



# PULSE

FEATURED STORY

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# CONFRONTING YOUTH MENTAL HEALTH CRISIS

HMS will use \$5.5M Manton Foundation grant to develop a wider range of mental health care access points for children and adolescents

➔ It's no secret the COVID-19 pandemic has exacted a devastating toll on global physical health, but what may be less obvious is its impact on mental health—more specifically, children's mental health.

"There is a grave crisis in the U.S. today in terms of the mental health of young people," says Vikram Patel, MBBS, MSc, PhD, the Pershing Square Professor of Global Health in the Blavatnik Institute at Harvard Medical School. "This crisis

is because of the lack of access that young people have to early, evidence-based care for their mental health difficulties."

Now, however, HMS has a plan to develop education and training programs aimed at making mental health care more widely available to children and adolescents through an initiative made possible by a \$5.5 million, three-year grant from the Manton Foundation, a charitable organization.

The foundation supports a range of New England organizations and causes, including but not limited to education, arts and culture, medical research, historic preservation, and conservation.

The newly created education and training programs will be disseminated through online learning tools developed and implemented by the HMS Office for External Education, which is led by David Roberts, MD '95, dean for external education.





# MENTAL HEALTH DECLINE

- A global study of 80,000 youths showed depression and anxiety symptoms have doubled since the beginning of the pandemic, with one in four youths experiencing depressive symptoms, and one in five experiencing anxiety symptoms, according to “The ‘New Normal’ and Life Beyond COVID-19,” a report by the Evidence-Based Policy Institute.
- Nationally, more than 25% of high school students reported worsened emotional and cognitive health during the pandemic, the report said, and many parents of younger children (ages 5 to 12) reported their children were displaying increased symptoms of depression, anxiety, and psychological stress.
- In fall 2021, the American Psychological Association said psychologists were reporting significant increases in demand for anxiety and depression treatment, even as they juggled expanded workloads and faced waitlists that were much longer than before the pandemic.



“COVID has brought out and widened cracks in our society,” says Roberts. “Social justice, mental health, the digital divide, economic disparities—those things are all having implications on health and wellness throughout the world. We’re trying our best to fill those gaps with information and education. Our part is really to create content for clinicians and for the lay public on these key topics.”

### Three-pronged approach

HMS aims to develop a wider range of mental health care access points by providing educational assistance to middle and high school counselors and community health workers; by offering additional training to health care providers, such as pediatricians and obstetrician-gynecologists; and by more thoroughly integrating mental health into the HMS MD education curriculum.

“We hope the training modules we develop will be used all over the country and throughout the world,” says HMS Dean for Medical Education Edward M. Hundert, MD ‘84, who helped spearhead the new enterprise.

Part of the difficulty with getting care to those who need it is the traditional division between mental and physical health care, says Todd Griswold, MD, an HMS assistant professor of psychiatry at Cambridge Health Alliance, who will be working with others at the School to develop an enhanced curriculum for medical school students. “I’m hoping that the pandemic has opened people’s eyes so that they’ll see that psychiatry is not separate from the rest of clinical medicine,” says Griswold. “It has been considered that for way too long in education and in clinical work.”

The approach to the new curriculum will, in part, benefit from the lessons learned in the collaborative care model for depression, which aims to provide access to mental health support and treatment across a range of primary care settings.

“When people have depression and see primary care providers, the primary care providers will have been trained, and will see depression as part of their work. And if a patient’s case is complicated, they will have mental health providers and psychiatrists to whom they can refer the patient. So, in this model, non-

psychiatrists can see basic mental health care as part of their general day-to-day work,” Griswold says.

To integrate this approach into future health care practice, the new HMS curriculum will be integrated into MD students’ pre-clerkship courses, which occur before their clinical rotations begin, and then be supported and reinforced within specific clerkship rotations. There will also be an emphasis on strengthening child and adolescent psychiatry training within the psychiatry clerkship.

Specific materials, such as videos, interactive online course modules, and case-based discussions, will be created, and clerkship directors will be surveyed to determine how best to support a wider variety of physicians in clinical settings.

“The more complex thing is to integrate the learning into students’ clinical experiences when the students are rotating and seeing patients, and that usually involves faculty development,” Griswold says. “So, the clinical teachers—say the primary care doctors or pediatricians they’re working with—may need a little bit of faculty development.”

**“I’M HOPING THAT THE PANDEMIC HAS OPENED PEOPLE’S EYES SO THAT THEY’LL SEE THAT PSYCHIATRY IS NOT SEPARATE FROM THE REST OF CLINICAL MEDICINE.”**

TODD GRISWOLD

### In the schools

While Griswold focuses on enhanced training for future doctors, Patel will work with leading U.S. and international adolescent mental health treatment experts to train school counselors and other providers in key, evidence-based intervention principles. This will allow them to better support middle and high school students, who are in the age range when Patel says the majority of mental disorders first emerge.

HMS will design a digital, skills-based curriculum inspired by an initiative called EMPOWER, which enables community-based frontline providers to learn, master, and deliver brief psychological treatments. It also provides a suite of competency assessments and tools for supervision by peers once interventions have been mastered.

Courses will be developed in concert with school counselor professional groups and other target audiences. The courses will be thoroughly tested, and training certifications will be developed, all with the goal of helping school counselors move to a more evidence-based practice. The program will also be available to other providers who deliver care to adolescents, such as community health workers and nurses.

“We know that mental health problems lie on a spectrum, and what we have historically done is treated mental health problems in a binary way: either you have a problem, or you don’t,” says Patel, an expert in the field of global mental health who co-leads the HMS Mental Health for All lab and the GlobalMentalHealth@Harvard initiative. “You only receive care if you get a diagnosis, and that diagnosis can only be given by a certain kind of professional. That paradigm is, for me, one of the single biggest reasons why we have a crisis of care in America today.”

The new approach, Patel says, embraces a dimensional model of mental health problems, “recognizing that you don’t need a diagnosis to receive care, and that care can be delivered wherever you are, in the settings where you live and work, by people who are close to you and connect with you.”

The ultimate goal is to provide care that will give young people the skills they need to cope with different kinds of emotional distress and the motivation to deal with their difficulties in a purposeful way, says Patel.

“This is not going to solve all the various aspects of crisis for youth mental health,” he says. “What it will do is help mitigate the impact of those mental health problems by enabling young people to recover from their emotional distress and prevent the escalation into full-blown crises.”

# GETTING TO THE HEART OF PEDIATRIC DISEASES

➔ You can't use a rat to figure out how a child's heart develops from fetus to adulthood, so researchers are working with human tissue, thanks to the Chan Zuckerberg Initiative (CZI), which has awarded Harvard Medical School a \$1.75 million grant to support a project titled "Building a Pediatric Healthy Heart Cell Atlas Across Ancestries."

"We intuitively know that the biology of children is different from adults and yet quite little is known about the actual cellular or molecular mechanisms that differ," says Jonah Cool, PhD, program officer for the Single-Cell Biology

program at CZI. "Funding pediatric research will help us decipher the origins of many childhood diseases, including heart diseases."

The project will be led by Christine Seidman, AB '74, MD, the Thomas W. Smith Professor of Medicine at Brigham and Women's Hospital and a professor of genetics in the Blavatnik Institute at HMS. Seidman notes that congenital heart defects (CHDs) occur in just under 1% of births, but CHDs and other heart diseases are leading causes of pediatric deaths and cost more than \$7 billion annually in U.S. health care expenditures.

**"FUNDING PEDIATRIC RESEARCH WILL HELP US DECIPHER THE ORIGINS OF MANY CHILDHOOD DISEASES, INCLUDING HEART DISEASES."**

JONAH COOL

Although researchers have been able to study diseased heart tissue before, until now there has been no prolonged observation of how the pediatric heart develops in humans, and the changes in the development of a child's heart are dramatic—the heart triples in size in the first year of life and continues to grow with the child. Changes in the properties of the heart must occur to support its rapid growth and also to supply increased energy requirements of growing tissues throughout the body. The heart changes again when a child hits puberty so the organ can continue to pump blood to serve the needs of an adult for decades.

"Dr. Seidman's project sheds an important light on how pediatric heart research can improve our understanding of how a healthy heart develops, leading to disease detection and treatments," Cool says.

Researchers previously studied rodent hearts, but the human heart structure and function are quite different. For example, a rat's heart beats 10 times faster than the heart of a child. That's why researchers need to find out how the human heart develops from fetus to newborn to early childhood to adolescence to adulthood. And while the newborn heart is similar in structure to the adult heart, the chemistry of the organ changes as the child develops.

"Today we have very few insights into how the healthy human heart changes throughout childhood growth and adolescent maturation," Seidman says. "Support from the CZI will enable an international collaboration to define the cells of the human heart and their molecular properties during normal physiologic growth."

Seidman says the researchers intend to freely share their data with the scientific community so as to improve insights into the consequences of pediatric heart disease and ultimately advance new treatment opportunities for many children with these serious conditions.



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.



# RECOGNIZING THE VITAL ROLE OF PHYSICIAN-SCIENTISTS

➔ Harvard Medical School Dean George Q. Daley, AB '82, MD '91, PhD, believes that the Harvard/MIT MD-PhD Program represents the greatest hope for countering the diminishing numbers of physician-scientists in the workforce. Early in his deanship, he prioritized securing philanthropic funding that would double the number of fully-funded students in each incoming MD-PhD class from 12 to 24, and he remains deeply committed to this goal as he nears the start of his seventh year as dean.

But why, exactly, is this goal so important? Loren Walensky, MD, PhD, director of the nearly 50-year-old program and an HMS professor of pediatrics at Dana-Farber Cancer Institute, points to the physician-scientist's critical role in bridging science and medicine.

"The COVID-19 pandemic has provided the most striking premise of our time for having a robust physician-scientist workforce capable of transcending the boundaries between clinical care, scientific research, public health policy, and a host of specialty disciplines in the basic and social sciences," he says. "By training to speak the language and acquire the skills of both fields, physician-scientists are uniquely positioned to transform scientific insights from the lab into new treatments for human disease and bring the unmet needs of patients back to the lab for investigation and the development of new solutions."

David Altshuler, MD '94, PhD '94, and his wife, Jill Altshuler, AB '87, MBA '94, share Daley's vision for expanding the program. They recently made a gift of \$550,000 to the Jill and David Altshuler MD-PhD

Scholarship Fund that allowed for an additional fully-funded student to enter the program in 2022.

"Combined MD-PhD training provides an invaluable perspective on how science can address human suffering," says David Altshuler. "Jill and I can't think of a better use for our philanthropy than to help expand opportunities for these remarkable students to grow and contribute in the Harvard/MIT MD-PhD program."

**"THE COVID-19 PANDEMIC HAS PROVIDED THE MOST STRIKING PREMISE OF OUR TIME FOR HAVING A ROBUST PHYSICIAN-SCIENTIST WORKFORCE."**

LOREN WALENSKY

Student trainees in the program typically complete two years of medical school, followed by four years of PhD training and the final two years of medical school. They are afforded access to faculty and resources across the campuses of Harvard University, the Massachusetts Institute of Technology, the Whitehead Institute, the Broad Institute, and 15 Harvard-affiliated hospitals. The environment of innovation within the Boston-Cambridge biotechnology sector enables students to pursue real-world opportunities to translate their discoveries into next-generation diagnostics, devices, and therapies.



