# HARVARD MEDICAL SCHOOL

2014 ADMISSIONS BULLETIN

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HARVARD MEDICAL SCHOOL

# To Our Applicants



Harvard Medical School is dedicated to continuing a long-standing tradition of training leaders in

every conceivable aspect of medicine today, and innovators who will shape the practice of medicine in the future. Each incoming class is selected to bring together a diverse and talented group of students possessing complementary intellectual passions, with the expectation that they will learn from each other as well as learning from our faculty. Whether your interest evolves into biomedical engineering, genomics, global health, health policy, primary care, or any other emerging field of interest, you will find a uniquely fertile and supportive environment at Harvard. Here, you will study with dedicated and renowned mentors as you explore the foundational sciences of medicine and learn the art of translating medical knowledge into the best possible care for patients.

We are delighted that you are interested in learning more about Harvard Medical School and look forward to receiving your completed application.

> Sincerely yours, **Robert J. Mayer, M.D.** Faculty Associate Dean for Admissions Professor of Medicine





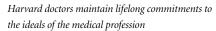


# to Be Prepared

Harvard doctors are prepared to function and excel in a rapidly changing world of medicine



## to Be Compassionate



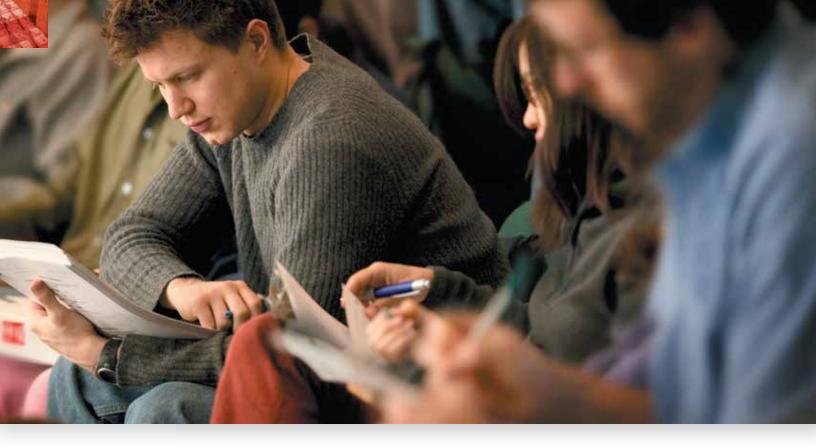


# to Be Explorers

Harvard doctors conduct research that changes the nature of medicine



to Be Visionary Harvard doctors impact the world 20



# to Be Prepared

Harvard Medical School's Department of Systems Biology (DSB) is one of the first department-level systems biology programs in the nation. hat does it mean to be a Harvard doctor? A Harvard Medical School (HMS) education will prepare you to excel in the rapidly changing landscape of modern medicine. It will do so through a curriculum grounded in the study of leading biomedical science and clinical experience, a rich diversity of degree program choices, and a history of innovation that continues to set the standard for excellence in medical education in the United States and around the world. Within these halls, you will experience the medical profession in all its dimensions. At HMS, you can pursue your individual interests, find your calling, and discover how you can change the fabric of medicine.

## The HMS Integrated Curriculum

Throughout its history, Harvard Medical School has influenced the design of medical school education. From Harvard University President Charles Eliot's 19th century reform—developing the concept of a medical school as we know it today—to the innovative Health Sciences and Technology Program in 1971 and the ground-breaking New Pathway curriculum of the 1980s, HMS has been in a continual process of growth and change.

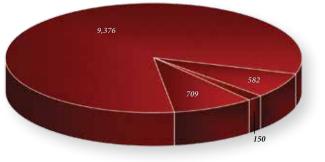
In 2006, HMS implemented enhancements to its curriculum specifically designed to meet the needs of 21st century medicine. The HMS Integrated Curriculum builds on the strengths of both the New Pathway and the Health Sciences and Technology (HST) curricula by further integrating the clinical and basic sciences across the curriculum, developing new models for clinical education, and mentoring the engagement of students through in-depth scholarly experiences.

The curriculum begins in mid-August for all students with *Introduction to the Profession*, an intensive two-week course designed to introduce students to the profession, the practice of medicine, and the experiences that lie before them as they embark on the process of becoming physicians. Students spend years one and two focused on the basic biological and population sciences that underlie clinical medicine. In April of year two, New Pathway students transition from the classroom to the clinical realm, and are joined by their HST classmates in years three and four.

In year three, individual clerkships in the major disciplines of medicine (medicine, surgery, pediatrics, obstetrics and gynecology, psychiatry, neurology, radiology) unify in a "Principal Clinical Experience," which provides opportunities for longitudinal experiences with patients and faculty members as well as an interdisciplinary curriculum that integrates the scientific and clinical aspects of important diseases. Throughout the four years of medical school, students work one-on-one with faculty members. In this vein, a capstone experience for our students is a several year, faculty mentored, in-depth scholarly experience culminating in a written work product. Such exploration of a topic in-depth allows students to participate with faculty in the excitement of discovery and scholarship. In the final year, students pursue special concentrations and participate in advanced elective clerkships. Students elect clerkships from our 17 affiliated institutions, and may participate in exchange clerkships with other institutions both domestic and international. The HMS Integrated Curriculum prepares graduates to function in an increasingly multicultural landscape undergoing radical scientific, social, economic, and technological transformation. HMS seeks to ready students for this new world by providing them with the ideal educational environment and carefully integrated global experience to foster their growth as clinicians, scholars, discoverers, and leaders.

#### HMS Community Snapshot: 2012-2013

709 Medical Students 150 Dental Students 582 Graduate Students 9,376 Residents, Interns, and Postdoctoral Fellows



#### HMS DEPARTMENTS

Ambulatory Care and Prevention

Biological Chemistry and Molecular Pharmacology

Cell Biology Genetics

Health Care Policy

Microbiology and Molecular Genetics

Neurobiology Pathology

Stem Cell & Regenerative Biology

Social Medicine Systems Biology

Hospital-based clinical departments in Anaesthesia, Dermatology, Medicine, Neurology, Obstetrics/ Gynecology/Reproductive Biology, Ophthalmology, Orthopedic Surgery, Otology/Laryngology, Pathology, Pediatrics, Physical Medicine/ Rehabilitation, Psychiatry, Radiology, Radiation Oncology, and Surgery

#### HMS PROGRAM IN MEDICAL EDUCATION

M.D. Programs & Curricula New Pathway M.D. Health Sciences & Technology (HST) M.D. Five-Year Option M.D.-Ph.D. Program

#### Other Joint Degree Programs M.D./M.B.A. M.D./Master of Public Health M.D./Master of Public Policy

#### Other Degree Programs on HMS campus Division of Medical Sciences Ph.D.

Harvard School of Dental Medicine Doctor of Dental Medicine

Harvard School of Public Health Doctor of Public Health Master of Science Master of Public Health Doctor of Science

For more information on courses, faculty, and degree options, please visit:

x //hms.harvard.edu/departments/admissions

# Innovatin

**DR. JEFFREY S. FLIER** Dean of the Faculty of Medicine

Jeffrey S. Flier, Harvard's George C. Reisman Professor of Medicine, became the 21st Dean of the Faculty of Medicine at Harvard University in 2007. Dean Flier explains his vision for HMS in terms of graduating cutting-edge researchers and clinicians: "Investigation and generation of new knowledge are, alongside clinical medicine, a core element of the HMS ethos."

Indeed, Dean Flier is familiar with scientific breakthroughs. A leading researcher in molecular causes of diabetes and obesity, Flier's discoveries in leptin expression have fundamentally shaped the discourse of the field, with applications in industry.

"I have a track record of productive collaboration with industry in the conduct of metabolic research," Dean Flier explains, "and I'm very much interested in maximizing the translation of basic discoveries into clinical impact." Flier's honors include a five-year \$500,000 Unrestricted Metabolic Research Grant by Bristol-Myers Squibb.

Prior to becoming Dean, Dr. Flier spent 29 years on the Harvard faculty at Beth Israel Hospital and Beth Israel Deaconess Medical Center, where he served as Chief of the Diabetes Unit, Chief of the Endocrine Division, and Chief Academic Officer, responsible for research and academic programs. He has authored over 200 scholarly papers and reviews and has held many editorial positions, including the Editorial Boards of leading endocrinology journals and the American Journal of Medicine. He is currently on the Board of Consulting Editors of Science Magazine.

Regarding his vision for HMS, Dean Flier explains that "expertise as physicians is our bedrock goal. While some students may have outstanding research careers, others will have outstanding clinical careers, and yet others will blend research and clinical activity." The HMS program, Flier explains, "is flexible enough to prepare all of our students to excel."

## Many Paths: A Diverse Medical Program

How to employ new information and technology, think on your feet, draw on a solid base of scientific knowledge, care for patients, continue learning—each path of the HMS medical program offers an education in these skills.

New Pathway M.D. Program: A tutorial environment defines the New Pathway Curriculum. For the first three and onehalf semesters you'll learn in small group discussions analyzing patient cases to master fundamental medical concepts. Classmates become colleagues and teach each other. The New Pathway curriculum encourages taking responsibility for your own learning — your time in the library searching for answers is as important as your time studying biomedical sciences and medical procedures through the laboratories, conferences, and lectures that augment your tutorials.

Health Sciences and Technology (HST)

**M.D. Program:** Combining the extensive resources of Harvard Medical School and Massachusetts Institute of Technology (MIT), the Health Sciences and Technology (HST) M.D. Program will prepare you for interdisciplinary research careers in academic medicine. Through a rigorous and quantitative curriculum, you'll focus on biological, chemical, physical, and engineering sciences and collaborate with Harvard and MIT faculty on substantive, groundbreaking research. You can take courses at both Harvard Medical School and MIT, and will be part of a select group—only 30 students per year are admitted into HST.

Clinical Education: An extraordinary variety of courses are offered at HMS and its affiliated hospitals. Core clerkships are offered in the principal clinical specialties. All students complete clerkships in medicine, surgery, and women's and children's health (pediatrics and obstetrics/gynecology), and elective experiences can include more specialized clerkships such as hematology, emergency care, and dermatology; advanced pathophysiology courses in areas such as oncology and infectious diseases; and laboratory and field research.

**M.D.-Ph.D. Program:** The overall mission of the M.D.-Ph.D. program at Harvard Medical School is to train its students to lead the next generation of physicianscientists, with representation across a variety of clinical disciplines and research areas from basic and translational sciences bioengineering to the social sciences.

# Innovating

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#### ZACHARY SCOTT MORRIS

A former Goldwater Scholar, Zachary Morris graduated from Ripon College with degrees in Biology and Chemistry. After Zach was accepted into the M.D.-Ph.D. program at HMS, he deferred his enrollment to spend two years at Oxford University as a Rhodes Scholar, earning Master's degrees in Medical Anthropology and the History of Science, Medicine, and Technology.

But medical school had been Zachary's goal since childhood. "With a fair bit of family history in cancer," he said, "I became interested in trying to develop cures rather than applying medical knowledge."

During his two undergraduate research fellowships at Argonne National Laboratory, Zachary examined structurefunction relationships in photosynthetic bacterial membrane proteins. Today, his research focuses on the regulation of certain growth factor receptors at the cell membrane by another protein, the product of the NF2 tumor suppressor gene. Under the direction of Dr. Andrea I. McClatchey, Department of Pathology, Zachary is examining how mutation of the human NF2 tumor suppressor gives rise to the familial cancer syndrome, *Neurofibromatosis type 2, which features* the development of nervous system tumors and often leads to hearing loss.

"It was amazing to come to Harvard and interact with professors whose books I'd been reading at Oxford," Zach observes. "HMS offers phenomenal breadth of research expertise, with faculty at the cutting edge in virtually every area of science. The research community is huge, with more than 5,000 labs to choose from," he explains. "It's sometimes difficult to grasp how much is going on around here."

