

CELEBRATING THE HEART AND IMPACT OF THE HMS COMMUNITY

SPRING 21

FEATURED STORY

SHINING A SPOTLIGHT ON RARE CANCERS

The Bertarelli Foundation is helping to build a community of scientists who will study and share insights on rare cancers





WORKING TO SOLVE PARKINSON'S PUZZLE

A diverse, multidisciplinary team is tackling key knowledge gaps thanks to substantial grant





MAKING HMS Accessible to all

Grateful financial aid recipient aims to return favor by supporting scholarship program



A CHAMPION FOR

THE UNDERSERVED

The late Mavis C. Campbell strengthens her legacy of supporting global health equity



PURSUING A COMMON GOAL TO CURE RARE CANCERS

Rare cancers occur in fewer than 15 out of 100,000 people each year, according to the National Cancer Institute's Center for Cancer Research. Because their patient populations are so small, these cancers are difficult to study and draw limited interest from pharmaceutical companies. As a result, scarce improvements have been made in the management of rare cancers.

Finding treatments for rare diseases has been a longstanding endeavor of the Bertarelli family. "Much of the work done by (biotech company) Serono, when owned by my family, was into treatments for orphan diseases," says Dona Bertarelli, co-chair of the Bertarelli Foundation along with her brother, Harvard Medical School Board of Fellows Vice Chair Ernesto Bertarelli, MBA '93. "Sometimes we discover that what we think is a rare disease is not, in fact, all that rare, or that the biological mechanisms discovered in the rare disease are important in many other diseases."

Bertarelli says that through her discussions with HMS Dean George Q. Daley, AB '82, MD '91, PhD, it became clear that there was a need and an opportunity to accelerate transformative research into rare cancers. The Foundation acted quickly, establishing the Bertarelli Rare Cancers Fund (BRCF) at HMS with a \$15 million gift. "At the Bertarelli Foundation, we are able to take risks and to fund what we hope will be innovative research, in ways that private companies cannot," she says.

Late last year, following a request for proposals

a useful community," Harlow says. "New eyes on any result can open new angles, provide new insights, and discover missing pieces."

Harlow and team are seeking additional funds to expand the program and gain even more community momentum in rare cancer studies.

Wide-ranging research

Grant recipients are investigating different individual rare cancers as well as genetic and molecular mechanisms that span multiple rare cancers. Nabeel Bardeesy, PhD, an associate professor of medicine at HMS and Massachusetts General Hospital (MGH), studies a rare liver cancer in young adults known as fibrolamellar carcinoma. The fund has allowed him to recruit specialists from different fields to his team.

GENETIC ANALYSES ARE REVEALING NEW KINDS OF CLEAR Cell Cancer, such as this one seen on a histology slide.

IMAGE: JOHN HANNA



to the Harvard medical community, nine project teams were awarded more than \$9 million from the BRCF. The funding supports the work of 19 lead and co-lead investigators across HMS and its affiliated hospitals, with research kicking off this past winter.

"The grants feature work across the research spectrum featuring basic, detection, diagnostic, and therapeutic research, and they fund both senior and junior investigators," says Fund Director Ed Harlow, PhD, the Virginia and D.K. Ludwig Professor of Cancer Research and Teaching at HMS. He, Daley, and the Bertarelli Foundation envision the BRCF as a catalyst for a community of rare cancer researchers throughout Harvard who will, in collaboration with scientists around the world, improve the detection, diagnosis, treatment, and prevention of rare cancers. "We're encouraging everyone to share advice and data before publication as an important part of building

"AT THE BERTARELLI FOUNDATION, WE ARE ABLE TO TAKE RISKS AND TO FUND WHAT WE HOPE WILL BE INNOVATIVE RESEARCH, IN WAYS THAT PRIVATE COMPANIES CANNOT."

DONA BERTARELLI

Now, he is probing how the genetic change that defines this cancer type affects tumor cells; using genetics and proteomics, a technique that measures the levels of every protein in a cell, to reveal each gene and molecular circuit that drives tumor growth; and searching for vulnerabilities in the cancer cells that researchers could design drugs to attack.

"The gift allows us to make headway by tackling some of the biggest questions in the field, coming up with new approaches, and strengthening the foundation for drug development, which would have an impact on patient care," says Bardeesy.

Kimberly Stegmaier, MD '96, a professor of pediatrics at HMS and Dana-Farber Cancer Institute, is investigating EWS fusion oncoproteins: abnormally fused-together proteins first discovered in Ewing sarcoma, a rare type of cancer that occurs in bones or in the soft tissue around the bones. She hopes the model system her team is building A rare cancer affects fewer than 40,000 people per year in the U.S., according to the National Cancer Institute, but as a group, rare cancers make up just over a quarter of all cancers and cancer deaths.

ANVABL

should allow more nuanced classification, which in turn helps doctors and researchers improve patient diagnoses and prognoses and develop HMS DEAN GEORGE Q. DALEY AND BERTARELLI FOUNDATION CO-CHAIR DONA BERTARELLI CELEBRATE THE CREATION OF THE BERTARELLI RARE CANCERS FUND AT A SIGNING CEREMONY IN NOVEMBER 2019.



LEARN MORE ABOUT THE BERTARELLI RARE Cancers fund and the work being done by Grant recipients at Brcf.HMS.Harvard.edu.

to investigate these proteins will help the broader research community study other fusiondriven cancers.

"These cancers have lacked effective targeted therapies because the fusion proteins are so difficult to get a lock on," says Stegmaier. "Our multidisciplinary team of Ewing sarcoma and fusion oncoprotein experts, chemists, and structural biologists is incredibly excited to work together to tackle this problem using new chemistry approaches that leverage the cell's natural protein disposal machinery."

Several of the funded projects focus on clear cell cancers, a particularly understudied type of rare cancer. John Hanna, PhD '06, MD '09, an assistant professor of pathology at HMS and BWH, is sequencing the DNA and RNA of clear cell tumor samples. Whereas many clear cell cancers look similar under a microscope, the genetic analyses more precise treatments.

"We are identifying entirely new types of clear cell tumors and other rare tumors that previously were either unrecognized or erroneously lumped in with other tumor types because of their similar appearance," says Hanna. "Understanding the specific molecular and genetic changes within tumors will have major impacts on our ability to care for patients."

The "bench to bedside" research approach supported by the BRCF is also a hallmark of the Bertarelli Program in Translational Neuroscience and Neuroengineering at HMS. "With any research that is undertaken, to be truly relevant, the human context is the most essential element," says Dona Bertarelli. "Harvard Medical School shares this belief, and we're delighted that it will now lead what I hope will become transformative work in rare cancer research."

FINANCIAL AID AND EDUCATION

FIGHTING FOR HEALTH Equity through Scholarship support



AZAN VIRJI, HMS CLASS OF 2023, SAYS THE REACH Scholarship has "truly Been A Blessing" but That more must be done to reduce student Loan Burdens. As income inequality grows in the U.S., so too do the economic barriers standing in the way of educational opportunities. That's unacceptable to Lisa and Mark Schwartz, AB '76, MBA '79, MPP '79, who, through their philanthropy, are working actively to remove those barriers, in hopes of ultimately reducing health inequities in communities of color.

