children to adults." 🐾

**KRISHNA YESHWANT**  
*Peabody Society*

Describing Krishna Yeshwant's professional interests can exhaust a profile writer's word limit. A polymath who studied computer science at Stanford, he is to pick up a joint MD-MBA degree in 2009 from Harvard.

He will use all of these skills—technology, medicine, and business—in his career, he said, based on his experience in various

health care venues, including at Massachusetts General Hospital as a surgical research fellow.

"Physicians come up with ideas for new medical technology, but they don't have the engineering talent to realize those ideas. Engineers have ideas, but they don't realize them in ways that physicians want to use. I'm interested in taking ideas from the laboratory to something applicable beyond."

Working at MGH before and during his medical education, Yeshwant's tech savvy helped him invent a surgical device, now used in several hospitals, that repairs congenitally undersized jaws in children. He also helped start a diagnostics company that won business competitions at both Harvard and MIT.

This computer science major was inspired toward medicine partly by his physician parents and partly by the money chase he saw during a stint as a software entrepreneur before medical school.

"Making products that help rich people get richer was not satisfying for me," he said. "In medicine, you interact with so many different people. At the Brigham, I got to take care of a former IV drug user who turned his life around and was a great father, now suffering from liver failure.

In a computer career, I would never have gotten to interact with somebody like that."

Just married this year to a medical school classmate, Yeshwant reunited with a college rock band he cofounded to serenade his bride with Led Zeppelin at their reception. He also has a black belt

in karate, a discipline his mother thought handy for a self-described nerd growing up in Illinois. 🐾

**TIAN ZHANG**  
*London Society*

Whenever Tian Zhang tries to summon medicine's future—whether researching bone repair therapies for cancer patients or a precancer condition that overproduces red blood cells—the past whispers to her. Her grandfather died of lung cancer in her native Beijing when the fourth-year MD student was 12 years old.

"His death was a personal inspiration to pursue medicine," said Zhang, who had lived with him before emigrating with her family to the States. She became interested in cancer progression as a biochemistry major at Columbia.

Working with Kevin Raskin at Massachusetts General Hospital this year, she was awaiting the results of her research into survival rates of cancer patients undergoing two different surgeries for actual or potential fractures of long bones, such as the thigh or upper arm. These breaks are a risk in patients with cancers such as lung, prostate, or breast that can spread to bone.

One approach involves driving a nail into the long axis of the bone to hold its pieces together. The second is to attach a metal plate on the side of the bone, on its short axis, with smaller screws. Zhang's hypothesis was that the plating enhances survival chances, since a nail might disturb the tumor in the bone and cause the cancer to metastasize.



**Krishna Yeshwant**



**Tian Zhang**

Usage rates for each approach depend upon the tumor's location and surgeon's comfort level with the two techniques. "If we show either survival or disease-spread benefit, it might change the way orthopedic surgeons treat a pathologic fracture," said Zhang.

Her thesis involves separate research in Gary Gilliland's lab at Brigham and Women's. They are looking for molecules that might inhibit the activity of a mutated enzyme, JAK2, that leads to an overproduction of red blood cells in some preleukemia patients. To support that research, she received a fellowship from the Alex's Team Foundation.

Zhang was elected to the Aesculapian Club and coproduced her class's Second Year Show, "Joseph Martin and the Amazing Technicolor White Coat." She plans a career as a clinician and clinical researcher; she also enjoys writing and hopes to incorporate it into her career. She will marry her fiancé, who is an HST graduate, in 2009. 🐾

## Alums

### WALTER NANCE Class of 1958

As a resident, Walter Nance gained a reputation of being more interested in the patient's family history than the illness at hand. "Walter," his department chairman said, "you better study genetics before you hurt somebody," he recounted. He earned a PHD and, in 1975, established a new Department of Human Genetics at Virginia Commonwealth University, where he remains a Research Professor. Nance also has served as president of the American Society of Human Genetics, the American Board of Human Genetics, and the International Society of Twin Studies.

Nance developed an early interest in genetic deafness, which led to his first National Institutes of Health grant, while an intern. He soon found a remarkable collection of pedigrees on 5,000 marriages among the deaf, collected in 1898. Those data have informed his research ever since.

Many deafness genes are known, but one locus, *Cx26*, stands out. Since deaf marriages are common, Nance speculated that the high frequency of mutations in *Cx26* might result from the combination of relaxed selection against deafness since sign language was introduced 300 to 400 years ago and the high rate of marriage between deaf partners, called positive assortative mating.

In 2002, he supported this hypothesis with computer simulations and recently confirmed his controversial predictions, finding that in the last century, the

prevalence rate of mutant *Cx26* had doubled, to nearly 40 percent of the deaf population.

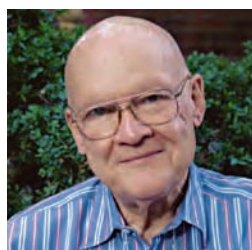
Nance believes the same mechanism may have accelerated the fixing of mutations in the language-associated gene, *FoxP2*, after they first arose about 400,000 years ago. By facilitating development of syntactic language and abstract thought, assortative mating may help explain the rapid evolution of *Homo sapiens*.

Nance has also contributed importantly to twin studies, an interest that began at HMS with a review article he published, under the mentorship of geneticist Kurt Benirschke, which won Harvard's Boylston Medical Society Award. In 1975, he described a novel research design, the "monozygotic twin half-sib model," which exploits the multiple unique relationships within families of identical twins, starting with the twins' children and their genetical equivalence to half-siblings. The model has been widely used because it permits a more incisive resolution of genetic and environmental effects, said Nance.

