

CELEBRATING THE HEART AND IMPACT OF THE HMS COMMUNITY

FALL 19

FEATURED STORY

STOKING INNOVATION

Chan Zuckerberg Initiative supports new perspectives on neurodegeneration





ANCIENT SECRETS Foundation hopes ancient

DNA can help us better understand our existence





COMMITMENT

HMS graduate continues to confront critical global health challenges



UNRAVELING

CANNABINOIDS

Harvard University alumnus wants to fill the research void in the science of cannabis



LOOKING BACK TO THE FUTURE

\$15.5 million grant galvanizes ancient DNA research and collaboration



Ancient DNA research has exploded onto the scene in the last decade, churning out insights into the human past—from Neanderthal ancestry to the identification of "ghost" populations to genetic shifts that accompanied the transition from hunting and gathering to farming—that both enrich and challenge what we know from established fields such as archaeology and linguistics.

The work has raised a host of new questions regarding what ancient DNA can tell us not only about our past and present but also our future, as well as how the field itself can evolve in the most effective and ethical manner.

"THIS GRANT IS A GRAND BET ON THE POWER OF ANCIENT GENOMICS TO ENHANCE AND DEEPEN OUR UNDERSTANDING OF WHO WE ARE AND HOW WE

ARE RELATED TO ONE ANOTHER."

Now, Harvard Medical School has received a \$15.5 million grant from the John Templeton Foundation—one of the largest awards in the foundation's history—to lead the ancient DNA community in exploring these questions.

The Ancient DNA Atlas of Humanity, led by David Reich, AB '96, DPhil, professor of genetics in the Blavatnik Institute at HMS, will quintuple the number of published ancient human genome sequences, creating a database of 10,000 individuals spanning 50,000 years. The Atlas will be free for researchers around the world to use, so that the entire community can dive into the coming flood of ancient DNA sequences.



EHC SPOTLIGHT: Abbe & Peter Steinglass



"We have recently had more serious conversations about our legacy, estate planning, and the life experiences that have been most meaningful to us. We met at HMS, so we are very connected to it. With student debt distorting the choices people make, we hope our charitable gift annuity helps shift the balance, taking financial considerations out of the equation and allowing HMS students to follow their passions."

The Ezekiel Hersey Council recognizes those who have created a life income gift, named HMS as a beneficiary of a retirement account or existing donor-advised fund, or included HMS in their will or trust. Learn more at hms.harvard.edu/EHC. DURING HIS FIRST WEEKEND AS AN HMS STUDENT, PETER STEINGLASS, MD '64, SPOTTED A NOTICE ON THE VANDERBILT HALL BULLETIN BOARD FOR A SOCIAL EVENT AT BRANDEIS UNIVERSITY. HE ATTENDED THE EVENT AND MET HIS FUTURE WIFE, ABBE, WHO WAS A BRANDEIS STUDENT.

"Such a database would not have been possible to create by other means," said Reich. "This grant is a grand bet on the power of ancient genomics to enhance and deepen our understanding of who we are and how we're related to one another."

Initiative leaders also hope the results will illuminate "humanity's capacity to adapt in the face of changing environmental conditions," such as climate change, said Kevin Arnold, senior program officer at the foundation.

The effort will leverage funding from additional organizations, including the Howard Hughes Medical Institute, the Paul Allen Foundation, and the National Geographic Society. While largely based at HMS, it will also support work in the Human Evolutionary Biology Department in Harvard University's Faculty of Arts and Sciences, the Broad Institute of MIT and Harvard, and the Department of Anthropology at the University of Vienna in Austria.

Finding the best way forward

A portion of the grant is earmarked for efforts to

The main goal of the Ancient DNA Atlas of Humanity is to expand the study of human evolution and the origins of disease, including how genetic changes in the past have shaped present-day disease susceptibility.

"We want to handle ancient remains in a respectful and ethical way that preserves material for the future while also recognizing that these unique treasures won't be around to analyze forever," said Reich.

Many questions center on how best to partner with cultures around the world and navigate sensitivities about when and how to analyze the remains of people's ancestors and how



ensure widespread access to ancient DNA data, foster productive conversations with related fields, and tackle some of the thorny issues geneticists have been wrestling with.

For example, although some studies have been conducted in areas such as Africa, Southeast Asia, Austronesia, and the Americas, most ancient DNA analyses have concentrated on Europe. How can research be spread more evenly across the globe?

The initiative intends to "help fill in the gaps for regions that have been relatively understudied," said Matthew Walhout, vice president of natural sciences at the foundation.

Researchers are also struggling to find a balance between protecting ancient human remains and analyzing as many samples as they can in order to build large data sets that yield greater insights into past and present human populations. to interpret the results.

"What do we do when science is in tension with cultural narratives, including people's origin stories?" asked Reich. "As scientists, we are dedicated to the imperative of uncovering the truth, but we also need to recognize that when it comes to issues of identity, what objectively happened can be less relevant than tradition and perception."

Also looming large is the question of how geneticists who focus on ancient DNA can collaborate more effectively with other researchers, including archaeologists, anthropologists, linguists, historians, museum curators, and molecular biologists.

"People are engaging in increasingly complex discussions as disciplines converge and collide," said Reich. "Although they can be volatile at times, it's critical to engage in these conversations." ANCIENT BONES, SUCH AS THESE SKULLS FROM A SITE IN What is now the czech republic, provide genetic material that enriches our understanding of human evolution. Images © Martin Frouz and Jiří Svoboda

HEAR DAVID REICH DESCRIBE HIS EFFORTS TO CHRONICLE HUMAN HISTORY AT TINYURL.COM/REICH-ANCIENT-DNA

LEFLERS' LEGACY GROWS EVEN STRONGER



"THE LEFLER SUPPORT HAS PLAYED A CRUCIAL Role in the funding of Postdoctoral fellows At HMS for Many Years."

MICHAEL GREENBERG

The Leflers had established a substantial nest egg as founders of The Mailing House Inc., where they became pioneers in the field of mass mailing and material handling. In May 1995, the Leflers'



estate provided the Department of Neurobiology at Harvard Medical School with \$7.3 million to establish the Edward R. and Anne G. Lefler Center for the Study of Neurodegenerative Disorders.

For nearly 25 years, the Lefler Center has served as a nexus for researchers dedicated to identifying a cure for Alzheimer's and other devastating diseases of the nervous system. The center supports four interrelated components: a neurobiology professorship, a grants program, a fellowship fund, and an annual symposium. HMS recently received a \$348,000 gift from the Edward and Anne Lefler Trust, providing an additional boost to the fellowship fund.

"The Lefler support has played a crucial role in the funding of postdoctoral fellows at HMS for many years, allowing them to carry out innovative and important research on the mechanisms of neurodegenerative disease with the hope of someday soon developing therapies to treat these devastating disorders," says Michael Greenberg, PhD, the Nathan Marsh Pusey Professor and chair of the Department of Neurobiology in the Blavatnik Institute at HMS.

ALUMNI COUNCIL Welcomes 5 New Members

This past spring, Harvard Medical School graduates cast their votes during the annual Alumni Council election, selecting a vice president and four new councilors. Representing the Third, Sixth, and Tenth and Beyond pentads, respectively, the new councilors are (left to right) Oni J. Blackstock, AB '99, MD '05, assistant commissioner for the Bureau of HIV/AIDS Prevention and Control for the NYC Department of Health and Mental Hygiene; Carmon J. Davis, MD '90, MPH '94, a pediatrician at Boston Children's Hospital; and Nina Tolkoff-Rubin, MD '68, director of dialysis and renal transplantation at Massachusetts General Hospital. Elizabeth Garner, MD '94, MPH '94 (second from right), chief medical officer and senior vice president at Agile Therapeutics Inc., was elected councilorat-large, and Tamara L. Callahan, MD '95, MPP '95 (far right), associate professor of clinical OB/GYN at Vanderbilt University Medical Center, was elected vice president.













