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Decoding human brain evolution

**How did our distinctive brains evolve?** What genetic changes gave rise to language? What allowed modern humans to form complex societies, pursue science, create art?

While there is some understanding of the genes that differentiate humans from other primates, that knowledge has not yet fully explained human brain evolution. But a \$10 million grant to some of Boston’s most highly evolved minds in genetics, genomics, neuroscience, and human evolution may soon lead to answers.

The Seattle-based Paul G. Allen Frontiers Group has announced the creation of the Allen Discovery Center for Human Brain Evolution at Boston Children’s Hospital and Harvard Medical School. It will be led by Christopher A. Walsh, MD, PhD, Bullard Professor of Pediatrics and Neurology at HMS and chief of the Division of Genetics and Genomics at Boston Children’s. Michael Greenberg, PhD, Nathan Marsh Pusey Professor and chair of the Department of Neurobiology at HMS, and David Reich, AB ’96, DPhil, professor of genetics at HMS, will co-lead the center.

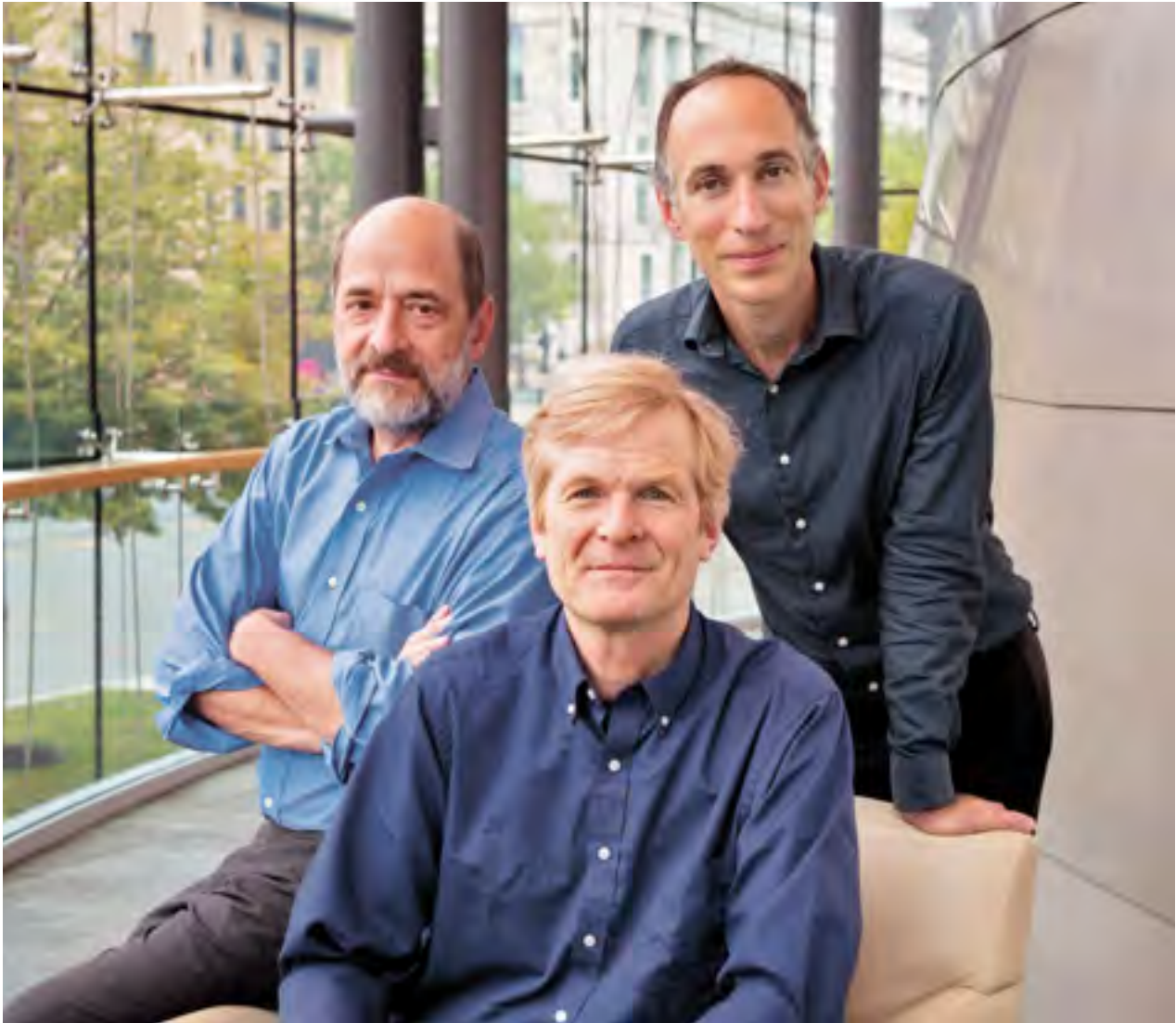
**“As a species, we have long sought to understand how our amazing capacities for art, science, and culture emerged,” says Tom Skalak, PhD, executive director of The Paul G. Allen Frontiers Group. “This Allen Discovery Center is using a combination of pioneering new techniques and interdisciplinary ways of thinking to make progress toward answering questions that lie at the heart of our humanity.”**

HMS Dean George Q. Daley, AB ’82, MD ’91, PhD, says that the research conducted by Walsh, Greenberg, and Reich spans from molecule to organism to system and underscores the cross-pollination among basic, translational, and clinical discovery, as well as across the fields of neurobiology, genetics, evolutionary biology, and neurology.

“Unraveling the mysteries of the human brain will propel our understanding of brain development, brain evolution, and human behavior. It also will help us understand what makes us unique as a species,” says Daley.

Bold Agenda

The center’s agenda includes cataloging the key genes required for human brain evolution, analyzing their roles in brain development and cognition, and studying their functions to discover evolutionary mechanisms.



Left to right: Michael Greenberg, PhD, Christopher A. Walsh, MD, PhD, and David Reich, AB ’96, DPhil, leaders of the new Allen Discovery Center for Human Brain Evolution at Boston Children’s Hospital and Harvard Medical School

Walsh says the team will take a multipronged approach that reflects how evolution works in nature and identifies how experience and environment affect the genes that gave rise to modern human behavior.

The researchers think not one but multiple mechanisms of evolution helped form the modern human brain. These mechanisms include changes to genes, such as gene addition, duplication, or deletion; alterations in the protein-coding sequence of genes to create new or modified biochemical functions; changes in noncoding DNA sequences altering patterns of gene expression, allowing an existing gene to be “repurposed” to become amenable to regulation by sensory experience; and polygenic changes, or changes in many genes working together.

Accordingly, the center’s research methods will include, in varying combinations, sequencing of ancient DNA recovered from bones and teeth of ancient humans; genomic studies of large populations to identify regions that correlate with human traits; genetic studies to test functional

effects of mutations in the evolutionarily important genomic sequences; and functional studies in neurons to determine the roles of these evolutionarily important sequences in the brain.

All these approaches will be supported by powerful computational data analysis, reaching across genomes and populations over the span of hundreds of thousands of years.

“The launch of this center is a wonderful opportunity for three laboratories that have been working independently to come together and study the genetic, molecular, and evolutionary forces that have given rise to the spectacular capacities of the human brain,” says Greenberg.

Reich says this generous funding from The Paul G. Allen Frontiers Group is profoundly exciting. “It will allow us to use ancient DNA analysis to track changes in the frequency of genetic mutations over time, which will in turn illuminate our understanding of the nature of human adaptation,” he says.

George Q. Daley, AB '82, MD '91, PhD  
Dean of Harvard Medical School

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Dear Friends,

It has been an honor and a privilege to connect with so many of you during Reunion and Alumni Week in early June and at our Meet the Dean events over the last several weeks and months. One of the highlights has been the opportunity to hear what's on your mind with respect to the School's future.

Many of you are concerned about medical student debt, and rightfully so. It's self-defeating to take idealistic medical students who come to Harvard wanting to change the world and then saddle them with devastating debt, which they can't pay off for years. That burden could result in many selecting a profession based on their financial prospects rather than their true passions.

Philanthropic support for financial aid, which is covered in this issue of *The Benefactor* and was celebrated at our Spotlight on Medical Education event Sept. 28, helps to ensure that the best and brightest students can attend HMS, regardless of their fiscal means. It also gives our students the freedom to choose their career paths, the fields they want to transform, and ultimately the cures they will discover and deliver.

We are also committed to diversity. Our laboratories are international melting pots, and the scholars working in these labs are essential to scientific progress. That is why we are celebrating our differences, ensuring the free exchange of ideas, working to reduce health disparities, and training medical students whose race and socioeconomic backgrounds reflect the rich diversity represented in our patient populations.