HMS's New Pathway curriculum offers morning lectures followed by tutorial learning. "Our tutorial system is similar to Oxford's," Zachary explains. "It's a casebased, interactive curriculum in a highly collaborative and interactive environment. Students freely email notes and study guides — so everyone reaches a very high level of medical knowledge."

# Innovating

#### DR. NANCY ORIOL

Associate Professor of Anesthesia, Associate Dean for Student Affairs, Director of Faculty Development for the Department of Anesthesia and Critical Care at Beth Israel Deaconess Medical Center

"What is truly unique about Harvard is the incredible diversity of experiences and perspectives our students bring to the world of medicine. It's not unusual to find bankers, Olympic athletes, published authors, Peace Corp volunteers, Jesuit priests, and watercolor artists, all in the same class," says Dr. Nancy Oriol. "You find yourself part of an astonishingly broad community of talent and passion."

Dr. Oriol is a renowned anesthesiologist who has been part of the HMS faculty for more than twenty-five years. She is an innovator whose medical breakthroughs range from inventing the "walking epidural" — a type of labor pain relief that does not interfere with the progress of labor — to creating an ingenious device for newborn resuscitation. Deeply committed to community service, she is the founder of The Family Van — a mobile health program in Boston that has served as a model for mobile health outreach in cities across the nation.

But what she is most passionate about is teaching. "We believe that medicine is a language and the only way to become fluent in it is by using it — by sharing your knowledge with those around you," says this recipient of numerous HMS teaching awards.

"Collaboration, teamwork, and group discussions allow our students to understand different worldviews. It teaches them to communicate with — and respect — difference, and to become more compassionate. Those are the qualities that distinguish great physicians."





## Teaching and Learning on an Unsurpassed Scale

You'll learn from them in small group tutorials, research collaborations, in lectures and seminars, and on rounds-in many places on this campus. With more than 11,000 faculty members drawn from the basic science departments as well as our affiliated hospitals and institutions, Harvard Medical School provides a teaching and learning environment of tremendous breadth and depth. Choose any medical specialty or research field and it's more than likely you'll find an HMS faculty member in it. Further, they serve as mentors and advisors in our innovative Academic Societies - which break the student population into five small communities. Your Society will shape your course of study, provide a home base and structure of support, and guide you from orientation to securing the residency of your choice.

# Honors and Awards

- Gary Ruvkun, HMS professor of genetics in the Department of Molecular Biology at Massachusetts General Hospital, received the Dan David Prize from Tel Aviv University, which recognizes innovative research that cuts across traditional paradigms. Performing research to define the genetic basis of aging, Ruvkun has discovered in animal models a set of hormonal signals and pathways that regulate aging and lifespan.
- Matthew Nock, a professor of psychology at FAS, received the MacArthur Fellow for his studies in suicide and self-injury in adolescents. While collaborating with the Massachusetts General inpatient psychiatric unit, Nock was able to combine epidemiology, lab experiences, mental health associations, and biological psychological assessments for breakthrough research in predicting and preventing suicide.
- Jack Szostak, a professor and member of the Department of Genetics at HMS and the Department of Molecular Biology at MGH, received the Nobel Prize in Physiology or Medicine, along with Elizabeth Blackburn and Carol Greider, for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase.
- Paul Farmer, the Maude and Lillian Presley Professor of Global Health and Social Medicine at HMS, was appointed deputy special envoy by former president Bill Clinton, the United Nations Special Envoy to Haiti. Farmer is a co-founder of Partners in Health, the largest healthcare provider in Haiti.

# THE ACADEMY

A body committed to training and rewarding outstanding teachers, The Academy at Harvard Medical School reinforces the learning environment by providing resources to enhance the teaching role of faculty and innovation in medical education.

Approximately half of the M.D. student body pursues a joint degree program or enrichment activity that not only takes them beyond the traditional four years of study, but enlarges the scope of their medical education.



# to Be Compassionate

#### HMS STUDENT MEDICAL SERVICE PROJECTS

A few of the many service projects include:

- Creating a phone-based tool for community health workers in a resource-poor setting
- Developing a team-based model for the integrated management of chronic pain in primary care
- Documenting caregiver-reported unmet needs and the impact of social context on families caring for medically complex children
- Evaluating the DNA damage response in naïve and primed human pluripotent stem cells
- Improving obstetric referrals through process improvement efforts in developing countries
- Providing care to understand communities in the Boston area working side-by-side with Harvard faculty at the Crimson Care Collaborate or with the Harvard Family Van

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http://hms.harvard.edu/ content/admissions ompassion — It may be the most vital aspect of patient care. A Harvard doctor is simply one who cares. Someone who brings empathy to the treatment of patients in communities as close as Boston and as far away as Vietnam.

Enrichment and Global Awareness — Our long-standing commitment to service and research moves students beyond traditional borders of the medical profession. Whether it's working with AIDS patients in South Africa, putting together swimming programs for asthmatics in Chinatown, or spending time with underprivileged kids in Appalachia you will learn to overcome obstacles and think creatively about solutions. HMS students are creating partnerships, conducting research, rebuilding neighborhoods, and serving those most in need.

**Crimson Care Collaborative**—Launched by HMS students, the Crimson Care Collaborative provides opportunities for students supervised by faculty to provide clinical care to patients in underserved communities. Open evenings for patients' convenience, the clinics have five sites in the greater Boston area that help patients who have difficulties in maintaining long-term primary care.

#### **Department of Global Health and**

Social Medicine — Under the leadership of Dr. Paul Farmer, this department applies social science and humanities research to constantly improve the practice of medicine and the development of healthcare policies locally and worldwide. It is Harvard Medical School's central structure to help organize global health activities. More information can be found at http://ghsm.hms.harvard.edu/.

# Educating

#### Dr. David Urion

Associate Professor of Neurology/Director, Division of Service Learning, Children's Hospital Boston

Doctors, by their very nature, want to help people. As Dr. David Urion is helping future doctors develop compassion and empathy to the fullest extent, he's also following Harvard's philosophy of doing something that will have a lasting impact on all of humanity. As director of the Division of Service Learning, Dr. Urion helps students make connections between learning and doing through service projects and enrichment programs.

"Harvard understands the social responsibilities that leadership and medicine entail — and doesn't just give it lip service. We offer students unparalleled opportunities to make a real difference domestically, nationally, and internationally because of the infinite number of connections that we have.

"Most of our students come with impressive backgrounds in community projects. At Harvard, they get to take that interest in the direction of service learning work. An ongoing project involves HIV education and assessment within the school, public health, and medical school realms in Vietnam. We have had medical students do assessments of province-level secondary hospitals for the establishment of AIDS outreach programs. We've had people go to Cuba and work in an HIV hospital doing narrative history collection. In terms of domestic projects, one person established an after-school training program for children with asthma in the Chinese-American community. We've had people provide dance and nutrition programs working with young women's health and esteem. The opportunities are as diverse as the students' interests."

http://hms.harvard.edu/ content/admissions

# Educating

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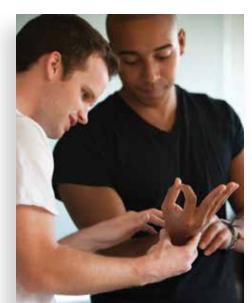
Medical education is transformed through collaborative innovation between students and faculty, as well as discovering the resources to ensure their work goes on to make a difference in the world through development and commercialization.

Just ask Dr. Randall King, who, along with collaborators Dr. Daniel Finley (HMS professor of cell biology, and Byung-Hoon Lee (HMS research fellow) were able to improve the uptake and potency of a compound (10 times more potent then their previous compound) that could help degrade proteins linked with Alzheimer's disease. The work resulted in a major agreement with a biotech company.

#### Randall King '97, M.D., Ph.D.

Associate Professor of Cell Biology Department of Cell Biology, Harvard Medical School HMS continually strives to develop effective new methods to educate the next generation of physicians and scientists. Through a rigorous approach and state-ofthe-art facilities we teach students how to incorporate the art and science of medicine into practice to meet the rapidly increasing demands of the healthcare profession. Following are but a few examples.

**Clinical Skills Center**: The new 5,500-square-foot Clinical Skills Center provides HMS faculty and students with some of the latest in teaching technology. Our 18 clinical exam rooms for interviewing and physical examination have video cameras for faculty to record and review patient-student encounters. This new



w Clinical Skills Center at Harvard Medical School

facility also has objective-structured clinical examinations that incorporate patient actors, radiological images, and other clinically relevant materials.

Smart Classrooms: From interactive whiteboards to high-resolution flat screens, patient-simulation technology to a simulated clinical exam room, and video and teleconferencing capabilities, new HMS smart classrooms are facilitating teambased learning and "just-in-time" teaching approaches. The classrooms support medium and small-group interactive teaching, peer teaching observation, teaching and evaluation of clinical skills, and simulation of clinical situations and pathophysiological processes.

**Center for Primary Care:** Boston is an epicenter of medical research and worldclass patient care. At the new Center for Primary Care, HMS students work in teams at our 18 affiliated centers across Boston to leverage technology to improve patient care while lowering costs. Policy experts at the center involve students as they provide insight into the critical area of healthcare delivery in the United States. Fourth-year students are offered an elective in primary care leadership and management.

#### Showcasing Student Research: For

more than 70 years, Soma Weiss Student Research Day has given HMS students effective networking opportunities with faculty, staff, and peers from the greater Harvard community. Students are able to showcase in-progress or completed research in bench and clinical research, outcomes and health delivery projects, public policy research, service learning, and systems improvements both in the U.S. and abroad.



Student presentations at Soma Weiss Research Day

Scholars in Medicine: From basic science to primary care, medical humanities to health care policy, HMS students complete a scholarly project during medical school. Through the course *Pursuing Inquiry in Medicine*, you will gain guidance on scholarly inquiry and learn how to seek mentors, develop proposals, and communicate research aims, methods, and results. HMS students then identify a mentor and draft a proposal for a project that most will pursue the following summer.

## Varieties of Patient Care Experience at HMS Affiliated Hospitals and Institutions:

Our substantial network of clinical affiliates offers you considerable breadth and depth and nearly unlimited opportunities for clinical learning in leading national hospitals, health care facilities, and health institutes. Among them you'll uncover a tremendous diversity of medical experiences, courses, and specialized clerkships. These experiences not only provide an "on the wards" education in disease and treatment, but will immerse you in the human relations so central to providing quality care.

**Patient-Doctor:** Students learn how to take thorough patient histories and perform physical examinations through the three-year course designed to enhance their clinical expertise and add an experiential dimension to their pre-clinical preparation. In videotaped sessions, you will evaluate your progress, gain exam skills, and begin your evolution to the clinical years.

**Clinical Clerkships:** HMS third- and fourth-year students come together for an education in direct patient care through clinical clerkships. Your study of pathological principles will come to life, and real people will replace textbook theory and case study. Learning by doing in each of the major fields of medicine will offer invaluable lessons on becoming an effective practitioner.

#### UNLIMITED OPPORTUNITIES: HMS AFFILIATED HOSPITALS

Beth Israel Deaconess Medical Center

Brigham and Women's Hospital

Cambridge Health Alliance

Children's Hospital Boston

The CBR Institute for Biomedical Research

The Dana-Farber Cancer Institute

The Forsyth Institute

Harvard Pilgrim Health Care

Hebrew SeniorLife

Joslin Diabetes Center

Judge Baker Children's Center

Massachusetts Eye and Ear Infirmary

Massachusetts General Hospital

McLean Hospital

Mount Auburn Hospital

Schepens Eye Research Institute

Spaulding Rehabilitation Hospital

VA Boston Healthcare System

More information about Harvard's affiliated teaching hospitals is available on the web at http://hms.harvard.edu

For more than a decade, five of the top 10 independent hospitals funded by the National Institutes of Health (NIH) have been Harvard affiliates.