THERAPEUTIC INNOVATION

FUJIFILM FELLOWSHIPS BOLSTER THERAPEUTIC INNOVATION

Advancing fundamental discoveries into novel biomedical applications that will transform human health and well-being is one of Harvard Medical School's top priorities. This goal also resonates with FUJIFILM Corporation (Fujifilm)—so much so that the company has given HMS \$1 million to advance translational medical research by supporting future therapeutics innovators.

The Fujifilm Fellowship provides up to two years of funding to the most promising PhD students across the nine HMS-based life sciences PhD programs. Selected by HMS leadership, the fellows are also enrolled in the Therapeutics Graduate Program (TGP), a new curriculum that focuses on pharmacology, toxicology, and drug discovery, emphasizing research in both HMS labs and realworld internships.

"Thanks to Fujifilm, this program will support some extraordinary minds in the life sciences who are working across scientific disciplines at the leading edge of biomedical research. The result will be a remarkable lineage of beneficiaries whose collective contributions to human health and biomedical innovation will impact countless lives globally," says David Golan, AB '75, MD, PhD, dean for research operations and global programs, professor of biological chemistry and molecular pharmacology, director of the TGP, and co-chair of the Therapeutics Initiative Steering Committee at HMS. He is also the George R. Minot Professor of Medicine at Brigham and Women's Hospital.

"FUJIFILM AND HARVARD MEDICAL SCHOOL SHARE THE SAME VISION FOR THE

FUJIFILM FELLOWS (LEFT To Right) Reina Iwase, Martha Ordonez, And Michael Mazzola

and senior vice president of FUJIFILM Corporation. "Harvard Medical School's strong legacy of educating many of the leading medical innovators and then translating these innovations to medical practice is inspirational to our company and especially to our employees, who are working hard with the goal of improving patient care and outcomes."

Future Innovators

Announced in June, the inaugural Fujifilm Fellows are Reina Iwase, Michael Mazzola, and Martha Ordonez—all of whom are enrolled in the Biological and Biomedical Sciences (BBS) PhD Program.

Born and raised in Tokyo, Iwase is working in the lab of Philip Cole, MD, PhD, professor of biological chemistry and molecular pharmacology at HMS and professor of medicine at Brigham and Women's Hospital. She is interested in the mechanisms by which various proteins function. Specifically, she is studying how PTEN, a His thesis aims to improve transplantation by better understanding how hematopoietic stem cells respond to and survive stress. With this knowledge, Mazzola says that strategies to cure hematopoietic diseases by gene therapy and bone marrow transplant will be more effective at normalizing patients' blood.

"When I learned that I was named a Fujifilm Fellow, I was excited to share the news with my unconditionally supportive parents and laboratory," says Mazzola. "I am so happy to be supported by Fujifilm, which shares my enthusiasm for the future of cell-based therapies."

FUTURE, A VISION WHICH IS STEEPED IN OUR COMPANY'S HISTORY OF CONTINUOUS INNOVATION, EVEN UNDER THE MOST CHALLENGING OF CIRCUMSTANCES."

NAOTO YANAGIHARA

"Fujifilm and Harvard Medical School share the same vision for the future, a vision which is steeped in our company's history of continuous innovation, even under the most challenging of circumstances," says Naoto Yanagihara, director phosphatase inactivated in many tumor cells, is regulated by N-terminal ubiquitination for nuclear targeting.

"A deeper understanding of PTEN would allow development of novel anti-tumor therapeutics," says Iwase, adding that she was surprised to be named a Fujifilm Fellow. "I am very grateful for this honor and the support from a famous Japanese company."

A native of Long Island, Mazzola joined the lab of David Scadden, MD, Gerald and Darlene Jordan Professor of Medicine at Harvard University, codirector of the Harvard Stem Cell Institute, and director of the Center for Regenerative Medicine at Massachusetts General Hospital, to study blood stem cells, particularly in the context of bone marrow transplant. Born in Ecuador, Ordonez was 8 when her family moved to the U.S. in search of better economic and educational opportunities. She recently joined the lab of Edward Chouchani, PhD, assistant professor of cell biology at HMS and assistant professor of cancer biology at Dana-Farber Cancer Institute.

Ordonez's research applies new mass spectrometric and chemical technologies to identify small molecules that can act as switches to drive calorie burning in UCP1, a well-known protein that controls calorie burning in fat cells. She says these molecules could hold major promise as treatments for obesity and diabetes. "I am looking forward to future scientific experiences as a Fujifilm Fellow and the opportunity to share my findings with the scientific community," says Ordonez.

FACES OF HMS











03

Sara Al-Zubi (left) and Amina Ziad, members of the Class of 2023, share a laugh after receiving their white coats in August.

04

Ajay Chawla, MD, PhD, a professor in the Cardiovascular Research Institute at the University of California, San Francisco, was one of the featured speakers at the sixth annual Symposium on Immunity and Inflammation in Disease and Tissue, hosted by the Evergrande Center for Immunologic Diseases at HMS and Brigham and Women's Hospital on July 19.







08

MD-PhD student Nathan Nakatsuka, AB '12, explains his research project to HMS students at the 32nd annual HST Student Research Forum in the TMEC Atrium on April 10. Nakatsuka was among 36 students in the Harvard-MIT Program in Health Sciences and Technology who presented research.

09

Keynote speaker Karen Adelman, PhD, a professor of biological chemistry and molecular pharmacology in the Blavatnik Institute at HMS, enjoys a welcome reception on the first day of the Giovanni-Armenise Harvard Foundation's biennial scientific symposium, held in June in Italy. The symposium, whose theme was "Quantifying Biology in Space and Time," fosters collaboration between Armenise researchers based in the U.S. and Italy.

01

At the Talks@12 series event May 16 titled "The Primary Care Revolution," HMS Center for Primary Care Director Russell Phillips, MD (left), Megan Townsend, MD '19, MPP '19, and Mark Herzog, an MD-MPP candidate, discussed ways to improve health care and health outcomes for patients amid a landscape of rising health care costs.

02

Mark Hughes, AB '82, MD '86, and his son, Michael Hughes, AB '15, MD '19, attend a reception after the Class of 1958 Endowed Lecture, which featured keynote speaker Edward M. Hundert, MD '84, dean for medical education at HMS. The lecture was established by classmates in honor of their 50th Reunion as a gift to the graduating class to reinforce the idealism, humanism, and nobility of medicine.

05

Keynote speaker Mona Hanna-Attisha, MD, MPH, a physician-scientist whose research exposed the water crisis in Flint, Michigan, addresses HMS and HSDM graduates during the Class Day ceremony in May.

06

Members of Harvard Medical School's Class of 2019 make their way to Harvard Yard for Commencement ceremonies May 30.

07

Danial Ceasar, MD '19 (right), and Tenny Zhang, MD '19, were among the 167 Harvard Medical School students who learned during Match Day 2019 where they will spend the next three to seven years in residency training programs.

10

Stéphanie P. Lacour, PhD, who holds the Bertarelli Foundation Chair in Neuroprosthetic Technology at the School of Engineering at the École Polytechnique Fédérale de Lausanne (EPFL), addresses the crowd at the annual Bertarelli Symposium, which was held in July at Campus Biotech in Geneva. The symposium highlights research projects and investigators funded as part of the Bertarelli Program in Translational Neuroscience and Neuroengineering.

EASING THE BURDEN OF STUDENT DEBT

Sumeer Sathi, MD '89, remembers vividly his personal struggle to pay for medical school. His family had emigrated from India and had no savings to help with his education or expenses. That was more than 30 years ago, before the cost of higher education began to skyrocket. Last fall, Sathi got to experience these steep costs as his oldest son went off to college.

"I realized how overwhelming it must be for a student currently considering medical school followed by a residency, which typically pays low wages," Sathi says, explaining his inspiration for making a \$100,000 gift to establish an endowed financial aid fund at Harvard Medical School. "I know this scholarship will directly help students and lessen their financial burdens. Their career paths may also be strongly influenced by this."