MEMBERS OF THE HMS/HSDM CLASS OF 2026 ARRIVED ON CAMPUS IN EARLY AUGUST. OF THE 163 STUDENTS WHO MATRICULATED IN THE MD PROGRAM, 13 ARE ENROLLED IN THE HARVARD/MIT MD-PHD PROGRAM.

"The students are our pride and joy," Walensky says. "They are multitasking, have hearts of gold, and are here to make a difference for patients through compassionate care and basic and social science discovery."



## SYMPOSIUM SHOWCASES CANNABINOID RESEARCH

➔ Scientists and clinicians presented research on phytocannabinoids and their therapeutic potential during the Charles R. Broderick Cannabis & Cannabinoid Research Symposium, held May 4 at Harvard Medical School. A private reception after the symposium celebrated the generosity of Charles R. "Bob" Broderick, AM '05 (top), an alumnus of Harvard University and the Massachusetts Institute of Technology who committed \$4.5 million to each alma mater to support independent research of the science of cannabinoids.

Elizabeth A. Thiele, MD, PhD (bottom), a professor of neurology at HMS and Massachusetts General

Hospital (MGH), director of the MGH Pediatric Epilepsy Program, and director of the Carol and James Herscot Center for Tuberous Sclerosis Complex at MGH, delivered the symposium's keynote address, "The Role of Cannabinoids in the Treatment of Epilepsy: More Than Millenia in the Making."

The Charles R. Broderick III Phytocannabinoid Research Initiative at HMS supports 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.

# ENSURING BETTER LIVES THROUGH INVESTMENTS IN DIVERSITY



➔ Lori and Ted Samuels, AB '77, MBA '81, believe that one of the keys to reducing social inequality is to inspire a diverse population to embrace health care as an opportunity and a career. That belief has guided many of their philanthropic efforts, including recent significant gifts to Harvard Medical School to support the Lori and Ted Samuels STEM Pipeline Fund, which they established in 2019, and the newly created Equity Hub Fund.

The Pipeline Fund supports students from kindergarten through 12th grade who take part in the various science, technology, engineering, and math (STEM) programs administered by the HMS Office for Diversity Inclusion and Community Partnership (DICP). “Enabling underrepresented students’ access to STEM is exciting,” says Ted Samuels, a member of the HMS Discovery Council.

“This will ultimately create stronger connections and trust between health professionals and patients.”

The Equity Hub Fund aims to convene and catalyze the efforts of physicians and scientists committed to reducing health disparities and increasing diversity within academia, health care, and industry—an increase that the couple believe will advance medical research, patient outcomes, and the health sphere as a whole.

Both funds are under the direction of Joan Reede, MD, MPH '90, SM '92, MBA, dean for diversity and community partnership at HMS, whom Ted credits with turning his philanthropic focus to HMS in recent years after decades of support to Harvard Business School and Harvard College. “Dr. Reede’s passion and vision for diversity, as well as her articulation of opportunities to make a difference, ultimately inspired our giving to HMS,” he says.

Reede is grateful to have the couple in her corner. “At DICP, we are on an ambitious and vital path,” she says. “If we are to create the diversity and inclusion necessary to ensure health and well-being for all people, we need partners like Lori and Ted to help propel us forward.”

**“DR. REEDE’S PASSION AND VISION FOR DIVERSITY, AS WELL AS HER ARTICULATION OF OPPORTUNITIES TO MAKE A DIFFERENCE, ULTIMATELY INSPIRED OUR GIVING TO HMS.”**

TED SAMUELS

# COMMEMORATING THE LAUNCH OF TAN-YANG CENTER

➔ In 2019, Hock Tan, MBA '79, and Lisa Yang gave \$20 million to launch the Hock E. Tan and K. Lisa Yang Center for Autism Research at Harvard University, which focuses on the biological basis of neurodevelopment as it relates to autism spectrum disorder. A pandemic-delayed celebration to recognize the generosity and vision of Tan and Yang was held May 16 at the Hotel Commonwealth in Boston.

The event featured remarks from HMS Dean George Q. Daley, AB '82, MD '91, PhD; Harvard University President Lawrence S. Bacow, JD '76, MPP '76, PhD '78; Michael Greenberg, PhD, the Nathan Marsh Pusey Professor of Neurobiology in the Blavatnik Institute at HMS; Chinfai Chen, MD '91, PhD '91, a professor of neurology at Boston Children’s Hospital (BCH); and Sandeep Robert “Bob” Datta, MD '04, PhD '04, a professor of neurobiology in the Blavatnik Institute at HMS. In addition, Tan-Yang Center research faculty and fellows from labs based at HMS, BCH, and Massachusetts General Hospital prepared poster presentations for the event.

Investigators at Harvard’s Tan-Yang Center collaborate with peer researchers at the Massachusetts Institute of Technology (MIT) and complement efforts at the Hock E. Tan and K. Lisa Yang Center for Autism Research at the McGovern Institute for Brain Research at MIT.

FROM LEFT: GEORGE Q. DALEY, MICHAEL GREENBERG, LISA YANG, EVA TAN, HOCK TAN, AND LAWRENCE S. BACOW





# FACES OF HMS



**01** The Family Van, an HMS-affiliated mobile community health program, celebrated its 30th anniversary and premiered a new mobile health clinic at the Roxbury branch of the Boston Public Library on May 16. The event featured remarks from HMS Dean George Q. Daley, AB '82, MD '91, PhD (far right), and a ribbon-cutting ceremony for the new mobile clinic, which was purchased with a gift from Boston Scientific.

**02** Daniel H. Lowenstein, MD '83, delivered the Class of 1958 Commemorative Lecture on May 25 at the Tosteson Medical Education Center. Enjoying a light reception afterward are (back, from left) Christine Xu, MD '22; Lowenstein, executive vice president and provost at the University of California, San Francisco, and former HMS dean for medical education; Elizabeth M. Lee; Lois Lowry; Class Agent Howard A. Corwin, AB '54, MD '58, who is Lowry's partner; and (front) Elliot V. Miller, MD '58, who is Lee's husband.

**03** HMS MD graduates make their way to the outdoor Tercentenary Theatre, adjacent to Harvard Yard, on the morning of May 26 to partake in commencement exercises. They are led by Raquel Sofia Sandoval, MD '22, MPP '22 (left), and Ayotomiwa Ojo, MD '22, MPP '22, both of whom served as Class Day moderators later in the day on the HMS Quad.

**04** Odunayo Kolawole Talabi, MMSc '22, embraces Joia Mukherjee, MD, MPH '01, director of the Master of Medical Sciences in Global Health Delivery program at HMS, after receiving his master's degree May 25 on the HMS Quad during the first in-person master's graduation ceremony at the School in two years.

**05** HMS held its 14th Division of Medical Sciences Hooding Ceremony on May 26 in the conference center of the New Research Building, recognizing 121 graduates who earned doctoral degrees in 2022. Yixuan He, PhD '22, files into the auditorium with other graduates for the ceremony.

**06** HMS and Harvard School of Dental Medicine alumni from the classes of 2020 and 2021 returned to campus May 29 for a long-awaited in-person graduation celebration.

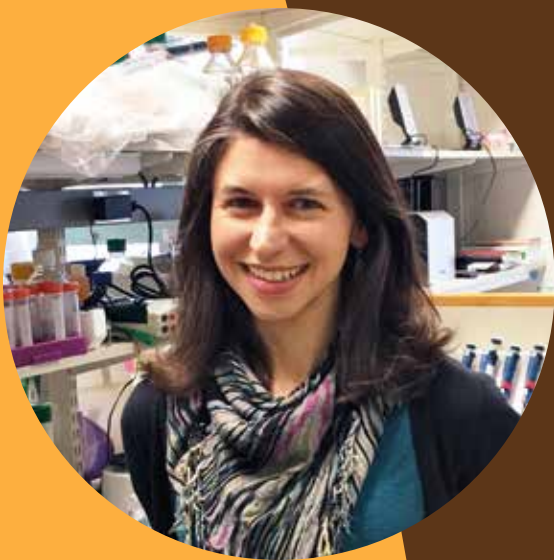
**07** In conjunction with the National Medical Association Annual Convention and Scientific Assembly, a reception for HMS alumni and friends was held Aug. 1 in Atlanta, hosted by the HMS Office for Diversity Inclusion and Community Partnership and the HMS Office of Alumni Affairs and Development. From left are Shannon Banks, MD; Jennifer Parker, MD, PhD, MPH '19, a former Commonwealth Fund Fellow in Minority Health Policy at Harvard University; and Bryant Cameron Webb, MD, JD.

**08** The Giovanni Armenise Harvard Foundation hosted a daylong event March 18 in Milan, Italy, to introduce principal investigators (PIs) to representatives from venture capital firms that invest in the basic sciences. All the PIs were from labs throughout Italy and were recipients of Armenise Harvard Foundation Career Development Awards.

**09** Ritika Manik, MD Class of 2026, was among the new students at HMS and the Harvard School of Dental Medicine who capped their first week on campus with the traditional White Coat Ceremony on Aug. 5. The students slid on their new white coats, introduced themselves to their classmates, and thanked friends and family members for their support.

**10** All first-year HMS and Harvard School of Dental Medicine students were invited to a block party at the Tosteson Medical Education Center on Aug. 3. Hosted by the HMS Office for Community Centered Medical Education (OCCME), the event offered students an opportunity to learn more about and get involved with OCCME, which worked all summer to build relationships with community-based organizations in Mission Hill, Roxbury, and Jamaica Plain.





## HMS RESEARCH FELLOW WINS AWARD FROM ALPERT FOUNDATION

Erin Duffy Lacy, PhD, a research fellow in neurobiology in the Blavatnik Institute at Harvard Medical School, has been named one of five winners of the 2022 Warren Alpert Distinguished Scholars Fellowship Award. As a recipient of this award, she'll receive \$400,000 over two years for her research project titled "Functional characterization of novel microproteins in the human brain."

Duffy Lacy received her PhD in molecular biophysics and biochemistry from Yale University, where she developed new methods to study RNA metabolism. She joined HMS as a postdoctoral fellow in September 2018 and is leveraging her expertise in RNA post-transcriptional regulation to study complex mechanisms in the human brain. Her proposed research project lies at the intersection of neurobiology and biochemistry, utilizing cutting-edge tools to explore the complexities of what makes us human.

"I am honored to receive the Warren Alpert Distinguished Scholars Fellowship Award and look forward to using this funding to explore a new class of proteins in the human brain to learn more about human neurodevelopment and function," Duffy Lacy says.

The Warren Alpert Distinguished Scholars program aims to enable exceptional postdoctoral fellows to advance to full-time faculty members (assistant professor level or higher) or to assist in the development of a laboratory program that would lead to independent funding. Duffy Lacy's long-term career goal is to become a professor at a research university. Her lab would leverage her unique perspective as an RNA biochemist turned neuroscientist to answer fundamental questions about how post-transcriptional regulation in the developing brain facilitates cortical circuit assembly, and how these processes go awry in neurodevelopmental disorders such as schizophrenia and autism spectrum disorder.