#### HMS STUDENT GROUPS

Alternative Spring Break American Medical Student Association American Medical Women's Association Art & Literature Magazine Asian Health Association **Black Health Association** Christian Medical and **Dental Society** Coffee House Dermatology Interest Group **Emergency Medicine Club** Family Medicine/Primary Care Interest Group First-year Educational Adventure Trip (FEAT) First-year Urban Neighborhood Campaign (FUNC) Harvard Health Caucus Harvard International Health Organization Health and the Environment HMS/HSDM Athletics Club HMS/HSDM Soccer Club HMS Student Council Holistic Medicine Kinsey 2-6ers (gay, lesbian, and bisexual student association) LIFE Committee (students organizing activities to welcome new students) Life Drawing Longwood Players Maimonides Society (Jewish student association) Massachusetts Medical Society Medical Students for Choice Medical Students of Las Americas (MeSLA-Latino student association) Medical Student Section of the American Medical Association Multicultural Student Alliance Music Society Native American Health Organization Physicians for Human **Rights/Amnesty** Physicians for Social Responsibility **Religion & Spirituality** Second Year Show Social Committee Social Hour Society Olympics Student Association of Medically Oriented South Asians (SAMOSA) Student Council Community Service Organization Student Interest Group in Neurology Student National Medical Association Students for Global Health and Justice Surgical Interest Group

## A Change Community

Life beyond the lecture halls and labs at HMS offers a stimulating mix of people and opportunities. You'll live among an active and diverse community, one comprised of students from a variety of ethnic, sociocultural, and economic backgrounds. Harvard Medical School is also home to students with a fascinating mix of intellectual and scientific interests, creative talents, and passionate pursuits. Among your classmates, you might meet a student who is researching a cure for kidney disease, another who is pursuing a black belt in kung fu, and another with a degree in electrical engineering. HMS students are varied and energetic people who commit themselves equally to their academic and social pursuits. They are world-changers - no matter what they do.

#### Historic Diversity

For more than 30 years, HMS has been successfully building a campus community that reflects the changing face of America. Harvard's commitment to diversity is not only reflected in the variety of institutions from which students are accepted, but also in the ethnic and economic backgrounds of the student body. In 1969, HMS established the Office of Recruitment and Multicultural Affairs to recruit and provide supportive services to individuals from groups underrepresented in medicine. In the years since, HMS has graduated over 1,000 physicians from minority groups underrepresented in medicine, and there are over 171 underrepresented minority students currently enrolled.

To learn more about the Office of Recruitment and Multicultural Affairs, please visit: www.hms.harvard.edu/orma.

## **HMS Student Services**

HMS offers a full array of student services to meet your personal and health needs, including a Student Health Plan that provides coverage for hospitalization and care on and off the HMS campus, dental insurance, disability insurance, and services for students with disabilities.

# *Living at HMS: Vanderbilt Hall*

You can take advantage of the convenience of living on the HMS campus by booking a room in Vanderbilt Hall, a residence complex next to the Medical School. The hall provides a comfortable atmosphere in which to forge friendships with your classmates, study, and relax. You'll find:

- Rooms for approximately 320 men and women
- A library and study lounges
- An athletic center with full-size gym, tennis court, racquetball courts, squash courts, weight room, and exercise and locker rooms
- Single rooms with connections for telephone and web access
- A darkroom, music rooms, and a computer lab



#### Boston

Harvard Medical School's prime location in the Longwood Medical Area of Boston will put you in touch with one of the country's most distinctive cities. Big enough to be cosmopolitan and interesting, yet small enough to be manageable, Boston offers a charm and character all its own. From the stately brick townhouses of Beacon Hill to Fenway Park, from the harbor where the American Revolution witnessed some of its most famous moments to the Common and Public Garden, you'll discover a rich tapestry of people, history, cultural life, and entertainment — and it's all less than a mile from the HMS campus. Boston is also an ideal place for students: it houses many of the most highly regarded colleges, universities, and institutes in the U.S.—a wealth of academic resources influenced by Harvard's long historical reach. In this colorful city, Harvard medical students find abundant personal and professional opportunities that shape their lives.

#### TO DO

- Explore over
   100 years of
   Red Sox history
   with an inside
   look at Fenway
   Park, the nation's
   oldest ballpark.
- Shop for designer brands or acquire a new coiffure on lively Newbury Street, Boston's own "Rodeo Drive."

Discover Boston's rich reading culture with a tour of the distinguished Boston Public Library, the nation's first public library — and then peruse the city's numerous

bookstores.

 Stroll through Public Garden, a horticultural "museum" and the nation's oldest botanical garden.

Cheer on the Celtics or the Bruins at The TD Banknorth Garden, and check out the Sports Museum of New England while you're there. Step back in time along Boston's Freedom Trail, a 2.5-mile path connecting the city's historic sights from Boston Common to the Bunker Hill Monument, and with a stroll through the Beacon Hill neighborhood. Hop aboard the Old Town Trolley or Beantown Trolley for a narrated journey that takes in over 100 interesting sights.

Delve into the legacy of our 35th president at the John F. Kennedy Library and Museum.

#### A SAMPLING OF ACADEMIC INSTITUTIONS

Boston College Boston University Brandeis University Harvard University Massachusetts Institute of Technology Northeastern University Tufts University Wellesley College

#### A SAMPLING OF CULTURAL INSTITUTIONS

Boston Symphony Orchestra Institute of Contemporary Art Museum of Afro-American History Museum of Fine Arts Museum of Science New England Aquarium

# PROFESSIONAL SPORTS

Bruins Celtics Patriots Red Sox Revolution

#### DAY TRIPS

Historic Salem, site of the witchcraft trials of 1692

Walden Pond — Thoreau's Inspiration

Skiing and winter sports in the Berkshires and White Mountains

North & South Shore Seacoast Towns — Maritime and Whaling History Sites

Cape Cod, Nantucket, & Martha's Vineyard

More than 800 doctors, graduate students, and staff performed research last year in the 525,000-square-foot New Research Building, designed to accelerate medical progress by aligning scientists from many disciplines in one shared state-of-the-art facility. It is where the world's foremost scientists work to solve some of the biggest medical challenges of our time.

# to Be Explorers

As the recipient of a five-year Clinical and **Translational Science** Award (CTSA) from the National Institutes of Health, Harvard belongs to a select network of Clinical and Translational Science Centers (CTSC) based at academic medical centers nationwide. This unique grant is helping bond together a bench-tobedside translational and clinical research system that enables Harvard's entire medical and science community to be larger and more effective than the sum of its parts.

Harvard doctor makes significant contributions to biomedical science. You'll explore new scientific frontiers by participating in a legacy of research that resonates on a global scale. Harvard Medical School has been home to 15 Nobel Laureates and many nationally and internationally recognized researchers and medical scholars. Here, you will collaborate with some of the leading medical scientists in the world who teach and demonstrate not only state-of-the-art research techniques, but a passionate dedication to improving human life through scientific discovery.

## Research at Harvard Medical School: A History of Achievement

Think of it as a city of research—turn nearly any corner on the HMS campus and you'll encounter a cutting-edge research facility. Multiply that effect by our numerous surrounding hospitals and research centers, and the impact enlarges. Drawing on HMS faculty scholars and prominent medical researchers from all over the world, HMS has a tremendous history of cultivating research that has alleviated human suffering caused by disease. As a consequence of what



happens at HMS, people all over the world live healthier lives. The list of HMS breakthroughs is astonishing, among them:

- Introduction of insulin into the United States
- Invention of the iron lung
- Application of tissue culture methods to develop a polio virus to be used as the key ingredient of the polio vaccine
- Mapping the visual system of the brain
- Creation of the external cardiac pacemaker
- Development of artificial skin
- First successful kidney transplant
- Discovery of the gene that causes Duchenne Muscular Dystrophy

**Research opportunities** that will change medicine await you in the Quadrangle, at all of the Harvard-affiliated teaching hospitals, and at Harvard University and MIT. Harvard medical students often find their research experiences among their most important, regardless of whether they pursue a life in the laboratory or in practice — you will as well. Understanding how to ask a question and how to generate an answer will form one component of your lifelong commitment to the health sciences. Another will be a useful and highly applicable understanding of the scientific basis of medicine.

#### HMS CENTERS, DIVISIONS, AND INSTITUTES

The Armenise-Harvard Foundation Dana-Farber/Harvard Cancer Center Harvard Center for Eating Disorders Harvard Center for Neurodegeneration and Repair Harvard Clinical Research Institute Harvard Division of Health Care Policy Research and Education Harvard Division of Nutrition Harvard Institute of Chemistry and Cell Biology Harvard Institute of Mind/ Brain/Behavior Harvard Institute of Proteomics Harvard Institute of Psychiatric **Epidemiology and Genetics** Harvard Mahoney Neuroscience Institute Harvard Medical International Programs running in over 30 countries Harvard-MIT Division of Health Sciences and Technology Harvard Program on Head and Neck Oncology HMS Center for Biochemical and **Biophysical Sciences and Medicine** HMS Center of Excellence in Minority Health HMS Center of Excellence in Women's Health HMS Center for Health and the Global Environment HMS Center for Hereditary Deafness HMS Center for Mental Health and Media HMS Center for Neurofibromatosis and Allied Disorders HMS Center for Palliative Care HMS Division on Addictions HMS Division on Aging HMS Division of AIDS HMS Division of Emergency Medicine HMS Division of Medical Ethics HMS Division of Primary Care HMS Division for Research and Education in Complementary and Integrative Medical Therapies HMS Division of Service Learning HMS Skin Disease Research Center HMS Division of Sleep Medicine HMS Institute of Human Genetics HSDM and HMS Center for Craniofacial Tissue Engineering Juvenile Diabetes Research Foundation Center for Islet Cell Transplantation at HMS MIT/HMS Center for Magnetic Resonance Last year Harvard Medical School was awarded \$295.3

School was awarded \$295.3 million in sponsored research funding. Of that amount, \$242.5 came from the National Institute of Health.

# Discovering

#### DR. ALVIN POUSSAINT

Professor of Psychiatry, Faculty Associate Dean for Student Affairs, Director of the Office of Recruitment and Multicultural Affairs, Judge Baker Children's Center

A familiar figure on campus since 1969, Professor of Psychiatry Dr. Alvin Poussaint has played a leading role in increasing parental and public awareness about the harmful effects of the increasingly sophisticated commercial exploitation of young children via television. Over the years, in between teaching, writing widely cited articles in medical and lay journals, and consulting on issues of adult and child psychology at the medical institutions affiliated with HMS as well as in public forums like The Oprah Winfrey Show, Dr. Poussaint has also served in a variety of administrative roles at Harvard Medical School

As the current Faculty Associate Dean for Student Affairs and the Director of the Office of Recruitment and Multicultural Affairs, he is passionate about ensuring that HMS continues to offer its students a warm and highly supportive educational environment.

"Be it our flexible and innovative curriculum or tutoring, counseling, or other student services that we offer, Harvard Medical School offers individual attention, and a world of resources, to every single student. It is a place where you can pick up the phone, call up Nobel Prize winners, and fix up an appointment to talk to them about your own professional goals. No matter what your interests are, you'll be able to collaborate with faculty who are pioneers *in their fields and who really care about* you and your experience at HMS. We may be one of the world's leading medical research institutions, but we are — first and foremost — a medical school."



http://hms.harvard.edu/ content/admissions

THE DECKENT OF DECK

# Discovering

#### Gaurav Das Gaiha, Ph.D.

Harvard-MIT Health Sciences and Technology (HST) Medical Sciences M.D. Program

## Recent Faculty and Student Research at HMS

#### Faculty

- Developed an endoscopic procedure combining the reduction of fluidproducing tissue with restoration of normal flue circulation that avoids dependence on implanted shunt devices that fail over time.
- Improving the health of people in underserved communities through patient-centered health system redesign.
- The discovery of a progressive correlation between brain function and size may lead to a control or cure for schizophrenia.
- The sequencing of protein from a 68-million-year-old dinosaur proves it remains possible beyond one million years, and reveals a genetic connection between the extinct reptiles and birds.
- The counterintuitive discovery that proper drug combinations can turn bacteria's resistance against itself, offering new avenues in drug research.
- Research indicating compounds (such as red wine's resveratrol) that increase the life span of yeast and fruit flies may prevent the health-threatening effects of obesity in mammals.