"Issues such as patient trust, cultural awareness, and medical biases demand that there be greater representation of doctors of color to better ensure successful access, treatment, and outcomes in marginalized communities," says Lisa Schwartz. "If people of color are deterred from entering the medical professions, we would be perpetuating racial and health injustice in those communities."

She says that until and unless there's systemic change in the U.S. to create economic justice, targeted solutions like need-based scholarships are an effective way to start leveling the playing field. With that in mind, the Schwartzes recently gave \$240,000 to HMS to support the REACH scholarship program, which acknowledges student attributes of Resilience, Excellence, Achievement, Compassion, and a demonstrated commitment to Helping the underserved. "If we can remove the economic barrier to education, we are not only assisting the medical student but also likely helping marginalized communities," Lisa Schwartz says.

"THE NUMBER AND SIZE OF REACH SCHOLARSHIPS DIRECTLY IMPACT OUR ABILITY TO SEAT A DIVERSE CLASS."

ANDREA REID

Andrea Reid, MD '88, MPH '01, associate dean for student and multicultural affairs in the Program in Medical Education and director of the Office of Recruitment and Multicultural Affairs at HMS, says that REACH is critical to the School's ability to recruit extraordinarily talented, accomplished, and diverse students. Invariably, she says, these students are considering offers of acceptance from many medical schools, including some that promise more attractive financial packages.

"REACH scholarships help us to compete for these amazing individuals by decreasing the loan burden for selected students who have demonstrated financial need. The number and size of REACH scholarships directly impact our ability to seat a diverse class," Reid says.

EHC MEMBERS' Generosity Recognized During Virtual Event



Ezekiel Hersey Council Chair Jordan J. Cohen, MD '60, kicked off the Council's first virtual meeting by thanking its more than 600 members for their legacy gifts, which, he said, allow Harvard Medical School's dean to have the flexibility to react to unexpected opportunities that demand a quick response.

One of the December event's two featured speakers, HMS Dean George Q. Daley, AB '82, MD '91, PhD (top right), immediately offered a vivid example of such an opportunity. "The financial impact of the coronavirus on the Medical School has been enormous. Your support has allowed us to continue our tradition of financial aid, to support both fundamental and translational research, and the work that I'll be talking about today," said Daley, referencing the efforts of the Massachusetts Consortium on Pathogen Readiness (MassCPR), a multi-institutional collaboration that includes hundreds of scientists and clinicians addressing the COVID-19 pandemic and preparing for future health crises.

Robert D. Truog, MD (bottom right), director of the HMS Center for Bioethics and the Frances Glessner Lee Professor of Legal Medicine, Professor of Anaesthesia (Pediatrics) at Boston Children's Hospital, discussed the ethical issues that have arisen during a pandemic that he says has "starkly revealed the structure of social injustice in our country."

The Council recognizes alumni and friends 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. It is named for Ezekiel Hersey, a physician and Harvard College alumnus whose bequest led to the creation of Harvard Medical School in 1782.

CRITICAL FUNDING FOR Novel cystic fibrosis Antibiotics

Over 70,000 people worldwide have cystic fibrosis (CF), a progressive genetic disease that causes fluids in the lungs and other organs to thicken. The disease greatly increases one's chances of acquiring difficult-to-treat bacterial infections that cause deadly complications and inflammatory responses.

Now, the Cystic Fibrosis Foundation is supporting a team of Harvard scientists as part of its Infection Research Initiative, which will award \$100 million in funding for research on CF-related infections by 2023. Stephen Lory, PhD, a professor of microbiology in the Blavatnik Institute at Harvard Medical School, and Andrew Kruse, PhD, a professor of biological chemistry and molecular pharmacology in the Blavatnik Institute at HMS, will join Andrew G. Myers, PhD '85, Amory Houghton Professor of Chemistry at Harvard University, in sharing a \$2.5 million grant to address the urgent need for new antibiotics to treat infections caused by Pseudomonas aeruginosa (P. aeruginosa). This bacterium infects nearly 45% of CF patients, and some strains have developed resistance to multiple antibiotics, critically limiting treatment options.



"THE FOUNDATION IS REALLY VISIONARY IN THAT THEY SUPPORT BASIC RESEARCH WITH OR WITHOUT TRANSLATIONAL APPLICATION. THEY BELIEVE KNOWLEDGE IS THE KEY TO THERAPEUTICS IN THE FUTURE."

STEPHEN LORY

essential in building the outer cell membrane used by Gram-negative bacteria to resist antibiotics. By attacking the formation of the outer membrane, the compound would disable the bacterium's best defense mechanism. If the team is successful, this new class of antibiotics may be easily adapted to treat other pathogens beyond P. aeruginosa.

The foundation's funding is primarily supporting postdoctoral research fellows across the three labs an invaluable contribution to future CF research, Lory says. "The Cystic Fibrosis Foundation is committed to future scientists who will study this disease by investing in their education," he says.

*PERSISTENT INFLAMMATION FROM CHRONIC BACTERIAL INFECTIONS DAMAGES LUNG FUNCTION AND LIMITS LIFE EXPECTANCY FOR CYSTIC FIBROSIS PATIENTS.

*CORRECTION: In the print version of Pulse, this photo of a chest X-ray was displayed backward

to study P. aeruginosa that sequenced its entire genome, developed microarrays to understand its gene expression, and investigated its evolution over time. "The foundation is really visionary in that they support basic research with or without translational application. They believe knowledge is the key to therapeutics in the future," Lory says. It's because of this belief that Lory and his colleagues now have the knowledge and opportunity to pursue a pre-clinical drug development program.

The team will take an iterative and interdisciplinary approach, harnessing the strength of the Harvard research community to develop an entirely new class of antibiotics. Each lab will tackle a different piece of the puzzle, working together to solve structures, synthesize compounds, and test the antibiotics' efficacy in mice. The team's novel approach will optimize a promising compound to target a pathway that is We apologize for this mistake.

The mission of the Cystic Fibrosis Foundation is to cure cystic fibrosis and to provide all people with CF the opportunity to lead long, fulfilling lives by funding research and drug development, partnering with the CF community, and advancing high-quality, specialized care.

FUNDING INNOVATIVE AUTISM RESEARCH

Securing funding for research is a significant stressor for scientists. The competition for grants is fierce, and grant writing is an arduous process that takes researchers away from their work. On top of that, the pressure to obtain funding can stifle scientific breakthroughs. For example, some scientists may choose "safer" projects—those that are likely to yield publishable results and thus attract funding agencies—instead of pursuing riskier studies that may have greater potential to produce major advances but also are more likely to fail.

Fortunately for Michael Greenberg, PhD, the Nathan Marsh Pusey Professor and chair of the Department of Neurobiology in the Blavatnik Institute at Harvard Medical School, the Simons Foundation Autism Research Initiative (SFARI) welcomes risk and novelty when reviewing proposals for its Research Awards. The most important criterion for these awards, which provide support for the investigation of key unresolved research questions in autism, particularly those that connect etiology to brain function and behavior, is the potential impact on the autism research field.