Sathi, who celebrated his 30th Reunion in June, says he's thankful for his education and training at HMS and likes to stay connected to the School. He served as vice chair of leadership giving on his Reunion Committee, encouraging his classmates to be generous given the current financial environment for students.

"I KNOW THIS SCHOLARSHIP WILL DIRECTLY HELP STUDENTS AND LESSEN THEIR FINANCIAL BURDENS. THEIR CAREER PATHS MAY ALSO BE STRONGLY INFLUENCED BY THIS."

SUMEER SATHI

A neurosurgeon and founder of Long Island Neuroscience Specialists, Sathi says he started out wanting to combine research and clinical care but realized that he wanted to focus on



excellence in clinical medicine. "I wanted to make a difference in my patients' lives by performing high-quality work and offering them cuttingedge and compassionate care," he says.

FINANCIAL AID AND EDUCATION

STRIVING TO INSPIRE STUDENTS

Harvard Medical School is committed to providing all accepted students with need-based financial aid packages that help make it possible for them to attend HMS and access its world-class educational, research, and training opportunities. This commitment is critical to the School's mission to nurture a diverse, inclusive Chi-Li Pao Foundation USA can appreciate this commitment and mission, having funded programs at Stanford for the past five years aiming to improve the lives of Chinese people through the support of medical education and health care projects. Now, the foundation has

THE FAMILY BEHIND THE FOUNDATION HOPES THAT THIS SCHOLARSHIP PROVIDES A

community dedicated to alleviating suffering and improving health and well-being for all.



given \$200,000 to establish a scholarship fund at HMS with a preference for students whose heritage is linked to China, Hong Kong, Taiwan, or Singapore.

"Although it is often noted that Chinese and Asians in general are over-represented in the medical field, not all Chinese students come from wealthy backgrounds and many come from immigrant families," says Gloria S. Kim, MD, Chi-Li Pao Foundation USA trustee.

The foundation was created in honor of Chi-Li Pao, a shipping magnate and generous philanthropist. Kim says the family behind the foundation hopes that this scholarship provides a transformative experience for recipients, and that those recipients are inspired by the generosity of strangers to do good things, make positive contributions to society, and help others along the way. TRANSFORMATIVE EXPERIENCE FOR RECIPIENTS, AND THAT THOSE RECIPIENTS ARE INSPIRED BY THE GENEROSITY OF STRANGERS TO DO GOOD THINGS, MAKE POSITIVE CONTRIBUTIONS TO SOCIETY, AND HELP OTHERS ALONG THE WAY. **GLOBAL HEALTH AND SERVICE**

VISIONARY LEADERSHIP IN GLOBAL HEALTH



STEPHEN KAHN IS AN Emergency medicine Physician and president of The Abundance Foundation.

Stephen Kahn, MD '99, is inspired by the growth in the number of visionary leaders impacted by the Master of Medical Sciences in Global Health Delivery (MMSc-GHD) program at Harvard Medical School. Four students graduated from the program in 2014, while 16 are expected to earn degrees in 2020. To date, 77 students from 29 countries have enrolled in the program.

What's even more significant, says Kahn—incoming chair of the HMS advisory council on global health and service and a major benefactor of the MMSc-GHD program—is the impact these students are having on the world.

Kahn highlights how 2016 master's graduate Mohamed Bailor Barrie, MD, has created and continues to create lasting change. Barrie came to the MMSc-GHD program as the co-founder of a health care system in a rural and neglected region of his native Sierra Leone—an area that happened to be 50 miles from the epicenter of the Ebola outbreak in West Africa that killed more than 11,000 people. When the outbreak began in 2014, Barrie was in Boston working toward his master's degree. He was able to apply his health-systems learning to become a key conduit, connecting ministers of health, doctors and nurses, and community health workers in Sierra Leone with the HMS Global Health Research Core and Partners In Health (PIH). This enabled the

PARTNERS IN HEALTH STRATEGIST Mohamed Bailor Barrie Helps Conduct an oral Cholera Vaccination Campaign in Freetown, Sierra Leone, in 2017. quick and effective establishment of research and clinical programs on the ground—programs funded by Kahn and the Abundance Foundation, a global health nonprofit that Kahn founded.

"MMSc-GHD students become health multipliers, able to develop solutions to critical local and global health problems, effect systemic change, and ensure delivery of high-quality clinical care," says Kahn, president of the Abundance Foundation. Through this foundation and the Harvard Abundance Fund, Kahn has given more than \$3.6 million to HMS since 2015 to support an array of global health programs as part of the Abundance Project for Global Health.

"Stephen is a visionary with a deep understanding of the need to develop and amplify the voices of those implementing global health programs," says Joia Mukherjee, MD, MPH '01, director of the MMSc-GHD program and of the Program in Global Medical Education and Social Change at HMS, associate professor of medicine in the Division of Global Health Equity at Brigham and Women's Hospital (BWH), and chief medical officer of PIH.

"His foundational support of the MMSc-GHD program has empowered clinicians, project managers, and activists to develop the skills to design, implement, and evaluate programs that directly improve the health of the world's poor and marginalized in more than a dozen countries across the globe," Mukherjee says.

As part of the Global Health Delivery Intensive program, which is offered jointly by HMS, the Harvard T.H. Chan School of Public Health, and BWH, Kahn recently gave a lecture on the critical work of Chief Abundance Partner Louise Ivers, MB, BCh, BAO, MPH '05, MD, associate professor of global health and social medicine in the Blavatnik Institute at HMS and executive director of the Center for Global Health at Massachusetts General Hospital. Ivers' Abundance-funded research led to the use of the cholera vaccine during an epidemic for the first time, after a catastrophic earthquake hit Haiti in January 2010. Thanks to Ivers' leadership, the vaccine is now used worldwide to both respond to and prevent cholera epidemics.

Research Training (IORT) program under the direction of Bethany Hedt-Gauthier, SM '05, PhD '08, an associate professor of global health and social medicine at HMS and a member of the Global Health Research Core.

"WE ARE GRATEFUL TO STEPHEN FOR HIS THOUGHTFUL PARTNERSHIP, VISIONARY PHILANTHROPY, AND DEVOTED FRIENDSHIP."

PAUL FARMER

"The IORT program has yielded 19 publications," Kahn explains, "and has both trained and mentored a cadre of Rwandan researchers who've designed and executed rigorous, community-generated research that impacts local health systems." Kahn's gift will fund the publication of a special supplement in the Annals of Global Health, a peer-reviewed, open access journal, highlighting IORT research.

"Our most recent research training resulted in eight papers—all led by Rwandan first-time first authors—describing innovative clinical programs," says Hedt-Gauthier. "We will publish these papers along with details on our Harvard-PIH-BWH research and training partnerships, which will support replication of these embedded and collaborative efforts at other academic institutions," she says.

ULSE • FALL 19 0B

Kahn has continued to advocate for critical global health research, including recent support for the Intermediate Operational

JON LASCHER/PARTNERS IN HEALTH

Paul Farmer, MD '90, PhD '90, Kolokotrones University Professor and chair of the HMS Department of Global Health and Social Medicine, chief of the Division of Global Health Equity at BWH, and co-founder and chief strategist of PIH, says: "Over the last decade, Stephen's unwavering and visionary support has transformed our department; helped to advance the careers of our faculty, staff, and students; and impacted the lives of countless patients and communities near and far. We are grateful to Stephen for his thoughtful partnership, visionary philanthropy, and devoted friendship."