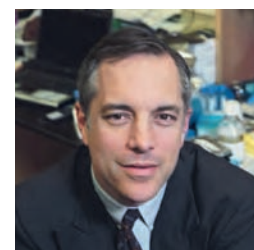
Nance taught three geneticists on the HMS faculty, Frederick Bieber, Cynthia Morton, and Louise Wilkins-Haug. 🐾

### ELAZER EDELMAN Class of 1983

Elazer Edelman was heading toward expulsion from 8th grade when his mother, suspecting he was bored, prevailed upon the principal to let him sit in the top math class. Myles London, the teacher, caught him swapping notes with a comrade in a code they had invented based on Swahili



Walter Nance



Elazer Edelman



and numbers. As an alternative to expulsion, London told them they could study the mathematics of codes. That, Edelman said, was his turning point.

Following a high school soccer accident that detached his retinas, threatening his eyesight, Edelman became interested in artificial vision and then technology and medicine, which led to undergraduate work at MIT and—following HMS—a PHD from MIT in medical engineering and medical physics.

Today, Edelman, professor of medicine at Brigham and Women's Hospital, also runs the Harvard–MIT Biomedical Engineering Center, which applies disciplines from math to vascular biology to the study of fundamental biology and disease mechanisms. Edelman, for example, has helped incorporate continuum dynamics, a branch of physics that deals with continuous change, into computer models of biological systems. He integrates these with in vitro and animal studies to model the mechanics of rare but devastating pathologies, such as the clotting that afflicts about one in 100 stent patients after a year. The goal is to design rational preventive measures.

Edelman is also an attending cardiologist in the coronary care unit at BWH, where he teaches house staff and fellows. "It's incredibly rewarding to teach young doctors and help people," he said, "and when we can't change nature, to help patients and families through end of life issues."

Edelman was recently awarded the A. Clifford Barger Excellence in Mentoring Award. Of his own mentors, he said, "Judah Folkman showed me how to revel in science. Marshall Wolf and Elliott

Antman taught me how to treat all people, including patients, with respect. I try to read and write critically like Morris Karnovsky and synthesize medicine and science like Eugene Braunwald."

Barger, he noted, "taught me to teach. He had a reverence for his teachers but, above all, an adoration for us, his students." One could say the same about Edelman. 🍷

#### **KEIKO HIROSE** Class of 1993

The formative experience in the lives of Keiko Hirose and her three brothers, all surgeons, was their surgeon mother's death at age 42, from breast cancer.

Hirose resisted medicine at first "because it was too obvious a choice for me," said the former Russian history major. She took all the prerequisites for medical school and sent out applications, all the while telling herself she would turn down any acceptances. But when HMS responded with a yes, she said, "I realized in my heart that becoming a doctor was my dream come true."

Hirose resonated with the constant questioning of the New Pathway curriculum. Despite her strict children-should-be-seen-and-not-heard upbringing, she bubbled over with questions and began asking them even "when it was inconvenient"; she learned to time them well and often rely on herself to find answers. As an associate professor of otolaryngology at Washington University, she tries to inculcate in her students the importance of inquiry. She is also chief of pediatric otolaryngology at St. Louis Children's Hospital.



**Keiko Hirose**

At HMS, a talk by Ed Hundert, then associate dean for student affairs, helped Hirose figure out where in medicine she belonged. He explained that some fields require more patient contact or more technical expertise while others, such as pediatrics, require more socializing to build relationships.

Marshall Strome, then an HMS associate professor of otology and laryngology at Brigham and Women's Hospital, counseled Hirose to consider otolaryngology, and in 2000, offered her her first faculty position, at Cleveland Clinic. According to Hirose, "He said, 'When you were a medical student, I didn't know what you were going to do, but I knew I would recruit you onto my faculty.'"

Hirose's research has revealed a "robust inflammatory response" to noise injury in the inner ear. She is investigating the inflammation's impact, as well as how to modulate inflammation to improve repair and avoid further damage. She is also investigating whether surgical trauma from cochlear implantation causes significant inflammation and what that impact is.

Hirose's family is closely associated with HMS. Her father, Tatsuo Hirose, is an HMS clinical professor of ophthalmology at Massachusetts Eye and Ear Infirmary; her brother, Kenzo, and her husband, E.P. Barrette, are both HMS graduates. 🍷

#### **UDAY KUMAR** Class of 1998

By his last year at Harvard College, Uday Kumar was more interested in translating scientific insights than making basic discoveries. At HMS, he gravitated toward



**Uday Kumar**

cardiology—his father's field. He wanted to use his knowledge gained from treating patients to develop new technologies to solve unaddressed problems. Technologies that grow directly from clinical experience need not search for applications, he noted.

Following college graduation, Kumar delayed medical training for a year to gain entrepreneurial experience, working for a startup that created precise anatomical models for applications like presurgical planning and establishing evidence in legal cases.

Later, while interviewing for a cardiology fellowship at Stanford, he met Paul Yock, HMS '79, the inventor of intravascular ultrasound and the rapid exchange catheter system. Yock was starting a program, called Biodesign, to teach the process of discovering and addressing unmet medical needs.

In 2005, following cardiology and electrophysiology fellowships at UCSF, Kumar joined Yock as a Stanford Biodesign fellow. He worked with a business school graduate and mechanical and electrical engineers to address needs in electrophysiology.

One of these became the focus of his first company, iRhythm Technologies, Inc. Cardiac arrhythmias, he explained, often go undiagnosed even after symptoms have appeared, in part because they occur so sporadically that they frequently are missed. Some monitoring technologies are ill-suited to the task because they track heart rhythms only for short periods or pose compliance issues. In addition, cost and availability frequently delay the monitoring process.

So, taking advantage of shrinking electronics and costs, iRhythm is developing a technologically simple patch-based device that Kumar says could boost the number of patients evaluated by cutting costs dramatically and raising compliance. The company, now employing nearly 25, is about to submit the device to the Food and Drug Administration for approval.