"CURRENT AND PAST SFARI SUPPORT HAS BEEN CRITICALLY IMPORTANT IN ALLOWING US TO PURSUE EARLY-STAGE STUDIES SUCH AS OUR CURRENT PROJECT."

MICHAEL GREENBERG



Over the next four years, SFARI intends to provide about \$9 million in grants to 11 investigators at various institutions who received 2020 Research Awards, including Michael Greenberg at HMS.

"SFARI occupies a unique niche within the autism funding community, supporting a broad range of research approaches," says Greenberg, who will receive nearly \$1.2 million in grant funding as a 2020 Research Award recipient. "Current and past SFARI support has been critically important in allowing us to pursue early-stage studies such as our current project. We are able to test and explore provocative hypotheses when access to alternative funding sources might otherwise prove difficult," he says.

Neuronal activity triggers the expression of new genes that play a critical role in aspects of neural development and cognitive function. Greenberg's laboratory has been investigating how dysregulation of this genetic program may contribute to neurodevelopmental disorders such as autism.

"In the case of the current project, we have identified an unexpected link between the stimulus-induced transcription factor Fos and the BAF chromatin remodeling complex when working in fibroblasts," he says. "We find that Fos recruits BAF to drive a program of stimulusinduced gene expression in these cells."

Mutations in various components of the BAF complex have been associated with autism as well as a range of other neurodevelopmental disorders. However, the specific mechanisms by which impairment of the BAF complex contributes to autism remain unclear.



"Given that Fos also serves as a major mediator of neuronal activity-dependent gene responses in neurons, the proposed research seeks to test the hypothesis that Fos acts to drive gene expression in response to neuronal activity via BAF recruitment, and that defects in this response might underlie the effects of BAF mutations in autism," Greenberg says.

Working in both a BAF mutant mouse model as well as a human neuronal culture system, the lab will determine whether autism-associated BAF mutations compromise neuronal activitydependent gene expression programs. Together, the proposed experiments will provide a better understanding of BAF function and yield insight into the etiology of a range of syndromic and nonsyndromic autism spectrum disorders.

FACES OF HMS









02

The HMS Center for Primary Care spearheaded the new HealthTech Fellowship in 2020, a collaborative effort that leverages the faculty and resources of HMS and its affiliated hospitals, the Harvard John A. Paulson School of Engineering and Applied Sciences, and Harvard Business School. The four fellows are learning how to harness technology, engineering, business, and cutting-edge science to define a new standard of medical care.

05

Luca Tiberi, PhD, who is in the final year of his 2016 Career Development Award (CDA) from the Giovanni Armenise-Harvard Foundation, recently won a prestigious Young Investigators Award from the European Molecular Biology Organization, which promotes excellence in the life sciences in Europe and beyond. Tiberi's lab at the University of Trento in Italy focuses its work on understanding brain cancer.

At the annual Daniel D. Federman Teaching Awards ceremony, held virtually Nov. 9 to celebrate 16 of HMS's best teachers in 2020, Alex Yactayo is honored for receiving the L. James Wiczai Award for Leadership, Excellence, and Innovation in Medical Education for his role as medical education coordinator for the Practice of Medicine course at Beth Israel Deaconess Medical Center and Mount Auburn Hospital. The award was established in 2000 by Karen C. Kirby in memory of her husband, L. James Wiczai.

03

Peter Sorger, AB '83, PhD, the Otto Krayer Professor of Systems Pharmacology in the Blavatnik Institute at HMS, spoke at the first Global Conference on Regulatory Science, hosted by the Harvard-MIT Center for Regulatory Science. Scientists and health care leaders from across academia, government, and industry gathered to discuss the evaluation and regulation of new medicines at the two-day conference, held virtually in October.

04

Program directors from HMS-affiliated hospitals join Barbara Cockrill, MD (top left), director of faculty development at HMS; HMS Dean George Q. Daley, AB '82, MD '91, PhD (top center); and HMS Dean for Medical Education Edward M. Hundert, MD '84 (middle center), in welcoming residents and fellows to the HMS community during a September virtual event.

06

Eric Topol, MD, founder and director of the Scripps Research Translational Institute, discusses smartphone ultrasound devices during the annual George W. Gay Lecture, hosted by the HMS Center for Bioethics. Topol's talk, delivered virtually Nov. 12 was titled "How Artificial Intelligence Can Make Health Care Human Again."

07

Clockwise from bottom: HMS MD students Tyler S. LeComer, AB '19, Class of 2024; Constance Wu Class of 2021; and Keizra Sorya Mecklai, Class of 2022, participate in February's virtual Alumni Leadership Appreciation Event, during which they shared what it's like to pursue a medical education during a pandemic.

HMS-LED CONSORTIUM TRIES TO SOLVE PART OF PARKINSON'S PUZZLE

Aligning Science Across Parkinson's (ASAP) is keenly focused on developing a better understanding, at a molecular and cellular level, of the basis of Parkinson's disease (PD) with the hope that such work will lead to the identification of disease biomarkers and potential new therapies.

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 Harvard Medical School, is leading a project aligned with ASAP's goals that was recently awarded \$7.2 million from the initiative.

Harper is coordinating six groups across four institutions—HMS, the Max Planck Institute of Biochemistry, Stanford University, and the University of Göttingen—that are applying cutting-edge approaches to attack a central feature of Parkinson's disease: defective protein quality control (QC).

"DR. HARPER HAS ASSEMBLED A DIVERSE, MULTIDISCIPLINARY TEAM TO TACKLE KEY KNOWLEDGE GAPS, INCLUDING EXPERTS OUTSIDE THE PARKINSON'S RESEARCH SPACE WHO CAN LEND THEIR TALENTS TO OUR FIELD."

EKEMINI RILEY

"Major gaps exist in our understanding of the

Aligning Science Across Parkinson's is championing a three-part strategy: support meaningful collaboration, generate research-enabling resources for the Parkinson's and broader neurodegeneration field, and democratize data by making it more accessible and usable.

tremors, other debilitating movement symptoms, and problems with cognition, mood, and sleep.

"Given the complex and multifactorial nature of PD, we feel that it necessitates a team approach. Dr. Harper has assembled a diverse, multidisciplinary team to tackle key knowledge gaps, including experts outside the Parkinson's research space who can lend their talents to our field," says ASAP's managing director, Ekemini Riley, PhD.

Harper says collaborators at the Max Planck Institute for Biochemistry and at the University of Göttingen are experts in a process called cryo-electron microscopy, which allows visualization of cellular structures and macromolecules at nanometer resolution in cells. "Through this technique, we hope to visualize cellular features at unprecedented detail," he says. The Stanford group includes experts in protein homeostasis who also have the ability to transdifferentiate patient cells to neurons for cell biological studies, allowing the consortium to examine how aging is linked with neurodegeneration.

molecules and mechanisms underlying individual recognition, trafficking, and elimination steps that normally prevent the accumulation or facilitate removal of damaged proteins/organelles, as well as how these processes are altered in PD and with aging," Harper says. "This consortium will fill these gaps by combining biochemical and genetic analysis of chaperone and degradative QC pathways in engineered and patient-based cell systems with direct visualization of these QC pathways in situ using cryo-electron tomography, facilitating precise molecular descriptions of pathogenic mechanisms."