HEAR MMSC-GHD STUDENTS DESCRIBE THEIR JOURNEYS AT TINYURL.COM/MMSC-GHD-STUDENTS

A PERSONAL STAKE IN RARE DISEASE

Jonathan Boutelle and Rashmi Sinha, PhD, faced the unimaginable when their son Vikram was diagnosed with two rare diseases in the span of two years: an inflammatory disease called systemic juvenile idiopathic arthritis (SJIA) at age 1, and a year later, a lung disease called pulmonary alveolar proteinosis (PAP). The combination of SJIA and PAP is ultra-rare, and the few cases seen before had a unique set of symptoms and a high mortality rate.

ALEX PICKERING, A BIOINFORMATICIAN WHO HAS BEEN WORKING AS A CONSULTANT AND HAS BEEN RECRUITED AS THE SENIOR SCIENTIFIC PROGRAMMER FOR THE DEPARTMENT OF BIOMEDICAL INFORMATICS AT HMS, VISITS VIKRAM BOUTELLE IN CINCINNATI.



As a result, the couple started collaborating with scientists to understand it better. Shortly before Vikram's initial diagnosis, the couple had sold their company SlideShare to LinkedIn. They decided to turn their attention to finding a cure for their son, working tirelessly to organize conferences and fund research.

Vikram is now 7, and his parents have made some headway in their work. They have found more than 30 SJIA-PAP patients and have worked with experts at Cincinnati Children's Hospital who are sequencing RNA from samples gathered at the yearly family conference organized by their foundation. Now, to facilitate a collaborative relationship among their foundation, Cincinnati Children's Hospital, and Harvard Medical School, the couple have made a gift to establish the Sinha Boutelle Foundation Fund at HMS. According to the National Organization for Rare Disorders, there are more than 7,000 rare diseases, and more are discovered every day. Most of these are pediatric, and more than 90 percent do not have FDA-approved treatments.

This funding has allowed Isaac Kohane, MD, PhD, the Marion V. Nelson Professor of Biomedical Informatics and chair of the Department of Biomedical Informatics in the Blavatnik Institute at HMS, to recruit a strong data scientist who can develop and apply computational approaches to the sequenced RNA data.

"We hope that our gift helps identify new treatments for our son's rare disease and inspires others to bring together bioinformatics experts to find new treatments using computational approaches," says Sinha. "We are especially excited that Dr. Kohane's expertise in repurposing drugs can help identify medications with an established safety profile that can be used soon."

ALBRIGHT SY<mark>mposium</mark> Highlight<mark>s healthy aging</mark>



In 2001, Tenley Albright, MD '61, and her brother, Nile L. Albright, AB '61, MD, established an endowed symposium at Harvard Medical School in memory of their father, an alumnus who devoted his life to surgery, patient care, and student mentorship.

In March, the 18th annual Hollis L. Albright, MD '31 Symposium focused on healthy longevity and the science of brain health. Researchers highlighted projects that are uncovering fundamental mechanisms of both healthy aging and age-related conditions.

"At medical school, we were told that our aim should be to help our patients die young as late as possible," Tenley Albright (right) said at the symposium before introducing keynote speakers Sharon K. Inouye, MD, MPH (center), director of the Aging Brain Center at the Hinda and Arthur Marcus Institute for Aging Research at Hebrew SeniorLife and a professor of medicine at Beth Israel Deaconess Medical Center and HMS, and Bruce A. Yankner, MD, PhD (left), codirector of the Paul F. Glenn Center for Biology of Aging Research and a professor of genetics and neurology in the Blavatnik Institute at HMS.

HMS Dean George Q. Daley, AB '82, MD '91, PhD, spoke about the latest developments at the School, while Samantha M. Landino, MD '19, received the Albright Scholar Award, which is presented each year to an outstanding medical or surgical student at HMS.

GAENSLER NAMED Chair of Alumni giving

Erik Gaensler, AB '79, MD '84, a radiologist with Bay Imaging Consultants and a clinical professor of radiology at the University of California San Francisco Medical Center, has been named chair of alumni giving at Harvard Medical School. In this volunteer role, Gaensler will help engage and steward alumni, support class agents and Reunion Committees in their fundraising efforts, and update the Alumni Council on philanthropic giving from alumni.

Why should HMS alumni give back to their alma mater? Gaensler says when you look at the

beautiful, classical marble buildings on the Quadrangle, it's clear that HMS, like Rome, wasn't built in a day.

"No matter what your graduation year, we were the beneficiaries of multiple prior generations of scholars and donors," says Gaensler, pictured with his sister, Karin Gaensler, MD '81, and holding a photo of his late father, Edward Gaensler, MD '45. "We were fortunate to stand on the shoulders of those who came before us. It is now our opportunity to pay it forward."

FLEXIBLE FUNDING

INVESTING IN HMS AND HIS FINANCIAL FUTURE



Mark S. McMahon, MD '86, says he enjoys a threefold benefit when establishing a deferred charitable gift annuity (CGA) at Harvard Medical School: he gets a tax deduction, boosts his retirement income, and helps his alma mater. That's why he recently established his 10th CGA at the School.

"Additionally, the money is managed by the experts at Harvard Management Company, in whom I have a great deal of confidence," says McMahon, who serves as a volunteer leader of HMS's legacy society, the Ezekiel Hersey Council (EHC). McMahon derives immense joy from the fact that his daughter Devon is enrolled at HMS, having entered with the Class of 2020. She received a fellowship to fund a year of research and clinical work in Kenya—the same fellowship Mark received as a student, allowing him to obtain a master's degree at the London School of Economics.

I AM HARVARD MEDICINE

By establishing a deferred CGA, McMahon funds the gift today but elects to postpone his income payments until his retirement, when they will be higher. He's designated his \$100,000 gift as flexible funding to be used at the discretion of the dean of HMS.

"I want to afford the School the flexibility to invest in the ideas that will have the greatest potential to improve health and well-being for everyone," he says.

An orthopedic surgeon in New York City, McMahon says he looks forward to coming to Boston for the annual EHC event. "It is a great opportunity to reconnect with the School, the faculty, and some of my classmates," he says. "I WANT TO AFFORD THE SCHOOL THE FLEXIBILITY TO INVEST IN THE IDEAS THAT WILL HAVE THE GREATEST POTENTIAL TO IMPROVE HEALTH AND WELL-BEING FOR EVERYONE."

MARK S. MCMAHON

"These are the kinds of opportunities available to those of us who have been fortunate enough to attend HMS," he says.

STOKING INNOVATION

When awarding grants to support academic science, traditional funders such as the National Institutes of Health and the National Science Foundation often select well-established principal investigators who are conducting research in areas that their labs have long studied.

That's not the case, however, with grants recently distributed by the Chan Zuckerberg Initiative (CZI) to three researchers in the Blavatnik Institute at Harvard Medical School. Two of these grants, known as the Ben Barres Early Career Acceleration Award, will fund innovative work being performed by investigators who recently started their own laboratories. The other award, known as the Imaging Scientist Award, will fund work that furthers the use of microscopy techniques, without focusing on a specific research project.

"THESE SORTS OF GIFTS FOR FACULTY AT OUR STAGE CAN MAKE A HUGE IMPACT ON OUR CAREERS AND OUR ABILITY TO DO CUTTING-EDGE RESEARCH."

ISAAC CHIU

Both Early Career Acceleration Awards—each worth \$2.5 million over five years—will fund investigators who are part of CZI's first cohort of Neurodegeneration Challenge Network grantees. Isaac Chiu, AB '02, PhD '09, assistant professor of immunology, will use his award to take his laboratory in a different direction. Chiu's lab has focused on interactions between the nervous system and the immune system. With the new funds, he'll be starting a project to better understand the role that gut bacteria and pathogens play in amyotrophic lateral sclerosis and engineer bacteria to treat this devastating motor neuron degenerative disease with no truly effective treatments. Founded by Priscilla Chan, AB '07, and Mark Zuckerberg in 2015, the Chan Zuckerberg Initiative strives to build a more inclusive, just, and healthy future for everyone.