As we look toward the future, we are also thankful to those who came before us and paved the way for HMS today. On Sept. 6, we lost an icon and beloved pillar of our community with the passing of Daniel D. Federman, AB '49, MD '53. A towering presence at Harvard for nearly 70 years, he was a champion for students, saved lives, comforted families, transformed careers, and changed HMS and the field of medicine for the better. He was also a dedicated donor to HMS, and last year we named the Federman Loyalty Circle—which recognizes consistent alumni donors of five years or more—in his honor. We will miss him and everything for which he stood.

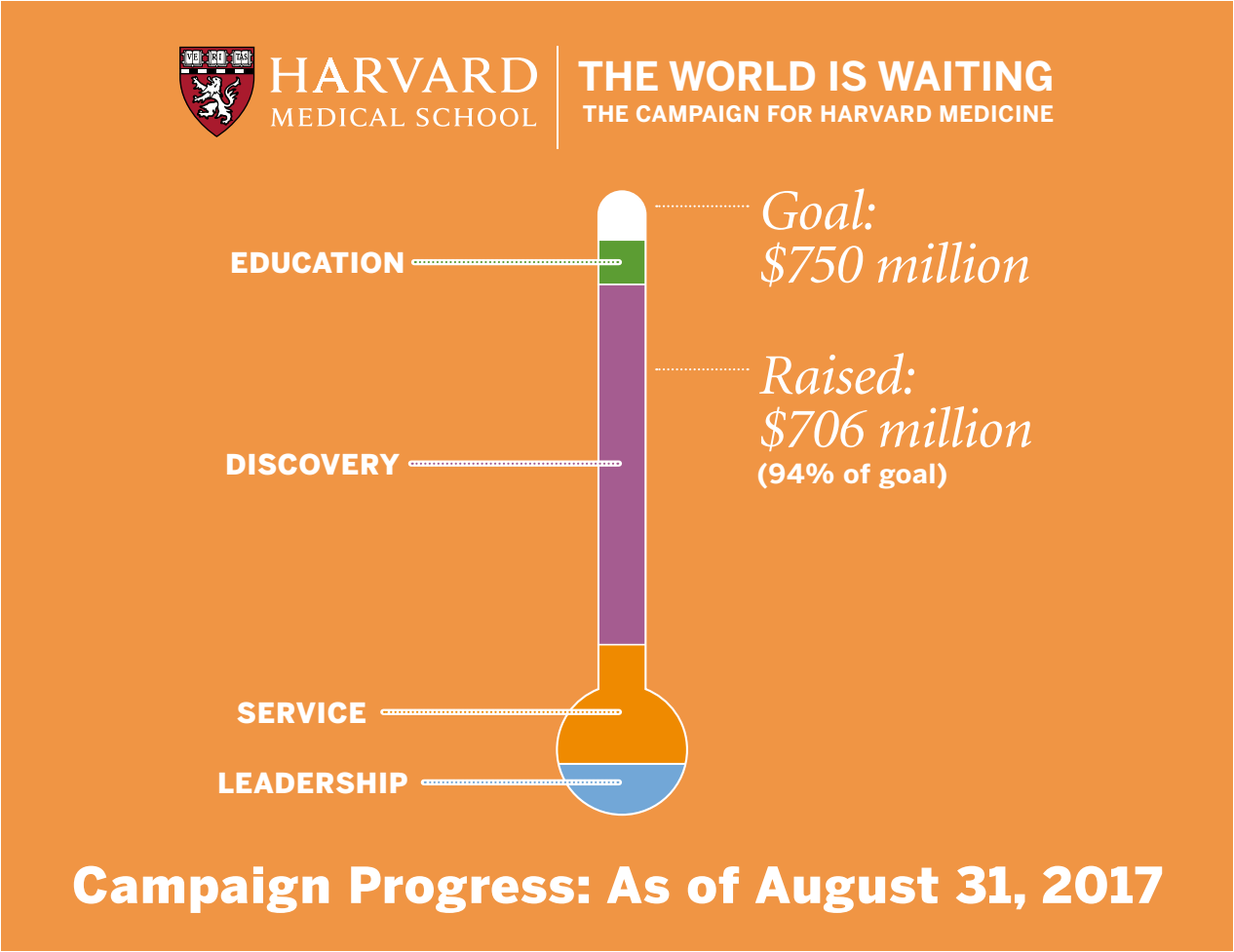
Sincerely,

*George Q. Daley, MD, PhD*

George Q. Daley, AB '82, MD '91, PhD  
Dean of Harvard Medical School

*Lisa J. Boudreau*

Lisa J. Boudreau  
Dean for Alumni Affairs and Development





# Gates Foundation seeks to end diarrheal disease deaths in children



Oral rehydration salts (a treatment for people dehydrated from diarrhea) being administered to a young boy in Adja-Ouèrè, Benin

**According to the Centers for Disease Control and Prevention (CDC), diarrheal diseases account for 1 in 9 child deaths worldwide, making them the second-leading infectious cause of death among children younger than 5.**

The Bill & Melinda Gates Foundation believes that no children should suffer or die from gastrointestinal or diarrheal infections. Therefore, it is focusing on vaccines as one of the most cost-effective ways to protect this young population from the devastating effects of these infections, including slower growth rates, impaired cognitive development, and death.

“The foundation is built around the guiding principle that all lives have equal value,” says Anastazia Older Aguilar, program officer for vaccine discovery at the Gates Foundation. “One of the primary levers to increasing equity of opportunity is to improve access to quality health care. Many global health diseases lack adequate vaccines, therapeutics, diagnostics, or other tools. We aim to fund research addressing key knowledge gaps that are preventing the development of those solutions.”

Enter the Mucosal Vaccine Consortium, which aims to develop a nanoparticle-based vaccine administered through a peripheral route to prevent enteric infections, and Ulrich von Andrian, MD, PhD, Edward Mallinckrodt Jr. Professor of Immunopathology and director of the Center for Immune Imaging at Harvard Medical School. The Gates Foundation has given a grant of nearly \$2.7 million to support von Andrian, making its total support of this consortium, which includes investigators from the University of Washington and MIT, \$4.5 million.


Von Andrian says oral vaccines, which often contain live attenuated microbes, can protect most people in Western countries from diarrhea caused by enteric pathogens, but might not work as well when administered to children in developing countries because of a host of factors, including vitamin deficiencies and existing gut dysfunction. By contrast, vaccines that are injected through

the skin evoke immune responses regardless of a vaccine’s geographic location, but the protective memory cells that arise in response to such “peripheral” vaccinations acquire migratory properties that guide them into the skin, providing suboptimal protection in other tissues, particularly the gut. The key, he says, is figuring out how to deliver a vaccine that can be injected through the skin but targets immune responses toward the intestine.

“Our strategy employs a parenteral vaccine antigen—paired with an adjuvant and retinoic acid—that generates a potent immune response in peripheral lymph nodes,” von Andrian says. “Unlike lymphoid organs in the gut, skin-associated lymph nodes do not contain retinoic acid naturally. Our vaccine will supply skin-draining lymph nodes with exogenous retinoic acid, which is needed to instruct vaccine-induced ‘memory’ cells to acquire gut-homing properties. We believe that this strategy will allow us to target the immune response to the intestine, essentially bypassing the compromising effects of the gut’s nutritional or microbiologic status that can hamper the effectiveness of oral vaccination in children in the developing world.”

It is just this type of scientific inquiry that meshes with the foundation’s culture, which Aguilar says is one of “impatient optimism.” She says program officers and directors are empowered to invest in accelerating the testing of ideas that may not have a lot of preliminary data but could have a transformational impact on global health.

“We’re extremely grateful that the Gates Foundation was willing to step forward to fund this research,” says von Andrian. “This is an enormous public health issue that needs to be addressed, and it would be difficult for us to obtain federal funding for this work. We hope we’re successful in identifying at least one vaccine formulation that can be moved into clinical trials.”

 **Watch von Andrian’s 90-second “Science Matters” video about why he studies the immune system at <http://bit.ly/2tDmlLm>**

## BOSTON IS FIRST STOP ON MEET THE DEAN TOUR

Harvard Medical School Dean George Q. Daley, AB '82, MD '91, PhD (below), spoke at the Harvard Club of Boston on May 3 in the first installment of an interstate tour intended to introduce the Harvard Medicine community to the new dean and his vision for the School.