#### Students

- Studying the long-term outcomes and prognostic factors in locally advanced pancreatic cancer patients undergoing intraoperative radiation therapy.
- Researching actigraphy-based sleep characteristics as predictors of inflammatory, autonomic, and stress systems activation in individuals suffering from primary insomnia.
- Researching the effect of tau protein on the brain in hopes of inhibiting diseases such as Alzheimer's.
- Studying the effectiveness of "pulsed dye" laser techniques in the treatment of otherwise inoperable cancer tumors.
- Fulbright study of an oppressed Costa Rican population group led to a World Bank grant to provide basic medical care.
- Helped to discover several enzymes, one of which is prevalent in high-risk prostate cancer patients; another, when mutated, indicates the severity of mental retardation.



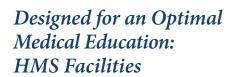
While beginning experiments as an undergraduate biochemistry major at the University of Illinois-Chicago, Gaurav Gaiha "came to an important realization." He recalls, "Science was no longer the trite memorization of facts. Instead, it transformed into a challenging thought process that required knowledge, creativity, and tenacity." Gaurav decided to pursue an M.D.-Ph.D. and began by researching novel HIV therapies while earning his Ph.D. at Oxford as a Clarendon Scholar.

After Oxford, Gaurav enrolled in the Medical Sciences M.D. division of the Harvard-MIT Health Sciences and Technology Program. "The biggest draw to Harvard was the HST Program," Gaurav says. "Being part of HST, I'm able to work at any lab at Harvard or MIT — and the curriculum teaches us how to integrate science and engineering with medicine."

Gaurav's HST thesis project is entitled "Characterization of HIV-specific Cytotoxic T Lymphocytes with Supernormal Killing Activity through a Functional Genomic Screen." Working with researchers at Harvard, MIT, and Massachusetts General Hospital, Gaurav explains that "the project pulls together cutting-edge technology with unique patient samples. The data obtained from this project could potentially be a new frontier in understanding the biology of CTLs in HIV infection. Ultimately, we hope that this new insight will aid in the continued development of novel T cell-based vaccines."



http://hms.harvard.edu/ content/admissions



Extensive, in-depth medical facilities on a classical campus, the HMS research environment offers a substantial range of well-equipped facilities for teaching and research, among them:

#### *Tosteson Medical Education Center (TMEC)*

- Houses most HMS classrooms and the five Academic Societies
- Fitted for digital and audiovisual technologies
- Case Method Room interactive tiered classroom seating 80 students
- Student Computing Center
- Home of the new Clinical Skills Center, offering 18 clinical examination rooms

#### Francis A. Countway Library

- One of the largest collections of biomedical books in the U.S. and a world-renowned historical collection
- The Countway Digital Library provides access to 149 databases for online services, over 10,000 electronic journals, and 1,114 electronic textbooks
- Study areas with network access
- Volumes: 695,749
   Monographs: 213,328
   Journal Volumes: 482,421
   Rare books: 212,083

#### Warren Alpert Building

 Houses departments of neurobiology and microbiology and the Center for Blood Research

#### New Research Building (NRB)

- Houses departments of genetics and pathology
- The Joseph Martin Conference Center

#### The Laboratory for Human Reproduction and Reproductive Biology (LHRRB) Building

 Houses investigators from the departments of biological chemistry and molecular pharmacology, and cell biology

#### Smart Classroom Tosteson Medical Education Center

#### The Seeley G. Mudd Building

 Provides expanded space for biomedical research programs

#### The Harvard Institutes of Medicine

 Inter-institutional biomedical research complex for HMS, Beth Israel Deaconess Medical Center, and Brigham and Women's Hospital

#### The New England Regional Primate Research Center

 Located in Southborough, Massachusetts, a 140-acre tract sponsored by the National Institutes of Health

## Connecting with HMS Technology

You'll learn with the help of a seamless combination of hardware and software that enhances MyCourses, our virtual curriculum. Designed to provide multimedia resources that foster student and faculty interaction, MyCourses-along with 50-inch, high-definition plasma display screens-enhances the tutorial process and provides access to a wide range of supplemental learning materials, such as micro-scopy slides, patient videos, and articles from the New England Journal of Medicine. You can also download files from the web, create your own personal web page and storage area, and coauthor complex documents with HMS faculty.



With nine basic and social science departments housed in the HMS Quadrangle, 50 clinical departments in our 17 teaching hospitals and other affiliates, Ph.D. research training programs offered through the Division of Medical Sciences, and faculty who conduct research in a score of locations around Boston, Harvard Medical School provides unsurpassed research opportunities.



David E. Cohen, M.D., Ph.D. Associate Professor of Medicine and Health Sciences and Technology and Co-Director of the Harvard-MIT Division of Health Sciences and Technology on the steps of Brigham and Women's Hospital, one of HMS' 17 affiliated institutions.

#### A F F I L I A T E D H O S P I T A L S

#### Beth Israel Deaconess Medical Center Renowned for excellence in surgery (including general, cardiovascular, thoracic, gastrointestinal, solid organ transplant,

and vascular surgery), Beth Israel Deaconess Medical Center is also known for treatment of cardiac conditions, cancer, and pulmonary and thoracic disorders, and for expertise in neurosciences, gastroenterology and liver disease, obstetrics and women's health, podiatry, and emergency and trauma medicine.

#### Brigham and Women's Hospital

Brigham and Women's Hospital is internationally known for its treatment of complex disorders in areas such as cardiac care, cancer treatment, neurosciences, orthopedics and arthritis, and women's health, as well as offering outstanding primary care services and the largest obstetrical program in Massachusetts.

#### **Cambridge Health Alliance**

Cambridge Hospital is one of the founding members of the Cambridge Health Alliance, a unique model that incorporates public health, clinical care, academics, and research. It offers a wide variety of services including medical specialties, surgical specialties, obstetrics, and primary care for all ages.

#### **Children's Hospital Boston**

As the largest pediatric medical center in the United States, Children's offers a complete range of health care services for children. Out of its more than 100 outpatient clinics, those for epilepsy, urological disorders, cerebral palsy, sports medicine, and cystic fibrosis are among the world's largest. The CHB Program in Cellular and Molecular Medicine forms the Immune Disease Institute.

#### The Dana-Farber Cancer Institute

Dana-Farber Cancer Institute is a founding member of the Dana-Farber/Harvard Cancer Center (DF/HCC), a federally designated comprehensive cancer center, as well as a federally designated Center for AIDS research. Providing advanced training in cancer treatment and research for an international faculty, the Institute conducts community-based programs in cancer prevention, detection, and control throughout New England.

#### The Forsyth Institute

As a collective community of educators, scientists, support staff, trustees, graduates, and friends, the Forsyth Institute has become the preeminent institution devoted to the advancement and dissemination of knowledge in oral and craniofacial science and its relation to systemic health and well-being.

#### Harvard Pilgrim Health Care

In 1992, Harvard Medical School and Harvard Pilgrim Health Care combined resources to form the Department of Ambulatory Care and Prevention, distinguishing Harvard Pilgrim Health Care as New England's first teaching and research health maintenance organization.

#### Hebrew SeniorLife (HSL)

Boston-based Hebrew SeniorLife (HSL) is a 100+ year-old organization committed to maximizing the quality of older adults' lives through an integrated network of housing, health care, research, and education programs.

#### Joslin Diabetes Center

Joslin Diabetes Center is an internationally recognized diabetes treatment, research, and educational institution. Some of the most important improvements in diabetes care — including treatments for diabetes in pregnancy, the development of laser surgery to treat diabetic eye disease, and the identification of markers for "pre-diabetes" — were developed at Joslin.

#### Judge Baker Children's Center

Judge Baker Children's Center is dedicated to improving the lives of children whose emotional and behavioral problems threaten to limit their potential. The Center attracts some of the foremost experts in the fields of developmental psychology, education, and child mental health.

#### Massachusetts Eye and Ear Infirmary

Massachusetts Eye and Ear Infirmary (MEEI) is a specialty hospital providing outstanding patient care for disorders of the eye, ear, nose, throat, head, and neck. Founded in 1824, MEEI is an international leader in ophthalmology and otolaryngology research.

#### Massachusetts General Hospital

Founded in 1811, Massachusetts General Hospital is the third oldest general hospital in the United States and the oldest and largest in New England. The 875-bed, world-renowned medical center offers sophisticated diagnostic and therapeutic care in virtually every specialty and subspecialty of medicine and surgery.

#### McLean Hospital

The first psychiatric institution in New England, McLean Hospital is a world



leader in the treatment of mental illness and chemical dependency, research into the cause of mental illness, and the training of generations of mental health care providers. It maintains the largest program of research in neuroscience and psychiatry of any private psychiatric hospital in the United States.

#### Mount Auburn Hospital

Mount Auburn Hospital was incorporated in 1871 as the first hospital in Cambridge, Massachusetts. With a mission to improve the health of the residents of Cambridge and the surrounding communities, Mount Auburn Hospital is dedicated to delivering primary and specialty health care services in a personable, convenient, and compassionate manner.

#### The Schepens Eye Research Institute

The Schepens Eye Research Institute is the largest independent eye research institute in America. Located in Boston, Massachusetts, the Institute was founded in 1950 by famed retinal surgeon Charles L. Schepens.

Spaulding Rehabilitation Hospital Spaulding Rehabilitation Hospital is one of the largest rehabilitation facilities in the U.S., providing comprehensive rehabilitation and complex medical management services for patients recovering from a wide variety of disorders.

Veteran Affairs Boston Healthcare System The largest consolidated VA facility in New England, the VA Boston Healthcare System encompasses three main campuses and six outpatient clinics within a 40-mile radius of the greater Boston area. The combined facility has 392 acute hospital beds, 120 nursing home beds, and 70 domiciliary beds for homeless veterans.

# to Be Visionary

HMS students perform extremely well on NBME Parts I and II. HMS graduates obtain residency positions at Boston's and the country's most prestigious hospitals and health care institutions. transforms students into leaders who make significant contributions to the practice, science, and history of medicine. Your four years at Harvard Medical School will empower you to join this tradition and ensure you have what it takes to become an important part of it. In accepting the responsibility to lead, you will contribute to the history of visionary accomplishments realized through the lives of HMS graduates and join a long list of innovators, discoverers, educators, and leaders.

> Like many HMS faculty, Dr. Beverly Woo, Associate Professor of Medicine, Brigham and Women's Hospital, and Associate Master of the Francis Weld Peabody Society, gives much of her time to students.

# **Seans**

## **Research at Harvard : Transforming Medicine**

HMS produces national and global leaders in medicine and biomedical science, public policy and health care administration, medical education, and specialists in numerous medical fields. The long list of leading physicians and scientists among HMS alumni is considerable, ranging from Harvey Cushing, the father of modern neurosurgery, to Dr. David Kessler, former head of the FDA. From the beginning, the Medical School has drawn the most gifted students from across the country and the world, many of whom demonstrate a strong desire for and experience in leadership early in the application process.



Paul Farmer, Chair of the Department of Global Health and Social Medicine, leads efforts to advance teaching and research in global health equity, linking students, medical residents, and faculty to service programs in some of the poorest parts of the world.

#### SOME HMS NOBEL LAUREATES

#### Jack Szostak, 2009,

Physiology or Medicine Discovered how chromosomes are protected by telomeres and the enzyme telomerase (with Elizabeth Blackburn of UC San Francisco and Carol Greider of Johns Hopkins University)

Linda Buck,\* 2004, Medicine Research on the olfactory system, explaining the sense of smell (with Richard Axel, Columbia University)

#### Joseph E. Murray, 1990, Medicine

Developed new procedures for organ transplant (with E. Donnall Thomas, formerly of the University of Washington)

#### Bernard Lown, Herbert Abrams, Eric Chivian, and James Muller, 1985, Peace

Cofounders, with Evgueni Chazov, Leonid Ilyin, and Mikhail Kuzin from the Soviet Union, of the International Physicians for the Prevention of Nuclear War

#### David Hubel and Torsten Wiesel, 1981, Medicine

Research on informationprocessing in the visual system

Baruj Benacerraf, 1980, Medicine and Physiology Research on genetics and immunology

In addition to our 15 Nobel Laureates, you will find among the faculty (living):

31 Howard Hughes Medical Institute investigators, 65 National Academy of Science members, and 123 Institute of Medicine members

\*Buck was awarded the Nobel Prize for work done while a member of the Harvard faculty. When the award was made, she was a member of the faculty of Fred Hutchinson Cancer Research Center.