### RESEARCH AND THERAPEUTICS

# SEEKING TO END 'DIAGNOSTIC ODYSSEYS'

➔ What do you do when you know something's wrong with you, your doctors know something's wrong with you, and yet nobody seems to be able to figure out *what* exactly is wrong with you?

At Harvard Medical School, Isaac Kohane, MD, PhD, the Marion V. Nelson Professor and chair of the Department of Biomedical Informatics (DBMI) in the Blavatnik Institute, and Kimberly LeBlanc, MS, a certified genetic counselor, are leading a team that's going into greater depth to answer that question, thanks to a \$1.75 million grant from the Warren Alpert Foundation. The grant supports the Undiagnosed Diseases Network (UDN), a research study that brings together clinical and research experts from across the U.S. to solve the most challenging medical mysteries using advanced technologies. The UDN's coordinating center is based at the DBMI.

"In the UDN, we are working to find answers for patients, many of whom have been undiagnosed for years and told they may never find answers or an explanation for their condition," says LeBlanc, who is the director of the UDN coordinating center. She focuses on connecting patients affected by the same or a similar rare condition and bridging the gap between clinical research and clinical practice.

A recent study by the EveryLife Foundation for Rare Diseases reported that patients with rare conditions see nearly 17 doctors before getting a diagnosis. In 2013, the National Institutes of Health (NIH) Common Fund decided to support the creation of the Undiagnosed Diseases Network to help address this problem. The UDN is an extension of the Undiagnosed Diseases Program started by Dr. William Gahl at the NIH Clinical Center in 2008. Today, the UDN consists of 12 clinical sites across the U.S.

"Currently in the United States, 25 to 30 million people are impacted by rare diseases," says LeBlanc. "Many of these people are on extended 'diagnostic odysseys,' meaning that they are searching for years for a diagnosis."

The project that this grant will support has three distinct aims: performing outreach and community engagement in historically underserved and underrepresented communities, bridging the divide between diagnosis and treatment for UDN



**ISAAC KOHANE AND ALEXA MCCRAY ARE BOTH PRINCIPAL INVESTIGATORS FOR THE UNDIAGNOSED DISEASES NETWORK'S COORDINATING CENTER, BASED AT HMS'S DEPARTMENT OF BIOMEDICAL INFORMATICS.**

patients, and researching the underlying cause of several diseases through modeling of specific proteins. "Ultimately, we hope that our work in each of these areas will improve diagnosis and treatment for patients both within the UDN and beyond," LeBlanc says.

Since its formation, the UDN has successfully solved medical mysteries, shortened diagnostic odysseys, and contributed to biomedical research discovery—achievements that align with the Warren Alpert Foundation's overarching goal of improving human health for future generations.

"Warren Alpert was unwavering in his support of innovative individuals and organizations dedicated to understanding and curing disease," says David M. Hirsch, chair of the Warren Alpert Foundation's board of directors. "By supporting the UDN through the bioinformatics department at Harvard Medical School, we are helping to bring together clinicians and researchers from different specialties and disease areas to try to find diagnoses for these patients and put an end to their difficult, uncertain journeys."

The Undiagnosed Diseases Network has evaluated over 1,700 of the most challenging diagnostic cases, established diagnoses in over 500 of these patients, published more than 150 manuscripts, and discovered more than 35 new diseases.



# PROBING THE GUT'S LINK TO VIRAL DISEASES

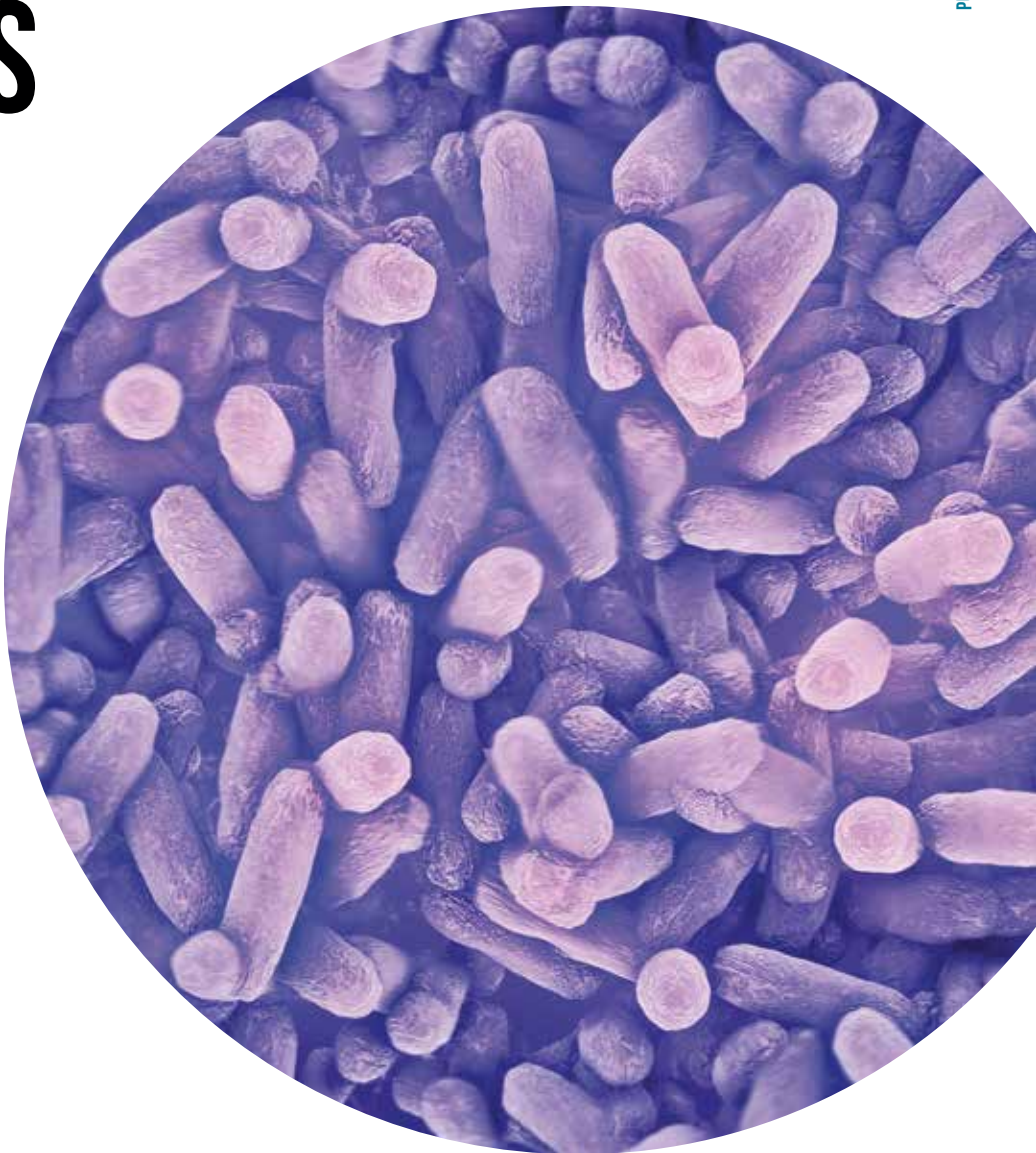
➔ Dennis Kasper, MD, the William Ellery Channing Professor of Medicine and a professor of immunology in the Blavatnik Institute at Harvard Medical School, has conducted research in microbiology, immunology, infectious diseases, and public health for more than four decades. His work on *Bacteroides fragilis*, a gut-resident microbe, has served as a model for understanding the relationship between gut microbiota and the immune system.

**“OUR APPROACH PRESENTS AN EXCITING OPPORTUNITY TO DEVELOP A LOW-COST WAY TO MINIMIZE THE SEVERITY OF VIRAL DISEASES.”**

DENNIS KASPER

Recently, a donor who chooses to remain anonymous made a \$300,000 gift to HMS to support research on the gut microbiome, stipulating that the funds be channeled through the Quadrangle Fund for Advancing and Seeding Translational Research, or Q-FASTR, which aims to accelerate early-stage research that has the promise and potential to lead to commercialization and, ultimately, improve people's health. A project proposed by Kasper was a natural choice to be awarded this funding.

Working with researchers at Brigham and Women's Hospital and Seoul National University, Kasper is focused on preventing and treating severe viral infections. “It has been shown that an important regulator of viral disease severity is host interferon beta (IFN $\beta$ ), which is a crucial mediator for antiviral immunity and the regulation of the immune system,”



says Kasper. “Our work has found that host natural IFN $\beta$  is regulated by the gut microbiome.”

Kasper and his colleagues have purified a specific IFN $\beta$ -inducing small molecule from *B. fragilis* and now have synthesized it. His group is testing the synthetic molecule for treatment and prophylaxis in models of influenza and COVID-19 infection. “Our approach presents an exciting opportunity to develop a low-cost way to minimize the severity of viral diseases as well as other diseases for which type 1 interferons can be used therapeutically,” he says.

**OUR GUT MICROBIOME COMPRISES THE TRILLIONS OF BACTERIA AND OTHER MICROBES IN OUR DIGESTIVE SYSTEM.**

## EHC SPOTLIGHT: STEPHEN ONESTI, AB '82, MD '86

➔ “I established a charitable gift annuity at Harvard Medical School to honor the wonderful teachers I had and to help the school recruit the best faculty for all future students. It's been a great journey over the years keeping up with classmates, and when I meet someone new from HMS, we share a bond. I feel very fortunate to have gone to HMS and to have been able to become a part of the Ezekiel Hersey Council.”

*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](https://hms.harvard.edu/EHC).*



EZEKIEL  
HERSEY  
COUNCIL

# GRATEFUL HMS GRADUATES GLAD TO GIVE BACK

MD alumni gifts in fiscal year 2022 ranged from \$10 to over \$100,000, with a median of \$250 and an average of \$3,000.



CHASITY JENNINGS-NUÑEZ  
AND FELIX NUÑEZ

➔ From the day they were assigned to the Peabody Society as Harvard Medical School students, Chasity Jennings-Núñez, MD '95, and Felix Núñez, MD '95, found a friend, teacher, counselor, and mentor in Ronald Arky, MD, who was the Peabody Society's advisory dean and director at the time. When the couple got married during their fourth year of medical school, Arky traveled to Houston to attend the wedding.

"After more than 60 years at HMS, Dr. Arky has served in these roles for countless other medical students. He is beloved, and it is so gratifying to be able to honor his life and legacy while he is alive to receive it," says Jennings-Núñez, who, together with her husband, made a gift to HMS in fiscal year 2022 to support the Marie L. and Ronald A. Arky, M.D. Endowed Scholarship.

The couple are members of the Federman Loyalty Circle, which honors alumni who have made consecutive annual gifts of any size for five years or more. Their previous giving has supported the School's diversity and inclusion efforts and provided unrestricted funding for the dean to use where it is needed most. Jennings-Núñez, vice president of the HMS Alumni Council, says that, as members of groups underrepresented in medicine, she and her husband recognize the sacrifice, perseverance, and hard work of the exceptional African American and Latino medical students and physicians who paved the way for them to succeed at HMS. "It is a no-brainer for us to actively support activities and programs that will increase the pipeline of African American and Latinx students, as well as support those currently attending HMS."