Michael Rosenblatt, MD '73, chief medical officer at Flagship Pioneering and president-elect of the HMS Alumni Council, introduced Daley, asking guests to imagine they had a construction set and could build the perfect dean for HMS. “I think if you played around with that set, every one of you would come up with George Daley,” he said.

Daley said that forging the path to the future of medicine will require embracing innovation in research and therapeutics, committing to campus revitalization, and expanding access to medical education.

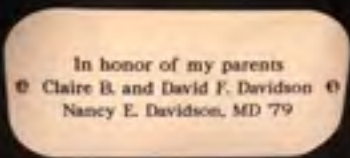
“We’re on the brink of a sweeping transformation of the human condition,” he told the audience. “Medical breakthroughs over the next 50 years will dwarf those of the last 1,000. Our mission at Harvard Medical School is to lead the way toward that new era of possibility,” Daley said.

Other stops on the Meet the Dean tour were New York, Washington, D.C., San Francisco, and Los Angeles in September and October. The last stop is Philadelphia on Nov. 1. Visit [hms.harvard.edu/meet-the-dean](http://hms.harvard.edu/meet-the-dean) for more information and to RSVP for the Philadelphia event.



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# Faces of RE:UNION

More than 650 alumni and friends reunited in Boston for Reunion 2017 from June 1–2. Reunion Committees, comprising more than 100 alumni volunteers spanning six decades, put the special touches on programming and inspired their fellow graduates from classes ending in “2” and “7” to not only come back, but to give back—raising more than \$3.3 million to help the School advance its priorities in education, discovery, service, and leadership.



**1** Naomi Simon, MD '92, SM '03, professor of psychiatry at HMS, director of the Center for Anxiety and Traumatic Stress Disorders, and chief medical officer of the Massachusetts General Hospital (MGH) Home Base Program, and Tim Ferris, MD '92, MPH '98, senior vice president of population health at Partners HealthCare and MGH, were presenters at the 25th Reunion Symposium.

**2** Ben Nguyen, AB '88, MD '92, chief medical informatics officer of Pragmatics Inc., coordinated four panel discussions as part of the 25th Reunion Symposium, which covered topics from health care delivery and managing your memory to global health. Nguyen also served on his Reunion Committee and made a Dean's Council-level gift in honor of his Reunion.

**3** Class of 1997 volunteers and Dean's Council members Allison and Geoffrey McDonough serve as co-class agents and played an important role on their Reunion Committee, helping with both the event planning and class gift.

**4** Alumni, including Adam Rubin, MD '97, director of the Lakeshore Professional Voice Center and vice president of Lakeshore Ear, Nose & Throat Center in Detroit, and Abimbola Aina-Mumuney, AB '93, AM '93, MD '97, assistant professor at Johns Hopkins University in Baltimore, traveled from across the country to attend Reunion 2017.

**5** Left to right: Chair of Alumni Relations A.W. Karchmer, MD '64, joins Scientific Symposium presenters Aaron Schwartz, PhD '15, MD '17; Matthew Canver, PhD '16, MD '18; Melis Anahtar, PhD '15, MD '17; and panel moderator Patricia D'Amore, PhD, MBA, Charles L. Schepens Professor of Ophthalmology and professor of pathology at HMS and associate chief of basic and translational science at Mass. Eye and Ear, where she also directs the Howe Laboratory.

**6** Left to right: Celebrating their 30th Reunion are classmates Francis Campion, MD '87; Khoi Le, AB '83, MD '87; Randy Jotte, MD '87; and Jacqueline Marshall, MD '87.



**Relive Reunion 2017:**  
View candid photos, class photos, and other  
highlights at <http://bit.ly/2f5vVkn>



**7** Timothy Daniel Jenkins, AB '88, MD '92, together with his wife (not pictured), Valerie Tonnu Jenkins, DMD '93, were among the 17 alumni who named a chair in the Joseph B. Martin Conference Center Amphitheater in honor of their Reunion.

**8** The Class of 1967 not only tallied the largest Reunion class gift, totaling \$1,878,809, but also had the highest attendance at Reunion, with 48 percent of the class returning to the Quad.

**9** Dean George Q. Daley, AB '82, MD '91, PhD, received a standing ovation after laying out his vision for the future of HMS during his first Alumni Day State of the School Address.

**10** The Alumni Day Symposium featured (left to right) Dean for External Education David Roberts, MD '95; Partners HealthCare Vice President for Graduate Medical Education Debra Weinstein, MD '84; Director of the Academy at HMS and Ellen and Melvin Gordon Professor of Medical Education Richard Schwartzstein, MD '79; and Dean for Medical Education Edward M. Hundert, MD '84, discussing innovations in medical education.

**11** Immediate Past President James J. O'Connell III, MD '82, welcomed alumni to the Annual Business Meeting of the Harvard Medical Alumni Association, where he updated attendees on the Alumni Council's activities over the past year and announced the newly elected Council members. See related story on page 11.

**12** The Class of 1962 achieved the highest participation rate, with an overwhelming 79 percent of the class making gifts to support HMS.



# A storied medical and military career



Paul W. Dale, MD '47, at home in Hawaii

## Imagine being drafted by the army and sent to Harvard Medical School to become a doctor.

That is precisely what happened to Paul W. Dale in his sophomore year at Harvard College.

**“My contemporaries and I were strongly influenced by World War II. We wore uniforms, saluted when required, and lived in barracks in Vanderbilt Hall. It was a military life,” says Dale.**

The war was over by the time he graduated from HMS in 1947 at age 24. After completing an internship in Seattle, he began his residency in psychiatry at the Colorado Psychopathic Hospital and completed it while on active duty at Walter Reed National Military Medical Center.

His medical practice took the Idaho native to numerous locations in the U.S. and to the Pacific Ocean region. “For 33 years until retirement, my medical practice involved a close faculty association with the University of Hawaii School of Medicine,” says Dale.

In honor of his 70th Reunion earlier this year, Dale gave \$150,000 to HMS to establish a charitable gift annuity (CGA). He says this CGA allows him to sleep better knowing that no matter what happens with the stock market, it won’t affect the quarterly fixed-income payments he receives.

“Harvard Medical School has always been at the forefront of an amazing culture of honesty, directness, and good regard for others. This annuity honors that culture of doing the right thing,” says Dale.

# Alumnus gives back in honor of 35th Reunion


For Bob Peterson, MD '82, it is hard to overstate the impact that Harvard Medical School has had on his life and career. He says his MD from HMS opened many doors and gave him instant credibility. But the people he met and values imparted during his years on the Quad are his most valuable assets.



“My classmates were the most amazing group of people that I have ever known. I have great respect for all of them, and I am very grateful to have been a member of this illustrious group,” he says. “HMS instills an expectation of excellence, and even though I am no longer in the Boston area, I feel an obligation to try to make a difference.”

To this end, Peterson established two deferred charitable gift annuities (CGA) at HMS totaling \$100,000 in honor of his 35th Reunion. “I wanted to make a meaningful gift, but I am not wealthy and live in Hawaii, which is a very expensive state, so I worry about retirement income and what the future holds,” he says. By establishing a deferred CGA, Peterson funds the gift today but elects to postpone his income payments until his retirement.

Peterson’s gift benefits the Class of 1982 Healthcare Outreach through Medical Education Endowed Scholars Fund, which provides support to HMS students who are committed to providing health services to underserved populations and communities in Boston. By earmarking this gift to his class fund, Peterson hopes it will indirectly support the work of his classmate James J. O’Connell III, MD '82, who serves as president of Boston Health Care for the Homeless, where most students supported by this fund choose to complete their projects.



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## EZEKIEL HERSEY COUNCIL RECEPTION

Harvard Medical School’s distinguished Ezekiel Hersey Council (EHC) includes more than 600 members from around the world who have made investments in education, discovery, service, and leadership by establishing life income gifts or including HMS in their estate plans.

In May, Council Chairman Jordan J. Cohen, MD '60 (far right), welcomed members to the 27th annual EHC recognition event at the Harvard Club of Boston and thanked them for their foresight, generosity, and commitment to the School.

Cohen also introduced two new EHC volunteer leaders: Alexandra E. Page, MD '92 (left), and Mark S. McMahon, MD '86 (second from left).

Dean George Q. Daley, AB '82, MD '91, PhD (second from right), expressed his gratitude to EHC members for contributing so significantly to HMS’s past, present, and future. Following the reception, members joined the Meet the Dean event for the broader HMS community, where Daley shared his vision for the School and took questions from the audience.