\*\*Robbins was awarded the Nobel Prize for work done while a member of the Harvard faculty. When the award was made, he was a member of the faculty of Case Western Reserve University.

A complete listing of HMS Nobel Laureates is available on the web at http://hms.harvard.edu/about-hms/ facts-figures



#### **GRADUATE SUCCESS**



#### ONI BLACKSTOCK

Albert Einstein College of Medicine (Montefiore Program) Internal Medicine/ Primary Care

"From the beginning of your time at HMS, you're thinking like a doctor. Harvard students have a reputation on the wards for being able to work through problems... because we study patient cases early on."



#### SARAH RUSSELL

New York State Presbyterian Hospital (Columbia Campus/NY State Psychiatry Institute Program)

"The real strength of HMS is that it prepares you to deal with lots of different kinds of people. You see that when you get to the wards and all of the dynamics that converge on the team of people caring for a patient transfer directly to you."

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#### A SAMPLING OF HMS RESIDENCY PLACEMENTS

HMS students have a reputation for landing placements with highly regarded institutions in a variety of fields. Over 50 percent of the graduating class completes residency training in one of the HMS-affiliated teaching hospitals: Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Cambridge Hospital, Children's Hospital Boston, Dana-Farber Cancer Institute, Harvard Pilgrim Health Care, Joint Center for Radiation Therapy, Joslin Diabetes Center, Judge Baker Children's Center, Massachusetts Eye and Ear Infirmary, Massachusetts General Hospital, Massachusetts Mental Health Center, McLean Hospital, Mount Auburn Hospital, Spaulding Rehabilitation Hospital, VA Boston Healthcare System. Other programs attended by recent graduates include:

Anesthesiology Duke University Medical Center

Hospital of the University of Pennsylvania

Mount Sinai Hospital (NY)

New England Medical Center UCLA Medical Center

UCSF Medical School

Child Neurology

Children's Hospital-Philadelphia (PA)

UC San Diego Medical Center

UCSF Medical School
Dermatology

Mayo School of Graduate Medical Education (MN)

Stanford University Programs (CA)

UC Davis Medical Center University of Pittsburgh

Medical Ćenter (PA) *Emergency Medicine* Alameda County Medical Center (CA)

Medical Center (CA) Beth Israel Medical Center (NY)

Harbor-UCLA Medical Center

Hennepin County Medical Center (MN)

Johns Hopkins Hospital (MD)

Rhode Island Hospital/ Brown University Temple University Hospital (PA)

UCLA Medical Center

Family Medicine

O'Connor Hospital (CA) Sutter Medical Center (CA)

UCSF School of Medicine

University of Washington Affiliated Hospitals

General Surgery Barnes Jewish Hospital (MO)

Duke University Medical Center (NC)

Mount Sinai Hospital (NY)

UC Davis Medical Center Rus UCSF Medical School Med

University of Chicago Medical Center

Internal Medicine Hospital of the University of Pennsylvania Johns Hopkins Hospital (MD)

New York Presbyterian Hospital, Columbia University Medical Center

New York Presbyterian Hospital, Weill Cornell

Medical Center Stanford University

Programs (CA) UCLA Medical Center

University of Michigan Hospitals

UC San Diego Medical Center

UCSF Medical School

University of Washington Affiliated Hospitals

Yale-New Haven Hospital (CT)

Neurology Johns Hopkins Hospital (MD)

Stanford University Programs (CA) UCSF Medical School

Ob/Gyn

Johns Hopkins Hospital (MD)

Naval Medical Center (VA) New York University

School of Medicine Tulane University

School of Medicine University of Arizona

Affiliated Hospitals University of Michigan Hospitals

University of Toronto (Canada)

University of Virginia

**Ophthalmology** Wills Eye Institute (PA)

University of Iowa University of Southern California

**Orthopedic Surgery** Albany Medical Center Hospital (NY)

Barnes Jewish Hospital (MO)

Duke University Medical Center

Rush University Medical Center (IL)

Union Memorial Hospital (MD)

UCSF School of Medicine

University of Iowa Hospitals (IA) University of Maryland Medical Center University of Pittsburgh

Medical Center (PA) University of Southern

California University of Washington Affiliated Hospitals

Otolaryngology Johns Hopkins Hospital (MD)

Naval Medical Center (CA)

Stanford University Programs (CA)

University of Minnesota Medical School

Pathology Stanford University Programs (CA)

**Pediatrics** Baylor College of Medicine (TX)

Children's Hospital-Los Angeles (CA)

Children's Hospital-Philadelphia (PA)

New York Presbyterian Hospital, Columbia University Medical Center

Northwestern McGaw (IL)

Oregon Health & Science University

Stanford University Programs (CA)

UCLA Medical Center

UC San Diego Medical Center

UCSF School of Medicine

University of New Mexico School of Medicine

Phys Medicine & Rehab Northwestern McGaw (IL)

Stanford University Programs (CA)

**Plastic Surgery** New York Presbyterian Hospital, Columbia University Medical Center

Northwestern McGaw (IL) University of Michigan

Hospitals UCSF School of Medicine

University of Texas

Medical Branch Preliminary Medicine Beth Israel Medical

Center (NY) Johns Hopkins/ Bayview (MD)

Mount Sinai Hospital (NY)

Mount Sinai Medical Center (FL) Stanford University

Programs (CA) UC Irvine Medical Center

**Preliminary Surgery** 

New York Downtown

Hospital of the University

UCLA Semel Institute

Radiation Oncology

University of Iowa

Hospitals (IA)

of Pennsylvania

for Neuroscience

Memorial Sloan-

Stanford University

Affiliated Hospitals

Hershey Medical

New England Medical

University of Michigan

UCLA Medical Center

Transitional Medicine

New England Medical

Newton-Wellesley Hospital (MA)

St. Joseph Mercy-Ann Arbor, MI

Santa Clara Valley

Scripps Mercy Hospital (CA)

Center (WA)

Duke University

Hospital (DC)

Hospitals (IA)

University of Iowa

Medical Center (NC)

Georgetown University

Urology

Medical Center (CA)

Virginia Mason Medical

LDS Hospital (UT)

Memorial Sloan-

Kettering (NY)

Center (MA)

University of Southern

University of Washington

Kettering (NY)

Programs (CA)

California

Radiology

Center (PA)

Center (MA)

Hospitals (MI)

Yale-New Haven

Hospital (CT)

Psychiatry

Duke University Medical Center (NC)

Hospital

# Leading

#### MARC A. LABERGE

M.D., Health Sciences and Technology Society, Ottawa, Canada

Marc's desire to make a real difference in people's lives compelled him to leave a career *in investment banking to study medicine.* To that end, HMS exceeded his highest expectations. "The faculty's passion for teaching and mentoring students is amazing, especially given that they are internationally recognized experts with very busy schedules. It's truly inspiring to *learn from teachers who can do it all: be* wonderful physicians and surgeons, worldclass scientists, and dedicated teachers. The student body at HMS is also an essential part of what makes the medical school so strong: exceptionally bright students with diverse and interesting backgrounds, committed to becoming great doctors. And the academic quality is outstanding.

The HST curriculum gives students in*depth and rigorous training in the science* of medicine and ties in the clinical side at the end of second year with an intensive three-month program in the hospital. HMS is affiliated with some of the best hospitals *in the world. Not only will you learn from* outstanding clinicians, you will study fascinating and complex cases, because Harvard hospitals are global referral centers. On the research side, no matter what field you are interested in and no matter how specialized, there's at least one HMS researcher who is an expert in it, and who would love to work with a medical student. HMS gave me the opportunity to learn from the very best and to develop the tools I need to provide patient care of the highest quality and conduct cutting-edge research."

NRMP

# Match Day 2018 Every March, HMS holds a Match Day on campus where students learn which residency

NRMP

NRMP

program they will be attending for the next three to seven years. Coordinated by the National Resident Matching Program in Washington, D.C., HMS holds a luncheon to celebrate the next step in the lives of hundreds of medical students.

# ADMISSIONS

#### **Selection Factors**

Admission to Harvard Medical School is very selective. We seek students of integrity and maturity who have concern for others, leadership potential, and an aptitude for working with people.

The Committee on Admissions evaluates applications based on several factors, including:

- Academic records
- Applicant's essay
- Medical College Admission Test scores
- Extracurricular activities
- Summer occupations
- Life experiences
- Experience in the health field, including research or community work
- Letters of evaluation

Accepted applicants must successfully complete all courses and programs in progress as indicated at the time of application — including course requirements for admission — at a standard comparable in quality to that of past academic performance.

Harvard Medical School is committed to the enrollment of a diverse body of talented students. The Committee on Admissions welcomes applications from qualified students representing groups that historically have been underrepresented in the field of medicine.

HMS complies with federal and state law prohibiting discrimination against any applicant or enrolled student on the basis of race, color, religion, sex, sexual preference, age, or handicap unrelated to job or course of study requirements. Applicants with disabilities will be evaluated on a case-by-case basis in accordance with technical standard guidelines as suggested by the Association of American Medical Colleges. All students must possess the physical and emotional capabilities required to undertake the full curriculum independently and to achieve the levels of competence required by the faculty. Our technical standards are listed in detailed policies on our website: www.hms.harvard.edu/admissions.

#### **Requirements for Admission**

The Faculty of Medicine accepts applications from current students in good standing and graduates of accredited colleges who:

- Meet the minimum course work requirements listed below.
- Present evidence that their intellectual and personal credentials are of such quality as to predict success in the study and practice of medicine.
- Demonstrate aptitude in the biological and physical sciences during their undergraduate years, but not to the exclusion of the humanities and social sciences.
- Supplement their education with at least one year of college or university training in the United States or Canada *if* they have completed academic work in universities outside the United States or Canada. (Foreign students who do not have a baccalaureate or advanced degree from an institution in the United States or Canada are rarely admitted.)

PLEASE NOTE: Students who have previously enrolled in any medical school, for any length of time, are ineligible to apply for admission at HMS. Students who have applied for admission to HMS on two prior occasions are also ineligible.

#### General Comments Regarding Course Requirements

The Committee on Admissions considers the level of courses when evaluating academic performance and determining a candidate's suitability for medicine. We require strong preparation in the sciences and mathematics basic to medical school studies. Candidates should take courses that are comparable to courses taken by students majoring in these subjects.

In the final analysis, however, it is not the number of years in college or hours in a course, but the quality of education and the maturity of the student that determine readiness for medical school. At least three years of college work and a baccalaureate degree from an accredited institution are required prior to matriculation in medical school.

#### **Required Courses**

Detailed descriptions of the competency areas to be covered by prerequisite coursework can be found on our website: http://hms.harvard.edu/admissions.

**1. Biology:** one year with laboratory experience. Courses should be devoted to genetics and cell biology. This

requirement can be met with a formal yearlong course that covers these concepts. Other approaches (including interdisciplinary courses taught together with biologically relevant physical sciences) will be considered. Advanced placement credits cannot be used to satisfy this requirement; upper level courses should be taken if students have been granted advanced placement credits.

- 2. Chemistry: two years with laboratory experience. Full-year courses in general (or inorganic) and organic chemistry generally meet this requirement. A onesemester course in organic chemistry which covers the relevant material and a semester course in biochemistry may substitute for the traditional year of organic chemistry. As of the class entering in 2016, biochemistry will be required. Advanced placement credits which enable a student to take an upper level course may be used to meet one semester of this requirement.
- **3. Physics:** one year. Advanced placement credits which enable a student to take an upper level course may be used to meet one semester of this requirement.
- 4. Mathematics: either one year of calculus, or one semester of calculus and one semester of statistics, preferably biostatistics. Advanced placement credits may satisfy this requirement (Calculus AB = 1 semester, Calculus BC = 2 semesters). Preferably, students will have some combination that equals a unified two-semester course that covers important, biologically relevant concepts in calculus and statistics. As of the class entering in 2016, one semester of statistics (preferably biostatistics) will be required.