Associate professor of systems biology Debora Marks, PhD, whose lab uses computational approaches to decipher genetic data, will use her award to focus on developing novel statistical methods employing probabilistic modeling and machine learning to better understand the mechanisms across a variety of neurodegenerative diseases. These funds have already attracted collaborators from a variety of disciplines.

"People are already sharing their data with me, whether it's phenotypic measurements from brains or new genetic information," she says. "We'll use that with the new probabilistic tools we're designing and making and testing."

The third grant was awarded to Jennifer Waters, PhD, a microscopy expert who directs Harvard's Nikon Imaging Center and serves as interim director of the Imaging and Data Analysis Core. With \$750,000 over three years, Waters will be able to expand her ongoing educational mission, developing new microscopy training videos for her YouTube channel, an online forum for microscopy, and a short course for other experts who run core facilities like hers.



YOUTUBE CHANNEL, Microcourses, At Tinyurl.com/ HMS-Microcourses

> "These sorts of gifts for faculty at our stage can make a huge impact on our careers and our ability to do cutting-edge research," he says.

Jonah Cool, PhD, science program officer for CZI, says: "Investigators at Harvard are making important contributions to various CZI programs via their close partnerships with other Harvard investigators as well as direct collaboration as part of international teams. Recent grantees illustrate the power of how diverse backgrounds can develop new technologies, use them to generate resources used by the community, and apply them to further our understanding of disease."

PULSE • FALL 19 (2)

'AMAZING STUDENTS' INSPIRE REACH PROGRAM SUPPORT

Ensuring access to medical education is integral to Harvard Medical School's mission to alleviate suffering and improve health and well-being for all. To help achieve that access, the School upholds its twin values of need-blind admissions and need-based aid, selecting candidates without regard for their ability to pay and supporting every student with demonstrated financial need.

Still, some talented candidates from disadvantaged backgrounds decline their HMS admission offers because they receive more attractive financial packages that include merit-based scholarships. To keep HMS as an option for these students, the School created the REACH scholarship program, which acknowledges student attributes of Resilience, Excellence, Achievement, Compassion, and a demonstrated commitment to Helping the underserved.

REACH provides funding through HMS's need-based financial aid program to reduce the loan component of a student's financial aid package, making it more feasible for those who are historically underrepresented in the medical profession to accept their offers of admission.

"REACH has been so successful and addresses the needs of the situation I was in when I was applying to medical school," says Martin Prince, who celebrated his 35th HMS Reunion in June with the Class of 1984. "I have heard some of the stories of the REACH scholars, and now I have met several of these amazing students. The program is so important to the HMS mission."

Important enough that Prince decided to establish both current-use and endowed REACH scholarship funds last year and has followed that up with an additional \$500,000 endowed gift this year.

"DEAN DALEY'S VISION OF INCLUSION, EXCELLENCE, AND POSITIVE IMPACT MEANS THAT HARVARD MEDICAL SCHOOL NEEDS TO BE ATTRACTING THE BEST STUDENTS AND GRADUATING THEM WITHOUT BURDENSOME DEBT."

MARTIN PRINCE

"Dean (George) Daley's vision of inclusion, excellence, and positive impact means that Harvard Medical School needs to be attracting



the best students and graduating them without burdensome debt. This is what the REACH program is all about," Prince says.

Dean for Medical Education Edward M. Hundert, MD '84, says Prince's ongoing support of the REACH scholarship program is "a true inspiration to us all."

"When alumni choose to give back to ensure that students from diverse and disadvantaged backgrounds can become part of the Harvard Medicine community, their generosity ensures that HMS will continue to lead for generations to come," Hundert says.

ALUMNI DAY OFFERS CHANCE TO REDISCOVER CAMPUS



All Harvard Medical School alumni were invited to reconnect with their classmates and the School at Alumni Day on June 7.

Following a continental breakfast, the Annual Business Meeting of the Harvard Medical Alumni Association featured the inaugural presentation of the Distinguished Service Award for Harvard Medical School Alumni (see feature on back cover).

Next up was the Alumni Day Symposium, at which an impressive roster of speakers discussed how physicians can manage rising health care costs, burnout, new technologies, and the changing nature of provider payments and care delivery.

HMS Dean George Q. Daley, AB '82, MD '91, PhD, then delivered his State of the School Address before the Alumni Day Lunch. A separate lunch was held for Society of the Silver Stethoscope members—alumni who have celebrated their 60th Reunion.

Late in the afternoon, students led campus tours of the newly renovated Clinical Skills Center, learning studios, and classrooms in the Tosteson Medical Education Center. **ALUMNI GIVING**

BUILDING ON A CULTURE OF GIVING

Harvard Medical School has a long and proud. tradition of alumni support. Last year was no exception. More than 2,400 alumni made gifts totaling nearly \$10.5 million in fiscal year 2019, which ran from July 1, 2018, through June 30, 2019. The majority of alumni designated their gifts to support two areas: financial aid and education, which helps ensure that the School is accessible and affordable for all admitted students, and "where it is needed most," which provides vital, discretionary funding that Dean George Q. Daley, AB '82, MD '91, PhD, can leverage to propel his plans and vision for the future of HMS.

The motivations behind each gift were as unique as the donors themselves. William Proudfit, MD '39, a renowned cardiologist whose career at the Cleveland Clinic spanned more than 40 years, says he has been proud to be associated with HMS because it is one of the top medical schools in the U.S.

"I still contribute because the medical school treated me like a gentleman, though there may be a few exceptions which I won't mention," says Proudfit, chuckling. At age 105 he is HMS's oldest alumni donor. Having given consecutively for more than 40 years, he is a member of the Federman Loyalty Circle, which recognizes alumni who have given annual gifts for five years or more.

Sewit Teckie, AB '05, MD '09, who is a member of the Dean's Council, HMS's leadership annual giving society, and the Federman Loyalty Circle, says she knows how fortunate she is to have an HMS education. A proud recipient of financial aid, she says her years at HMS provided her with the best education she's ever received, preparing her for the challenges of residency and beyond.



SEWIT TECKIE

WILLIAM PROUDFIT

Alumni gifts in FY19 ranged from \$10 to \$4.25 million, with a median of \$250 and average of \$3,000.

making it more feasible for those who come from disadvantaged backgrounds to accept their offers of admission.

According to Reunion Committee Chair Erik Gaensler, AB '79, MD '84, who is a member of the Dean's Council and Federman Loyalty Circle, as well as the new chair of alumni giving at HMS, the Class of 1984 is painfully aware of the cost of medical education.

"While our tuition may have been lower than today, finances were a major struggle for many," said Gaensler. "As I speak to classmates, financial aid and wanting to help current and future generations of HMS students have always been primary goals of their generous donations."

For members of the Class of 1969, their 50th Reunion was a big motivator for giving back. The class raised more than \$7 million—a new record for HMS class fundraising—including a number of bequest gifts that will help sustain the School's future. The class's Reunion Committee began meeting 18 months before Reunion and, according to Chair George Thibault, MD '69, had a shared sense of gratitude that they wanted to express by doing something special.



GEORGE THIBAULTT

"I am grateful for the financial support that was afforded me, and I wish to pass that on to future aspiring physicians," says Teckie. "Medicine is an extremely rewarding career, and I believe students should not be limited by ability to pay for a quality education."

Milestone Reunions were another motivator for alumni giving. In fact, 620 alumni made gifts in honor of their Reunions last year. Reunion class giving totals include planned gifts and multivear pledges and, therefore, are often larger than fiscal year totals.

The Class of 1984 raised more than \$2.5 million to mark its 35th Reunion. Of this total, nearly \$1.5 million supports incoming MD students through REACH scholarships, which provide funding through HMS's need-based financial aid program to reduce the loan component of a student's financial aid package even further,

"We wanted this to be a memorable occasion for us all, and a memorable way for us to recognize our indebtedness to HMS," said Thibault, who is a member of the Dean's Council and Federman Loyalty Circle.