# Putting global mental health on the map



Pershing Square Professor of Global Health Vikram Patel, MBBS, MSc, PhD (left), meeting with Sunil Kokate, who attempted suicide in 2012, and his family in the village of Bodad in Maharashtra, India, as part of Sangath's VISHRAM Project

**We cannot expect to attain good health without paying attention to mental health.** This tenet from Vikram Patel, MBBS, MSc, PhD, has been the guiding principle of his life's work. For more than two decades, the renowned global mental health researcher and innovator has focused on reducing the treatment gap for people with mental disorders in low-resource countries.

**"Mental health is an integral component not just of every person's well-being, but of every global health program," says Patel. "It is unacceptable, for example, that a program seeking to improve maternal health or the health of people living with HIV should focus only on their narrowly defined biomedical physical health concerns, ignoring the psychosocial factors which are so deeply intertwined with them."**

This conviction has inspired his research on the burden of mental disorders, their association with poverty and social disadvantage, and the use of community resources for the delivery of prevention and treatment programs. He has left an indelible mark on the field by co-founding the Centre for Global Mental Health at the London School of Hygiene and Tropical Medicine, the Centre for Chronic Conditions and Injuries at the Public Health Foundation of India, and Sangath, an Indian nongovernmental organization that has received the MacArthur Foundation's International Prize for Creative and Effective Institutions and the World Health Organization's Public Health Champion of India award.

Now Patel is bringing his passion and expertise to Harvard Medical School, where he has been named the inaugural Pershing Square Professor of Global Health. The professorship was established with generous endowed support from The Pershing Square Foundation, the private family foundation of Bill Ackman, AB '88, MBA '92, and Karen Ackman, MLA '93, based in New York City.

"We have a deep interest in helping future leaders gain exposure to the right environments," says Pershing Square Foundation President Olivia Tournay Flatto, PhD. "This professorship has the ability to

inspire students to go into the field of global health, work alongside visionaries like Vikram Patel, and bring new ideas into the field, which is constantly evolving."

### Branching Out

After receiving his formal training in medicine and psychiatry at major teaching hospitals in Mumbai, Oxford, and London, Patel says he realized he was unprepared to address mental health problems in populations where there were very few mental health professionals and high levels of social disadvantage, and where the understanding of mental health differed greatly from that of biomedicine.

"This was when I was drawn to the field of global health, which was attempting to address similar challenges in other areas of medicine, notably infectious diseases. The field of global mental health grew out of the marriage of the disciplines of psychiatry and psychology on the one hand and global health on the other," he says.

In coming to HMS, Patel says he most looks forward to the opportunity to work with global leaders in the diverse disciplines—including neuroscience and digital, implementation, social, and clinical sciences—that are central to his vision of global mental health.

"Of course, I am also very excited to serve in a department which is home to scholars who have made historic contributions on the cultural and social determinants of mental health and of the practice of global health delivery, both of which are the foundations of global mental health," he says.

As for the professorship, Patel says it is a once-in-a-lifetime opportunity. It will allow him to consolidate his ongoing work, including developing new opportunities to teach mental health and sustainable development, while exploring exciting new areas of innovation, such as leveraging digital technologies for person-centered care and emphasizing prevention through interventions early in people's lives.

"Philanthropic support from The Pershing Square Foundation provides me with a unique platform to pursue such a diverse and ambitious program of work," says Patel.

## MURRAY NAMED INAUGURAL STRYKER AND JOHNSTON PROFESSOR OF GLOBAL HEALTH

Epidemiologist and infectious disease specialist Megan B. Murray, MD '90, MPH '96, SD '01, has been appointed the inaugural incumbent of the Ronda Stryker and William Johnston Professorship in Global Health.

In 2016, Stryker and Johnston made a transformative \$20 million gift to establish this professorship and support the overall vision of Paul Farmer, MD '90, PhD '90, Kolokotronis University Professor, chair of the Department of Global Health and Social Medicine, and chief strategist and co-founder of Partners In Health. Stryker is a director of the Stryker Corporation and a member of the HMS Board of Fellows and Advisory Council on Global Health and Service.

In addition to this new appointment, Murray is an associate professor of medicine at HMS, professor of epidemiology at the Harvard T.H. Chan School of Public Health, founding director of the Research Core in the Department of Global Health and Social Medicine, and director of research at Partners In Health and the Division of Global Health Equity at Brigham and Women's Hospital.

She has more than 25 years of experience in the epidemiology of tuberculosis and has conducted field studies in South Africa, Russia, Peru, the United States, and Rwanda, and has previously worked in Kenya, Niger, and Pakistan.



Left to right: Bethany Hedt-Gauthier, SM '05, PhD '08, a mentee of Murray's and assistant professor of global health and social medicine at HMS; Farmer; Stryker; and Murray celebrate the establishment of the professorship.



# Commitment to students comes into focus

**Frederick Joseph Lesemann Jr., MD '37, loved to take photographs in his spare time.** A snapshot of his own life reveals a highly respected surgeon in Arizona who colleagues say was committed to improving the quality of hospital care for decades.

Lesemann, who died in 1995, was committed to another cause, too: Ensuring that Harvard Medical School students with demonstrated financial need are able to complete their education. A bequest of nearly \$860,000 from his estate to support scholarships at HMS is proof of that commitment.

**“Gifts supporting financial aid have enabled generations of students to learn medicine here and go on to become clinical leaders who have treated and healed millions or to become researchers who have changed the nature of medicine,” says HMS Dean for Medical Education Edward M. Hundert, MD '84.**

In fiscal year 2017, the average scholarship for MD students at HMS was \$46,250, which is the equivalent of Lesemann’s gift funding 18 student scholarships.


Lesemann was born in Chicago in 1914 and earned a bachelor’s degree at the University of Chicago. After graduating from HMS, he trained to become a surgeon at the Mallory Institute of Pathology in Boston, Peter Bent Brigham Hospital (now Brigham and Women’s Hospital) in Boston, and Cook County Hospital in Chicago.

During World War II, Lesemann performed surgeries at various hospitals in the European Theater of Operations. An article in the military publication Stars and Stripes from Jan. 9, 1946, makes mention of him at the 116th General Hospital in Nuremberg, Germany. The U.S. Army had gained control of the former German military hospital in 1945, relocated German patients, and set up operations there. According to the article, “Maj. Frederick J. Lesemann of Chicago, chief of surgical service, operates upon particularly delicate cases” at the hospital.

In 1947, Lesemann settled in Tucson, where he practiced general surgery until his retirement in 1979. During that time, he had a three-year stint as chief of staff at Tucson Medical Center.



*Frederick Joseph Lesemann Jr., MD '37, who enjoyed photography, golf, and music in his spare time*

 **Learn about the power of financial aid from the perspective of alumni and current students at [hms.harvard.edu/dreams](https://hms.harvard.edu/dreams)**

## Ensuring world’s poorest people get proper care

**Noncommunicable diseases and injuries (NCDIs) bring much suffering and death to the world’s poorest people.** According to the World Health Organization, of the 40 million people killed by these chronic diseases each year, 31 million live in low- and middle-income countries.

These diseases are not confined to older age groups. In the poorest countries, where up to 75 percent of the population is younger than 30, many of the cardiovascular diseases associated with risk factors

of material poverty, such as rheumatic heart disease and some cardiomyopathies, strike at young ages, according to a paper written in support of the Lancet Commission on Reframing NCDIs for the Poorest Billion (Lancet NCDI Poverty Commission).

But what if millions of deaths from NCDIs—including cancers, cardiovascular diseases (the leading killer), diabetes, respiratory diseases, and many forms of trauma—among the world’s poorest people could be prevented through better-informed

policymaking? Are many people living in poverty dying because of harmful environments and lack of access to health systems, and not because of risky behaviors, as commonly thought?

The Lancet NCDI Poverty Commission was formed in late 2015 with the goal of assessing how to best address the health needs of the world’s poorest populations. Two years later, the Commission is close to issuing its final report, which it hopes will help spur policymakers to prioritize NCDIs and achieve universal health coverage.

Gene Bukhman, MD, PhD, director of the Program in Global Noncommunicable Disease and Social Change at Harvard Medical School and co-chair of the Lancet NCDI Poverty Commission, says HMS has worked closely with the Commission to help advance its efforts. He says philanthropic funding allows the program to “maintain (its) unique focus on NCDIs in populations living in extreme poverty.”

One source of that funding is a donor whose recent gifts to HMS in support of the Commission’s work total \$272,000. The donor, who wishes to remain anonymous, praised the Commission’s courage and tenacity and hopes its work will trigger more informed discussion and prioritization of NCDIs of poverty at next year’s U.N. high-level meeting on noncommunicable diseases.