Dagny Zhu, MD '12, shares this sentiment of wanting to help students who come from disadvantaged circumstances achieve their dreams. A first-generation immigrant raised by a single mother, she came from humble beginnings and viewed education as a way to improve her family's life. When Zhu was accepted to HMS, she remembers being so happy that she was shaking and crying. But then fear and anxiety set in; how would she pay for her medical education? Luckily, she says, HMS offered her a generous financial aid package, allowing her to continue pursuing her dream. But for some, the burden of medical student debt is debilitating, and the situation is only getting worse.

"It's sad because finances should never be a barrier to attending medical school," says Zhu. "Concerns over debt affect not only the specialties we select but also the locations in which we choose to practice."

Zhu hopes to play a small part in alleviating those concerns through her fiscal 2022 gift supporting scholarships. "HMS has given so much to me that I am grateful to be able to give back by contributing to future students," says Zhu, who recently served on her 10th Reunion Committee and is a member of the Dean's Council, HMS's leadership annual giving society.

In fiscal year 2022, which ran from July 1, 2021, through June 30, 2022, over 2,400 MD alumni collectively

gave more than \$4.5 million to HMS. Last year, the vast majority designated their gifts to financial aid or made flexible gifts, allowing HMS Dean George Q. Daley, AB '82, MD '91, PhD, to deploy the dollars where they are needed most.

Doug Kelling, AB '68, MD '72, says he has the "utmost trust" in the dean, which is why he gave an unrestricted gift in FY 2022. "I want to give the dean as much flexibility as possible to use that money to support ventures that he feels are appropriate and have a chance to improve health care in various ways," says Kelling, who recently served on his 50th Reunion Committee.

A member of the Ezekiel Hersey Council, HMS's legacy giving society, as well as the Federman Loyalty Circle and the Dean's Council, Kelling has provided more than 40 years of consistent support, including contributions for financial aid. He says that financial aid gifts are not only an investment in the broad future of medicine but also an investment in the students who will one day be leaders in their various fields. "I hope to be able to help them more easily accomplish their goals," Kelling says.

He appreciates the fact that HMS has maintained a strong bond with him since he graduated and began to practice medicine in Concord, North Carolina, where he continues to see patients to this day. "It's hard to list all the ways that HMS has been a benefit to me. I don't think I'll ever be able to repay the School for the education and lasting relationships it has afforded me," Kelling says.

Rhondee Baldi, MD '03, feels a similar affinity for HMS and her former classmates. "HMS and my medical school experience hold a warm place in my heart," she says, which prompted her to mark her 20th Reunion with a flexible gift to be used at the discretion of the dean. "I know the dean will prioritize and direct resources based on need and potential impact for success of students and staff."

Since completing her residency, Baldi has mostly worked as a primary care physician in under-resourced communities. Looking back on her time as a student, she says she loved the diversity among her classmates—diversity of age, backgrounds, interests, and aspirations. She recalls fondly the security guard at Vanderbilt Hall, a middle-aged Black woman who looked out for her. "She took me out to dinner when I needed it the most and reminded me that she was so proud that I was studying at Harvard," says Baldi, who recently served on her 20th Reunion Committee and is a member of the Dean's Council.

Baldi says she also remembers one particular faculty member's smile and kindness whenever she ran into him in the Peabody Society room. She's referring to the Daniel D. Federman, M.D. Distinguished Professor of Medicine and Medical Education at HMS and Brigham and Women's Hospital—none other than Ronald Arky.



DOUG KELLING



RHONDEE BALDI



DAGNY ZHU

▶ **VIEW THE FY22 MD  
HONOR ROLL OF DONORS AT  
[ALUMNI.HMS.HARVARD.EDU/  
HONOR-ROLL](https://alumni.hms.harvard.edu/honor-roll).**



# HIS PASSION FOR THE SCIENCES LIVES ON THROUGH PROFESSORSHIP

➔ Arthur Kaskel Solomon, PhD '37, was a true renaissance man who had a love and talent for both art and science. He was well-known for the phenomenal art collection that he and his wife, Mariot Fraser “Marny” Solomon, amassed together. Encompassing contemporary works and pieces from the 19th and early 20th centuries, their collection included a Cézanne watercolor, a self-portrait by Monet, and a sculpture by Rodin.

Solomon's lifelong passion for the sciences motivated him to study chemistry at Princeton as an undergraduate and to complete his graduate work, also in chemistry, at Harvard. Wartime research needs brought him to England for volunteer work on radar, but he would return to the U.S. in January 1945, temporarily joining the Radiation Laboratory at the Massachusetts Institute of Technology before landing a role at Harvard Medical School, where he would spend the rest of his career.

During his lengthy and storied career at HMS, Solomon led the former Biophysical Laboratory and was an embodiment of cross-campus collaboration before it became the norm. In 1950, he strongly advocated for the establishment of a biophysics program to be based at HMS. By involving members of the Faculty of Arts and Sciences (FAS), the program represented an early example of cross-University collaboration. Although it initially faced opposition from skeptical colleagues, the Biophysics Graduate Program began in 1959 and became a great success. Solomon ran the program from its inception until 1980. In 1983, Solomon formally retired from HMS, but he maintained an active laboratory until the mid-1990s and continued to participate in the program until just a few years before his death on Nov. 6, 2002.

In the 1980s, Solomon wanted to make a financial commitment to support the Biophysics Graduate Program in the future, so he created provisions in his trust for the establishment of the Arthur K. Solomon Professorship of Biophysics at Harvard Medical School, in addition to providing funding



**“IMPORTANTLY, PROFESSOR SOLOMON PRESCIENTLY RECOGNIZED THE VALUE OF AN INTERDISCIPLINARY GRADUATE EXPERIENCE SPANNING FACULTIES IN BOTH FAS AND HMS.”**

MARTHA BULYK

for fellowships at FAS. A recent distribution from the trust will allow HMS to move forward with creating the professorship.

“Arthur K. Solomon's generous gift to endow a professorship of biophysics at Harvard Medical School is extremely valuable as it provides solid support for the mission of the Harvard Biophysics Graduate Program in educating and training the next generation of biophysicists,” says Martha Bulyk, PhD '01, co-chair of the program. “Importantly, Professor Solomon presciently recognized the value of an interdisciplinary graduate experience spanning faculties in both FAS and HMS. The establishment of this professorship strengthens the cross-river collaboration inherent in the program, firmly confirms the program's base at HMS as well as in FAS, and provides strong support for continued improvements in the education of graduate students in this program.”

The Biophysics Graduate Program at Harvard University provides broad training in the biophysical, chemical, and molecular concepts and techniques that are required to address outstanding problems in biology and biomedical sciences.

# DONORS UNITE TO HONOR PAUL FARMER

➔ The sudden death of Paul Farmer shook Harvard Medical School and the health care community around the world. Thankfully, Farmer left behind a clear road map of how to continue to develop access to and excellence in global health. Now, it's up to the next generation of socially conscious physicians to follow that map and advance Farmer's career-long commitment to social justice, health equity, and delivery of high-quality care to the poorest people globally.

In an effort to identify and support these aspiring physicians, two of Farmer's close friends, Jim Yong Kim, MD '91, PhD '93, and Arthur M. Kleinman, AM '74, MD, along with members of the HMS Class of 1988, helped to conceive of the idea for the endowed Paul Farmer, MD '88, PhD '90 Memorial Scholarship Fund. So far, 92 donors—including 35 from the Class of 1988—have contributed nearly \$750,000 to this fund, which will provide financial aid to medical students at HMS who are interested or have demonstrated experience in global health or social medicine, with a preference for students who are from countries in which Farmer focused his life's work, including Haiti, Rwanda, Malawi, Lesotho, Liberia, Sierra Leone, Mexico, Kazakhstan, Russia, Peru, and the U.S.

"In effect, HMS will be educating the next generation of Paul Farmers—student physicians who themselves come from the 'clinical deserts' in the poorest communities, which Paul took to be exactly the places where those experiencing social suffering and structural violence needed to be accompanied in care and themselves recruited to deliver care," says Kleinman, the Esther and Sidney Rabb Professor of Anthropology in the Harvard Faculty of Arts and Sciences and a professor of medical anthropology and psychiatry at HMS. At the time of his death, Farmer was the Kolokotronis University Professor and chair of the Department of Global Health and Social Medicine in the Blavatnik Institute at HMS.

He was also chief strategist of the international health organization Partners In Health, which he co-founded with Kim and three others, and chief of the Division of Global Health Equity at Brigham and Women's Hospital.

**"HE WAS THE MOST ADMIRABLE PHYSICIAN AND PERSON I KNEW."**

ARTHUR M. KLEINMAN

Frederick G. St. Goar, MD '84, a donor to the scholarship fund and a member of the HMS Global Health and Service Advisory Council, says he is honored to be able to support the legacy of Farmer, whom he calls "an extraordinary human being and dear friend." He says Farmer's impact on health equity was unparalleled and that "providing support for like-minded students from diverse backgrounds and countries who otherwise might not have the opportunity to follow in his footsteps by promoting health equity is what Paul would have wanted."

William W. Helman IV, MBA '84, another donor to the fund and a longtime supporter and friend of Farmer's, as well as a former member of the Global Health and Service Advisory Council, says the scholarship is a wonderful way to keep Farmer's legacy alive at Harvard. "I can't think of a more fitting tribute than to train future physicians in the values of social justice and health equity and to prepare them for a life of service to the health and welfare of those in need—a life like the one led by Paul."

During his life, Farmer would become the world's iconic global physician and medical humanitarian. "He was the most admirable physician and person I knew," says Kleinman.

IMAGE: JON LASCHER/  
PARTNERS IN HEALTH



If you would like to give to the Paul Farmer Memorial Scholarship Fund, visit [hms.harvard.edu/farmer-scholarship](https://hms.harvard.edu/farmer-scholarship).





# ALUMNI COUNCIL WELCOMES 6 NEW MEMBERS

➔ Harvard Medical School MD graduates selected six new Alumni Council members during the 2022 election. Three of those members are representing the Third (classes of 2007–2011), Sixth (1992–1996), and Tenth (1976 and beyond) pentads, respectively: Kristy Rialon, MD '08, an assistant professor of surgery at Baylor College of Medicine; Elbert S. Huang, AB '92, MD '96, MPH '01, a professor of medicine and public health sciences at the University of Chicago; and Douglas P. Zipes, MD '64, distinguished professor emeritus of medicine at the Indiana University School of Medicine. Michelle L. Rivera, MD '92, chief executive officer and founder of Phenom Pharmaceuticals, will represent all classes as a councilor-at-large. Louise Aronson, MD '92, MFA, a professor of medicine at the

University of California, San Francisco, was selected as the new president-elect, while Chasity D. Jennings-Núñez, MD '95, an obstetrician and gynecologist who is the site director for OB Hospitalist Group, was chosen to serve as vice president.

The Alumni Council promotes and supports activities that connect alumni to each other, the School, and current students. In addition, its members, who are elected to three-year terms, serve in a consultative and advisory role to HMS leaders.