#### 5. Expository Writing: one

year. One year of critical writing preparation, preferably in a course devoted specifically to the development of expository writing skills, is required. Advanced placement credits cannot be used to satisfy this requirement.

6. Additional requirements for the HST Program: In addition to all the requirements, the HST curriculum requires that students be comfortable with upper level mathematics (through differential equations and linear algebra), biochemistry, and molecular biology. In addition, one year of calculusbased physics in college is required.

When advanced placement credits are used to satisfy portions of the chemistry, physics, or mathematics requirements noted above, scores from the AP examination must be submitted prior to matriculation.



#### **Application Procedure**

Application to Harvard Medical School is made through the American Medical College Application Service (AMCAS). All applicants are eligible to file the Harvard supplemental application, which must include a non-refundable application filing fee of \$100. We will waive the fee for applicants who have been granted an AMCAS fee waiver. HMS does not accept supplemental applications for the first-year class received after October 22<sup>nd</sup> of the year preceding expected matriculation.

Early submission of the application materials is encouraged. All letters of evaluation should be sent to the AMCAS no later than October 22<sup>nd</sup>. Applications remaining incomplete after October 22<sup>nd</sup> will not be acknowledged; these applications will be reviewed and acted upon shortly after November 1st on the basis of the application materials on file at that time. All application materials become the property of Harvard Medical School.

Applicants selected for interviews will be notified by February. Offers of acceptance will be made from this group. Final decisions will be announced in March. Under no circumstances will decision information be released to applicants by telephone.

Only the Committee on Admissions has the authority to make offers of admission to Harvard Medical School, and this authority cannot be delegated to any other person, committee, or group. To be valid, an offer of admission must be signed by the Chairperson of the Committee on Admissions.

#### The Medical College Admission Test

The Medical College Admission Test (MCAT) is required of all applicants. Only scores available by October 22<sup>nd</sup> will be considered. MCATs more than three years old must be retaken. Information regarding this test can be found at www.aamc.org/students/applying/mcat.

#### **Transfers and Advanced Standing**

Transfers are not possible. Admission with advanced standing is limited to a few students each year who are completing the Medical Engineering Medical Physics program at MIT's Graduate School of Science and Engineering or the Oral and Maxillofacial surgery postgraduate program sponsored by Massachusetts General Hospital and the Harvard Dental and Medical Schools.

#### **Deferred** Admission

Students should apply during the admission cycle for the year they plan to attend. Harvard Medical School will NOT accept applications from candidates currently enrolled in other degree granting programs, unless the pending degree will be conferred prior to medical school matriculation. This policy applies to students participating in the NIH Graduate Partnership Program. Deferrals will not be granted for students unable to complete degree programs in progress at the time of the application. However, HMS recognizes that special opportunities may arise during the application year. The Faculty Associate Dean for Admissions approves applications for deferred admission on a case-by-case basis. Deferrals are granted for one year, and consideration may be given for multiple years for students participating in two- or threeyear Rhodes or Marshall Scholarships. Accepted students wishing to apply for deferral should write to the Faculty Associate Dean for Admissions stating their reasons for deferral and their plans for the subsequent year(s).

#### Additional Application Procedures and Selection Factors for M.D.-Ph.D. Applicants

Admission to the M.D.-Ph.D. Program is highly competitive due to the limited number of National Institutes of Health Medical Scientist Training Program (MSTP)-funded positions.

The M.D.-Ph.D. Subcommittee on Admissions seeks applicants with:

- Outstanding academic ability
- Commitment to pursue careers in academic medicine and research
- Significant research experience

#### The Admission Process

Admission to the M.D.-Ph.D. Program is contingent upon admission to the New Pathway (NP) and/or Health Sciences and Technology (HST) M.D. Program(s). Applicants must submit a complete application to one or both of these programs in addition to the M.D.-Ph.D. application materials described below.

Two application cycles are used during the academic year for students applying to the M.D.-Ph.D. Program. The first cycle is for the new applicants to Harvard Medical School. The second cycle is for currently enrolled medical students at HMS.

The AMCAS essay questions relevant to the M.D.-Ph.D. study, and letters of recommendation from research supervisor(s), are important components in the evaluation process. Application to the M.D.-Ph.D. Program does not influence admission to only the M.D. program(s). There are two separate tracks available as part of the M.D.-Ph.D. Program.

#### *M.D.-Ph.D. in the Basic and Translational Sciences Track*

Admission to the M.D.-Ph.D. Program Basis and Translational Sciences Track is highly competitive due to the limited number of National Institutes of Health Medical Scientist Training Program (MSTP) funded positions.

NOTE: The deadline for all materials for the M.D.-Ph.D. Program is October 22, 2014.

The M.D.-Ph.D. Subcommittee on Admissions seeks applicants with:

- Outstanding academic ability
- Commitment to pursue careers in academic medicine and research
- Significant research experience

M.D.-Ph.D. applicants interested in the basic and translational sciences must submit the AMCAS application and the HMS Supplemental Application. Applicants selected for interviews will be invited to meet with two members of the M.D.-Ph.D. Subcommittee on Admissions in addition to the interviews scheduled by the medical school for New Pathway and/or HST. All interviews will be scheduled over a one- or two-day period.

Students admitted to the M.D.-Ph.D. Program in basic and translational sciences are awarded funding starting in the first year of medical school that covers the entire period of combined M.D.-Ph.D. education for tuition, fees, and a stipend. Support is provided, in part, by the National Institutes of Health Medical Scientist Training Program (MSTP) Grant. HMS may award varying levels of support to students who matriculate and who pursue the dual degree program. Additional support is available from departmental training grants, special fellowships, and research or teaching assistantships for M.D.-Ph.D. students during the graduate years. Some M.D.-Ph.D. students are eligible for support through other NIH fellowships including the Minority Access to Research Careers (MARC) and Minority Predoctoral Programs.

Decision letters for all M.D.-Ph.D. applicants to the basic and translational sciences track are sent by U.S. mail in early March.

#### M.D.-Ph.D. in the Social Sciences Track

Applicants to the Social Sciences M.D.-Ph.D. Program should submit the AMCAS Application, the HMS Supplemental Application, AND also file a separate application to the Harvard Graduate School of Arts and Sciences (GSAS) for admission to a relevant Ph.D. program at the University. The M.D. can be combined with Harvard Ph.D. programs, including medical anthropology, economics, government, health policy, history of science, psychology, and sociology.

Applicants should note that application materials to medical and graduate school must be filed independently of each other since these materials are not shared. Applicants must meet all eligibility requirements and follow procedures and deadlines for each respective application process at HMS and GSAS. Applicants should also file the appropriate financial aid materials as requested in conjunction with their graduate school application. Information on graduate programs, admissions, and financial aid can be found at www.gsas.harvard.edu.

Admission to the Social Sciences M.D.-Ph.D. Program requires admission to both HMS and a relevant Ph.D. program at the Harvard GSAS. Funding available to students in the Social Sciences M.D.-Ph.D. Program differs from that available to the basic and translational sciences M.D.-Ph.D. track students, is more limited, and is granted via a competitive process after admission to the program. Further details about the program and available funding can be found at www.hms.harvard.edu/md\_phd/ program/social.html.

Decision letters about funding awarded by the Social Sciences M.D.-Ph.D. Program are sent by U.S. mail by early April. Decision letters about admission to HMS and GSAS follow their respective timelines for notification.

#### **Admissions Guidelines**

The following recommendations are promulgated by the Association of American Medical Colleges (AAMC) to ensure that applicants are afforded timely notification of the outcome of their medical school applications and timely access to available first-year positions and that schools are protected from having unfilled positions in their entering classes. These recommendations are being distributed for the information of prospective medical students, their advisors, and personnel at the medical schools to which they have applied. Harvard Medical School subscribes in full to these recommendations.

#### The AAMC Recommends That:

- 1. Each applicant be familiar with, understand, and comply with the application, acceptance, and admission procedures at each school to which the applicant has applied, as well with as these recommendations.
- 2. Each applicant provide accurate and truthful information in all aspects of the application, acceptance, and admission processes for each school to which the applicant has applied.
- 3. Each applicant submit all application documents (e.g., primary and secondary application forms, transcript[s], letters of evaluation/ recommendation, fees) to each school in a timely manner and no later than the school's published deadline date.
- 4. Each applicant promptly notify all relevant medical school application services and all medical schools with independent application processes of any change, permanent or temporary, in contact information (e.g., mailing address, telephone number, email address).

- Any applicant who will be unavailable for an extended period of time (e.g., during foreign travel, vacation, holidays) during the application/admission process:
  - a. Provide instructions regarding his or her application and the authority to respond to offers of acceptance to a parent or other responsible individual in the applicant's absence.
  - b. Inform all schools at which the applicant remains under consideration of this individual's name and contact information.
- 6. Each applicant respond promptly to a school's invitation for interview. Any applicant who cannot appear for a previously scheduled interview should notify the school immediately of the cancellation of the appointment in the manner requested by the school.
- 7. Each applicant in need of financial aid initiate, as early as possible, the steps necessary to determine eligibility, including the early filing of appropriate need analysis forms and the encouragement of parents, when necessary, to file required income tax forms.
- 8. In fairness to other applicants, when an applicant has made a decision, prior to May 15, not to attend a medical school that has made an offer of acceptance, the applicant promptly withdraw his or her application from that (those) other school(s) by written correspondence delivered by regular or electronic methods.
- 9. By May 15 of the matriculation year (April 15 for schools whose first day of class is on or before July 30), each applicant who has received an offer of acceptance from more than one school choose the specific school at which the applicant prefers to enroll and withdraw his or her application, by written correspondence delivered by regular or electronic methods, from all other schools from which acceptance offers have been received.
- Immediately upon enrollment in, or initiation of an orientation program immediately prior to enrollment at, a U.S. or Canadian school, each applicant withdraw his or her application from consideration at all other schools at which he or she remains under consideration.

# TUITION, FEES, & EXPENSES

Harvard Medical School tuition rates are set annually and cover courses taken from July 1 through June 30 each year up to the final year of enrollment, ending with graduation. Tuition is billed by semester with two forms of bill payment available: payment in full by semester or monthly payments (payments for the year spread over eight months). The monthly payment plan carries a service charge of \$35 per semester.

An estimate of yearly expenses shows that the average cost for an unmarried first-year student will be approximately \$78,975 for the 10.5-month academic year 2013–2014. This estimate includes tuition, health service fee and insurance premium, room and board, books, travel, transportation to clinical sites, miscellaneous, and incidentals. Students whose homes are outside the Northeast region of the United States may experience travel costs in addition to this estimate.

Students who choose the five-year program or whose time for meeting degree requirements at Harvard Medical School exceeds eight semesters and who have paid eight semesters of full tuition ordinarily will be assessed a reduced tuition charge for each semester of enrollment beyond the eighth semester. This reduced tuition is expected to be \$1,525 per semester in 2013–2014.

#### *Tuition and Fees for a First-Year Student*

#### 2013-2014

Tuition	\$52,100
University Health Services Fee	\$958
Blue Cross/Blue Shield	\$2,190
Disability Insurance	\$63
Matriculation Fee	\$35
Educational Materials Fee	\$425
Vanderbilt Hall (avg. rent)	\$8,750

Tuition and fees are adjusted on an annual basis.

#### **Financial** Aid

The decision to attend a high-cost private medical school should involve the entire family, as the primary responsibility for financing the education falls on the individual students (and spouses, if married) and their parents. Our Financial Aid Office strives to help students meet any shortfall of funds after the maximum financial effort has been made by the student and his/her family. In academic year 2012– 2013, the Financial Aid Office administered financial assistance to approximately 84 percent of the student body.