**The Commission’s work, the donor says, has highlighted “the need for all of us to take up this cry for countries to prioritize their poorest and most vulnerable populations, who have been neglected in the NCDI community.”**



*An examination of a child in Hassanpur, Haryana, India*



# Moskovitzes continue to boost Alzheimer’s research

**According to the Alzheimer’s Association, 1 senior out of 3 dies with Alzheimer’s disease or another form of dementia.** As life expectancy climbs and baby boomers age, more people will be affected by these neurodegenerative diseases, and the cost of long-term care will rise along with the toll on families of Alzheimer’s patients.

Despite the grim statistics, researchers at the Harvard NeuroDiscovery Center (HNDC) believe Alzheimer’s research is entering an exciting phase. The discovery of biomarkers, or indicators, over the last 20 years, coupled with increasing amounts of longitudinal data, have made it possible to study more effectively how the disease unfolds. In addition, antibody treatments for Alzheimer’s are in advanced stages of clinical trials around the world.

Thanks in large part to initial funding from the Rick and Nancy Moskovitz Foundation, the HNDC Deep Phenotyping: A Longitudinal Alzheimer’s Biomarker Program began in 2014. Among other goals, it aims to develop a range of biomarkers that will help identify those at greatest risk for developing the disease, accurately diagnose it at presymptomatic stages, understand how it will progress in individual patients, and determine how those patients are likely to respond to specific antibodies or drugs and drug combinations.

“We put a lot on the line for something with an unknown outcome because we believe in basic research. The more tools we have to define the fingerprints of this disease, the better our chance of finding effective treatments,” says Rick Moskovitz, AB ’69, MD ’73.

Since their initial seed funding, the Moskovitzes have been impressed by the project’s progress and have given several subsequent gifts, bringing their total investment to more than \$4 million since the program began.

Dennis Selkoe, MD, joint head of the program and the Vincent and Stella Coates Professor of Neurologic Diseases at HMS and co-director of the Center for Neurologic Diseases at Brigham and Women’s Hospital, is also pleased with the progress researchers have made over the last three years.

He says they now have a significant collection of neuronal cultures from many Alzheimer’s patients and a growing data set of immensely valuable PET brain scans revealing previously unrecognized characteristics of what are thought to be very early signs of brain disease. In a recent development, researchers have taken a significant step toward detecting signs of abnormal Alzheimer proteins in the blood.

“With another year of the program still to go, there is no question that this extraordinary gift continues to move us closer to the day when we will be able to identify those at risk of Alzheimer’s, hopefully with a simple, inexpensive blood test. It is our hope that we and others will be able to use such a test to identify and start treating patients before they have symptoms and thereby help prevent or at least delay this terrible disease,” says Selkoe.

The impact of the project goes far beyond this specific research. The stable four-year funding provided by the foundation has helped the HNDC build a strong and collaborative core team of experienced researchers and pay for equipment that forms the backbone of their imaging work.



*The Moskovitzes, who traveled to Havana, Cuba, as part of a Harvard Alumni Association trip in January 2017*

The project’s success has also allowed the team to secure additional funding that will push forward a number of related research projects.

The Moskovitzes are thrilled that this work will continue and are confident in the HNDC’s ability to find more effective methods of prevention and treatment. “What has impressed us most about the research team at the Harvard NeuroDiscovery Center has been how nimble they are in terms of their ability to plan and implement new studies quickly and efficiently, as well as to incorporate new findings with embellishments to the projects during their course,” says Rick Moskovitz.

“The more tools we have to define the fingerprints of this disease, the better our chance of finding effective treatments.”  
—Rick Moskovitz, AB ’69, MD ’73

## MCCARROLL APPOINTED FLIER ASSOCIATE PROFESSOR

Steven A. McCarroll, PhD, an institute member of the Broad Institute of MIT and Harvard and director of genetics at the Broad’s Stanley Center for Psychiatric Research, has been installed as the inaugural incumbent of the Dorothy and Milton Flier Professorship in Biomedical Science.

Made possible by generous contributions from members of the HMS Board of Fellows, this professorship honors Jeffrey S. Flier, MD, Harvard University Distinguished Service Professor and George Higginson Professor of Physiology and Medicine at HMS, and his nine-year tenure as dean of HMS. Flier’s parents are the namesakes of the professorship, which will bear his name upon his retirement from the Harvard University faculty.

Flier says he felt strongly that the professorship should go to Quad faculty members who conduct basic science research that could improve understanding of the root cause of disease or lead to new treatment. He says it was evident



from the beginning that McCarroll was a brilliant choice to be the first recipient. McCarroll’s lab is working to discover how genetic risk factors give rise to key molecular and cellular events in the development of schizophrenia and bipolar disorder.

The ultimate goal of his research is to develop new and innovative therapies for these diseases.  
Above: Honorees Flier (left) and McCarroll celebrate together at the June 7 ceremony.



# In brief

*The following grants of \$250,000 or more support Harvard Medical School faculty members in their work to alleviate human suffering caused by disease.*

Three faculty members were the recipients of career-recognition awards totaling more than \$1.7 million from the **Burroughs Wellcome Fund**. Seth Rakoff-Nahoum, PhD, MD, assistant professor of pediatrics at HMS and Boston Children’s Hospital, and Jonathan Abraham, AB ’05, PhD ’10, MD ’12, instructor of biological chemistry and molecular pharmacology at HMS and Brigham and Women’s Hospital (BWH), received Career Awards for Medical Scientists. Amit Choudhary, PhD, assistant professor of medicine at HMS and BWH, received a Career Award at the Scientific Interface.

The **Biomedical Science Career Program** (BSCP) has awarded \$1,070,116 to continue its longstanding role in fostering diversity efforts under the direction of Joan Reede, MD, MPH ’90, SM ’92, MBA, dean for diversity and community partnership. Since its inception in 1991, the BSCP has provided students of every race, ethnic background, gender, and financial status the support and guidance needed for the successful pursuit of biomedical science and other science-related careers.



The **Commonwealth Fund** has awarded a grant of \$815,000 to support The Commonwealth Fund Mongan Fellowship in Minority Health Policy under the direction of Reede (above with the Mongan Fellows at the program’s 20th anniversary celebration). A second grant of \$359,471 supports a project by Richard Frank, AM ’93, PhD, Margaret T. Morris Professor of Health Economics, to analyze health plan competition in the Medicare Advantage program.

A \$657,748 grant from the **Alfred P. Sloan Foundation** is supporting research by Nicole Maestas, PhD, associate professor of health care policy, focusing on preferences for working conditions and employment among older workers.

The **Howard Hughes Medical Institute** (HHMI) has awarded a grant of \$570,000 to support the 2017 HHMI Medical Research Fellows Program, under the direction of Jane Neill, associate dean for medical education planning and administration. The funding

provides a year of full-time, mentored laboratory research training for 15 HHMI Medical Fellows at HMS.



A \$462,000 grant from the **Doris Duke Charitable Foundation** is supporting the Doris Duke Charitable Foundation International Clinical Research Fellowship for Medical Students at HMS. Under the direction of Louise Ivers, MB, BCh, MD, MPH ’05, associate professor of global health and social medicine at HMS and associate professor of medicine at BWH, the fellowship provides three students annually with a mentored research experience addressing key clinical and public health issues in resource-limited settings around the world.

The **American Diabetes Association** has given \$338,000 to support the work of two HMS research fellows. Haejin Yoon, PhD, postdoctoral fellow in cell biology, received a fellowship for his work to understand the metabolic features that contribute to insulin resistance, while Raul Spallanzani, PhD, research fellow in microbiology and immunobiology, received the Minority Postdoctoral Fellowship for his work understanding the interactions between immune cells and adipose tissue.

Alfred Goldberg, AB ’63, PhD ’68, professor of cell biology, has received a \$300,000 grant from the **Muscular Dystrophy Association** to continue his work to better understand the molecular mechanisms behind muscular atrophy and potential therapies to slow its progression.



The **Louis E. Wolfson Foundation** has continued its longstanding support of HMS students in need of financial assistance through a \$300,000 gift that provides access to low-interest loans.

Ulrich von Andrian, MD, PhD, Edward Mallinckrodt Jr. Professor of Immunopathology at HMS, has received a grant of \$300,000 from **The Ellison Foundation** to advance his research on endothelial differentiation in the formation of new blood vessels in solid tumors, which may lead to more effective immunotherapy regimens for patients with cancer.

Maofu Liao, PhD, assistant professor of cell biology, has received \$300,000 from the **Richard and Susan Smith Family Foundation** for cryo-electron microscopy studies of multidrug resistance. Liao is working to obtain structural information for ATP-binding cassette multidrug transporters that are overexpressed in tumor cells. Findings from this project will fundamentally advance scientists’ understanding of multidrug resistance and enable improved drug development.