As an instructor and lecturer at Stanford, Kumar mentors Biodesign fellows and students, helping them refine their plans to contribute to biomedical innovation. He is also helping Yock write a text on the process taught in the Biodesign program. But he hopes to get back to seeing patients again soon. Kumar feels strongly about that. "I am and will always be a physician first and an entrepreneur second," he said. 🐾

#### **CHARMAINE SMITH WRIGHT** Class of 2003

For the third-grade science fair, Charmaine Smith Wright turned the family kitchen into a shrimp hatchery, with 20 jars testing different environmental effects on hatching rates. That early flare for science went hand-in-hand with aspirations to becoming a doctor, out of a desire to take care of her family and her community, and because "I was in awe of the human body." When she was 10 and her youngest sister was in utero, Wright, whose own first child is due as this report goes to press, read up on baby care. She also remembers longing to be able to dispense medical advice.

As a pre-adolescent, Wright was already investing in community, organizing the neighborhood children in science

and recreational activities. Following graduation from Harvard University, she established a youth program on Chicago's notorious South Side, with funding from the Harvard Club of Chicago. "We made replicas of human cells using food items to represent organelles," she said. "We traced ourselves on big pieces of paper, and as we learned about each organ system, we added it to our bodies on the wall."

At HMS, Emily Oken, Class of 1996, an assistant professor, became Wright's mentor, and subsequently, her collaborator. Their latest paper finds that by age 3, children born to mothers with gestational diabetes have elevated body fat and blood pressure.

While Wright was on rotation in the ER during residency at Children's Hospital Boston, the repeated admissions of a child with seizures steered Wright toward maternal and child health. "She couldn't get her prescription filled because her mother was severely depressed," Wright explained. "I realized this child could not be healthy unless Mom got treated." Similarly, she perceived that treating the obese children she saw would not succeed unless the intervention included the family. Now a Robert Wood Johnson Clinical Scholar at the University of Pennsylvania, Wright is earning a master's in health policy research, seeing patients, and researching clinical guidelines for pregnancy. But the daughter of Jamaican immigrants still fields telephone calls from hometown friends and acquaintances and notes that she was raised to share any "special knowledge" with her community. 🐾

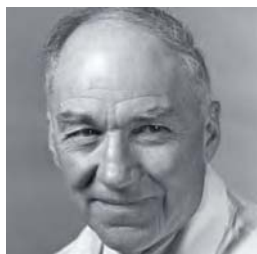


**Charmaine Smith Wright**

## In Memoriam



**RAYMOND ADAMS,**  
*the Bullard professor emeritus of  
neurology, passed away in October 2008  
at the age of 97.*



Adams began his medical career in 1936, receiving his MD from Duke University School of Medicine. He served his internship and first year of residency at Duke University Hospital. He then spent a year in psychiatry at Yale Medical Center and moved to the Neuropathology Laboratories at Boston City Hospital. Adams assumed leadership of the Department of Neurology at Massachusetts General Hospital in 1951. An advocate for the development of subspecialty areas in the field, he created a separate Pediatric Neurology Division.

He was also a strong advocate for clinical research in these specialty areas. In the late 1950s, working with a grant from the Joseph P. Kennedy Foundation, Adams helped create the Joseph P. Kennedy Jr. Laboratories at MGH to support clinical research in child and adult neurology. The Kennedy Laboratories became a focal point for world-renowned research on aspects of disease like the causes and treatment of epilepsy, developmental and chromosomal disorders of the nervous system, multiple sclerosis, cerebrovascular disease, and cancer.

At the heart of his thinking was a focus on patients and how the physician could better respond to their needs. A beloved mentor to students, residents, fellows, and colleagues, Adams is regarded by many as the father of modern neurology.

“Ray Adams was the most distinguished neurologist of the second half of the 20th century,” said former HMS dean Joseph Martin, who took over as chief of the MGH Neurology Department after Adams retired in 1977.

Adams was the author of more than 200 original publications, and he developed the premier textbook in the field, *Adams and Victor Principles of Neurology*. ♦

**JOHN LEMUEL BETHUNE,**  
*professor emeritus of radiology (biochemistry),  
died in June 2008 at the age of 82.*

Bethune received his BSc from Acadia University, Canada, in 1947. Before beginning doctoral studies, Bethune worked for 10 years as a professional chemist with Canadian Breweries Research Institute, where he is still remembered by the Rigby-Bethune unit, a measure of the bitterness of beer.

He received his PhD from Clark University in 1961 and joined HMS as a postdoctoral fellow in Bert Vallee’s biophysics laboratory, which was located in the Peter Bent Brigham Hospital. He went on to serve as assistant professor of biological chemistry from 1966 to 1969 and as associate professor of biological chemistry from 1969 to 1975.

Bethune was known as an expert in macromolecular transport and most of his early publications involved ultracentrifugation and electrophoresis. In 1972, Vallee entered into a collaboration with Judah Folkman to work on angiogenesis. Two years later, the collaboration became the basis for the Harvard–Monsanto Project, a multimillion dollar pioneering venture between industry and academe.

The project led to the discovery of angiogenin, a tumor-derived angiogenesis factor. Bethune was a co-author on many of the initial papers describing this protein.

He served as professor of radiology (biochemistry) from 1975 to 1993, spending the latter part of his career teaching statistics to the radiology interns and residents. He retired in 1993. ♦

**TIMOTHY BROWDER,**  
*instructor in pediatrics at Children’s  
Hospital Boston, died in March 2008.  
He was 51.*



Browder received his BS in 1978 from Wake Forest University and his MD in 1982 from Duke University School of Medicine. After completing his residency in pediatrics at Texas Children’s Hospital in Houston, he completed a fellowship at the Clinical Hematology Branch of the National Heart, Lung, and Blood Institute at the National Institutes of Health. He joined the HMS community in 1989 as a fellow in pediatric hematology–oncology at Children’s Hospital Boston and Dana–Farber Cancer Institute. He became an instructor in pediatrics in 1992.