The research team expects this mechanistic framework to fuel new hypotheses and help lead to the development of approaches for overcoming cellular defects in PD, a progressive neurodegenerative disease characterized by "Each team member brings unique capabilities," Harper says. "No single group can do all of these different types of techniques."

The team's co-investigators are Wolfgang Baumeister, PhD (Max Planck), Ruben Fernandez-Busnadiego, PhD (Göttingen), Judith Frydman, PhD (Stanford), Franz-Ulrich Hartl, MD (Max Planck), and Brenda Schulman, PhD (Max Planck). ASAP's implementation partner, The Michael J. Fox Foundation, issued the grant.

ALBRIGHT SYMPOSIUM EXPLORES ADDICTION AMONG WOMEN

There is a silent epidemic of substance use disorder in women, and it has been exacerbated by the COVID-19 pandemic, says Shelly Greenfield, MD '86, MPH (top left), the Kristine M. Trustey Endowed Chair of Psychiatry and chief academic officer at McLean Hospital and a professor of psychiatry at Harvard Medical School.

Greenfield delivered the keynote address at the 20th annual Hollis L. Albright, MD '31 Symposium, held virtually March 3. She shared research on the effects of alcohol on American women, examined barriers to treatment, and discussed how to optimize prevention and recovery.

Opening remarks were delivered by Tenley E. Albright, MD '61, and her brother, Nile L. Albright, AB '61, MD, who established the endowed symposium at HMS in memory of their father, an alumnus who devoted his life to surgery, patient care, and student mentorship. Troy Amen, MD/MBA Class of 2021 (bottom left), who received this year's Albright Scholar Award, said that he hopes to continue to honor Hollis Albright's legacy through his community work.

"What's been most inspiring to me about Dr. Albright's legacy was his unrelenting commitment to his patients not only inside of the hospital but also, more importantly, outside of the hospital," Amen said. "This is definitely a very rare and beautiful trait to see in a surgeon."

HMS Dean George Q. Daley, AB '82, MD '91, PhD, updated symposium attendees on the Harvard medical community's efforts to fight COVID-19.

EHC SPOTLIGHT: Ron grimm, AB '57, MD '61

"The greatest day of my life was the day I received my Harvard Medical School acceptance letter, and the second greatest was the day I received my diploma. You could probably say that my identity is being an HMS graduate. As the oldest of eight, I would not have been able to attend HMS had it not been for generous scholarships. It is a great pleasure to be able to give back in support of today's students. A charitable remainder trust goes both ways, giving back to Harvard and giving back to the donor." 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**.

RON GRIMM WITH HIS WIFE, MARY, AND THEIR DOG, TUCKER

COUPLE'S CHILDREN INSPIRE Support of Aging Research

David S. Vogel and his wife, Thais Lopez Vogel, founded the VoLo Foundation in 2014 with the belief that developing and sharing knowledge through facts and data builds momentum for positive global change. "Together we have six kids, and they are our inspiration for a healthier, more educated, and sustainable future," says Thais Lopez Vogel, who is an attorney, climate change advocate, and Venezuelan native.

WE WANT TO EMPOWER PEOPLE THROUGH KNOWLEDGE TO BE ABLE TO CONTROL THE FUTURE OF THEIR OWN HEALTH AND TO LIVE LONG AND HEALTHY LIVES."

DAVID S. VOGEL

"We believe our ability to scientifically interpret relationships in data and explain it to non-scientists positions us to make a positive impact in the world," says David S. Vogel, a data scientist who is founder and CEO of Voloridge Investment Management LLC. In February 2020, the couple met with David A. Sinclair, PhD, professor of genetics in the Blavatnik Institute at Harvard Medical School and co-director of the Paul F. Glenn Center for Biology of Aging Research. Sinclair's work and progress resonated with the Vogels and aligned with their foundation's health initiatives, which aim "to acquire knowledge and means to maximize lifespan with high quality of life and wellness."

As a result, the Vogels and their foundation have made a gift to HMS to establish the VoLo Research Fund on Aging in support of Sinclair's work. The fund will help propel research efforts focused on understanding how to accurately measure the pace of aging in humans and what aging clocks represent in terms of future health and longevity. Sinclair says he and the members of his lab are extremely grateful for the couple's support. "The generous gift from Mr. and Mrs. Vogel will support research to understand how to extend the time of life that we are healthy. I would be hard pressed to come up with a more impactful goal," he says. The Vogels believe that advances in aging research will lead to many other medical advances including prevention of cancer, heart disease, cognitive decline, and other age-related diseases. "We want to empower people through knowledge to be able to control the future of their own health and to live long and healthy lives," David S. Vogel says.

EXPLORING HEALTH DISPARITIES

Rear Adm. Felicia Collins, MD '95, MPH '99 (pictured), the former acting assistant secretary for health at the U.S. Department of Health and Human Services (HHS), director of the HHS Office of Minority Health, and HHS's deputy assistant secretary for minority health, delivered the keynote address March 29 at the 17th annual Alvin F. Poussaint, MD Visiting Lecture. Collins, a former Commonwealth Fund Fellow in Minority Health Policy at Harvard University, spoke about her work at HHS, described how social determinants of health have impacted the COVID-19 pandemic in the U.S., and identified specific roles that trusted messengers—physicians, medical students, and religious leaders, for example—have in combating the coronavirus.

"COVID-19 has shined a very bright light on an issue that many of us already knew about: that health disparities continue to persist for far too many communities across our nation," Collins said.

The lectureship fund was established in 2004 with a gift from Harvard Medical School alumni to honor Poussaint, who delivered the inaugural lecture in 2005. He retired in 2019 after a half-century of service to the School, most recently as director of the Office of Recruitment and Multicultural Affairs.

GRATEFUL FINANCIAL AID RECIPIENT WANTS TO RETURN FAYOR

Acts of generosity can sometimes overwhelm us. Just ask Harvard Medical School Dean for Medical Education Edward M. Hundert, MD '84, who could not contain his emotions when he first learned of a donor's recent \$1 million gift to the School.

"I'm quite serious that I burst into tears, knowing how many remarkable HMS students—future leaders of medicine—will have their lives forever changed by this act of generosity," Hundert says.

The donor, who chooses to remain anonymous, is supporting two funds: The REACH Financial Aid Fund (\$750,000) and the COVID-19 Student Emergency Aid Fund (\$250,000). 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 from disadvantaged backgrounds, including those historically underrepresented in medicine, to accept their offers of admission.

"Our ability to make an HMS education accessible to students from disadvantaged backgrounds is so dependent on support to the REACH scholarship program," Hundert says. Seventy-one students have received REACH awards since the fund was established in early 2018.