The **Simons Foundation** has awarded \$300,000 to Sandeep Robert “Bob” Datta, MD ’97, PhD ’04, associate professor of neurobiology, to study the neural basis for divergent sensory and sensorimotor phenotypes in animal models of autism spectrum disorders (ASD). Findings from this research may suggest approaches for potentially ameliorating social deficits in people with ASD.



George Church, PhD ’84, Robert Winthrop Professor of Genetics at HMS and professor of health sciences and technology at Harvard and MIT, is the recipient of a \$249,995 grant from the **Robert Wood Johnson Foundation** to support the development of tools and systems for the efficient collection and sharing of phenotypic data for human health research.



# Inspired alumni pay it forward

**Strong alumni support is one of Harvard Medical School's longest and proudest traditions.** In fact, 2,218 alumni collectively gave more than \$4.85 million to their alma mater in fiscal year 2017, which ran from July 1, 2016, through June 30, 2017. Their gifts ranged from \$5 to \$250,000, with a median gift amount of \$200.

The vast majority of alumni chose to designate their gifts to two areas: supporting student financial aid and providing flexible, unrestricted funding that can be used where and when it is needed most.

What motivates these HMS alumni to give back? Alumni Fund Chair Tamara R. Fountain, MD '88, says that since graduating and moving to Chicago, she has always felt the pull to “get back and give back” to HMS. Rather than thinking of giving as an obligation for alumni, she sees it as an opportunity for those who want to join together on a wonderful journey.

“Together, we can help ensure and protect the mission of HMS to train the next generation of doctors whose race and socioeconomic backgrounds reflect the rich diversity represented in our American patient population,” says Fountain, adding that students shouldn’t need to be wealthy to enter the medical profession.

When it comes to choosing where to direct their philanthropic support, Katherine Griem, MD '82, and her husband, Anthony Montag, MD, consider those organizations and institutions that will benefit the largest number of people and that have made an impact on their lives.

“I grew up in Indiana and attending Harvard Medical School presented unimaginable opportunities for academic and personal development that have framed my life and career. Over the last several decades, I’ve given to HMS both with a sense of gratitude and in hopes that other students will be given the same opportunity,” says Griem, who has given to HMS consistently for more than 30 years and is a member of the Federman Loyalty Circle, which recognizes donors who make consecutive annual gifts for five years or more.

Though he almost didn’t come to HMS because of the cost, Daveed Frazier, MD '90, says his degree opened many doors, both professionally and



Clockwise from left: Alumni Fund Chair Tamara R. Fountain, MD '88, and alumni donors Katherine Griem, MD '82, Daveed Frazier, MD '90, Rhonda Kost, MD '85, and Vinod Nambudiri, AB '05, MD '09, MBA '10



personally, that wouldn’t have been opened had he studied elsewhere. Now a spine surgeon and two-time Tony Award-nominated producer, he says the opportunities for HMS grads are endless.

“Life is short and the most we can hope for is to have some lasting impact on the world around us. As physicians, we impact many people daily, yet a contribution to HMS might help fund or support the next Einstein or the person who cures AIDS or cancer. Regardless, you will impact significant lives outside of your own microcosm. I can’t imagine a better opportunity,” says Frazier, who is a member of the Dean’s Council, a leadership annual giving society recognizing donors of \$2,000 or more.


As she has moved through her career, Rhonda Kost, MD '85, says she has often felt the value and impact of the network of colleagues and the education that began in those first years sitting in the HMS lecture hall.

“I hope that current HMS students will read the plaques on the chairs in front of them and appreciate the gratitude of students who have gone before

them,” says Kost, who is a Dean’s Council-level donor and has named two chairs—one honoring her parents and the other her husband—in the Joseph B. Martin Conference Center Amphitheater.

**Vinod Nambudiri, AB '05, MD '09, MBA '10, a Recent Grad Committee member and Dean's Council-level donor, is quick to reference this quote from Booker T. Washington: “The most useful and influential people are those who take the deepest interest in institutions that exist for the purpose of making the world better.”**

“I believe that HMS strives to be an institution that makes the world better and has the demonstrated successes to support that claim. I’m proud to help support HMS continue to play a leading role in achieving these goals, and I would encourage others to do so as well,” he says.

 **View Harvard Medical School's alumni honor roll of donors at [hms.harvard.edu/alumni-honor-roll](https://hms.harvard.edu/alumni-honor-roll)**

## ALUMNI COUNCIL ELECTION PRODUCES 5 NEW COUNCILORS; PRESIDENT STARTS TERM

This past spring, Harvard Medical School graduates cast their votes during the annual Alumni Council election. Elizabeth Petri Henske, MD '85 (below), co-director of the Pulmonary



Genetics Center at Brigham and Women’s Hospital (BWH) and professor of medicine at HMS, began her two-year term as president in July, alongside five new councilors.

The new councilors representing the First, Fourth, Seventh, and Eighth Pentad, respectively, are Jacqueline Boehme, MD '15, medical resident at Massachusetts General Hospital; Jennifer Mack, MD '98, associate director of the Pediatric Hematology/Oncology Fellowship Program and associate chief of pediatrics for population sciences

at Dana-Farber Cancer Institute and Boston Children’s Hospital, and assistant professor of pediatrics at HMS; Toren Finkel, MD '83, PhD '86, chief of the Center for Molecular Medicine at the National Institutes of Health; and Robert Barbieri, MD '77, chair of the Department of Obstetrics and Gynecology at BWH and the Kate Macy Ladd Professor of Obstetrics, Gynecology, and Reproductive Biology at HMS. Lakshmi Halasyamani, MD '93, chief quality and transformation officer at NorthShore University HealthSystem, was elected councilor-at-large.



HAAS-KOGAN NAMED  
RADIATION ONCOLOGY  
PROFESSOR AT HMS

Daphne Haas-Kogan, AB '86, MD, chair of the Department of Radiation Oncology at Dana-Farber Cancer Institute, Brigham and Women's Hospital (BWH), and Boston Children's Hospital, has been named to the Radiation Oncology Professorship at HMS. BWH established this professorship to support outstanding faculty as they work to advance research and treatments for cancer.

Haas-Kogan spent 18 years at the University of California, San Francisco's Helen Diller Family Comprehensive Cancer Center, most recently as program director and vice chair in the center's Department of Radiation Oncology, before accepting her current role and joining the Harvard Medicine community in 2015. Haas-Kogan has an active laboratory-based research program that is investigating novel therapeutic agents for adult and childhood brain tumors, as well as pediatric malignancies. She is the principal investigator for several clinical trials, including investigator-initiated studies and cooperative group trials run by the Children's Oncology Group and the Pacific-Pediatric Neuro-Oncology Consortium.



Above: Haas-Kogan joins her children (from left) Maetal Kogan, AB '19, Shira Kogan, AB '14, and Yonatan Kogan, AB '12, all of whom spoke at the celebration in May.

Bringing student dreams within reach



Marsha Wibowo at her graduation from Massachusetts Institute of Technology in 2016

**Growing up in Jakarta, Indonesia, Marsha Wibowo developed a deep interest in biology, but she never dreamed she'd have the opportunity to do research in the United States.** A first-generation college student at Massachusetts Institute of Technology and now a second-year PhD student at Harvard Medical School, Wibowo feels immensely grateful for the opportunities afforded to her through the generosity of others.

Last year, Wibowo was selected to receive the Charles and Ing Himawan Graduate Fellowship, which was established by Jeff S. Himawan, PhD '96, to support one international student in his or her PhD studies at HMS. She and Himawan share a similar background: both were born in Jakarta, both attended MIT for their undergraduate studies, and both chose to continue their studies at HMS in the Division of Medical Sciences.

The similarities are not lost on Wibowo. "It is very encouraging and inspiring to receive support from someone who has been in my shoes," she says. "Knowing how impactful it could be to help younger students, I give back to the community through service projects in Southeast Asia. I hope to one day be able to help the younger generation even more."

Wibowo has chosen to complete her thesis work in the lab of Aleksandar Kostic, PhD '13, at Joslin Diabetes Center. When she was in high school, Wibowo's father died of complications from diabetes, and she has since dreamed of making contributions to the field.

"It is an honor for me now to be able to directly contribute to a cause that is very personal to me," she says. "Dr. Himawan's generosity has helped me come closer to my dream of making an impact and contributing to the field of medicine."