Browder was interested in angiogenesis research and worked with cancer researcher Judah Folkman. As a fellow in the Folkman laboratory, his research showed that consistent lower doses of chemotherapy drugs could help curtail angiogenesis, the growth of blood vessels that feed tumors. This work led to an important breakthrough in treating drug-resistant cancers. ♦



**SUSAN CARVER BUCHANAN,**  
*retired lecturer on medicine, died in  
August 2007. She was 77.*

Buchanan received her undergraduate degree from Swarthmore College and her MD from the College of Physicians and Surgeons at Columbia University in 1956. She practiced cardiology under her maiden name, Susan Carver, and was the first female chief resident on the Medical Service of New York Hospital. Later, she was appointed associate director of New York Hospital and taught as an associate professor at Cornell University Medical College. She continued her commitment to medical education, becoming the associate secretary for the Liaison Committee for Medical Education and a consultant to the Council of Medical Education for the American Medical Association.

Buchanan joined the HMS community in 1983 and became director of the New Pathway program, which fundamentally changed how the School taught medicine. From 1984 to 1988, she served concurrently as the assistant director of clinics and the director of the Harvard Group Dental Practice at the School of Dental Medicine. In 1987 she was appointed lecturer on medicine at Beth Israel, and in 1990, she became the special assistant to the executive dean for academic programs. She retired in 1996. ♦

**MORTIMER BUCKLEY,**  
*professor emeritus of surgery at  
Massachusetts General Hospital, died  
in November 2007. He was 75.*



Buckley received his BA from the College of the Holy Cross in 1954 and his MD from Boston University School of Medicine in 1958. He began his long association with MGH as an intern in surgery in 1958.

His first academic appointment with HMS was in 1966 as instructor in surgery. After steadily advancing, he became a professor of surgery in 1977 and professor emeritus of surgery in 1998. He also served as chief of the vascular clinic at MGH from 1967 to 1969, before being named chief of the cardiac surgical unit in 1970, a position he retained for nearly three decades.

Buckley was recognized nationally and internationally as a leading cardiovascular surgeon. He made significant contributions to heart surgery, including the first large-scale use of the intra-aortic balloon in patients in cardiogenic shock. He also pioneered approaches in surgical therapy to treat early complications of myocardial infarction, myocardial revascularization, and cardiogenic shock complicating acute myocardial infarction.

He had served as president of the Massachusetts Heart Association and, more recently, as president of the American Association for Thoracic Surgeons. He was the recipient of many honors, including the Paul Dudley White Award from the American Heart Association in 1996. ♦

**JUDAH FOLKMAN,**  
*the Julia Dyckman Andrus professor of  
pediatric surgery at HMS and Children's  
Hospital Boston and founder of the field of  
angiogenesis research, died in January 2008.  
He was 74.*



Folkman graduated from HMS in 1957 and began his surgical residency at Massachusetts General Hospital, serving as chief resident in surgery from 1964 to 1965. He began his career as an instructor in surgery for Harvard's Surgical Service at Boston City Hospital, before being recruited to Children's Hospital Boston in 1967, where he served as surgeon-in-chief

for 14 years. That same year he became the youngest person ever appointed a full professor at HMS and was named the Julia Dyckman Andrus professor of pediatric surgery in 1968.

Folkman first speculated in the 1960s that angiogenesis is integral to the complex biology that enables and encourages the growth of tumors and other forms of cancer. He spent the last four decades validating this hypothesis, beginning with a seminal paper published in *The New England Journal of Medicine* in 1971. The process of angiogenesis, Folkman argued, helps transform a tumor from a small cluster of mutated cells into a large, malignant growth. Rather than waging a toxic chemical and radiation battle with a tumor, one could starve it into submission by shutting down its blood supply.

More than 30 years later, drugs based on this field of research have been approved and now benefit more than a million patients worldwide. At least 50 angiogenesis inhibitors are in clinical trials around the world, and more than 1,000 laboratories are conducting angiogenesis research. Folkman's work has also led to research on controlling abnormal angiogenesis in noncancerous diseases such as macular degeneration and diabetic retinopathy.

Folkman was the author of some 400 peer-reviewed papers and more than 100 book chapters and monographs. He also was the recipient of numerous national and international awards. He was elected to the National Academy of Sciences, the American Academy of Arts and Sciences, the American Philosophical Society, and the Institute of Medicine of the National Academy of Sciences. In 2006, he was one of seven people appointed by President Bush to the National Cancer Advisory Board of the National Institutes of Health. ♦

**HERMAN KALMAN (CHIP) GOLD,**  
*associate professor of medicine  
at Massachusetts General Hospital, died  
in March 2008. He was 67.*



Gold received his BS in 1961 from the College of William and Mary and his MD in 1965 from Duke University School of Medicine. After training at Johns Hopkins Hospital and the National Institutes of Health, he joined the HMS community as a research fellow in cardiology at MGH in 1969. He went on to spend more than three decades at MGH, serving as an instructor in medicine from 1971 to 1972, assistant professor of medicine from 1972 to 1978, and associate professor of medicine from 1978 to 2008.

Gold, who was highly skilled at interventional procedures, directed the cardiac catheterization laboratory at MGH. He was an early proponent of using nitroglycerin for treating acute heart failure, a common practice once thought to be dangerous.