FROM LEFT: LOUISE ARONSON, ELBERT S. HUANG, CHASITY D. JENNINGS-NUÑEZ, KRISTY RIALON, MICHELLE L. RIVERA, AND DOUGLAS P. ZIPES



LEARN MORE ABOUT THE NEWEST MEMBERS OF THE ALUMNI COUNCIL AT [ALUMNI.HMS.HARVARD.EDU/ELECTION](https://alumni.hms.harvard.edu/election).



## FINANCIAL AID AND EDUCATION

# SCHOLARSHIP FUND HONORS PIONEER IN MIND-BODY MEDICINE

➔ Herbert Benson, MD '61, knew that he wanted to be a doctor since the age of 4. Like many aspiring physicians, he dreamed of attending Harvard Medical School. He would make that dream come true and go on to blaze trails in mind-body medicine as one of the first Western physicians to bring spirituality and healing into medicine.

Sadly, Benson died in February at the age of 86. His wife, Marilyn, knew instantly how she wanted to honor him. She set up an endowed scholarship in her husband's memory at HMS to assist students who might otherwise be unable to attend. She made a significant gift to the fund, to which many friends and family members have also contributed. "He was so proud to attend HMS," she says. "This would make him happy."

HMS Dean for Medical Education Edward M. Hundert, MD '84, remembers Benson as a beloved professor of medicine at HMS when Hundert was a student, and he says it was a great honor and joy to continue learning from him as a colleague over many years. "It's amazing to think that his legacy as a pioneer and innovator in medicine will now be joined by another legacy through this endowed scholarship in his name," Hundert says. "We are so grateful to his family for creating this opportunity for students with financial need to be able to attend HMS and carry on his great tradition."

In 1989, Benson founded the Mind-Body Institute, which moved to Massachusetts General Hospital in 2006 and changed its name to the Benson-Henry Institute (BHI) for Mind Body Medicine. (The "Henry" in the name is the businessman and investor John W. Henry.) The BHI's mission is to fully integrate mind-body medicine into mainstream health care throughout the world through rigorous, evidence-based research and clinical application of this work. Benson was director emeritus of the institute at the time of his death.

**"HE WAS SO PROUD TO  
ATTEND HMS. THIS WOULD  
MAKE HIM HAPPY."**

MARILYN BENSON

Marilyn Benson says she hopes that future Herb Benson Scholars will take a moment to reflect on the attributes that made her husband a leader in his field who was beloved by his patients. "He was very courageous, highly ethical, and extremely honest. He just loved being a doctor."



HERBERT BENSON MET THE DALAI LAMA IN 1979 AND THE TWO FORGED A FRIENDSHIP. WITH THE BLESSING OF TIBET'S SPIRITUAL LEADER, BENSON STUDIED THE ADVANCED MEDITATION TECHNIQUES OF TIBETAN MONKS LIVING IN EXILE IN INDIA.

# PROFESSORSHIP CELEBRATIONS

Harvard Medical School recently celebrated the establishment of the following new professorships, recognizing the accomplishments of each inaugural incumbent and the generosity of each benefactor.



## MELTZER PROFESSORSHIP OF PEDIATRICS

On April 19 at the Harvard Club of Boston, a celebration marked the establishment of the Samuel J. Meltzer, MD Professorship of Pediatrics in the Field of Gastroenterology at Boston Children's Hospital (BCH) and the installation of Christopher P. Duggan, MD, MPH '94 (top left), as the inaugural incumbent. This professorship will be renamed the Wayne I. Lencer, MD Professorship of Pediatrics in the Field of Gastroenterology upon the retirement of Wayne I. Lencer, MD (bottom left), the Longwood Professor of Pediatrics at BCH.



## NABEL PROFESSORSHIP OF SURGERY

On July 25 at Harvard Medical School, Robert S.D. Higgins, MD (left), president of Brigham and Women's Hospital (BWH), was honored as the inaugural incumbent of the Elizabeth G. and Gary J. Nabel Family Professorship of Surgery at BWH. The professorship is named for former BWH President Betsy Nabel, MD (right), and her husband, Gary Nabel, AB '75, MD '82, PhD '82.



## GRAY PROFESSORSHIP IN CARDIOLOGY

Ik-Kyung Jang, MD, PhD, poses for photos outside Gordon Hall at Harvard Medical School on July 13, before a ceremony honoring him as the inaugural incumbent of the Allan and Gill Gray Professorship in the Field of Cardiology at Massachusetts General Hospital.



## LURIE MARKS PROFESSORSHIP OF NEUROLOGY

Seward Rutkove, MD, chair of the Department of Neurology at Beth Israel Deaconess Medical Center (BIDMC), enjoys a reception held in his honor July 26 at Harvard Medical School. The event commemorated the establishment of the Nancy Lurie Marks Professorship of Neurology at BIDMC and Rutkove's appointment as the inaugural incumbent.



## NOVARTIS PROFESSORSHIP OF SYSTEMS BIOLOGY

A celebration July 14 in Boston commemorated the establishment of the Novartis Professorship of Systems Biology at Harvard Medical School and the appointment of Galit Lahav, PhD, as the inaugural incumbent. From left are Vasant K. "Vas" Narasimhan, MD '03, MPP '03, chief executive officer of Novartis; Lahav, chair of the Department of Systems Biology in the Blavatnik Institute at HMS; and HMS Dean George Q. Daley, AB '82, MD '91, PhD.



# LARGE-SCALE AGING PROJECT AIMS TO MAKE CELLS YOUNGER

➔ Many of the fundamental questions of philosophy deal with existence. What is the purpose of life? Is there hope for life after death? Why do we get old? Actually, that third question is more scientific than philosophical, and some researchers have spent their lifetimes trying to answer it.

One theory is that aging depends on changes in gene expression. In trying to prove this theory, researchers usually test a fraction of the roughly 20,000 genes that make up a nerve cell. However, members of the Church Lab at Harvard Medical School have set out to test every gene. Projects of this magnitude are not common in the field of aging, and they are, of course, expensive. Thankfully, this project piqued the interest of James R. Fickel, founder of Starbloom Capital.

“THE CHURCH LAB’S PROJECT IS IMPORTANT BECAUSE THE LIFESPAN EXTENSION GENES THAT THEY’RE LOOKING FOR CAN BE TRANSLATED INTO THERAPIES.”

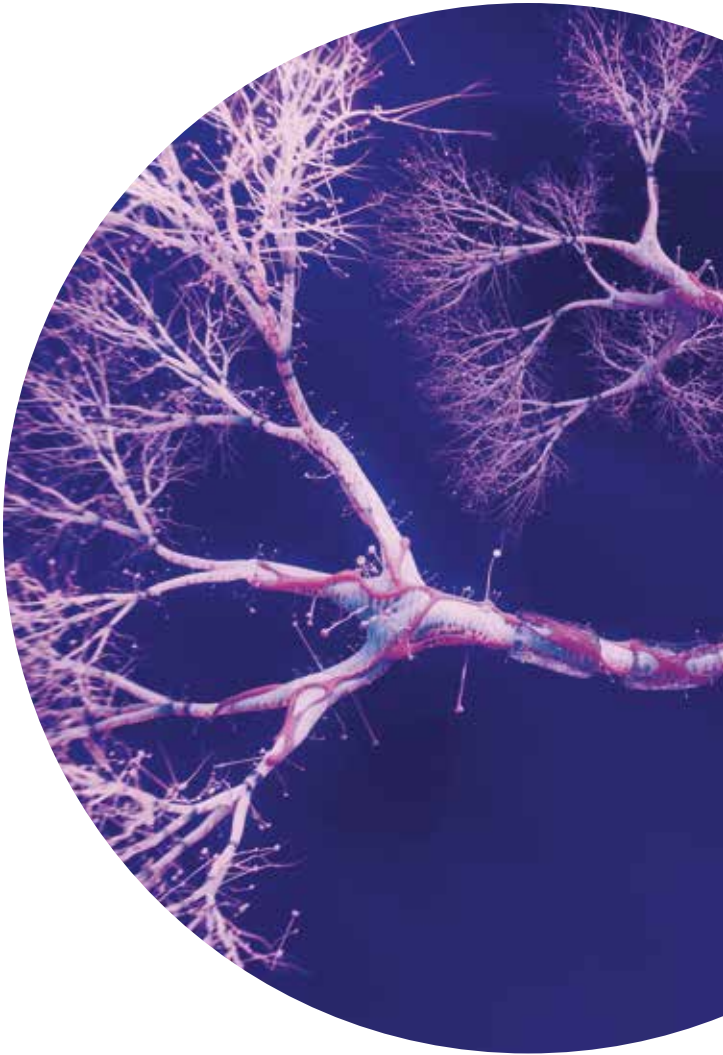
JAMES R. FICKEL

While spending the past few years as a cryptocurrency expert in the blockchain space, Fickel met Ethereum co-founder Vitalik Buterin, who spurred his philanthropic interest in aging. Once Fickel delved deeper into the subject and spoke with numerous leaders in the longevity field, he recognized the field is nascent and extremely underfunded. That’s why he recently gave \$800,000 to the Church Lab, which is led by George Church, PhD ’84, the Robert Winthrop Professor of Genetics in the Blavatnik Institute at HMS.

“The Church Lab’s project is important because the lifespan extension genes that they’re looking for can be translated into therapies,” says Fickel. And he’s correct: If the lab’s research finds genes that regulate the aging process and can make a cell “younger,” there would be hope for therapies that could slow the decline brought on by diseases such as Alzheimer’s or Parkinson’s.

Church, widely recognized for his innovative contributions to genomic science, says he is grateful for the visionary support of Fickel and others who make these projects possible. He’s excited to be “applying exponentially improving technologies for detailed microscopic observations of aging in response to genetic and epigenetic perturbations.”

And perhaps one day, thanks to this research, we will have one less question to ruminate about.



A 3D RENDERING OF A NERVE CELL



## SYMPOSIUM SHOWCASES IMPACT OF BERTARELLI RARE CANCERS FUND

HMS DEAN  
GEORGE Q. DALEY  
INTERVIEWS DONA  
BERTARELLI AT A  
DINNER FOLLOWING  
THE BERTARELLI  
RARE CANCERS  
FUND SYMPOSIUM.

➔ Finding treatments for rare diseases has been a longstanding endeavor of the Bertarelli family, dating back to when the family owned biotech company Serono. More recently, Dona Bertarelli, in her role as co-chair of the Bertarelli Foundation, helped establish the Bertarelli Rare Cancers Fund (BRCF) at Harvard Medical School by directing a \$15 million gift from the foundation to the School.

Since it was established, the BRCF has provided an exceptional opportunity to develop a prominent role for rare cancer research in the Harvard community. On Sept. 7, HMS hosted a symposium celebrating the progress of BRCF-backed research teams from HMS and its affiliate hospitals. The teams gave short presentations describing their efforts

to characterize newly discovered rare cancers, develop new approaches for rare cancer detection, and drive new strategies to treat these diseases.

“The problems posed by rare cancers are immense,” says BRCF Director Ed Harlow, PhD, the Virginia and D.K. Ludwig Professor of Cancer Research and Teaching at HMS. “While any one rare cancer represents a small number of cases per year, as a collective, the numbers are staggering. Support from the Bertarelli Foundation has opened the door for significant advances that will help patients given a rare cancer diagnosis.” Additionally, Harlow says, discoveries made during this research are likely to yield important clues that may be applied in studies of many other cancers.