AT REUNION IN JUNE, REACH SCHOLAR LEEN AL KASSAB (BOTTOM RIGHT) MEETS WITH **MEMBERS OF THE CLASS OF** 1984, INCLUDING (BACK ROW) **REUNION COMMITTEE CHAIR** ERIK GAENSLER, LISA HERTZ, (FRONT ROW) STEPHANIE MARIONEAUX, AND HER HUSBAND, HAROLD.

FACES OF REUNION

VISIT ALUMNI.HMS.HARVARD.EDU/2019-RECAP FOR MORE PHOTOS

01

The Class of 1994 25th Reunion Committee organized the Reunion Symposium, titled "Leadership in Medicine and Beyond," which included an acknowledgment of Alvin Poussaint, MD, who retired this year as faculty associate dean for student affairs and a professor of psychiatry. Posing together are (from left) Jessica C. Dudley, MD '94, chief medical officer at Brigham and Women's Physicians Organization; John Maa, MD '94, chief of the Division of General and Acute Care Surgery at Marin General Hospital; Marc S. Sabatine, AB '90, MD '94, MPH '02, chairman of the TIMI Study Group at Brigham and Women's Hospital; Joshua M. Hauser, AB '89, MD '94, associate professor of medicine and palliative care fellowship director at Northwestern Feinberg School of Medicine; Poussaint; Tina Young Poussaint, MD, professor of radiology at HMS and Boston Children's Hospital; Stella K. Kim, MD '94, the Joe M. Green Jr. Professor of Ophthalmology at the University of Texas McGovern Medical School; Robert L. Satcher Jr., MD '94, PhD, associate professor of orthopaedic oncology at the MD Anderson Cancer Center; and Sean D. Pierce, AB '89, MD '94, chair of the Department of Radiology at Hackensack University Medical Center.

03

Dean for Medical Education Edward M. Hundert, MD '84, a Reunion volunteer and a member of the Dean's Council and Federman Loyalty Circle, leads the Welcome Toast to kick off Reunion festivities.

04

A.W. Karchmer, MD '64, chair of alumni relations, a volunteer on his 55th Reunion Committee, and a member of the Dean's Council, Ezekiel Hersey Council, and Federman Loyalty Circle, introduces the Reunion Scientific Symposium, titled "Discovery

07

RE:

UNION

Wanda Barfield, MD '89, MPH '90, who recently finished her term as a councilor on the Alumni Council, picks up some HMS memorabilia from the Coop stand.

05

08

From left: Class of 2009 members Emily Wroe, MPH '15, a resident at Brigham and Women's Hospital; Katrina Abuabara, a dermatologist at the University of California, San Francisco; Obianuju Berry, AB '04, an adjunct associate research scientist at the Columbia University Medical Center; and Manasa Patna Kavasery, MPH '10, an attending physician at Cambridge Health Alliance, celebrate their 10th Reunion at the Gala reception.

02

During a symposium break, Kenneth S. Robinson, AB '75, MD '79, president and CEO of the United Way of the Mid-South, catches up with his fellow alumni.

at HMS: Disease—Genes From Cause to Cure."

05

From left: Erin Sullivan, PhD, research and curriculum director at the HMS Center for Primary Care; Andrew Ellner, AB '97, MD '04, co-founder and CEO of Firefly Health; Peter Slavin, AB '79, MD '84, MBA '90, president of Massachusetts General Hospital; and Bruce Landon, MD, MBA, SM '97, HMS professor of health care policy, speak at the Alumni Day Symposium, titled "Health Care: An Endangered Species?"

06

Alumni and friends get a look inside the newly renovated Clinical Skills Center, learning studios, and classrooms in the Tosteson Medical Education Center as part of student-led campus tours.

09

Alumni and friends enjoy the ambiance at the Lawn on D during the Family Picnic.

10

Alumni relax at the Rooftop@Revere while enjoying the Recent Graduate Gathering, which welcomed the Classes of 2004, 2009, and 2014.

VIEW THE ALUMNI HONOR ROLL OF DONORS, INCLUDING REUNION CLASS HONOR ROLLS, AT ALUMNI.HMS.HARVARD.EDU/HONOR-ROLL

FINANCIAL AID AND EDUCATION

IMPROVING CARE FOR PATIENTS WITH AUTISM

Medicine has grown increasingly specialized over the past several decades. Every organ, disease, and patient population imaginable is covered by a specialist or subspecialist. Very few of these practitioners are specifically trained, however, in working with patients who have autism spectrum disorder, despite the growing prevalence of this neurodevelopmental condition.

That needs to change, says David Roberts, MD '95, dean for external education at Harvard Medical School.

"WE WANT TO HELP DOCTORS IN ALL SPECIALTIES LEARN TO BETTER CARE FOR THESE PATIENTS."

DAVID ROBERTS

"Understanding the specific needs of this patient population is key to getting them the care they need," says Roberts. "We want to help doctors in all specialties learn to better care for these patients." In September 2018, the Office for External Education at HMS connected with the Nancy Lurie Marks Family Foundation, which is dedicated to helping individuals with autism lead fulfilling and rewarding lives. This private foundation focuses on advancing the scientific understanding of autism, funding educational and social opportunities for the autism community, and educating society about autism. It recently awarded a \$375,000 planning grant to HMS to support the Office for External Education in developing a set of online learning programs for doctors.

"Our hope is that this funding will make a tremendous difference in improving health outcomes for individuals with autism and their families by elucidating the specific and unique challenges that these families face in a medical setting and advancing the training of medical professionals," says Judith H. Chan, program officer and director of communications for the foundation.

Roberts says developing the learning programs involves attention to a multitude of details. His team will conduct a market analysis of existing educational efforts aimed at the same



goal; liaise with stakeholders such as patients, families, physicians, and office staff; and learn how patients' care might be included in videos while keeping privacy concerns and their unique sensory needs in mind.

"My dream," Roberts says, "is that other organizations see the value and benefit of this, and eventually, it could be a repeatable and scalable model that could help patients with other disorders as they seek general medical and specialty care and other resources."

AT EHC DINNER, A LOOK AT THE FUTURE OF HEALTH CARE



In May, Harvard Medical School Dean George Q. Daley, AB '82, MD '91, PhD, opened the 29th annual event for members of the Ezekiel Hersey Council (EHC) and thanked them for their generosity.

The Council, which comprises more than 600 members and is chaired by Jordan J. Cohen, MD '60, honors those who have established life income gifts to benefit the School or have named HMS as a beneficiary of their estate or retirement plans. It is named for Ezekiel Hersey, a physician and Harvard College alumnus whose bequest led to the creation of Harvard Medical School in 1782. A highlight of the evening was a panel discussion titled "Changes in the Financing and Organization of Health Care." Moderated by Joseph P. Newhouse, AB '63, PhD '69 (left), the John D. MacArthur Professor of Health Policy and Management at Harvard University, the discussion featured Bruce Landon, MD, MBA, SM '97 (center), professor of health care policy in the Blavatnik Institute at HMS, and Haiden Huskamp, PhD '97 (right), the 30th Anniversary Professor of Health Care Policy at HMS.

The 2020 EHC Lunch will be held Friday, May 1, at the New Research Building. Invitations to follow. Learn more about the EHC at hms.harvard.edu/ehc. PULSE • FALL 19 (6)

UNRAVELING CANNABINOIDS

In 2017, the National Academies of Sciences, Engineering, and Medicine issued a report calling upon philanthropic organizations, private companies, public agencies, and others to develop a "comprehensive evidence base" on the short- and long-term health effects—both beneficial and harmful of cannabis use.

Charles R. "Bob" Broderick, AM '05, an alumnus of Harvard University and MIT, has made gifts to both alma maters to support fundamental research into the effects of cannabis on the brain and behavior. The total gift of \$9 million— \$4.5 million to each institution—represents the largest donation to date to support independent research into the science of cannabinoids.