In addition to his commitments to the catheterization laboratory and the demands of his clinical service, Gold also directed research. His work on antibody administration to platelets laid the groundwork for treatment still used to control coronary thrombosis. ♦

**PAUL GOLDHABER,**  
*dean of the Harvard School of Dental  
Medicine from 1968 to 1990, died in  
July 2008 from complications of  
pancreatic cancer. He was 84.*



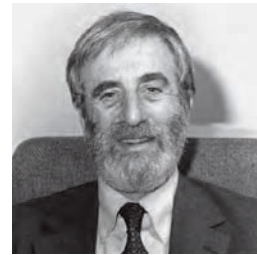
As dean, Goldhaber oversaw major changes in Harvard's dental curriculum and ensured that the student body became more ethnically and racially diverse. He encouraged graduates to be more involved in public service and their communities. He added a compulsory fifth year of dental school, during which students could choose either to do research or to obtain advanced degrees from the Harvard School of Public Health or Kennedy School. He also expanded the School's subspecialty degree programs and established with HMS a combined MD-DMD program in oral surgery.

Goldhaber's own research in bone biology ushered in a new era of dentistry, enabling tooth implantation to become a routine dental procedure. In 1966, he became full professor of periodontology; two years later he was appointed dean of the School, making him Harvard's first Jewish dean. He held additional leadership positions, including chair of the Dental Study Section at the National Institutes of Health and president of the American Association of Dental Research and the International Association of Dental Research. He was a member of the National Academy of Science's Institute of Medicine.

During World War II, Goldhaber enlisted as a private in the U.S. Army while attending City College of New York and New York University College of Dentistry through the Army Specialized Training Program. He obtained his DDS degree in 1948. Following active duty during the Korean War as a first lieutenant in the Dental Corps, he completed his undergraduate studies at City College

in 1954 and obtained his BS degree. That same year he completed specialty training in periodontology at Columbia University School of Dental and Oral Surgery and moved to Boston to begin his career at Harvard. ♦

**STUART HAUSER,**  
*professor of psychiatry at Judge Baker  
Children's Center, died in August 2008,  
succumbing to a fast-moving infection  
after surgery for esophageal cancer.  
He was 70 years old.*



Hauser received a bachelor's degree from Antioch College in 1960, a master's degree in social anthropology from Harvard University in 1965, a medical degree from Yale University in 1966, a doctorate in psychology from Harvard University in 1977, and a diploma from Boston Psychoanalytic Institute in 1978.

He completed his residency in psychiatry at the Massachusetts Mental Health Center in 1970, followed by research training in adolescent development and adolescent psychopathology at the National Institutes of Health from 1970 to 1972. He returned to the HMS community in 1972 and went on to serve in a variety of roles for nearly three decades, including as director of the Youth Development Project at the Diabetes Research and Treatment Center of the Joslin Diabetes Foundation, director of Judge Baker Children's Center (JBCC) from 1993 to 1996, and president of JBCC from 1997 to 2004.

He returned to a full-time career of research, training, and teaching when he stepped down as president and set about building support for expanded training and research at JBCC. ♦

**JEAN JACKSON,**  
*instructor in medicine at Brigham and Women's Hospital, died in January 2008.*

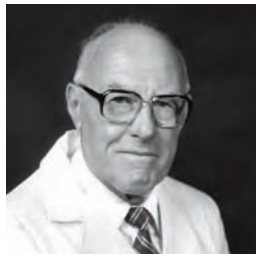


Jackson received her BS in 1963 from the University of Rhode Island and her MD in 1967 from the University of Maryland Medical School, where she was one of only five females in her class. She also completed her medical residency there. As a medical student, she was influenced by Betty Stevens at Johns Hopkins, who was a major force in rheumatology.

Jackson joined the HMS community in 1970 as research fellow in rheumatology at Brigham and Women's Hospital. She returned to Maryland to serve as chief medical resident and remained as director of clinical rheumatology. In 1975, she was recruited back to BWH to become the first female staff rheumatologist, specializing in both pediatric and adult rheumatology.

Jackson was known for her dedication to patients and for her energy and skill at bedside teaching. She was recognized for her contributions as a clinician-educator with several awards, including the Arthritis Foundation's Marian Ropes Physician Achievement Award in 2005 and the BWH Lifetime Achievement Award in Medical Education in 2006. To honor her teaching legacy, the BWH Department of Medicine established the Jean M. Jackson Distinguished Bedside Teacher Award. ✦

**ROGER JEANLOZ,**  
*professor emeritus of biological chemistry, died of pneumonia in September 2007 while vacationing in France. He was 89 years old.*



Born in Berne, Switzerland, Jeanloz received his undergraduate and doctorate degrees at the University of Geneva, remaining in the city as a biochemist and professor until 1946, when he was invited to work on a project to develop new laboratories at the University of Montreal. From there, he conducted research in Bethesda and Worcester before he was recruited to HMS in 1950. He eventually became chief of the Laboratory for Carbohydrate Research at Massachusetts General Hospital.

Jeanloz was an editor for the journal *Carbohydrate Research*, co-authored several books, and published more than 500 papers. He won numerous awards, including a Medal of the Société de Biochimie of France, a Guggenheim Fellowship, and the Hudson Prize of the American Chemical Society. ✦

**THOMAS CARLYLE (CARL) JONES,**  
*professor emeritus of comparative pathology, passed away in December 2007. He was 95.*

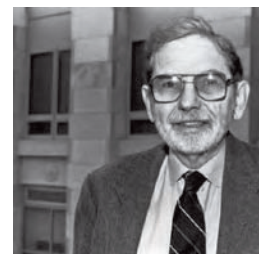


Jones received a DVM from Washington State University in 1935. After graduation, he entered the Veterinary Corps of the U.S. Army upon the advice and encouragement of its chief, General

Raymond Kelsler. He was eventually placed in charge of the U.S. Army Veterinary Research Laboratory. In 1947, he became the chief of Veterinary Pathology at the Armed Forces Institute of Pathology in Washington, D.C.; this administrative post was interrupted by an assignment overseas as chief of the Veterinary Department of the Fourth Field Laboratory in Germany. Over this 10-year period, he developed an extensive knowledge of comparative pathology, which led to co-authorship with H.A. Smith of the now-classic 1957 textbook, *Veterinary Pathology*.