# PURSuing A BETTER PATH FOR WOMEN WHO INHERIT BRCA GENE MUTATIONS

➔ Joan Brugge, PhD, the Louise Foote Pfeiffer Professor of Cell Biology in the Blavatnik Institute at Harvard Medical School and co-director of the Ludwig Center at Harvard, has committed her professional career to breast and ovarian tumors. As part of her tireless work in this field, she began a collaborative endeavor in 2015 with scientists at Dana-Farber Cancer Institute (DFCI) called the Harvard Medicine BRCA Research Project. The project's overarching objective has been to develop non-invasive medical options for women carrying mutations in the breast cancer 1 (BRCA1) or breast cancer 2 (BRCA2) genes.

For these women, who are at a much higher risk of breast and ovarian cancer, one of the only preventive options is the surgical removal of the breasts and ovaries. That grim reality drives Brugge and her DFCI collaborators as they continue to try to determine strategies for halting the emergence of malignant tumors in BRCA-mutation carriers.

**“WE WERE ABLE TO PURCHASE A STATE-OF-THE-ART INSTRUMENT THAT ALLOWS US TO DETECT MUTATIONS IN SINGLE CELLS FROM BREAST TISSUES OF WOMEN WHO CARRY BRCA MUTATIONS.”**

JOAN BRUGGE

“Nearly eight years ago, a gift from the Goldberg family allowed us to jump-start this project from scratch with the enormous support from our collaborators at Dana-Farber, Brigham and Women's Hospital, and Brigham and Women's Faulkner Hospital, who provided tissues from

women who carry mutations that increase their risk for breast cancer,” Brugge says.

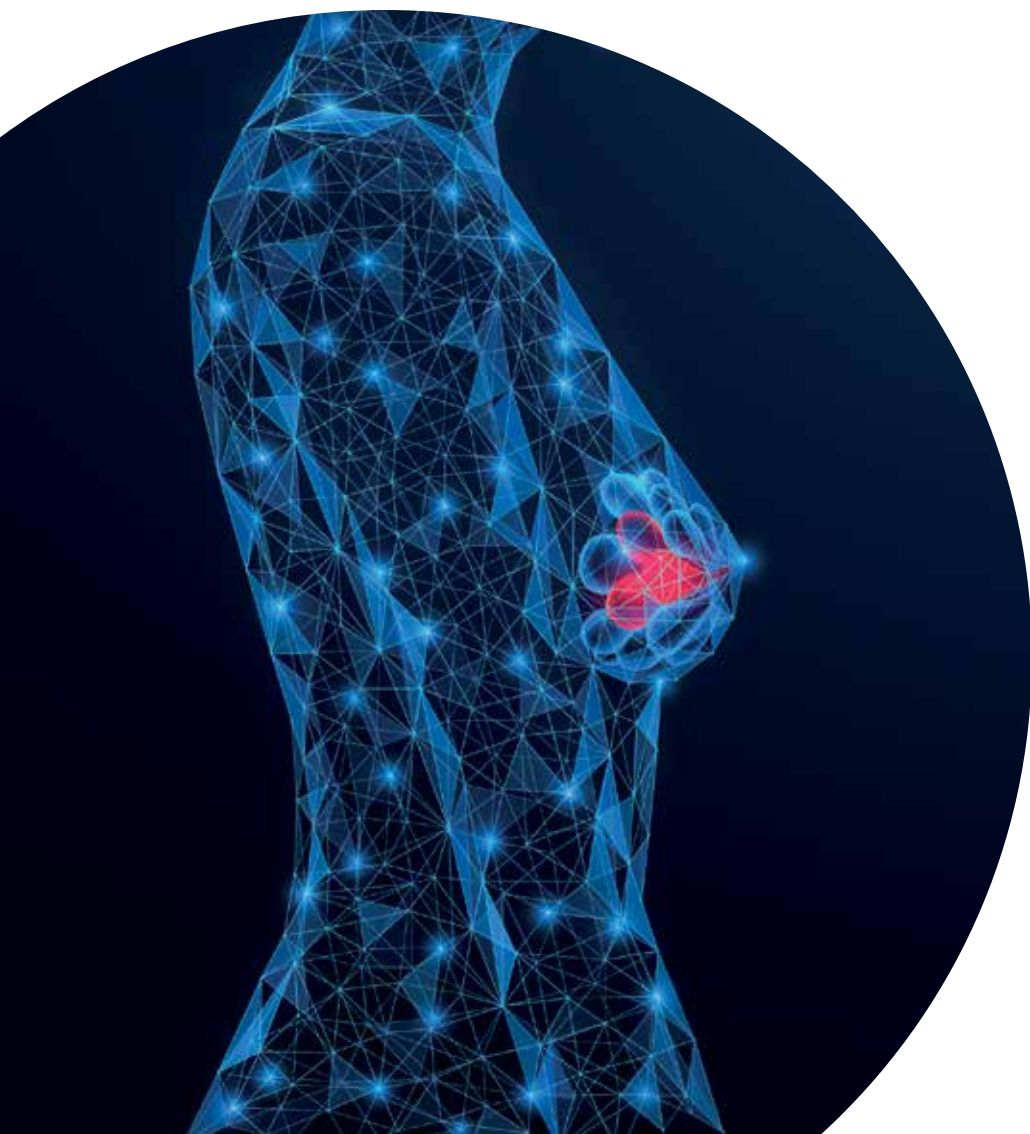
Evan M. Goldberg, AB '87, and his wife, Cynthia, learned 20 years ago that their family was impacted by BRCA mutations. While the BRCA1 and BRCA2 genes typically suppress tumors, some mutations in these genes prevent them from working properly, leading to a greater risk of certain cancers for people who inherit the mutations. The Harvard Medicine BRCA Research Project represented a new approach to looking at cancers—one that considered the genetic elements.

“The project investigators have been studying how cells turn into cancerous cells, and that deeper understanding of precursor cells could help with early treatment,” says Evan Goldberg. He and his wife recently re-upped their commitment to the project via the Goldberg Family Foundation, giving more than \$1 million to Brugge and her DFCI collaborators. “The big money comes from the National Cancer Institute, which typically doesn't fund earlier, higher-risk research,” Goldberg says. “We hope our support of this project helps the investigators make the case for larger funding.”

Brugge says that the new Goldberg gift has provided project researchers with the means to use new technologies to advance their understanding of the origins of breast cancer. “We were able to purchase a state-of-the-art instrument that allows us to detect mutations in single cells from breast tissues of women who carry BRCA mutations,” she says. “This makes it possible to detect the earliest genetic alterations that trigger the processes associated with cancer initiation. The goal is to identify these cells that are ‘on their way’ to forming tumors and devise a plan of action to detect pre-cancerous cells and develop therapeutic strategies to eliminate them to prevent cancer.”

According to the National Cancer Institute, about 13% of women in the general population will develop breast cancer some time during their lives. By contrast, 55%-72% of women who inherit a harmful BRCA1 variant and 45%-69% of women who inherit a harmful BRCA2 variant will develop breast cancer by 70-80 years of age.

**FUNDING FROM THE GOLDBERG FAMILY FOUNDATION WILL SUPPORT RESEARCH THAT MAKES IT POSSIBLE TO DETECT CHROMOSOMAL MUTATIONS IN INDIVIDUAL CELLS “ON THEIR WAY” TO CANCER IN ORDER TO UNDERSTAND THE EVENTS THAT CAUSE TUMOR INITIATION.**





# COUPLE ACT ON BELIEF THAT OTHERS' GENEROSITY IS KEY TO ACHIEVING DREAMS



HST CO-DIRECTOR WOLFRAM GOESSLING WELCOMES THE NEWEST CONTINGENT OF HST STUDENTS TO HMS IN AUGUST.

➔ As a physician-scientist team at Memorial Sloan Kettering Cancer Center in New York City, Irene Y. Cheung, SM '74, SD '77, and Nai-Kong V. Cheung, MD '76, PhD '78 (pictured below), say they have been fortunate to be able to pursue their goals and realize their dreams—a life journey that they began together decades ago, when they met as Harvard students. Now, hoping to assist future students on similar journeys, the couple have redoubled their recent efforts to support scholarship opportunities at Harvard Medical School, giving \$1 million to establish the NK and Irene Cheung Family REACH Scholarship.

REACH, which since 2017 has committed \$8.33 million to 113 students, decreases the loan burden for students who demonstrate qualities of Resilience, Excellence, Achievement, Compassion, and Helping the underserved. “This past year, Irene and I decided to put a major focus on assisting young scholars in pursuing their dreams, helping newcomers into the field of science and medicine,” says Nai-Kong Cheung. “The REACH program fits that bill.”

Andrea Ewing Reid, MD '88, MPH '01, associate dean for student and multicultural affairs in the HMS Program in Medical Education and director of the HMS Office of Recruitment and Multicultural Affairs, says she's grateful for the Cheungs' contribution to REACH because it will directly impact HMS's ability to recruit a diverse class. “There is tremendous competition for students accepted to HMS, and REACH allows us to close the gap and attract more of these fantastic students and to share their prodigious gifts with the broader HMS community,” she says.

With their contribution, the Cheungs have expressed a preference to support MD students in the Harvard-MIT Program in Health Sciences and Technology (HST), of which Nai-Kong Cheung is an alumnus. The program's approach toward medicine resonates with the couple, who say that medicine should be, among other things, evidence-based (“built on modern science and engineering”); dynamic (“evolving as the science keeps correcting itself”); and should challenge

In their work at Memorial Sloan Kettering Cancer Center, the Cheungs strive to find more effective treatments with less toxicity for children with cancer.

conventional thinking (“a continual renaissance, not to dominate or exclude, but to be part of the whole, and to enrich the collective experience”).

Wolfram Goessling, MD, PhD, co-director of the HST program and the Robert H. Ebert Professor of Medicine at HMS and Massachusetts General Hospital, says he is highly appreciative of and deeply grateful to the Cheungs for their generosity and support of the HST program. “This will allow us to attract and even better support students dedicated to becoming innovative and compassionate physician-scientists,” he says.

The full impact of the couple's gift will be felt far beyond the School, says HMS Dean for Medical Education Edward M. Hundert, MD '84. “Deep gratitude to the Cheungs is due not just from us and the students who will benefit directly from their generous scholarship,” he says, “but from all the future patients who will benefit from the care those students will provide and from the cures they will create over the course of their careers.”



**“THERE IS TREMENDOUS COMPETITION FOR STUDENTS ACCEPTED TO HMS, AND THE REACH PROGRAM ALLOWS US TO CLOSE THE GAP AND ATTRACT MORE OF THESE FANTASTIC STUDENTS.”**

ANDREA EWING REID



# FACES OF REUNION

After two years of virtual Reunion events, the traditional in-person celebration made a thrilling return in 2022, as more than 750 alumni and guests from classes ending in 2 and 7 gathered to reconnect with each other.

Visit [alumni.hms.harvard.edu/2022-recap](https://alumni.hms.harvard.edu/2022-recap) to watch a highlight video, download candid photos for free, and preview and order class photos.