Alumnus supports next generation of academic leaders

**Arthur Herbst, AB '53, MD '59, was part of a seminal discovery in 1971 linking prenatal treatment with diethylstilbestrol (DES)—a synthetic estrogen meant to prevent miscarriage—to a rare, clear-cell adenocarcinoma cancer found in a cluster of young women whose mothers took the drug.** His landmark paper ushered in an era of research into the delayed effects of carcinogen exposure on embryologic development.

In addition to this landmark paper published in the New England Journal of Medicine, Herbst has had a long and successful career in patient care, teaching, and research, making his mark in the field of gynecologic cancer. He credits Harvard with much of this success. In honor of his 60th Reunion next year, Herbst has given an additional \$150,000 to convert his existing research fund into the Arthur L. Herbst Endowed

Scholarship Fund to support scholars interested in the reproductive sciences or women's cancers.

"The cost of medical education has become increasingly prohibitive," Herbst says, noting that he had a lot of help getting through Harvard, including a scholarship he received as an undergraduate and private support he received for his research during medical school. "Harvard trains people to become academic leaders in basic science research, clinical practice, various specialties, and across every discipline in medicine. This is a way for me to support the next generation."

**Dean for Medical Education Edward M. Hundert, MD '84, says, "Support from inspiring alumni like Arthur enables any student to come to HMS and then go on to make their own mark on science, medicine, and the world."**





# Red Sox Foundation goes to bat for Project Success

**When Jeremy M. Wolfe was in high school, his father, a physicist, arranged for him to work in a colleague’s lab doing vision research.**  
By the end of the summer, Wolfe was hooked.

But Wolfe, PhD, now a professor of ophthalmology and radiology at Harvard Medical School and director of the Visual Attention Lab at Brigham and Women’s Hospital and HMS, realizes that most high school students aren’t given the same opportunity.

“Access to that kind of opportunity should depend on interest, commitment, and talent, not on whether your parents happen to have the right connections,” Wolfe says.

That thinking inspired Wolfe to open up his lab to Project Success, a program that allows Boston and Cambridge high school students from disadvantaged backgrounds or from groups underrepresented in medicine to engage in paid summer research

internships under the mentorship of HMS faculty. Wolfe has hosted one to three students from the program every year for more than 20 years.

However, there would be no Project Success without dedicated philanthropic support. The Red Sox Foundation has stepped up to the plate with a gift of \$120,000. This funding supports 10 students, known as Red Sox Foundation interns, each year for three years.

“These opportunities afford students with enormous potential an experience they might otherwise not have access to and open their minds to another level of learning,” says Gena Borson, executive director of the Red Sox Foundation, which has supported Project Success since 2013. “The personal and professional growth that they can make in just one summer is invaluable.”

Katie Yao, who participated in Project Success in 2016 and 2017 and will enroll at Boston University in January, says the program helped her develop research and critical thinking skills that she has applied at school. She said she always wanted to become a physician and, after Project Success, “I definitely wanted to continue on that track.”



Katie Yao, who is focused on understanding the genetics of age-related macular degeneration at the Schepens Eye Research Institute lab of Neena Haider, PhD, associate professor of ophthalmology at HMS

 **Hear from Project Success students and see them in action at <http://bit.ly/2fa0y4R>**

## CLARK APPOINTED YIP HEPP ASSOCIATE PROFESSOR OF DERMATOLOGY

Rachael A. Clark, MD '93, PhD '98, has been named the first incumbent of the Shing-Yiu Yip and Cecilia M. Hepp Professorship in Dermatology. Clark is an innovative leader and educator in human skin disease. Her research focuses on T cells in normal human skin, skin cancers, and inflammatory diseases. She is director of the Human Skin Disease Research Center at Brigham and Women’s Hospital (BWH), which aims to bring more dermatologists into translational skin disease research and support their efforts in experiment design and execution.

Martin Mihm Jr., MD, director of the Mihm Cutaneous Pathology Consultative Service and the Melanoma Program in the Department of Dermatology at BWH and associate director

of the Center for Melanoma Oncology at Dana-Farber/Brigham and Women’s Cancer Center, initiated this professorship through a generous gift in 2000. Shing-Yiu Yip, MD, an HMS-trained dermatologist based in Hong Kong, contributed the remaining funds to establish this professorship. Yip and Mihm have been friends since their dermatology residency program at Massachusetts General Hospital in the 1960s. Upon Mihm’s retirement from the Harvard University faculty, the professorship will be named for both benefactors. In the interim, the title will bear the name of Mihm’s mother, Cecilia Hepp.

Left to Right: Mihm, Clark, and Yip commemorate the professorship at an April 21 ceremony in Gordon Hall.



## DID YOU KNOW 80% OF HMS STUDENTS RECEIVE FINANCIAL AID?

Meet one of them:

“If my Harvard Medical School financial aid package had not been so generous, I may have felt pressured to accept an offer from another school even though in my heart I wanted to be here.”  
— Elorm Avakame, MD '18

Consider a leadership gift to support need-based financial aid.

Contact Aisha Francis at 617-384-8503 or [aisha\\_franis@hms.harvard.edu](mailto:aisha_franis@hms.harvard.edu) to learn how you can support the next generation of leaders in science and medicine.



HARVARD  
MEDICAL SCHOOL





# Faces of HMS



**1** Joan Reede, MD, MPH '90, SM '92, MBA (fourth from right), dean for diversity and community partnership, welcomed Harvard Medical School alumni to a reception in Philadelphia on July 31, held in conjunction with the National Medical Association's 115th Annual Convention and Scientific Assembly.

**2** Samiya Alkhairy was one of dozens of students who presented her research at the Harvard-MIT Health Sciences and Technology (HST) Forum in April.

**3** Doctor and writer Louise Aronson, MD '92, autographed copies of her book, "A History of the Present Illness," following her keynote address for the Class of 1958 Endowed Lecture. Established by classmates in honor of their 50th Reunion, the annual event is a gift to each graduating class to reinforce the idealism, humanism, and nobility of medicine.

**4** Ernesto Bertarelli, MBA '93, president of the Bertarelli Foundation and a member of the HMS Board of Fellows, and his wife, Kirsty, thanked the scientists from HMS and École Polytechnique Fédérale de Lausanne (EPFL) who presented their research at the sixth annual Bertarelli Program in Translational Neuroscience and Neuroengineering Symposium on April 7 at the EPFL's Campus Biotech in Geneva, Switzerland.

**5** Left to right: Nworah Ayogu, AB '10, MD '14, MBA '15; Andrew Rivera, MD '15; and Kai Huang, MD '15, reconnect at the Recent Grad Reception at the Harvard Club of New York City on May 9. The event was hosted by Bobby Daly, MBA '07, MD '10, and Christina Grassi, AB '10, MD '15.

**6** In May, participants gathered for "Charting the Future of Primary Care," an intensive, three-day program featuring case-based discussions of exemplary practices around the world. This was the second executive education program hosted by the HMS Center for Primary Care.

**7** In Harvard Yard on May 25, the HMS Class of 2017 walked to Tercentenary Theatre for the University's 366th commencement exercises.

**8** In April, HMS Dean George Q. Daley, AB '82, MD '91, PhD (right), joined Harvard University Provost Alan Garber, AB '77, PhD '82, MD (not pictured) and members of the HMS Board of Fellows and Advisory Councils in thanking outgoing Board Chairman John W. Rowe, MD (left), for his service.

**9** Sam Frons (right), founder of Addicaid and finalist in the 2016 Health Care Innovation Challenge, connects with (left to right) Elena Avramov, MBA '13, Kirsten Kester, AB '09, MBA '13, and Nick Ringold, chief operating officer of Addicaid, following the Addicaid Case Session in New York City on May 9. The event series is hosted by the Forum on Health Care Innovation, a collaboration between HMS and Harvard Business School.

**10** The Giovanni Armenise-Harvard Foundation hosted its eighth class of Italian graduate and medical students this summer, facilitating their two-month-long fellowships at HMS and its affiliated institutions.

**11** The Harvard community came together May 15 to celebrate the Massachusetts Life Sciences Center, headed by Travis McCready (fourth from right), and its \$18 million in capital infrastructure grants supporting four new projects led by HMS, the Harvard T.H. Chan School of Public Health, Dana-Farber Cancer Institute, and the Institute for Protein Innovation.



# 60th Reunion spurs financial aid gift

**George Bray fondly recalls “the wonders of Harvard Medical School” he experienced as a student 60 years ago.** Now he wants to ensure that today’s HMS students get to experience some of those same wonders.