The donation will allow experts in the fields of neuroscience and biomedicine at Harvard Medical School and MIT to conduct research that may ultimately help unravel the biology of cannabinoids, illuminate their effects on the human brain, catalyze treatments, and inform evidence-based clinical guidelines, social policies, and the regulation of cannabis.

With the increasing use of cannabis both for medicinal and recreational purposes, there is a growing concern about critical gaps in knowledge.

"Our desire is to fill the research void that currently exists in the science of cannabis," said Broderick, an early investor in Canada's medical marijuana market and founder of Uji Capital, a family office focused on quantitative opportunities in global equity capital markets.

The Broderick gifts to HMS and MIT will support independent studies of the neurobiology of cannabis; its effects on brain development, various organ systems, and overall health, including treatment and therapeutic contexts; and cognitive, behavioral, and social ramifications.

"THE RESEARCH EFFORTS ENABLED BY BOB'S VISION SET



CHARLES R. "BOB" BRODERICK

"I want to destigmatize the conversation around cannabis—and, in part, that means providing facts to the medical community, as well as the general public," said Broderick, who argues that independent research needs to form the basis for policy discussions, regardless of whether it is good for business. "Then we're all working from the same information. We need to replace rhetoric with research," he said.

Mobilizing a community

The Charles R. Broderick Phytocannabinoid Research Initiative at HMS will span basic science and clinical disciplines, ranging from neurobiology and immunology to psychiatry and neurology, taking advantage of the combined expertise of some 30 basic scientists and clinicians across the School's Blavatnik Institute and its affiliated hospitals.

The Department of Neurobiology will be the epicenter of these research efforts, which will be led by Wade Regehr, PhD, and Bruce Bean, AB '73, PhD.

"I am excited by Bob's commitment to cannabinoid science," said Regehr, professor of neurobiology at HMS. "The research efforts enabled by Bob's vision set the stage for unraveling some of the most confounding mysteries of cannabinoids and their effects on the brain and various organ systems."



THE STAGE FOR UNRAVELING SOME OF THE MOST CONFOUNDING MYSTERIES OF CANNABINOIDS AND THEIR EFFECTS ON THE BRAIN AND VARIOUS ORGAN SYSTEMS."

WADE REGEHR

According to Bean, the Robert Winthrop Professor of Neurobiology at HMS, even though cannabis products are now widely available, and some used clinically, we still understand remarkably little about how they influence brain function and neuronal circuits in the brain. "This gift will allow us to conduct critical research into the neurobiology of cannabinoids, which may ultimately inform new approaches for the treatment of pain, epilepsy, sleep and mood disorders, and more."



CELEBRATING INAUGURAL OMENN ASSOCIATE PROFESSOR

Gilbert S. Omenn, MD '65, PhD (left), has had a long and distinguished career in medicine. An expert in genetics, proteomics, bioinformatics, and precision medicine, he is the Harold T. Shapiro Distinguished University Professor of Computational Medicine & Bioinformatics, Internal Medicine, Human Genetics and Public Health at the University of Michigan.

Omenn is also deeply committed to Harvard Medical School, recently making a generous gift to create the Gilbert S. Omenn, MD '65, PhD Associate Professorship in Biomedical Informatics within the department he helped to establish at HMS. Peter Kharchenko, PhD '05 (right), was recognized as the inaugural incumbent at a June celebration. Currently, Kharchenko focuses on the application of single-cell genomic techniques to the analysis of several human cancers.

"This professorship will provide invaluable support to a new generation of extraordinary researchers—like Peter Kharchenko—who will carry forward the work of precision medicine and all of the promise it engenders for breakthrough treatments and scientific insights," says HMS Dean George Q. Daley, AB '82, MD '91, PhD.

FINANCIAL AID AND EDUCATION

TRANSFORMATIVE EXPERIENCE INSPIRES SUPPORT FOR MD-PHD PROGRAM



professor and co-founder of the Broad Institute of MIT and Harvard, and most recently as chief

Medical School must train more physicianscientists. That's why he is committed to doubling the size of the Harvard/MIT MD-PhD Program expanding the size of the entering class of students who will prepare to become leaders of basic science, translational medicine, policy, and care delivery in hospitals, academia, government, and industry.

For 45 years, the program has trained the next generation of physician-scientists across a variety of clinical disciplines and research areas tailored to each student's interests and passions. These outstanding young scholars typically complete two years of medical school, followed by four years of PhD training and the final two years of medical school.

David Altshuler, MD '94, PhD '94, says his experiences in the MD-PhD program were transformative, propelling his academic career as an endocrinologist and human geneticist, as a scientific officer at Vertex Pharmaceuticals.

"My experiences in academia and industry have made me a huge believer in the unique and critical role of physician-investigators. It is hard to overstate the value of deep training in both science and in medicine early in one's intellectual development," Altshuler says.

That belief has spurred him and his wife, Jill Altshuler, AB '87, MBA '94, to establish a currentuse scholarship fund for MD-PhD students at HMS with an initial \$100,000 gift. "We are committed to George's vision of doubling the size of the program," David Altshuler says.

Daley certainly appreciates their commitment. "This is one of my main priorities at HMS, and it means a great deal to me to have David and Jill's support," he says.

MD-PHD STUDENT ERIENE-HEIDI SIDHOM WORKS IN THE BROAD Institute lab of her mentor, anna greka, an alumna of the Harvard/mit MD-Phd Program and associate professor of Medicine at Brigham and Women's Hospital and HMS.

Q&A WITH EDWARD M. HUNDERT

We sat down with Harvard Medical School Dean for Medical Education Edward M. Hundert, MD '84, to talk about medical student financial aid, which is a theme of this issue of Pulse.

01

How many HMS students benefit from financial aid and what are the tenets of the program? HMS upholds the twin values of need-blind admissions and need-based aid. We believe that the cost of attendance should never prevent the most promising students from choosing HMS. Thanks to our alumni and other donors, along with a strong commitment from the school, we have one of the most generous MD financial aid programs in the country, with approximately 76 percent of students receiving financial aid,

including over \$24 million in scholarships and \$12 million in loans awarded last year.

CALENDAR

OCTOBER 28

CELEBRATING 50 YEARS OF Diversity and inclusion At HMS and HSDM

Join our family of alumni, faculty, trainees, students, and staff for a day of learning and discussion to mark the anniversary of the 1969 diversity initiative that paved the way for a culture of inclusion at HMS and beyond. **Learn more and register at hms.harvard.edu/diversity50.**

NOVEMBER 1

MD-PHD PROGRAM Marks 45 Years

Join alumni, faculty, staff, and students in the Joseph B. Martin Conference Center at 3 p.m. for an academic symposium that will feature distinguished alumni of the Harvard/MIT MD-PhD Program at Harvard Medical School, including HMS Dean George Q. Daley, AB '82, MD '91, PhD. The symposium will showcase the diverse roles and accomplishments of physician-scientists in America and beyond. **Email mdphd@hms.harvard.edu or call 617-432-0991 for more information.**

02

Several universities and medical schools have announced recently that they are going tuition-free. Is HMS planning to follow suit? I applaud all efforts that seek to lower student indebtedness. But instead of diverting precious scholarship funds to students from families who have ample means to pay for their education, our goal is to offer even more aid to those students who have the greatest need. This need-based approach enables us to provide all students whose calculated family contribution is zero with a full scholarship covering both tuition and fees for all four years at HMS.



03

What is the REACH scholarship program and how is it making an impact? The REACH scholarship provides funding through HMS's need-based financial aid program to reduce the loan component of a student's financial aid package even further, making it more feasible for those who come from disadvantaged backgrounds to accept their offers of admission. Since the program's inception in 2017, 52 students have

benefited from REACH scholarships.