The COVID-19 Student Emergency Aid Fund was created to provide financial assistance to medical students who are struggling with unanticipated or emergency financial situations as a direct result of the COVID-19 pandemic. "We have already had some unforgettable moments of awe from students when they learned of the availability of this fund, which is enabling them to continue at HMS when a parent lost their income or life due to COVID-19," Hundert says.

"IT'S IMPOSSIBLE TO EXPRESS

Of those who receive financial aid at HMS, 1 student in 5 comes from a family whose annual income is less than \$50,000, and 50 percent of students qualify for the Middle Income Initiative, which adjusts the parental contribution expected for HMS families with the greatest financial need.

costs; for technology needs related to remote learning; and for additional scholarship support to cover the loss of family income that would

FULLY THE GRATITUDE WE ALL FEEL FOR SUCH MAGNIFICENT SUPPORT OF OUR MEDICAL STUDENTS AT THIS TIME WHEN THEY NEED IT MOST." EDWARD M. HUNDERT

To date, money from the fund has been distributed to 162 students, with individual awards ranging from \$100 to \$22,000. This assistance includes support for temporary housing and/or other essential needs, such as food; for travel associated with a personal or family emergency, crisis, or death; for unforeseen or unusually high medical expenses and related have contributed to the cost of attendance.

The donor says he received scholarship support at the high school, college, and medical school levels and has been fortunate to build a successful career, so he feels it's important to give back. "My wife and I were weighing our planned giving options over the next several years. Then COVID happened, and we thought, why not advance this philanthropy and put it to work now to support emerging needs?" He said scholarship aid—with a particular focus on students underrepresented in medicine—has been a theme of the couple's philanthropy, and they have been very impressed by the return on their investment.

Hundert is thankful for that investment. "It's impossible to express fully the gratitude we all feel for such magnificent support of our medical students at this time when they need it most," he says. <image>

BLAVATNIK THERAPEUTICS CHALLENGE AWARDS

The BTCA program is part of the Blavatnik Family Foundation's has bolstered new cross-disciplinary collaborations, research programs, and essential infrastructure in support of the School's mission to transform human health through the translation of cures. Administered by HMS, the BTCA program aims to accelerate therapeutics affiliated hospitals, help investigators navigate the intricacies of intellectual property development and licensing, and spur the creation of new companies. The five inaugural BTCA projects listed below are led by principal investigators spanning four institutions, demonstrating the broad reach of the program across

• Daniel Bauer, MD, PhD Boston Children's Hospital Novel therapy for congenital neutropenia

• Elliot Chaikof, MD, PhD

RESEARCH AND THERAPEUTICS

AWARDS ENABLE PURSUIT OF LIFE-CHANGING THERAPIES

Trained as a mathematician, Peter Park, AB '94, SM '94, SM '00, PhD (pictured), a professor of biomedical informatics in the Blavatnik Institute at Harvard Medical School, is developing analytical methods to interpret the human genome. He and his lab colleagues recently discovered an interesting drug target, but they had neither the resources nor the expertise to pursue it. Enter the Blavatnik Therapeutics Challenge Awards (BTCA).

The Blavatnik Family Foundation provides \$1 million over two years to each BTCA recipient with the goal of advancing translational therapeutics research projects that are within two years of a commercial exit. Park says his lab's immediate goal is to develop a therapy for frontotemporal dementia, a devastating brain disorder that affects thousands of people and has no treatment.

"Our long-term goal is to develop an efficient platform to identify any genetic mutation in an individual by sequencing the person's genome and to design a molecule to counter the effect of the mutation—to enable personalized therapeutics," says Park.

Park says the BTCA program offers far more than funding. "The award allows us to take advantage of the expertise and resources of many people on campus and beyond." He said his lab has benefited tremendously, for example, from its interactions with Ifat Rubin-Bejerano, PhD, the director of translational research programs at HMS, and with members of the Business Development team in the Harvard Office of Technology Development. "With bioinformatic analysis of genomic data, we found a way to increase the amount of protein by targeting the specific genetic defect with a molecule that we designed. Called 'antisense oligonucleotide,' this relatively new class of molecules can be delivered to the brain effectively. Our laboratory experiments have validated our computational predictions, and we are now ready to perform animal studies," Park says.

The inaugural cycle of the BTCA program was completed successfully in 2020, and a request for proposals was sent out earlier this year for the 2021 cycle. All faculty at the rank of assistant, associate, or full professor based at HMS or its affiliated hospitals and research institutions are eligible to apply as lead principal investigator for the awards. Funding for the 2021 projects is expected to start in late summer, and additional program cycles are anticipated in 2022 and 2023.

"THE AWARD ALLOWS US TO TAKE ADVANTAGE OF THE EXPERTISE AND RESOURCES OF MANY PEOPLE ON CAMPUS AND BEYOND."

PETER PARK

"Our hope and expectation is that these awards will accelerate the translation of scientific discoveries into therapies to improve health and alleviate suffering," says Len Blavatnik, MBA '89, head of the Blavatnik Family Foundation and a member of the HMS Board of Fellows. "I look forward to following the continued progress of Dr. Park and the other inaugural award winners as they address a diverse range of medical conditions frontotemporal dementia, Type 1 diabetes, asthma, cancer-associated blood clots, and a rare congenital immune disease."

Beth Israel Deaconess Medical Center Novel therapy for cancer-related venous thrombosis

• Christiane Ferran, MD, PhD

Beth Israel Deaconess Medical Center Novel therapy to achieve insulinindependent glycemic control in Type 1 diabetes

- Steven Greenberg, MD '88 Brigham and Women's Hospital Novel therapy for asthma
- Peter Park, AB '94, SM '94, SM '00, PhD Harvard Medical School Novel therapy for progranulinassociated neurodegenerative diseases

Explaining his BTCA project, Park says that in some patients with frontotemporal dementia and other neurodegenerative diseases, an important protein called progranulin is not produced in sufficient quantities due to a mutation in the DNA. Modulating the level of this protein in the brain has been particularly difficult because it is hard to deliver a drug to the brain.

DEEP GRATITUDE MOTIVATES Alumnus to give

Barry W. Levine's medical journey began in eighth grade when he wrote a career book centered on medicine. A child of immigrants, Levine absolutely loved science, was comfortable working with people, and felt a calling to pursue medicine. Twelve years later, he graduated from Harvard Medical School as a member of the Class of 1965. He had a passion for pulmonology and went on to become a pulmonary disease specialist at Massachusetts General Hospital (MGH), where he worked for 46 years before retiring in 2016. He said his love and appreciation for HMS inspired him to stay at the School's largest teaching hospital.

"ALL THE MONEY I'VE GIVEN HAS BEEN UNRESTRICTED. I LEAVE IT UP TO HARVARD MEDICAL SCHOOL'S DISCRETION. THEY KNOW BEST WHAT THEY NEED. "

BARRY W. LEVINE

In honor of his 55th Reunion—for which he served on the Reunion Committee—Levine recently established a charitable gift annuity (CGA) that will provide unrestricted, flexible funding to HMS to be used at the dean's discretion. He had been considering the best way to gift assets to HMS, and a CGA, which offers him fixed income for life alongside a charitable income tax deduction, made sense.