Inspired by attending his 60th Reunion in June, Bray, MD '57, has given \$100,000 to create the George A. and Mary H. Bray Financial Aid Fund. The endowed fund is named in honor of his parents, whose “support deserves to be remembered,” says Bray. He credits his mother for influencing his decision to choose HMS over other schools.

Gifts supporting financial aid are key to helping HMS keep its average graduating debt well below the national average. For example, students in the

HMS Class of 2016 graduated with an average debt of \$101,478, which is \$100,000 less than the national average at private medical schools.

Most HMS students rely upon some form of financial aid. In academic year 2016–17, the HMS Financial Aid Office administered more than \$37 million in loans, employment, and scholarship funding from various sources to approximately 80 percent of the student body.

**Bray received scholarship funding toward his tuition each of his four years at HMS, while working to cover most of his other costs. “I hope this gift will help some other student who also needs help,” he says.**



## A fruitful partnership extended

**Two years ago, Cornelius B. Prior Jr., Esq., LLB '62, established a collaborative research fund linking George Church, PhD '84, the Robert Winthrop Professor of Genetics at Harvard Medical School, with University of North Carolina School of Medicine staff led by Donald Budenz, MD '87.** Their research has borne fruit, and Prior wants to make sure it continues.



“I decided to extend my support ... because of the success I heard about with respect to the work done last year,” Prior says.

The inaugural project supported by Prior focuses on developing a medicine that corrects the disease-causing genetic mutation in patients with retinitis pigmentosa. This disease degrades the retina, impairing vision and eventually causing complete blindness.

Church’s team has been building on the human gene-editing tool CRISPR (short for clustered regularly interspaced short palindromic repeats) “to specify the genetic sequence to be corrected,” which is key to tailoring medicines to each patient’s unique sequence. Cory Smith, PhD, a postdoctoral research fellow in Church’s lab, is taking a more

targeted approach to this work by focusing on transposable elements—DNA sequences that can move within a genome and have the ability to self-replicate—and more precise gene editing.

Prior says he expects the collaboration “to be even more fruitful” this year because Budenz and his team have a unique source of postmortem human eye tissue that will allow them to evaluate whether substances that have shown promise in vitro or in mice will be effective when human tissue is involved.

Church says Prior’s \$100,000 gift has enabled his team to develop and refine methods for correcting genetic and disease-causing mutations. He’s thankful Prior recognizes the critical nature of the work, which he says has “huge potential to improve the quality of life and cure disease.”

“I decided to extend my support ... because of the success I heard about with respect to the work done last year.” —Cornelius B. Prior Jr., Esq., LLB '62

## MANDL APPOINTED LINDBERG PROFESSOR OF PEDIATRICS

Kenneth Mandl, MD '89, MPH '95, director of the Computational Health Informatics Program at Boston Children’s Hospital (BCH) and professor of pediatrics and biomedical informatics at Harvard Medical School, has been appointed the inaugural incumbent of the Donald A.B. Lindberg Professorship in Pediatrics.

BCH and Children’s Hospital Pediatric Associates established this professorship in honor of Donald A.B. Lindberg, MD, director emeritus of the National Library of Medicine, whose pioneering work in applying computer technology to medicine shaped the field of medical informatics. Lindberg’s work had a profound influence on Isaac Kohane, MD, PhD,

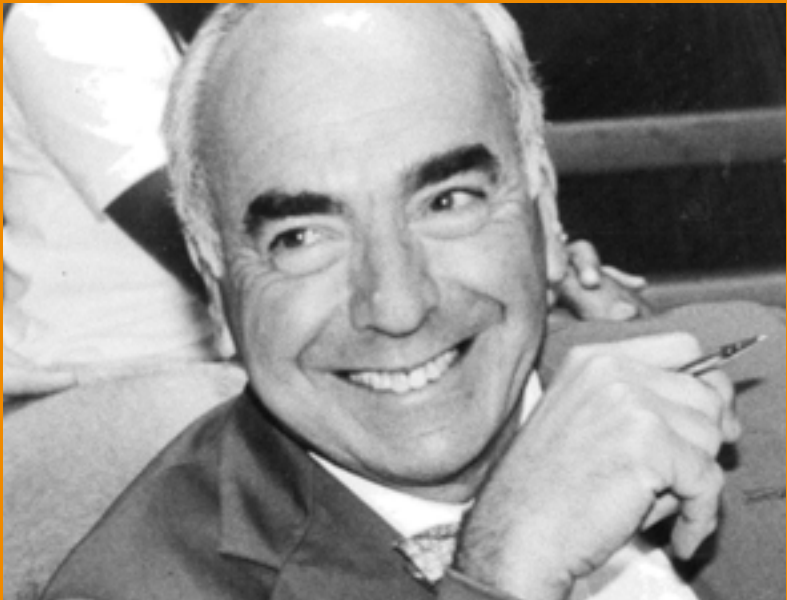
chair of the Department of Biomedical Informatics and Marion V. Nelson Professor of Biomedical Informatics at HMS, who will be honored as the ultimate namesake of this professorship upon his retirement from the Harvard University faculty.

Mandl, a Kohane mentee, focuses his research at the intersection of population and individual health. He has pioneered real-time biosurveillance, tracking infections and detecting outbreaks with diverse data. Mandl leads the transformative SMART Platforms initiative to design the “app store for health” and is principal investigator of the Scalable Collaborative Infrastructure for a Learning Health System. A teacher himself, Mandl has received the A. Clifford Barger Award for outstanding mentors at HMS.



Left to right: HMS Dean George Q. Daley, AB '82, MD '91, PhD, celebrates with Mandl and Kohane, the professorship’s future namesake.





Harvard Medical School mourns the loss of Daniel D. Federman, AB '49, MD '53 (1928–2017), who was a beloved pillar of our community and a towering presence at Harvard for nearly 70 years.

Read more about his life and view a special tribute video at [hms.harvard.edu/news/pioneer-passes](https://hms.harvard.edu/news/pioneer-passes).

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October 26

George W. Gay Lecture

Join the Center for Bioethics from 4:30–6 p.m. in the Walter Amphitheater in TMEC for the annual George W. Gay Lecture, featuring Michael J. Sandel, Anne T. and Robert M. Bass Professor of Government Theory at Harvard University. Quite possibly the oldest medical ethics lectureship in the U.S., it was established in 1917 by a gift from Dr. George Washington Gay, an 1868 graduate of HMS. *For additional information, visit [bioethics.hms.harvard.edu/gay-lecture](https://bioethics.hms.harvard.edu/gay-lecture).*



October 27

Contagion: Exploring Modern Epidemics

This Radcliffe Institute Science Symposium looks at new ways of tracking epidemics using big data and social networks to predict and stem the rise of emergent diseases. Free and open to the public, it starts at 9 a.m. at the Knafel Center in Cambridge. *To register and learn more, visit [radcliffe.harvard.edu/event/2017-contagion-symposium](https://radcliffe.harvard.edu/event/2017-contagion-symposium).*

November 1

Meet the Dean: Philadelphia

Alumni and friends are invited to the Down Town Club from 6–8 p.m. for the final stop on this interstate tour. Julia Haller, MD '80, will introduce Dean George Q. Daley, AB '82, MD '91, PhD, who will discuss his vision for HMS, its reach, and our collective impact. *Visit [hms.harvard.edu/meet-the-dean](https://hms.harvard.edu/meet-the-dean) for details and to RSVP.*



November 3

Alumni AAMC Reception in Boston

If you live in the Boston area or plan to attend the Association of American Medical Colleges' (AAMC) annual meeting, join us for a reception for alumni and friends, hosted by Dean George Q. Daley, AB '82, MD '91, PhD. It will be held from 5–6:15 p.m. in the St. Botolph Room at the Boston Marriott Copley Place. *RSVP to [hmsalum@hms.harvard.edu](mailto:hmsalum@hms.harvard.edu) or 617-384-8520.*



November 15



Executive Education Program in LA

Learn how two leading health care organizations implemented successful strategies for managing their unique patient populations. This interactive, case-based, executive education program, entitled Alternate Models for Population Health, is offered by the HMS Center for Primary Care and will be held from 10 a.m. – 4 p.m. at the Westin Bonaventure in Los Angeles. *To register or learn more, visit [info.primarycare.hms.harvard.edu/camden-pre-conference](https://info.primarycare.hms.harvard.edu/camden-pre-conference).*

March 29

Hollis L. Albright, MD '31 Symposium

Join us at 4:30 p.m. in the New Research Building for this 17th annual symposium highlighting groundbreaking initiatives in education, discovery, and service at HMS. *Contact Allie Keeler at 617-384-8596 or email [albright@hms.harvard.edu](mailto:albright@hms.harvard.edu) for more information.*