NOVEMBER 10

ALUMNI AAMC RECEPTION

Do you live in the Phoenix area or are you planning to attend the Association of American Medical Colleges' (AAMC) annual meeting there? Don't miss the HMS alumni reception from 6:15 to 7:30 p.m. at the Hyatt Regency. After the reception, join Dean for External Education David Roberts, MD '95, for dinner, discussion, and a chance to hear about HMS's online learning program, HMX. **RSVP at tinyurl.com/AAMC-reception-RSVP. For more information, call 617-384-8520 or email hmsalum@hms.harvard.edu.**

NOVEMBER 14

FAMILY, FINANCE, AND Philanthropy event In Chicago

Alumni and friends are invited to attend this interactive presentation that will address the topics of family wealth and governance, the Harvard endowment, and charitable planning techniques that can benefit you and your family. **Contact giftplanning@hms.harvard.edu**

NOVEMBER 21

GEORGE W. GAY LECTURE

Join the Center for Bioethics at 5 p.m. in the Joseph B. Martin Conference Center Amphitheater for the annual George W. Gay Lecture, featuring political theorist and classicist Danielle Allen, AM '98, PhD '01, the James Bryant Conant University Professor and director of the Edmond J. Safra Center for Ethics at Harvard. Allen is widely known for her work on justice and citizenship in both ancient Athens and modern America. **Register at tinyurl.com/2019-Gay-Lecture.**

FEBRUARY 7

APPRECIATION DINNER

HMS volunteers and Dean's Council members are invited to attend our annual appreciation dinner at the Hotel Commonwealth, featuring keynote speaker Robert Truog, MD, director of the Center for Bioethics and the Frances Glessner Lee Professor of Legal Medicine, Professor of Anaesthesia (Pediatrics) at HMS. **Contact Elizabeth Chan at 617-384-8441 or elizabeth_chan@hms.harvard.edu for more information.**

NOVEMBER 3

MINGLE WITH ALUMNI AT CHICAGO EVENT

Connect with fellow alumni while enjoying refreshments from 11 a.m. to 1 p.m. at the home of Shira Simon, AB '04, MD '11, MBA '12, assistant professor of ophthalmology and neurology at the Northwestern University Feinberg School of Medicine. For more information, call 617-384-8520 or email hmsalum@hms.harvard.edu. for more information.

NOVEMBER 19

ALUMNI COCKTAIL RECEPTION In California

Join alumni at an informal cocktail reception from 5:30 to 7:30 p.m. at the Stanford home of Phyllis I. Gardner, MD '76, professor of medicine at Stanford University School of Medicine. Alan C. Yeung, MD '84, The Li Ka Shing Professor in Cardiology at Stanford University School of Medicine, will serve as co-host, while HMS Dean for Medical Education Edward M. Hundert, MD '84, will speak about the future of medicine and answer questions about the School. **RSVP at tinyurl.com/HMS-cocktail-reception. For more information, contact Julie Griffin-Carty at julie_griffin-carty@hms.harvard.edu or 617-384-8519.**

MARCH 21–27

MIT-HMS HEALTHCARE INNOVATION BOOTCAMP

During this accelerated-learning program by HMS's Center for Primary Care and MIT Bootcamps, participants will attend lectures on health care, innovation, and entrepreneurship delivered by faculty at both universities, and they will work in teams to create a health care venture in one week. **Apply by Dec. 15 at bootcamp.mit.edu/** healthcare2020.

IN BRIEF

The following faculty-generated grants totaling \$250,000 or more were awarded by organizations to support members of the Harvard Medical School community in their work to alleviate suffering and improve health and well-being for all.

Under the direction of Joan Reede, MD. MPH '90, SM '92, MBA. dean for diversity and community partnership at HMS, the Commonwealth Fund Fellowship in Minority Health Policy at Harvard



University is being supported through another \$800,000 grant from The Commonwealth Fund. The fellowship prepares physicians for leadership roles in health policy and public health, giving them the tools to transform health care delivery systems for minority, low-income, and other vulnerable populations across the country.

The Louis E. Wolfson Foundation has given \$320,000 to help MD students at HMS with demonstrated financial need pay for tuition through institutional loans. Over the past 35 years, the foundation has given more than \$11 million to support deserving MD students.

Michael Baym, PhD, an assistant professor of biomedical informatics in the Blavatnik Institute at HMS, has been awarded a Packard Fellowship for Science and Engineering. The \$875,000 grant from the David and Lucile Packard Foundation will help the Baym Lab

stay one move ahead of antibiotic resistance and discover therapies and control strategies informed by the



has awarded a \$600,000 grant-\$200,000 a year for three years—to Joan

Brugge, PhD, Louise Foote Pfeiffer Professor of Cell Biology in the Blavatnik Institute at HMS. for her work on the identification of premalignant changes in breast cells from BRCA1 mutant carriers.

A Robert Wood Johnson Foundation grant of \$385,040 is supporting Richard Frank, PhD, Margaret T. Morris Professor of Health Economics in the Blavatnik Institute at HMS, in his research to understand how projected changes in the labor market will affect employment opportunities for people with mental illness and in the development of policy proposals to mitigate potential negative impacts.

Alfred Goldberg, AB '63, PhD '68, professor of cell biology in the Blavatnik Institute at HMS. received a \$345,000 grant from the **Cure Alzheimer's Fund** to support his investigations of pharmacological approaches to enhance the degradation of toxic proteins

DEAN OF HARVARD

MEDICAL SCHOOL

George Q. Daley,

AB '82, MD '91, PhD

DEAN FOR ALUMNI AFFAIRS

AND DEVELOPMENT

Lisa J. Boudreau

that cause neurodegenerative diseases.



The Susan G. Komen Breast Cancer Foundation



The Richard A. and Susan F. Smith Family Foundation has awarded \$600,000 to

two faculty members in the Blavatnik Institute at Harvard Medical School. Maofu Liao, PhD, associate professor of cell biology, received \$300,000 to advance investigations on the molecular basis of Alzheimer's disease in the hopes of developing potential treatments. Alan Brown, PhD, assistant professor of





biological chemistry and molecular pharmacology, received \$300,000 to study ciliopathies using cryo-electron microscopy.

Siniša Hrvatin, AB '07, PhD '13, a neurobiology instructor in the Blavatnik Institute at HMS, received a \$400,000 grant from the **Warren Alpert Foundation**. As a Warren Alpert Distinguished Scholar, he will study how the brain initiates, regulates, and survives profound hypometabolic states in the hope of advancing transformative new medical treatments.

The **Burroughs Wellcome Fund** has awarded \$500,000 grants to two assistant professors of immunology in the Blavatnik Institute at HMS. Isaac Chiu, AB '02, PhD '09, is exploring neuronal regulation of influenza virus infection, while Jun Huh, PhD, is focused on the modulatory role of maternal gut bacteria in influencing fetal brain development in the context of viral infection. In addition, Zuzana Tothova, PhD '07, MD '09, an HMS assistant professor of medicine at Dana-Farber Cancer Institute, received a \$700,000 award for her work elucidating the mechanisms of cohesinopathy in myelodysplastic syndromes.

Matthew Bonds, PhD, an assistant professor of global health and social medicine in the Blavatnik Institute at HMS, received a \$523,000 grant from **Pivot** to support projects in Madagascar focused on establishing a new science of health system integration.

predictable features of microbial evolution.



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RECORD NUMBER OF ALUMNI And Guests Return to Campus for Reunion 2019



CELEBRATING THE HEART AND IMPACT OF THE HMS COMMUNITY



CONGRATULATIONS

Dea Angiolillo, MD '79, head of the MD Alumni Adviser program, received the inaugural Distinguished Service Award for HMS Alumni during the Harvard Medical Alumni Association's annual business meeting June 7. Presented to her by Harvard Medical School Dean George Q. Daley, AB '82, MD '91, PhD, the award recognizes and celebrates individuals who have made remarkable contributions to HMS.

LEARN MORE ABOUT DEA AND THIS AWARD, And nominate a Deserving Alumna/US, At Alumni.hms.harvard.edu/ Service-Award