The application process for financial assistance is separate from the admissions process. The Committee on Admissions

follows a long-standing policy of selecting candidates without regard to the candidate's ability to pay for medical school. Candidates selected for admission or for the wait-list are invited to apply for financial assistance and will be sent the necessary application forms.

The Financial Aid Committee awards financial assistance solely on the basis of financial need and the availability of funds; no merit-based scholarship awards are offered.

#### **Financial Need**

When calculating a student's financial need, the Financial Aid Office determines the expected family contribution by analyzing the family's financial disclosure according to a national formula. This financial disclosure is made via several financial aid application documents, including the U.S. Department of Education's Free Application for Federal Student Aid (FAFSA). The calculated family contribution is then subtracted from the estimated total cost for the year to arrive at the amount of financial need:

Standard _ Budget	_	Family _		Financial	
		Contribution	-	Need	

**Student Expenses.** For 2013–2014, eligibility for financial aid is based on the cost of attendance for a single firstyear student of \$78,975. This includes \$52,100 for tuition and \$26,875 for all other fees, supplies, and living expenses. The cost varies by year in school, and annual increases are possible due to inflation. We do not consider a separate budget for married students, as support for dependents is taken into account when determining the expected family contribution. School-administered funds are not available to meet expenses for individuals other than the student.

Family Contribution. To be considered for institutional grants and loans, the Financial Aid Office requires applicants to supply parent financial information, regardless of age, dependency, marital status, tax status, or prior history of financial independence.

For students aged 29 or above by October 1st of the academic year, the calculated parent contribution will be reduced 25–80 percent. (Actual percentage reduction is based upon age of student as of October 1st.)

In extreme cases, (e.g., when the whereabouts of a parent are unknown), the Financial Aid Office requires that the family's situation be documented by a third-party professional, such as a clergyman, attorney, social worker, or family physician who has personal and long-term knowledge of the family. **NOTE:** Students who anticipate that parents will not provide the full expected parent contribution must plan in advance how they will finance Harvard Medical School without parental help. It is Harvard Medical School policy not to replace an absent expected parent contribution with institutional aid.

#### **Program Eligibility Criteria**

The HMS Financial Aid Office administers several need-based scholarships and low-interest loans, including the HMS Scholarship, HMS Revolving Loan, Wolfson Loan, and federal Title VII Loan for Disadvantaged Students. Parent information is an important component in determining eligibility for these programs.

Applicants who choose not to provide parental information may be still considered for the following programs: Federal Direct Stafford/Ford Loan, Federal Direct PLUS Loan, and the Federal Work-Study Program (FWS). Non-federal, commercial market-rate student loans are also available; please contact the Financial Aid Office for more information. While it is possible to meet virtually the entire cost of attendance through loan programs, this option is not encouraged due to the heavy debt burden that would result at graduation.

#### Packaging Financial Aid Awards: The Unit Loan

Harvard Medical School uses a policy known as the Unit Loan concept to package financial aid awards and assure that high-need students have priority for scholarship funds. The Unit Loan is a package of loans offered to meet financial need before any HMS scholarship is offered. A student's financial need must exceed the total Unit Loan before the student is eligible for scholarship aid through HMS.

inancial	_ Unit	=	HMS
Need	Loan		Scholarship

F

For the 2013 incoming class, the Unit Loan is \$28,300. A student whose computed need exceeds \$28,300 will be offered an HMS Scholarship. The cornerstone of our loan package is always the Federal Direct Stafford Loan (6.8% fixed interest rate). The Perkins Federal Loan and various low-interest loans (interest of 5%–7%) are used to meet the remaining loan need up to our Unit Loan amount. Payments are not required while the student is in school.

SPECIAL NOTE: The federal portions of the Unit Loan require that a recipient be a U.S. citizen or a permanent U.S. resident. Aid from federal programs will be removed from the financial aid packages of international students. Harvard Medical School and/or private financial aid funds are then awarded to meet this gap.

Each entering class is assigned a Unit Loan amount prior to matriculation.

This Unit Loan amount will remain fixed for all members of that class for the duration of their enrollment at HMS. The Unit Loan changes in composition from one academic year to the next depending upon available funding levels. The Financial Aid Committee reserves the right to adjust the packaging of late applicants when funding is limited.

**Outside Awards.** Scholarships obtained by the candidate from sources outside of Harvard are used to replace the loans in a student's aid package (starting with least favorable loan). Upon request, students may use these funds to replace expected parent contribution instead of reducing loans.

#### Financial Aid Application Procedures

Harvard Medical School uses the Free Application for Federal Student Aid (FAFSA) and the Access Group's Need Access Application as key components of the financial aid application. Students who anticipate needing financial aid are urged to file FAFSA and Need Access Application forms as soon as possible after January 1. These forms are available online at: www.fafsa.ed.gov (HMS Title IV School Code E00472) and www.needaccess.org.

Candidates accepted or wait-listed for admission are sent financial aid application instructions in March. Required documents include parent tax returns. Families are urged to complete their tax returns early as financial aid awards cannot be prepared until all financial aid application materials have been received. If financial aid is a key factor in your decision to attend HMS, you must file as early as possible.

#### Sample Cases

Applying the policies described above, the following shows two types of financial aid awards:

0	<i>Standard Budget</i> Less Family Contribution	\$78,975 -50,675
	Financial Need	\$28,300
	Award	
	Federal Stafford Loan	\$ 20,200
	Federal Perkins, HMS Revolving & Wolfson Loan	\$8,100
	HMS Scholarship	0
	Total Aid	\$28,300



2	Standard Budget	\$78,975	
	Less Family Contribution	-22,000	
	Financial Need	\$56,975	
	Award		
	Federal Stafford Loan	\$20,200	
	Federal Perkins, HMS		
	Revolving & Wolfson Loan	\$8,100	
	HMS Scholarship	\$28,675	
	Total Aid	\$56,975	

If the student in either case was unable to obtain the full calculated family contribution, s/he would have to make up the shortfall from additional resources. These might include the Federal Direct Stafford/Ford Loan, the Federal Direct PLUS Loan, a private unsubsidized loan, or job earnings.

#### For More Information

Please call or write if you have additional questions or concerns about financing your medical education at Harvard: HMS Financial Aid Office, 25 Shattuck Street, Gordon Hall, Room 211, Boston, MA 02115–6092, telephone: (617) 432-0449, fax: (617) 432-4308, email: financial\_aid@hms.harvard.edu.

#### Financial Aid Calendar 2014

#### January 1

Earliest date that the federal government and the Access Group will accept FAFSA and Need Access Application forms for processing. Families should file tax returns, FAFSA, and Need Access Application forms as soon possible after this date.

#### Early March

Candidates accepted or wait-listed for admission are sent financial aid materials.

#### April 1

Evaluation of completed files and mailing of financial aid award letters begin on a rolling basis.

#### April 15

Deadline for submission of all application materials including tax returns for the most recent calendar year.

#### May 15

Last day an admitted student can simultaneously hold a place at HMS and another medical school.



Lulu Tsao, a first-year student, gets hands-on practice during Introduction to the Profession, a course that provides a general approach to patient care and a broad overview of the medical vocation.

# Leading

#### Dr. Richard Mitchell

Associate Professor of Pathology and Health Sciences and Technology, Brigham and Women's Hospital, Associate Master of Harvard-MIT Division of Health Sciences and Technology

A specialist in cardiovascular pathology, Dr. Mitchell's enthusiasm about his current research in cardiovascular diseases and solid organ transplant is surpassed only by his commitment to his students. "For students who love research, being at Harvard Medical School is a lot like being a kid in a candy store," he says. "The depth and breadth of scientific investigation conducted in this community is incredible."

Dr. Mitchell draws inspiration from his everyday interaction with the students he supervises within both the cardiology and pathology laboratories at Harvard's state-ofthe-art New Research Building. *"It is an environment unbelievably* rich in cross-fertilization," he says. "My students work with engineers and physicists on the next-level hip prostheses, or next-generation heart valves, or retinal implants that allow blind people to see. I've had students have brilliant ideas, take a break from medical school to start their own companies, and be featured on the cover of Fortune magazine before returning to complete their medical degrees.

"Our goal is to help our students become fluent in the languages of science and medicine and to graduate leaders who can understand the utility of such an interaction." http://hms.harvard.edu/



# SELECTED POLICIES

#### Access to Educational Records: Family Rights and Privacy Act of 1974 (FERPA)

Annually, Harvard Medical School informs students of the Family Rights and Privacy Act of 1974, as amended. This Act was designed to protect the privacy of education records, to establish the right of students to inspect and review their education records, and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with the Family Rights and Privacy Act Office concerning alleged failures by the institution to comply with the Act.

Within the Harvard Medical School community, only those members, individually or collectively, with a legitimate educational interest are allowed access to student educational records. Local policy explains in detail the procedures to be used by the institution for compliance with the provisions of the Act. A copy of the policy can be found at the HMS Registrar's Office, 25 Shattuck Street, Gordon Hall Room 213, Boston, MA 02115. Questions concerning FERPA may be referred to the Registrar.

The School will release certain information classified as "directory" information unless a student indicates that such information should not be released. Directory information is classified as: full name, local address, telephone number, photograph, and dates of enrollment. Requests to withhold this information should be indicated on the Personal Data Form that is filled out annually and submitted to the Registrar's Office in August.

#### Personal and Professional Responsibility

Harvard Medical School has the responsibility of ensuring that its graduates meet certain standards of professional conduct and responsibility. These standards include reliability, honesty and integrity, responsibility in professional relationships, responsibility in relationships with patients and families, and responsibility related to substance abuse. Promotion and granting of the M.D. degree require both satisfactory completion of courses and the required credits and demonstration by the student of responsible conduct. Students will be evaluated on the basis of these standards. Harvard Medical School subscribes to the AAMC's statement of professional responsibility in treating patients with HIV, adopted by the Executive Council of the AAMC on February 25, 1988: medical students, residents, and faculty have a fundamental responsibility to provide care to all patients assigned to them, regardless of diagnosis. A failure to accept this responsibility violates a basic tenet of the medical profession — to place the patient's interests and welfare first.

#### Attendance

Participation in the curriculum is considered as one aspect of a student's commitment to the learning of medicine and evidence for an understanding and mastery of professional responsibility. Attendance at all classes and venues involving patient participation is mandatory. Attendance and punctuality during all aspects of clinical clerkships are expected and are considered an important part of a student's evaluation. Students, like house staff, are expected to fulfill their patient care responsibilities; they are accorded real roles and form an integral part of the health care team. As the small-group tutorial is the cornerstone of the educational experience in the New Pathway curriculum, attendance at tutorial is required. The HST curriculum, by its very nature and the size of its student body, depends upon active participation in all venues of education, including lectures, small group meetings, laboratories, and research symposia; attendance is therefore expected of all students.

#### Policy Regarding Religious Holidays

In accordance with Massachusetts state law, any student who is unable, because of his or her religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination, study, or work requirement. Provided that students use careful discretion in judging the importance of a particular holiday, Harvard Medical School provides the opportunity to make up such absences.

#### Transportation

Medical schools have recognized that students need educational experiences beyond those available in teaching hospitals. In answer to this educational need, ambulatory sites, rehabilitation centers, geriatric facilities, nursing homes, health centers, and other venues have been introduced to provide a comprehensive exposure to a broad range of patients, illnesses, and care. Harvard Medical School policy is that students are responsible for arranging their own transportation, including that to and from their clinical sites. These sites, with rare exceptions, are accessible by public transportation from the medical school.

#### Technical Standards for Medical School Admission, Continuation, and Graduation

Applicants to Harvard Medical School are selected on the basis of their academic, personal, and extracurricular dimensions. In addition, applicants must have the intellectual, physical, and emotional capacities to meet the requirements of the school's curriculum and of a successful medical career.

A detailed statement of Harvard Medical School's technical standard guidelines is available at http://hms.harvard.edu/ admissions under the Detailed Policies section. These guidelines specify the attributes that the HMS faculty considers essential for completing medical school training and for enabling each graduate to enter residency and clinical practice. Because these standards describe the essential functions that students must demonstrate to meet the requirements of a general medical education, they are prerequisites for entrance, continuation, promotion, and graduation.