Upon retirement from the Army, Jones came to Boston in 1957 as a pathologist at Angell Memorial Hospital, where he began collaborating with the Pathology Department at HMS. He joined the HMS community in 1957, serving as clinical associate in pathology from 1957 to 1963, associate clinical professor of pathology from 1963 to 1971, professor of comparative pathology from 1971 to 1982, and professor emeritus of comparative pathology from 1982 to 2007. Jones worked at the New England Primate Research Center (NEPRC) beginning in 1967, serving as associate director for collaborative research until 1979. He remained active in NEPRC and the Department of Pathology programs as an emeritus professor. ✦

**EDWARD MASON,**  
*retired associate clinical professor of psychiatry at McLean Hospital, died in December 2007 of pneumonia following a stroke. He was 88.*



Mason began his psychiatric training at McLean Hospital in 1945. From there he fulfilled his military duty at Fort Sam Houston in San Antonio, a center for returning World War II veterans. In 1948, after discharge as captain, he



continued his psychiatric training at Massachusetts General Hospital and Judge Baker Children's Center. During his long professional career, he was associated with many Harvard teaching hospitals.

With a focus on children and an interest in photography, he started to make film documentaries. His 1962 film *Children in the Hospital* pioneered the documentation of the psychological effects of hospitalization on sick children, opening the way for parents to accompany their children throughout the hospital stay. He received numerous awards for his more than 60 films.

In 1964 Mason established the Harvard Medical School Film Program and Documentaries for Learning. For many years, he chaired the film program of the American Psychiatric Association, where he was a life fellow. ♦

**BENEDICT MASSELL,**  
*who retired from Beth Israel Hospital,  
passed away in January 2008 at his  
home in Brookline. He was 101.*



Born in Dorchester in 1906, Massell intended to follow his father's footsteps into a career in dentistry. Yet after only one year at Harvard College, from which he graduated in 1927, Massell switched to medicine.

After earning his degree from HMS, Massell trained at Beth Israel and at Babies Hospital, Columbia Medical Center, in New York City. From there, he began a three-year residency at Children's Hospital Boston and in the laboratory of Paul

Dudley White at Massachusetts General Hospital. It was in White's lab that Massell was introduced to research on streptococcal infections.

By the late 1930s, Massell had joined the medical staffs of the House of the Good Samaritan and Beth Israel Hospital. During World War II, he put his knowledge of streptococcal infections to work for the U.S. Navy. Shuttling between the Good Samaritan and the Navy's training station in Newport, Rhode Island, Massell investigated the epidemiology of strep infections and rheumatic fever, two conditions spreading through the service's ranks.

After the war, Massell returned to the Good Samaritan, where he became chief of the hospital's rheumatic fever division.

In 1946, after earlier, limited success using sulfonamides against streptococcal throat infections, Massell began administering the then-new drug penicillin to rheumatic heart disease patients at the Samaritan who had developed strep infections. He found that treating the throat infections with penicillin not only halted the spread of bacteria to other hospital patients, but also prevented many of the patients from relapsing with rheumatic fever.

After the Good Samaritan closed, Massell continued studying the natural history of rheumatic fever and rheumatic heart disease. In 1988, he published an analysis of the decline in acute rheumatic fever in this country and, at the age of 90, he authored a definitive text that highlighted the research on rheumatic fever and streptococcal infections. ♦

**CHARLES MCCABE,**  
*professor of surgery at Massachusetts General  
Hospital, died in July 2008 from complica-  
tions of melanoma. He was 60 years old.*



McCabe received his bachelor's degree from Notre Dame University in 1970 and his medical degree from New Jersey College of Medicine and Dentistry in 1974. He joined MGH as an intern in general surgery that same year.

When McCabe was in his final year of training, he received a life-changing diagnosis: multiple sclerosis. He took the news in stride and started down a new career path in emergency medicine. For more than three decades, he served as clerkship director of the MGH surgical clerkship, and since 1986, he was the associate chief of emergency services at the hospital.

From 1983 to 1992, McCabe was the state medical director for the Office of Emergency Medical Services, a division of the Massachusetts Department of Public Health. He also was on the editorial boards of numerous journals, holding posts as the editor of *Emergency Care Quarterly* and the *American Journal of Emergency Medicine*.

He was the recipient of many honors, including the Harvard Faculty Teaching Award in 1987, 1994, and 1997, and the HMS Special Faculty Prize for Sustained Excellence in Teaching in 2006. ♦

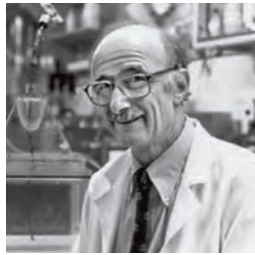
**LINDA JEAN METZGER,**  
*assistant clinical professor of psychiatry  
at Massachusetts General Hospital, died  
in February 2008. She was 44.*

Metzger received her BS from the University of Pittsburgh in 1985 and both her MA and PhD in psychology from the University of New Hampshire in 1988 and 1991, respectively. She joined the HMS community in 1992, serving as research fellow from 1992 to 1995, research associate from 1995 to 2003, and clinical instructor in psychiatry from 2000 to 2008. She had been recently promoted to assistant clinical professor of psychiatry.

Metzger was a research psychologist, psychophysicologist, and electrophysiologist. She used electroencephalographic (EEG) and brain event-related potential (ERP) methodologies to study the nature and source of emotional and cognitive abnormalities in posttraumatic stress disorder (PTSD).