"All the money I've given has been unrestricted," says Levine (top right), who has supported the School annually for decades. "I leave it up to Harvard Medical School's discretion. They know best what they need." He adds, "Hopefully my gift will be appreciated by my classmate and Class Agent Jim Nelson, AB '61, MD '65, who is very active in gift giving and always has asked me to give, and give more."

In 1999, Levine could no longer lay claim to being the only doctor in the family. Following in his footsteps, Levine's daughter Rachel Hitt, MD '99, MPH (bottom right), graduated from HMS and started working at MGH in the radiology department. Levine says the gratitude he feels toward HMS for the education that both he and his daughter received, propelling them both to successful careers, is a major reason for his recent gift.

EVENT SPOTLIGHTS IMPACT OF FINANCIAL AID

Siddhartha Mukherjee, DPhil, MD '99 (middle left), author of "The Emperor of All Maladies: A

LaShyra "Lash" Nolen, MD Class of 2023 (top left), the first Black woman to become sole class president

Biography of Cancer," which won the 2011 Pulitzer Prize for General Nonfiction, says that without financial aid, he would not have been able to attend medical school.

"There would have been no books. There would have been no speeches. And I would have been a fundamentally changed person. But most importantly, I would have never had the privilege to enter a profession where the capacity to combine reasoning and healing remains the lodestar," says Mukherjee, an associate professor of medicine in the Herbert Irving Comprehensive Cancer Center at Columbia University Medical Center.

Mukherjee delivered the keynote address at the annual Spotlight on Medical Education event held virtually Nov. 5—which celebrates Harvard Medical School's students as well as the donors, volunteers, and leaders who have invested in teaching, learning, and financial aid at the School. at HMS, told attendees that she doesn't want to be the last. She said it's important that HMS's generous supporters help create a pipeline "so that those who have been systemically denied opportunities can come to spaces like HMS and thrive and live their best lives."

Victor A. Lopez-Carmen, MD Class of 2023 (bottom left), a Dakota of the Crow Creek Sioux Tribe and also Yaqui, talked about the importance of investing in Indigenous youth and described the far-reaching impact of financial aid. "The investment that Harvard Medical School has made in me will benefit future generations. It will benefit my community for hundreds of years. I am the first doctor who will be from my tribe, and the children on the reservation look up to me. They see themselves in me. They see that they can be doctors too."

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AN ENDURING LEGACY of supporting global health equity

Mavis C. Campbell, PhD, was a staunch supporter of Harvard Medical School. She became interested in the School's work as a loyal subscriber to Harvard Health Publications, and that interest eventually blossomed into a mutually respectful and beneficial relationship. Between 2012 and 2019, she established eight charitable gift annuities (CGAs), totaling \$800,000, to create and support an endowed teaching and research fund in global health and social medicine at HMS. In return, she received regular fixed income payments, portions of which were tax-free, until she died in November 2019. Her estate recently distributed an additional \$1.73 million to her HMS fund.

"THE GREAT IMPORTANCE OF THE DEPARTMENT OF GLOBAL HEALTH AND SOCIAL MEDICINE LIES IN ITS INNOVATIVE, MULTIDISCIPLINARY, COLLABORATIVE APPROACH."

MAVIS C. CAMPBELL

MAVIS CAMPBELL WAS PARTICULARLY INTERESTED IN RESEARCH RELATED TO IMPROVING NUTRITION IN DEVELOPING NATIONS. Born in Jamaica, Campbell received her undergraduate degree from the London School of Economics and Political Science and her PhD from the University of London. A widely published author, she taught at Hunter College before spending more than 30 years at Amherst College, retiring as professor emerita of history. She visited academic institutions worldwide, According to the World Health Organization, life expectancy remains profoundly influenced by income: In 2016, it was 18.1 years lower in low-income countries (62.7 years) than in high-income countries (80.8 years).

including the University of Sierra Leone in West Africa, the University of Guyana in South America, the University of Edinburgh in Scotland, and Wolfson College, Cambridge, in England.

Campbell's educational background, coupled with her extensive travels, gave her a unique view of the problems facing underserved and resource-poor regions, and she strongly believed that education was fundamental to solving those problems.

She was particularly drawn to the humanitarian efforts of Paul Farmer, MD '88, PhD '90, Kolokotrones University Professor and chair of the Department of Global Health and Social Medicine in the Blavatnik Institute at HMS. She ultimately decided to direct her gifts toward the work being done across the department, boosting its efforts to continually improve the practice of medicine, the delivery of treatment, and the development of health care policies through social science and humanities research.

Campbell once said: "The great importance of the Department of Global Health and Social Medicine lies in its innovative, multidisciplinary, collaborative approach. This strategy allows practitioners to contextualize medical problems in poor countries as part of a wider set of grave social and economic issues, such as poverty, malnutrition, and lack of education. All of these issues must be addressed in tandem and followed through aggressively before development can be sustainable in these areas."

Farmer says he has appreciated Campbell's vision and steadfast support toward advancing global health research and education at HMS. "Support for global health programs from donors like Mavis Campbell is critical to the School's mission of alleviating suffering and improving health and well-being for all," he says.

ENERGIZING THE CURRICULUM, **EXPANDING HMS'S IMPACT**

Harvard Medical School leaders and Fariborz Maseeh, an idea was born to help incentivize faculty and support the dissemination of digital content to enhance medical education. This idea is now coming to fruition thanks to a \$300,000 philanthropic investment through the Massiah Foundation to establish the Fariborz Maseeh Award for Innovative Medical Educationthe first teaching award of its kind at HMS.

The annual award recognizes and supports a faculty member who develops and leads innovative courses in the MD curriculum, with a preference for digital content that may be disseminated to a broader community. Maseeh, a member of the HMS Board of Fellows and HMS Discovery Council, believes that sharing the School's expertise universally is an effective way to serve humanity. And he believes that the COVID-19 pandemic has made the digital distribution of knowledge more relevant than ever.

Michael Dougan, PhD '09, MD '11 (pictured), assistant professor of medicine at Massachusetts General Hospital (MGH), was celebrated as the inaugural recipient of the award at the 2020 Daniel D. Federman Teaching Awards virtual ceremony on Nov. 9. Dougan leads the immunology component of the Foundations course in the Pathways curriculum pre-clerkship phase, and he is co-director of the advanced integrated science

course in immunology for Pathways students. He also teaches medical students and residents who are part of the Pathways Consult Service at MGH.

"IF WE CAN REACH ONE MORE STUDENT, WHO CAN POSITIVELY IMPACT ONE MORE PATIENT, WE'LL HAVE ACCOMPLISHED SOMETHING WORTHWHILE." **FARIBORZ MASEEH**

"I am extremely grateful to Dr. Maseeh, and I am honored to have received this award," says Dougan. "My goal as a teacher has always been to help students learn how to ask the right questions, and how to view problems from different points of view, such as linking basic science understanding to clinical presentations. I am excited at the possibility of teaching to a wider audience, which will ultimately influence the care of more patients."

Maseeh is eager to see how faculty members create and distribute their content. "If we can reach one more student, who can positively impact one more patient, we'll have accomplished something worthwhile," he says.