#### Grading and Assessment

Courses ordinarily taken by first-year and second-year Harvard Medical students are graded Satisfactory/Unsatisfactory. Marginal performance by a student is noted by the course director in a letter to the student, with copies to the Society Master and Registrar.

Narratives on the performance of each student are prepared by the faculty of all courses having regular small group teaching sessions. This routinely applies to tutorials, but may also include labs and conferences.

Most courses normally taken during Years III and IV, including Core Clerkships, and clinical and non-clinical electives are graded High Honors/Honors/Satisfactory/ Unsatisfactory. The High Honors grade is reserved for outstanding performance,



not given according to formula or quota. The summative narrative component of grading in clinical clerkships becomes part of the official record. Formative comments regarding performance in clinical clerkships are to assist student selfdirected learning. They are available in each Society for review by the student, Society Master, Associate Master, and Advisor.

#### Licensure

Meeting the graduation requirements for the M.D. degree at Harvard does not guarantee eligibility for the licensure requirements. Some states have particular curricular requirements for licensure that may not be met by the Harvard curriculum. Students are advised to check with the Medical Board in states of possible residence for licensure requirements.

The National Board of Medical Examiners has established a single, three-step

examination for medical licensure in the United States. The United States Medical Licensing Examination (USMLE) provides a common evaluation system for applicants for medical licensure. Harvard medical students are required to obtain passing scores on both Step 1 and Step 2 prior to graduation. Step 3 is taken after the M.D. degree is earned.

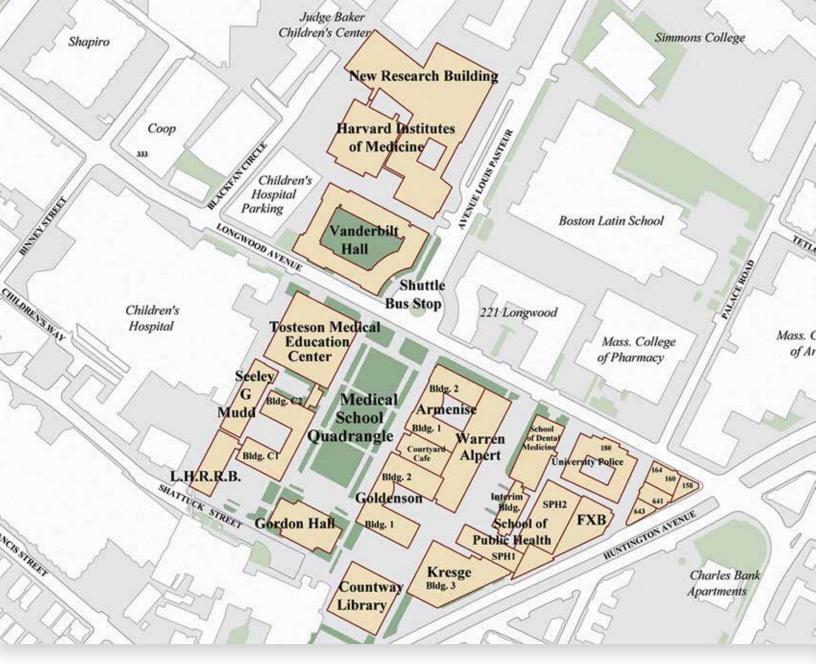
#### Crime Awareness and Campus Security for Members of the Harvard Community

The Harvard University Police Department publishes an annual report, *Playing It Safe*, which is intended to inform students, faculty, staff, and other members of the University community about campus safety and security policies, procedures, and practices, and to encourage a sense of self-responsibility for personal safety and security. The statistics, programs, and services described in this pamphlet are designed to help members of the Harvard community prevent crime and to promote safety and security around campus.

*Playing It Safe* was prepared in support of the University's commitment to foster a safe and secure campus environment, as well as to comply with the requirements of the Student Right-to-Know and Campus Security Act of 1990, the Drug-Free Workplace Act of 1988, and the Drug-Free Schools and Community Act Amendments of 1989. Copies of this publication are provided to all enrolled students annually; others may request a copy from the Harvard University Police Department, 1033 Massachusetts Ave, 6th floor, Cambridge, MA 02138, (617) 495–1215.

# ACADEMIC CALENDAR

Important Dates for Academic Year 2013–2014			
August 2013	19	Mon.	Classes begin for all students
September	2	Mon.	Labor Day—no classes
October	14	Mon.	Columbus Day—no classes
November	11	Mon.	Veterans' Day—no classes
	28-29	Thurs.–Fri.	Thanksgiving recess
December	13	Fri.	HST classes end
	16-20	Mon.–Fri.	HST final exam period
	21	Fri.	Winter Recess for all Societies
January 2014	6	Mon.	Classes resume for New Pathway and HST
	20	Mon.	M.L. King Day—no classes
	30	Thurs.	HST January classes end
February	3	Mon.	HST Spring classes begin
	17	Mon.	President's Day—no classes
March	17-21	Mon.–Fri.	Spring recess (all Societies)
April	21	Mon.	Holiday at MIT only (Patriot's Day)
May	16	Fri.	HST classes end
	19-23	Mon.–Fri.	HST final exam period
	26	Mon.	Harvard Commencement and HMS Class Day (all Societies)
	29	Thurs.	Memorial Day—no classes
June	13	Fri.	HST/MIT Commencement New Pathway Year 1 classes end



# DIRECTIONS TO HARVARD MEDICAL SCHOOL

#### From North and South of Boston

Take Interstate 93 to Exit 26 (Cambridge/ Storrow Drive). At the end of the exit ramp, take underpass to Storrow Drive. Follow Storrow Drive approximately 2.5 miles to Kenmore Square Exit (on left). Bear left at exit ramp, and take a right turn at the traffic light at the end of the ramp (Boylston Street). Follow Boylston Street approximately 1.5 miles until it merges into Brookline Avenue. Pass the Beth Israel Deaconess Medical Center East Campus on the left, and make a left turn onto Longwood Avenue (watch for the blue and white Longwood Medical and Academic Area signs). The Medical School Quadrangle is approximately .5 miles down on the right. The Admissions Office is located in Gordon Hall, at the head of the Quadrangle.

#### From West of Boston

Take Interstate 90 (Massachusetts Turnpike) to exit onto Interstate 93 and follow directions above.

#### From Logan Airport

Take the Sumner Tunnel into Boston and follow signs for Storrow Drive. Follow the directions as given above for travel from north and south of Boston.

#### From Boston's MBTA Subway

Take the Green Line "E" train outbound (west). Once the streetcar comes above ground, exit at the third above-ground stop, Longwood Medical Area. Cross Huntington Avenue and turn right onto Longwood Avenue. The Medical School Quadrangle is approximately 300 yards down Longwood Avenue on the left. The Admissions Office is located in Gordon Hall, the building at the head of the Quadrangle. Harvard Medical School is an integral part of the Longwood Medical and Academic Area (LMA), a 175-acre community of health care and educational institutions located adjacent to Fenway Park and the town of Brookline, Massachusetts. In a 90-year period, the LMA has earned recognition as one of the most prestigious centers of medical and educational service in the country.

# HARVARD DIRECTORY

#### Harvard Medical School

www.hms.harvard.edu Office of the Committee on Admissions 306 Gordon Hall 25 Shattuck Street Boston, MA 02115–6092 admissions\_office@hms.harvard.edu

Admissions: (617) 432–7195 HST Program: (617) 432–7195 M.D.-Ph.D. Program: (617) 432–0991 Recruitment & Multicultural Affairs: (617) 432–1572 Financial Aid: (617) 432–0449 Housing: (617) 432–1630 Student Affairs: (617) 432–1570 Scholars in Medicine Office: (617) 432–1573 Registrar: (617) 432–1515



#### **Other Harvard Schools and Programs**

Harvard University Graduate School of Arts & Sciences 8 Garden Street Byerly Hall, 2<sup>nd</sup> Floor Cambridge, MA 02138–3654 Admissions: (617) 495–5315

#### **Division of Medical Sciences**

260 Longwood Avenue, Room 435 Boston, MA 02115 Admissions information: (617) 432–0162

#### **Harvard Business School**

Dillon House Soldiers Field Road Boston, MA 02163 Admissions: (617) 495–6127

#### Harvard School of Dental Medicine

188 Longwood Avenue Boston, MA 02115 Admissions: (617) 432–1443

#### Harvard Graduate School of Design

48 Quincy Street 422 Gund Hall Cambridge, MA 02138 Admissions: (617) 495–5453

#### Harvard Divinity School

12 Divinity Avenue Cambridge, MA 02138 Admissions: (617) 495–5796

#### Harvard Graduate School of Education

Appian Way Cambridge, MA 02138 Admissions: (617) 495–3414

#### John F. Kennedy School of Government

79 John F. Kennedy Street Cambridge, MA 02138 Admissions: (617) 495–1155

#### Harvard Law School

1563 Massachusetts Avenue Cambridge, MA 02138 Admissions: (617) 495–3109

#### Harvard School of Public Health

677 Huntington Avenue Boston, MA 02115 Admissions: (617) 432–1030

#### Harvard College

Byerly Hall 8 Garden Street Cambridge, MA 02138 Admissions: (617) 495–1551

#### Harvard University Division of Continuing Education

51 Brattle Street Cambridge, MA 02138 General Information: (617) 495–4024 This bulletin contains current information on subjects that are of interest to students and applicants. It should be recognized that all information in the bulletin is subject to revision and, from time to time, changes are made in course offerings, academic rules, and the plan of instruction. Information contained herein supersedes that previously published and is subject to change.

Harvard University's policy is to make decisions on the basis of the individual's qualifications to contribute to Harvard's educational objectives and institutional needs. The principle of not discriminating against individuals on the basis of race, color, sex, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or disability unrelated to job or course of study requirements is consistent with the purpose of a university and the law.

Harvard University is accredited by the New England Association of Schools and Colleges, the regional accrediting association for the Commission on Institutions of Higher Education. Harvard Medical School is accredited by the Liaison Committee on Medical Education of the American Medical Association and the Association of American Medical Colleges.

Admissions Bulletin photography provided by Steve Gilbert, Jason Jones, Steve Lipofsky, John McKeith, John Soars, and Josh Touster.



#### Harvard Medical School Profile

**Mission:** To create and nurture a diverse community of the best people committed to alleviating human suffering caused by disease.

History: Established 1782.

**Setting:** An integral part of the Longwood Medical and Academic Area (LMA), a 175-acre community of health care and educational institutions located adjacent to Fenway Park and the town of Brookline, Massachusetts.

Affiliated Hospitals: Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Cambridge Health Alliance, Children's Hospital Boston, The Dana-Farber Cancer Institute, The Forsyth Institute, Harvard Pilgrim Health Care, Hebrew SeniorLife, Joslin Diabetes Center, Judge Baker Children's Center, Massachusetts Eye and Ear Infirmary, Massachusetts General Hospital, McLean Hospital, Mount Auburn Hospital, Schepens Eye Research Institute, Spaulding Rehabilitation Hospital, VA Boston Healthcare System.

#### **Basic Facts**

Faculty: Over 11,000, including 8,924 full-time.

**Trainees:** 9,376 resident physicians, interns, and postdoctoral fellows.

Total Students Enrolled in M.D. Program, Fall 2012: 709.

Total Students Enrolled in M.D.-Ph.D. Program, Fall 2012: 150.

Total Students Enrolled in Ph.D. Program, Fall 2012: 582.

**Student Profile:** Harvard Medical School affirms that medical education is enhanced by diversity among the student body, and has one of the most diverse medical school enrollments in the country. 20% of the student body comes from groups underrepresented in medicine, and another 31% from other minority groups. Students hail from nearly all U.S. states, many foreign countries, and over 100 different undergraduate institutions.

Achievement: Harvard Medical School has been home to 15 Nobel Laureates and many national and internationally recognized researchers and medical scholars.



# HARVARD MEDICAL SCHOOL

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