As a research associate, she worked as a co-investigator with Roger Pitman and Scott Orr on a nationwide twin study of biological abnormalities in PTSD and on a nationwide study of psychophysiological abnormalities in female Vietnam nurse veterans with PTSD. She assumed primary responsibility for the electrophysiological portion of these large-scale studies. She most recently served as a principal investigator on her own VA-funded research, focusing on EEG regional brain activation and concurrent autonomic responses to traumatic memories and threat in individuals with PTSD. ♦

**JOHN RICHARD PAPPENHEIMER,**  
*the George Higginson professor  
emeritus of physiology at HMS, died  
in December 2007 at the age of 92.*



His works in capillary permeability and molecular sieving are classics in physiological literature. He contributed research to a wide range of disciplines within physiology, including capillary permeability, respiratory physiology, and the neurochemical aspects of sleep. Recent work contributed to understanding of the absorption of sugars and amino acids in the intestine.

Pappenheimer received a BS from Harvard College and a PhD from Clare College in Cambridge, England. In 1953 he was awarded the lifetime Career Investigator position from the American Heart Association for his work on capillary permeability and respiratory physiology. He was appointed the George Higginson professor at HMS in 1969. Pappenheimer was a member of the American Physiological Society (president 1964 to 1965), the Academy of Arts and Sciences, the National Academy of Sciences, and honorary member of the British Physiological Society. He published articles of original work over a span of 70 years and collaborated with colleagues from around the world. ♦

**OGLESBY PAUL,**  
*professor emeritus of medicine and former  
dean of admissions at HMS, died in  
December 2007. He was 91.*



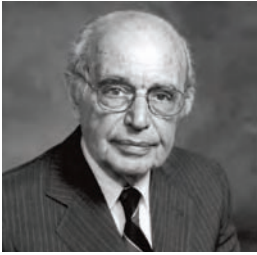
Paul received his AB from Harvard University in 1938 and his MD from HMS in 1942. Following an internship at MGH, he spent three years on active duty in the medical core of the U.S. Navy on the USS Daly in the Pacific during World War II.

He returned to MGH to complete his training in medicine and cardiology before moving to Chicago, where he served on the faculty of the University of Illinois and Northwestern University.

He rejoined the HMS community in 1977, serving as director of admissions from 1977 to 1982. As professor of medicine, he taught in the Cardiovascular Division of the Department of Medicine at Brigham and Women's Hospital from 1977 to 1986.

Paul was considered an outstanding clinical cardiologist, scholar, and teacher. He contributed significantly to the clinical literature for more than three decades, beginning with landmark papers he authored as a resident in collaboration with Paul Dudley White, a pioneer in the field of preventive cardiology. Paul moved into the forefront of research on links between heart disease and lifestyle factors such as diet, exercise, and smoking, leading a landmark study funded by the National Institutes of Health examining the connection between lifestyle and heart health in 2,000 men. He was the recipient of many honors, including the Coeur d'Or Award from the Chicago Heart Association in 1974. ♦

**JULIUS RICHMOND,**  
*professor emeritus of health policy at HMS  
and the Harvard School of Public Health,  
died at home in July 2008 at age 91.*



He was best known for his roles as U.S. Surgeon General and the first director of the national Head Start program. Trained in pediatrics and child development, he was a tireless advocate for introducing psychosocial development into pediatric education, research, and services.

Richmond received his undergraduate degree from the University of Illinois in 1937 and his MD from the University of Illinois School of Medicine in 1939. He served in the Army Air Force as a flight surgeon from 1942 to 1946, then returned to the Department of Pediatrics at the University of Illinois.

In 1953, Richmond became chairman of the Department of Pediatrics at SUNY Upstate Medical Center in Syracuse, where he rose to the position of dean. During his tenure, he completed collaborative research with Bettye Caldwell on the development of young children growing up in poverty, which led to his appointment in 1965 as the first director of the national Head Start program.

As U.S. Surgeon General and assistant secretary of the Department of Health and Human Services from 1977 to 1981, he established quantitative health goals for the nation for the next decade—a process later institutionalized by the government. A committed advocate, he also chaired the steering committee of the Forum on the Future of Families and Children of the National Academy of Sciences from 1987 to 1993.

Richmond served in several prominent positions in the Harvard community. He was director of Judge Baker Children's Center from 1971 to 1977 and, from 1983 to 1988, was director of the Division of Health Policy Research and Education at Harvard University. He also served as chair of psychiatry at Children's Hospital Boston.

Richmond received numerous honors, including the C. Anderson Aldrich Award of the American Academy of Pediatrics, the Gustav O. Lienhard Award and the Walsh McDermott Medal of the Institute of Medicine of the National Academy of Sciences, and the David E. Rogers Award of the Association of American Medical Colleges. In addition, the highest honor given by the School of Public Health is named after him—the Julius B. Richmond Award.

“Through his many important roles in the academy and in government, Julius Richmond did as much to improve the health of American citizens as anyone in the last century,” said Jim Yong Kim, chair of the HMS Department of Global Health and Social Medicine. ♦

**HERBERT SELENKOW,**  
*associate clinical professor of medicine and  
thyroid specialist, passed away in September  
2007. He was 84.*



Selenkow received his BS from Franklin and Marshall College in 1943 and his MD from Johns Hopkins University School of Medicine in 1950. He joined the HMS community as a research fellow in medicine in 1955 at Brigham and Women's Hospital, where he remained for the next four decades. Over the years, he served as instructor in medicine, clinical associate in medicine, tutor in medical sciences, associate in medicine, and assistant and

associate professor of medicine. He served as associate clinical professor of medicine at New England Deaconess Hospital (which later merged with Beth Israel) from 1995 until his retirement in 2000.