READ MORE ABOUT THE 2020 DANIEL D. FEDERMAN TEACHING AWARDS CEREMONY AT TINYURL.COM/2020-FEDERMAN-AWARDS.

ALPERT PRIZE HONORS GUT HORMONE INSIGHTS

→ The three winners of the 2020 Warren Alpert Foundation Prize were recognized during a virtual symposium Oct. 1 for their seminal discoveries about the function of key intestinal hormones and the effects of those hormones on metabolism. Their discoveries have informed the design of diabetes, obesity, and short bowel syndrome.

Harvard Medical School Dean George Q. Daley, AB '82, MD '91, PhD, who chairs the prize selection committee and delivered the symposium's opening remarks, said, "These discoveries are powerful and reassuring reminders that through the rigor of the scientific process, and with the passion of researchers and physicians, we can and we will make progress in improving human health."

The prize, which is administered by the Warren Alpert Foundation and HMS, recognizes scientists throughout the world whose research and achievements promise to revolutionize how we understand, diagnose, and treat disease. The 2020 winners were Daniel Drucker, MD, senior scientist at the Lunenfeld-Tanenbaum Research Institute at Mount Sinai Hospital in Toronto and a professor of medicine at the University of Toronto; Joel Habener, MD, an HMS professor of medicine and director of the Laboratory of Molecular Endocrinology at Massachusetts General Hospital; and Jens Juul Holst, MD, DMSc, a professor in the Department of Biomedical Sciences and group leader of the Translational Metabolic Physiology Section of the Novo Nordisk Foundation Center for Basic Metabolic Research at the University of Copenhagen.

ALPERT PRIZE WINNERS (CLOCKWISE, FROM LEFT) JOEL HABENER, JENS JUUL HOLST, AND DANIEL DRUCKER

LEARN MORE ABOUT THE PRIZE AND ITS PAST RECIPIENTS AT WARRENALPERT.ORG/PRIZE

BOARD OF FELLOWS WELCOMES THREE NEW MEMBERS

Reed Jobs (top right), James Tananbaum, MD '89, MBA '91 (center right), and Lisa Yang (bottom right) have been appointed to the Harvard Medical School Board of Fellows.

Jobs serves as managing director of health at Emerson Collective, a social change organization based in Palo Alto, California. With a sole focus on oncology, the Health Team managed by Jobs works with entrepreneurs and researchers to accelerate the development of new therapeutic options for cancer patients.

Tananbaum is the founder and chief executive officer of Foresite Capital, a U.S.-focused health care investment firm established in 2011 that has approximately \$3 billion in assets under management. During the last three decades, Tananbaum has been a thought partner for some of the most impactful and fastest-growing companies of their generation, including 10x Genomics, Amerigroup, and Jazz Pharmaceuticals.

Yang is a retired investment banker and advocat for brain science research and mental health programs. She serves on the boards of Autism Speaks, the Cornell University Laboratory of Ornithology, the Devereux Foundation, and the McGovern Institute for Brain Research at MIT. Yang is the namesake of the Tan-Yang Center for Autism Research at HMS.

Board of Fellows members serve as external advisers and provide counsel to the dean, senior administrators, and faculty on topics pertinent to the strength, health, and well-being of the institution. They also assist in developing and reviewing strategies that fulfill and enhance the School's mission to alleviate suffering and improve health and well-being for all.

NEW ERA FOR THERAPEUTICS Research and education

Harvard Medical School celebrated a milestone for its Therapeutics Initiative on Oct. 28: the launch of the Ideation Hub (I-Hub) and the Translator. Together, these programs support the efforts of HMS researchers across the entire breadth of the translational process, from generating ideas to moving therapeutics to the clinic.

Thanks to a historic \$200 million gift from the Blavatnik Family Foundation in 2018, the School has already invested deeply in therapeutics-oriented programs, in research infrastructure, and in promising translational projects. Len Blavatnik, MBA '89, head of the foundation, was among those who spoke at the virtual symposium marking the launch. "The I-Hub is about building community and helping scientists at all stages of their careers develop ideas and create translational projects," he said.

With ideas in hand, HMS researchers can now turn to the Translator program to execute the science needed to turn those ideas into medicines. "We want to surround the ideas that arise from our community with support, from a material standpoint, but also with advice and a chance to learn about drug discovery," said Mark Namchuk, PhD, executive director of therapeutics translation at HMS and director of the Translator.

"We need better drugs, sooner, and faster," said Blavatnik, who is a member of the HMS Board of Fellows. "This type of effort shows how much you can move forward through interdisciplinary collaboration in research, which is the key to modern science," he said.

I-Hub Director Timothy Mitchison, PhD (pictured), the Hasib Sabbagh Professor of Systems Biology in the Blavatnik Institute at HMS, issued an invitation to anyone seeking help with a translational research idea to reach out to him. Learn more about the Ideation Hub at i-hub.hms. harvard.edu.

FINANCIAL AID AND EDUCATION

EASING DEBT Concerns for Physicians-to-be

A common thread among many Harvard Medical School alumni donors who support financial aid is their desire to pay it forward. Thankful for the assistance they once received, they want to ensure that future students can count on scholarship support as well.

Laird D. Patterson, MD '68, says she was fortunate to receive a low-cost loan and a scholarship from HMS. Between financial aid and the money she earned working at a blood bank, her student debt was "a mere pittance in comparison to what it costs to get a medical education now." She says she's motivated to give back so that the talented and motivated physicians-to-be at HMS can make their profession—not burdensome debt—their primary concern.

"Monetary support for medical education enables young physicians to utilize their skills for the greatest good," says Patterson, who recently contributed an additional \$100,000 to the charitable remainder unitrust she established at HMS in 2012, which will ultimately support an endowed scholarship fund.

Michael Rosenblatt, MD '73, and his wife, Patricia, say that being a part of HMS has transformed their lives in many ways and that "payback" was always in their plans. "From the moment I received financial aid, we decided that we would eventually replenish the amount given and contribute multiples of that amount if we could," says Michael Rosenblatt, a member of the HMS Board of Fellows and HMS Advisory Council on Education, as well as president of the Alumni Council.

"MONETARY SUPPORT FOR MEDICAL EDUCATION ENABLES

to this goal and inspire others to do the same," Michael Rosenblatt says.

Nai-Kong V. Cheung, MD '78, PhD '78, and his wife, Irene Cheung, SM '74, SD '77, recently gave \$100,000 to the REACH scholarship fund, which makes it more feasible for those who are historically underrepresented in medicine and students from other disadvantaged backgrounds to accept their offers of admission to HMS. "Giving and caring is part of our profession," says Nai-Kong V. Cheung, who holds the Enid A. Haupt Chair in Pediatric Oncology at Memorial Sloan Kettering Cancer Center, where his lab focuses on engineering antibodies and immune cells to treat both solid tumors and liquid tumors in children. His wife is Laboratory Member and Attending Clinical Immunologist in the Department of Pediatrics.