**RE:**  
UNION

01

Among the speakers featured at the Alumni Day Symposium, titled “HMS’s Unique Pandemic Response: MassCPR,” were (from left):

- **Jacob Lemieux**, DPhil, MD ’15, an assistant professor of medicine at HMS and Massachusetts General Hospital (MGH) and co-lead of the Viral Variants working group for the Massachusetts Consortium of Pathogen Readiness (MassCPR);
- **Arlene Sharpe**, AB ’75, AM ’76, PhD ’81, MD ’82, the George Fabian Professor of Comparative Pathology and chair of the Department of Immunology in the Blavatnik Institute at HMS;
- **Haribabu Arthanari**, PhD, associate professor of biological chemistry and molecular pharmacology at HMS and Dana-Farber Cancer Institute;
- **Bruce Walker**, MD, Phillip T. and Susan M. Ragon Professor of Medicine at HMS and MGH and director of the Ragon Institute of MGH, MIT and Harvard;
- **Nahid Bhadelia**, MD, MALD, founding director of the Center for Emerging Infectious Diseases Policy and Research at Boston University; and
- **Dan Barouch**, AB ’93, MD ’99, PhD, the William Bosworth Castle Professor of Medicine at HMS and Beth Israel Deaconess Medical Center (BIDMC) and director of the Center for Virology and Vaccine Research at BIDMC.

The symposium was organized by A.W. Karchmer, MD ’64, chair of alumni relations.

02

Alumni converse at the Rooftop@Revere while enjoying the Recent Graduate Gathering, which welcomed the classes of 2007–2017.

03

Kenneth R. Bridges, MD ’76, HMS Alumni Council president and vice president of medical affairs at Global Blood Therapeutics, gave updates about the Council’s work, announced the newly elected Alumni Council representatives (see story on Page 13), and celebrated the winner of the 2022 Distinguished Service Award for HMS Alumni (see opposite page) during the Harvard Medical Alumni Association’s Annual Business Meeting.

04

HMS Dean George Q. Daley, AB ’82, MD ’91, PhD, thanks volunteers and donors during a recognition breakfast before updating alumni on the School’s progress during his State of the School Address.

05

Class of 1997 members Jennifer DeVoe, the chair of family medicine at Oregon Health & Science University, and Alison Lux, a physician in family medicine at Quadmed, celebrate their 25th Reunion while enjoying the ambiance at the Lawn on D during the Family Picnic.

06

Vamsi Mootha, MD ’97, a professor of systems biology in the Blavatnik Institute at HMS, presents to classmates during the Class of 1997 Symposium and Lunch.

07

Reunion Committee member Christine Ament, AB ’97, MD ’02, an assistant professor of ophthalmology at Boston University School of Medicine, enjoys a special breakfast recognizing the many volunteers and donors who made Reunion possible.

08

From left: Marvee Turk, MD ’17, a global surgery fellow at Operation Smile; Reunion Committee member Lauren Ko, MD ’17, a dermatology resident at Massachusetts General Hospital; and Sarah “Sally” Engelhart, MD ’17, a fellow in general internal medicine at the University of Toronto, celebrate their 5th Reunion at the Gala reception at the Four Seasons Hotel Boston.

09

Reunion Committee member Howard Kirshner, MD ’72, a professor of neurology at Vanderbilt University School of Medicine, and Douglas Cowan, AB ’68, MD ’72, a retired radiologist, celebrate their 50th Reunion.



Reunion Giving  
\$5.7 million  
raised by 552  
alumni donors\*

\* TOTAL INCLUDES OUTRIGHT GIFTS,  
PLEDGES TO BE PAID OVER FIVE YEARS,  
BEQUESTS, AND OTHER UNIQUE GIFTS  
THAT ALLOW ALUMNI TO STRETCH  
THEIR GIVING.

# ALUMNUS HONORED WITH DISTINGUISHED SERVICE AWARD

➔ DeWayne M. Pursley, MD '83 (Class of 1982), MPH '83, received the 2022 Distinguished Service Award for Harvard Medical School Alumni on June 3 during the Harvard Medical Alumni Association's annual business meeting, which was part of Reunion and Alumni Day activities.

The award recognizes MD alumni who have demonstrated loyalty, service, and commitment to HMS through volunteering, community building, service as an ambassador for the School, or otherwise supporting the School and its mission. Pursley, the chief of neonatology at Beth Israel Deaconess Medical Center and an associate professor of pediatrics at HMS, has given to HMS through volunteerism in the areas of financial aid, student diversity and inclusion, and mentoring the next generation of physicians.

In 2003, Pursley joined the HMS Financial Aid Committee, which has been instrumental in key financial initiatives, with the ultimate goal of making medical education debt-free for all who attend HMS. He has been the committee's faculty chair since 2015 and relishes the opportunity to "give students a voice on financial aid needs."

Pursley has led or participated in several mentoring groups, including those that encourage anti-racism efforts in clinical settings. He has also been a member of the HMS Promotion and Review Board and has been an active participant in Revisit Weekend

(now known as Admitted Students Preview Days), an annual event for admitted applicants to visit campus for a second look before making their final decision about which medical school they will attend.

Pursley is quick to give credit to those who helped him along the way. He says he remains humbled by the sacrifices and risks taken by his parents, who didn't have opportunities to attend college, and those who mentored him when he first arrived at Harvard after graduating from Stanford.



DEWAYNE PURSLEY ACCEPTS HIS AWARD ON JUNE 3.



TO NOMINATE A DESERVING  
ALUM FOR THE 2023 AWARD,  
GO TO [ALUMNI.HMS.HARVARD.  
EDU/NOMINATION](https://alumni.hms.harvard.edu/nomination).

## ALUMNI DAY ATTENDEES REKINDLE CAMARADERIE

➔ Harvard Medical School MD graduates were invited to reconnect with their classmates and the School at Alumni Day on June 3. The day began with breakfast at the Four Seasons Hotel Boston, followed by the Harvard Medical Alumni Association annual meeting, led by Alumni Council President Kenneth R. Bridges, MD '76, and featuring the presentation of the Distinguished Service Award for HMS Alumni (see story above).

After the meeting, HMS Dean George Q. Daley, AB '82, MD '91, PhD, delivered the State of the School Address, during which he reaffirmed the School's institutional priorities for the future: collaborative science, inclusive excellence, institutional resilience, and transformative education and training. The dean's address was immediately followed by the Alumni Day Symposium, which featured an esteemed roster of speakers discussing the work of the HMS-led Massachusetts Consortium on Pathogen Readiness (MassCPR). The consortium comprises more than 800 collaborators across 17 institutions who are tackling the immediate and long-term challenges of the COVID-19 crisis and enhancing preparedness for future pandemics.

After the symposium, participants gathered for lunch to cap their day together. A private lunch was held separately for Society of the Silver Stethoscope members—alumni who have celebrated their 60th Reunion.



# IN BRIEF

The following faculty-generated gifts and 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.

The Commonwealth Fund Fellowship in Minority Health Policy at Harvard University has prepared physicians, particularly physicians from groups underrepresented in medicine, for leadership roles in health policy and public health for more than 25 years, giving them the tools to transform health care delivery systems for historically marginalized populations. **The Commonwealth Fund** has renewed its support of



the fellowship with a grant of more than \$820,000 under the direction of Joan Y. Reede, MD, MPH '90, SM '92, MBA (left), dean for diversity and community partnership at HMS. In addition, the Commonwealth Fund has awarded a \$200,000 grant

to support a project led by J. Michael McWilliams, MD '03, PhD '08 (right), the Warren Alpert Foundation Professor of Health Care Policy in the Blavatnik Institute at HMS. Findings from this project, titled "The Next Phase of Risk Adjustment for Prospective Payment: Advancing Equity and Addressing Coding," will have immediate application in ongoing policy efforts to improve payment systems in Medicare.



Jonathan Abraham, AB '05, PhD '10, MD '12 (left), and Sophie Helaine, PhD (bottom right), are each receiving \$500,000 over five years from the **Burroughs Wellcome Fund** as part of its Investigators in the



Pathogenesis of Infectious Disease (PATH) program, which provides opportunities for assistant professors to bring multidisciplinary approaches to the study of human infectious diseases. Abraham and Helaine, both members of the Department of

Microbiology in the Blavatnik Institute at HMS, were among 10 PATH awardees in 2022. With his project, Abraham aims to inspire the design of next-generation drugs and vaccines that would stay active even against future variants of SARS-CoV-2, the virus that causes COVID-19. Helaine, meanwhile, is tackling one of the most important challenges facing human health in the coming decades: antibiotic failure.



Peter Sorger, AB '83, PhD, the Otto Kraye Professor of Systems Pharmacology in the Blavatnik Institute at HMS and director of the Laboratory of Systems Pharmacology (LSP), is collaborating with LSP

member Bree Aldridge, PhD, associate professor of molecular biology and microbiology at Tufts University School of Medicine, on a project titled "A Cloud Data Resource to Accelerate Tuberculosis Research." Supported by a grant of more than \$850,000 from the **Bill & Melinda Gates Foundation**, the project aims to develop open source software tools for accelerating research into tuberculosis, with a focus on the granulomas that form in the lung and play a role in chronic disease. Separately, Sorger has received an additional \$750,000 from **Ludwig Cancer Research** for a collaboration with LSP member Sandro Santagata, MD, PhD, an associate professor of pathology at HMS and Brigham and Women's hospital, on the Ludwig Tumor Atlas project. The overall goal of this project is to develop a precise understanding of the types and positions of cancer, immune, and stromal cells in human tumors and thereby accelerate the development of new cancer diagnostics and immunotherapies. The Atlas will consolidate data from Ludwig investigators worldwide and promote AI-based analysis of the genetic and non-genetic programs that promote tumor progression and determine responsiveness or resistance to treatment.



The **Massachusetts Life Sciences Center** has awarded a grant of \$735,000 to Debora Marks, PhD, associate professor of systems biology in the Blavatnik Institute at HMS, to study the profound changes that have

been observed in autoimmune disease course during pregnancy. In many autoimmune disease sufferers, pregnancy marks a time of strongly diminished disease activity. These nine months provide a unique window to explore the dynamics of immune repertoire changes.

Özge Demet Özcete, PhD (right), and Dorothy Majewski, PhD (next column, top left), have received 2022 **Human Frontier Science Program** (HFSP) fellowships, which will provide each of them

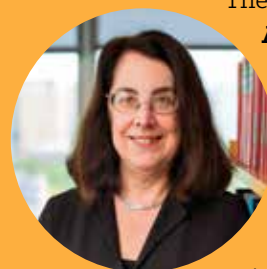


with nearly \$203,000 in funding over three years. Working under the direction of Pascal Kaeser, MD, a professor of neurobiology in the Blavatnik Institute at HMS, Özcete aims to reveal the key mechanistic features

of serotonin release and their behavioral roles, which will provide insights into the principles of neuromodulation at the molecular and behavioral levels and may offer new targets for modulating serotonergic activity in disease. Majewski, under the direction of George Church, PhD '84, the Robert Winthrop Professor of Genetics in the Blavatnik Institute at HMS, will be characterizing woolly mammoth cold adaptation genes in Asian elephant cells, contributing to ongoing species conservation and de-extinction efforts. Meanwhile, Johan Paulsson, PhD (right), a professor of systems biology in the Blavatnik Institute at HMS, is part of a research team that is using an HFSP grant of more than \$311,000 to discover the rules that govern the dynamics and organization of mitochondria and their genomes.