Selenkow was invited to Boston initially to begin the Thyroid Laboratory at the Peter Bent Brigham Hospital. He served as director of this program from 1956 to 1975, supervising the training and research of physicians, postdoctoral fellows, residents, medical students, and technicians. He authored more than 150 original research articles related to the thyroid, which added significantly to the diagnosis and treatment of thyroid disease. ♦

**ROBERT UTIGER,**  
*clinical professor of medicine at Brigham  
and Women's Hospital, died in June 2008.  
He was 76.*



Utiger received his medical degree from the Washington University School of Medicine in St. Louis in 1957, followed by postgraduate training in internal medicine and endocrinology at Washington University and the National Institutes of Health. He served as chief of endocrinology at both the University of Pennsylvania and the University of North Carolina medical schools. Utiger joined the HMS faculty as a clinical professor of medicine at Brigham and Women's Hospital in 1989.

An expert on thyroid function tests and an early proponent of the health benefits of vitamin D, he co-edited *Werner & Ingbar's The Thyroid: A Fundamental and Clinical Text*, served as deputy editor of *The New England Journal of Medicine*, and as editor of the *Journal of Clinical Endocrinology and Metabolism* and *Clinical Thyroidology*.



Utiger's own research focused on pituitary–thyroid function and disease. He developed radioimmunoassays for thyrotropin, triiodothyronine, and thyrotropin-releasing hormone, and used these assays to develop new information about the physiology and pathophysiology of the hypothalamic–pituitary–thyroid axis. He was one of the first to recognize the important role played by the activation of thyroxine by the iodothyronine deiodinases. He published more than 100 scientific papers and held prominent positions on various organization boards and committees. ♦

**THOMAS WELLER,**  
*a 1954 Nobel Prize winner and former  
HMS faculty member, passed away in  
August 2008. He was 93.*



Weller received the Nobel Prize in Physiology or Medicine with John Enders and Frederick Robbins, both of Children's Hospital Boston, for discovering how to grow poliomyelitis viruses in culture. Their breakthrough laid the foundation for others to develop the polio vaccine. The discovery demonstrated that scientists could grow viruses in human tissues in test tubes, foregoing the need for laboratory animals and speeding the way toward other vaccines.

Weller was later involved in isolating and growing varicella-zoster, the cause of chicken pox and shingles, and cytomegalovirus, a member of the herpesvirus family that can cause birth defects. He and others discovered rubella, which causes German measles.

Weller earned a BA from the University of Michigan in 1936. That same year he entered HMS, where he was given facilities for research in the Department of Comparative Pathology and Tropical Medicine. In 1939, Enders accepted him as a tutorial student and introduced him to the field of virus research and tissue culture techniques as a means to study infectious diseases.

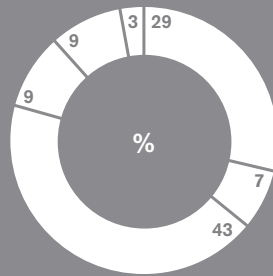
Weller graduated from HMS in 1940 and began clinical training at Children's. In 1942 he joined the Army Medical Corps and worked on malaria control while stationed in Puerto Rico. At the end of World War II, he returned to Children's to continue his clinical training. In 1947, he joined Enders in forming the Research Division of Infectious Diseases at the hospital. Two years later, he was named assistant director of the division. He also was appointed to the HMS faculty and later became an associate professor in the Department of Comparative Pathology and Tropical Medicine.

When the unit was renamed the Department of Tropical Public Health and was transferred to the School of Public Health, Weller was named the Richard Pearson Strong Professor of Tropical Public Health. He became head of the department, a role he held until 1981; in 1985, he was given emeritus status. ♦

# FINANCIAL SUMMARY

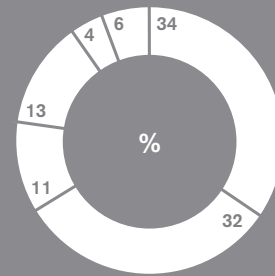
The Medical School ended Fiscal Year 2008 with a \$16.8 million core operating loss, compared to an operating loss of \$11.0 million in FY07. Drivers of the loss included flat indirect cost recovery; an increase in inflation, particularly in salary, wages, and benefits; higher energy costs; and incremental support for recruitment of faculty. The increases were partially offset by growth in the endowment distribution. Total operating income and expenses, as reflected in the pie charts below, indicate a \$34.2 million loss, which is a function of the timing of receipts and actual spending of gifts.

TOTAL OPERATING REVENUE: \$528.6M  
(Fiscal 2008)



- 43 Grants & Contracts
- 29 Endowment
- 9 Rental Income
- 9 Other Revenues
- 7 Tuition (net)
- 3 Gifts for Current Use

TOTAL OPERATING EXPENSES: \$562.8M  
(Fiscal 2008)



- 34 Academic Expenses
- 32 Research & Training
- 13 Administration
- 11 Facilities
- 6 Other
- 4 Debt Service

## HMS PROFILE (As of September 2008)

MD Students ..... 729  
 DMD Students ..... 141  
 PHD Students ..... 586  
 Interns, Residents,  
 Postdoctoral Fellows ..... 8,040

Voting Faculty ..... 4,392  
 Full-time Faculty ..... 8,075  
 Medical School Alumni ..... 9,134  
 Dental School Alumni ..... 2,422

## AFFILIATED HOSPITALS AND INSTITUTES

Beth Israel Deaconess Medical Center  
 Brigham and Women's Hospital  
 Cambridge Health Alliance  
 Children's Hospital Boston  
 Dana-Farber Cancer Institute  
 The Forsyth Institute  
 Harvard Pilgrim Health Care  
 Hebrew SeniorLife  
 Immune Disease Institute

Joslin Diabetes Center  
 Judge Baker Children's Center  
 McLean Hospital  
 Massachusetts Eye and Ear Infirmary  
 Massachusetts General Hospital  
 Mount Auburn Hospital  
 Schepens Eye Research Institute  
 Spaulding Rehabilitation Hospital  
 VA Boston Healthcare System

## Credits

The 2008-2009 Dean's Report was produced by the Harvard Medical School Office of Public Affairs.

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