The **Melanoma Research Alliance** is supporting



Arlene H. Sharpe, AB '75, AM '76, PhD '81, MD '82, chair of the Department of Immunology and the George Fabyan Professor of Comparative Pathology in the Blavatnik Institute at HMS, with a \$600,000 grant. Long-term durable control of melanoma relies, at least in part, on the capacity of memory immune cells to surveil the body and then rapidly respond to kill the tumor cells. Sharpe is leading a project that aims to maximize the potential of these anti-tumor immune cells.

Timothy Layton, PhD, the 30th Anniversary Associate Professor of Health Care Policy in the Blavatnik Institute at HMS, is leading a project focused on how Medicare Advantage (MA) is functioning for the most socially, economically, and clinically disadvantaged Medicare beneficiaries: dual eligibles (those eligible for both Medicare and







# EVENT HONORS HMS'S LEGACY DONORS

➔ Ezekiel Hersey Council (EHC) Chair Jordan J. Cohen, MD '60, welcomed EHC members virtually on April 22 to the council's Annual Recognition Event, which featured a keynote address by Robert J. Waldinger, AB '73, MD '78 (left), director of the Harvard Study of Adult Development.

Before Waldinger spoke, HMS Dean for Medical Education Edward M. Hundert, MD '84, expressed his gratitude for the support of EHC members—those alumni and friends who have created a life income gift, named the School as a beneficiary of a retirement account or existing donor-advised fund, or included HMS in their will or trust.

Waldinger's address, "What Makes a Good Life? Lessons From an 84-Year Study," explored the

findings of the Harvard Study of Adult Development. This rare longitudinal study has tracked hundreds of individuals' lives from adolescence to old age to understand the factors that predict human thriving across the adult life cycle.

Waldinger, co-author of the upcoming book "The Good Life," wrapped up his speech with three take-home messages:

- Human connection is a major source of happiness and physical health.
- Technology has the power to isolate us or to connect us.
- We need to be very intentional about how we structure our lives in order to combat social isolation.

Medicaid). The goal of this project, which is being supported by a grant of more than \$554,000 from the **Laura and John Arnold Foundation**, is to assess whether targeted efforts to improve MA for this group lead to better outcomes.



The **Bluefield Project to Cure Frontotemporal Dementia** recently awarded a \$539,000 grant to Wade Harper, PhD, the Bert and Natalie Vallee Professor of Molecular Pathology and chair of the Department of Cell Biology in the

Blavatnik Institute at HMS, for his project seeking to understand the global impact of GRN loss on cellular processes linked with organelle quality control processes that are central to cellular health, particularly using neuronal systems. The GRN gene provides instructions for making a protein called progranulin; heterozygous mutations in GRN lead to frontotemporal dementia due to deficiency in progranulin.

The **Louis E. Wolfson Foundation**, a steadfast supporter of MD students at HMS, has given \$500,000 to provide students who demonstrate financial need with access to low-interest institutional loans. This is the foundation's 37th consecutive year of support, and its contributions to HMS now total more than \$12 million.

Jennifer Waters, PhD (next column, top left), director of the Nikon Imaging Center and the Cell Biology Microscopy Facility, both at HMS, is receiving an additional \$500,000 from the **Chan Zuckerberg Initiative** for her project



titled "Advancing and Professionalizing Careers in Image Science," in which she is helping to increase the interactions between biologists and technology experts and to improve imaging tools for the scientific community. Waters also received a

\$240,000 commitment from **Nikon Corporation** to be added to the Nikon/Harvard Post-Doctoral Fellowship Fund. Under Waters' mentorship, Advanced Microscopy Fellows at HMS learn quantitative microscopy techniques and key skills needed to manage a large, heavily-used core facility.



Two researchers in the Blavatnik Institute at HMS—Susan Dymecki, MD, PhD (left), a professor of genetics, and Bernardo Sabatini, SB '91, MD '99, PhD '99 (bottom right), the

III Professor of Neurobiology—have received grants of \$200,000 from the **Milken Institute**. Dymecki's lab is investigating in mouse models the involvement of a newly discovered group of brain neurons that may underlie mood-related and physiological adaptations to seasonal changes in day length and exacerbations of these adaptations with relevance to bipolar disorder. Sabatini's lab aims to uncover the cellular and circuit changes that contribute to risk-taking and other cognitive behavioral changes in individuals experiencing mania in bipolar disorder.



John Flanagan, PhD, a professor of cell biology in the Blavatnik Institute at HMS, is using a \$300,000 grant from the **Simons Foundation Autism Research Initiative** to identify novel and unifying principles that link autism spectrum disorder genetic risk factors to molecular and cellular mechanisms, to set the stage for future therapeutic interventions.

Lucas Farnung, PhD, an assistant professor of cell biology in the Blavatnik Institute at HMS, has earned a Smith Family Award for Excellence in Biomedical Research from the **Richard A. and Susan F. Smith Family Foundation**. The award is worth \$300,000 over three years. Using structural biology approaches, Farnung will address a fundamental conundrum in biology: Why do all cells in our body carry the same genetic information but have dramatically different appearances and functions, and how do the molecular machines that read and tag our genome achieve this vast diversity of cell types? This question matters because when the genome is not properly read and tagged, organisms do not develop properly, and cells can become cancerous.



# EXAMINING THE LINK BETWEEN THE BRAIN AND FOOD ALLERGIES

➔ When her 8-month-old son was diagnosed with a food allergy after he ate some hummus with sesame and vomited, Christine Olsen, MD, wanted to understand his reaction better.

“As a doctor myself, I knew from medical school and neuroscience class that a specific part of the area ... in the brain is involved when someone vomits,” says the Food Allergy Science Initiative (FASI) director. “I distinctly remember this because I found it fascinating that it wasn’t the stomach.”

Three allergy specialists later, Olsen remained baffled, so she helped establish FASI in 2016 to advance knowledge of the biology of food allergies. Originally part of the Broad Institute of MIT and Harvard, the nonprofit became a separate entity in 2021. It recently awarded two grants totaling \$14 million to Harvard Medical School researchers who are doing more in-depth studies into the link between the brain and food allergies.

“WE BELIEVE THERE IS A CURE FOR FOOD ALLERGIES AND THAT FOUNDATIONAL RESEARCH IS THE PATH TO THAT CURE.”

CHRISTINE OLSEN

Stephen Liberles, AB ’94, AM ’96, PhD ’00, a professor of cell biology in the Blavatnik Institute at HMS, received \$1 million to investigate how gut nerves “talk” to the brain with resultant allergic disease/anaphylaxis symptoms, such as vomiting. Liberles says that sensory information from the gastrointestinal tract controls feeding, digestion, and host defense. Diverse gut-to-brain signals emanate from primary sensory cells called enteroendocrine cells, which survey the gut’s contents.

“He is also studying specialized cells in the gut that ‘sense’ food allergens and, using a genetic toolbox to see if changes to the cell change function, perhaps we can ‘reverse’ food allergies with these techniques,” Olsen says.

Isaac Chiu, AB ’02, PhD ’09, an associate professor of immunology in the Blavatnik Institute at HMS, received \$400,000 to examine the specialized sensory nerve cells in the gut that researchers at FASI believe may help regulate food allergy entry and immune responses. He is also partnering with another FASI collaborator to evaluate sensory neurons in the skin responsible for itch, and allergy-related diseases such as eczema.

Chiu’s laboratory will be performing experiments that attempt to clarify how neurons regulate gut immune responses with relevance to food allergy outcomes.

“We know that a lot of people with eczema are at risk of developing food allergies,” Olsen says. “This connection between the skin and gut, and development of systemic food allergies, which we believe could be related to the nervous system, is being studied. This will hopefully prevent the development of disease as well as lead to treatments.”

FASI’s ultimate goal: a world without food allergies.

As Olsen says, “We believe there is a cure for food allergies and that foundational research is the path to that cure.”



STEPHEN LIBERLES



ISAAC CHIU

The Food Allergy Science Initiative is the only global entity advancing a collective of academia, industry partners, philanthropists, and parents dedicated to food allergy discoveries.



# Q&A WITH VIKRAM PATEL

We sat down with Vikram Patel, MBBS, MSc, PhD, the Pershing Square Professor of Global Health in the Blavatnik Institute at Harvard Medical School, to discuss the eroding state of youth mental health and what must be done to improve it—a topic featured in this issue.



01

### Why are mental health needs surging among children and adolescents?

We should acknowledge that youth is the highest risk period for the emergence of mental health problems, indicating that these conditions have strong developmental origins. The recent surge can be accounted for by both an increase in risk factors and the decline in protective factors. Loneliness and interpersonal violence, including cyberbullying, are examples of risk factors. But equally important is the erosion of social connectedness, the invisible social bonds which bind people in a social group or community. There is also a growing anxiety among young people over threats that they feel are out of their control, such as climate change and social injustice. While studies from around the world have shown that youth mental health has been disproportionately affected by the pandemic, these observations have finally shone a spotlight on a mental health crisis that already existed well before the pandemic.

02

### Why is there a large unmet need for care for young people with mental health problems?

Even though most mental health problems emerge in adolescence and young adulthood, when they typically present with a mixture of psychiatric phenomena that do not neatly fit into diagnostic categories, most mental health care is designed to deal with diagnosed mental disorders in adults. That means by the time you see patients in those services, the majority have had mental health difficulties going back five or 10 years, and the opportunity for early intervention, which is to catch the illness in its earliest stages, is squandered. This leads to years of suffering and, ultimately, worse outcomes for the individual in the long term. In addition, young people are typically reluctant to consult with mental health professionals in clinical settings due to the stigma attached to mental health care and the fact that their illness narratives rarely embrace biomedical concepts.

03

### How can we improve access for the youths who need it?

The key strategies are to provide care where young people are—for example, in educational settings—and to provide needs-based care, rather than care that needs to be triggered by a psychiatric diagnosis. One major opportunity to address the crisis of care is to expand the availability of providers in educational settings who have the necessary training in evidence-based psychosocial interventions. Another opportunity is to deploy digital tools—for example, apps that support the practice of the skills that are learned through counseling, to complement these psychosocial interventions.



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PROBING THE GUT MICROBIOME'S  
LINK TO VIRAL DISEASES

09

CELEBRATING THE HEART AND IMPACT OF THE HMS COMMUNITY

# PULSE

FALL 22

## HONORING PAUL FARMER'S LEGACY

Colleagues, students, mentees, family, and friends of Paul Farmer, MD '88, PhD '90, gathered at Harvard University's Sanders Theatre on Oct. 1 for a memorial program and an inaugural academic symposium that celebrated Farmer's life and work. The daylong event was organized by Harvard Medical School, where Farmer was the Kolokotronis University Professor and chair of the Department of Global Health and Social Medicine. The memorial program included personal reflections from many admirers of Farmer, who died Feb. 21, while the symposium featured three panel discussions focused on Farmer's crucial academic contributions. **Read more and view photos and video at [tinyurl.com/Farmer-legacy](https://tinyurl.com/Farmer-legacy).**