IN AN AVERAGE YEAR, AT LEAST 70% OF THE HMS STUDENT BODY RECEIVES FINANCIAL AID THROUGH LOANS, EMPLOYMENT, AND SCHOLARSHIP FUNDING FROM VARIOUS FEDERAL, PRIVATE, AND SCHOOL SOURCES.

YOUNG PHYSICIANS TO UTILIZE THEIR SKILLS FOR THE GREATEST GOOD."

LAIRD PATTERSON

The couple recently gave \$100,000 to the Michael and Patricia Rosenblatt Financial Aid Fund, which they established in 2017. They were particularly interested in renewing their financial commitment as the School pursues a debt-free medical education for students with financial need. "We hope our gift will help bring us closer

With his 45th Reunion approaching in June he entered with the Class of 1976—Cheung says he wants to make sure future students receive the support he once did. "Looking back, I was in their shoes and someone gave me a helping hand," he says.

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.

The Leo Foundation

has awarded \$618,221 to George M. Church, PhD '84, the Robert Winthrop Professor of Genetics in the Blavatnik Institute at HMS. Church will be leveraging data from the Personal Genome Project

to study the genetics of acne pathogenesis and develop a novel cell model for therapeutic and cosmetic product evaluation.

Ronald C. Kessler, PhD, the McNeil Family Professor of Health Care Policy in the Blavatnik Institute at HMS, received \$537,554 in funding from the Warren Alpert Foundation. Kessler will evaluate a new and

innovative intensive case management program that is predicted to reduce suicide rates among recently-discharged veterans after inpatient hospitalization.

The Chan Zuckerberg Initiative is supporting a study on neuroimmune circuits and interactions at the single-cell level with a grant of \$525,000. The project will be led by three researchers—Isaac M. Chiu, AB '02, PhD '09 (top right), assistant professor of immunology in the Blavatnik Institute at HMS; Stephen Liberles,

AB '94, AM '96, PhD '00 (bottom left), professor of cell biology in the

Joan Brugge, PhD, the Louise Foote Pfeiffer Professor of Cell Biology in the Blavatnik Institute at HMS and co-director of the Ludwig Center at Harvard, has received \$386,922 from the Adelson Medical Research Foundation to support her work to develop safe combination therapies

for treatment-resistant tumors in patients with high-grade serous ovarian cancer. The foundation has supported ovarian cancer research under Brugge's direction for 12 years.

The Damon Runyon Cancer Research Foundation has awarded grants totaling \$331,000 to two scientists in the Blavatnik Institute at HMS. Pragya Goel, PhD, a research fellow in

neurobiology, is investigating how dopamine release and receptors contribute to the organization of microcircuits in the striatum. Better understanding of the structure of these microcircuits could lead to more efficient brain cancer therapeutics. Justin Sparks, PhD,

a research fellow in biological chemistry and molecular pharmacology, is conducting research on DNA replication and repair, which will help scientists understand how cancer cells develop chemotherapeutic resistance.

Two scientists in the Blavatnik Institute at HMS will use funding from the U.S. Israel Binational Science Foundation to complete collaborative research with Israeli colleagues. David E. Reich,

AB '96, DPhil, professor of genetics, will analyze entire genomes of 100 specimens dating back to 6200 B.C.E. to gain insights into ancient human life. Galit Lahav, PhD, Novartis Professor and chair of the Department of Systems Biology, will develop single-cell resolution image analysis tools based on deep learning that

will help uncover how 3D architecture of tumor cells impacts the expression and function of the p53 tumor-suppressing protein. These two grants from the foundation total \$280,900.

Mollie M. Williams, DrPH, MPH, executive director of the Family Van, has been awarded \$250,000 from **Leon** Lowenstein Foundation Inc. to create resources and partnerships that allow mobile health clinics

nationwide to increase their emergency response capabilities during crises like natural disasters and pandemics.

Blavatnik Institute at HMS; and Henrique Veiga-Fernandes, PhD (bottom right), of the Champalimaud Centre for the Unknown.

Michael Baym, PhD, assistant professor of biomedical informatics in the Blavatnik Institute at HMS, has been selected to join the Pew Scholars Program in Biomedical Sciences. He'll receive \$300.000 from **Pew** Charitable Trusts to investigate how antibiotic resistance evolves in bacteria in the wild.

Q&A WITH MARK NAMCHUK

We sat down with Mark Namchuk, PhD, executive director of therapeutics translation at HMS, to talk about the importance of team science, an approach to research being used in several of the projects described in this issue of Pulse.

01

What is team science and why is it important?

Team science is addressing an important scientific or medical problem across multiple disciplines and laboratories. It brings together different ways of attacking that problem and new ideas at a scale that is difficult for individual labs to achieve. Both the scale and diversity can accelerate progress. It is the approach most commonly used in translational research in biotech and the pharmaceutical industry.

02

Are you noticing a shift in research culture to multidisciplinary collaboration, and, if so, what is precipitating this change?

Yes. One of the most dramatic examples was the COVID-19 response across the HMS community. Within the Massachusetts Consortium on Pathogen Readiness (MassCPR), we were sharing preliminary research with numerous colleagues, getting feedback from a broad community on the data, and rapidly moving to collaborate when the skills of one lab could help the progress of another. In my therapeutics role at HMS, I commonly see that some of our best projects are collaborative proposals where labs are partnering to build on each other's strengths.

03

As executive director of therapeutics translation overseeing the HMS Therapeutics Initiative, can you give an example of a project that has benefited from the team science approach? There were a number of examples that arose in the MassCPR setting. One project I was involved in provided biochemical screening, antiviral screening, and compound handling logistics through a collaboration among HMS, Boston University's National Emerging Infectious Diseases Laboratories, and the Broad Institute of MIT and Harvard. Another example is the AbbVie/HMS collaboration aimed at emerging pathogens. The program integrates 16 labs, from six different institutions, with scientists at AbbVie in five focused areas of research. The program aims to integrate the best interdisciplinary academic science with the science and considerable resources available at an industry partner to accelerate discovery of new therapies for and our understanding of COVID-19 and other pathogens.

CALENDAR

Please note that we have removed the calendar section from this issue of Pulse as a result of the COVID-19 pandemic and its potential impact on

upcoming events.

/HarvardMedicalSchool

HarvardMed

DEAN OF HARVARD MEDICAL SCHOOL George Q. Daley, AB '82, MD '91, PhD

DEAN FOR ALUMNI AFFAIRS AND DEVELOPMENT Lisa J. Boudreau EXECUTIVE DIRECTOR OF DEVELOPMENT COMMUNICATIONS AND DONOR ENGAGEMENT Laura DeCoste

EDITOR Randy Fox

ASSOCIATE ART DIRECTOR AND PRODUCTION MANAGER Eliza Butts

CONTRIBUTOR Kristine King

DESIGNER Sametz Blackstone Associates

WRITERS

Elizabeth Dill Randy Fox Sarah Furie Brandy Newlon Alexis Stefano

PHOTOGRAPHERS

Gretchen Ertl Stuart Darsch Matthew Healey Getty Images Stephanie Mitchell Tony Rinaldo Photography Len Rubenstein Photography Maya Rucinski-Szwec John Soares PULSE

is produced by the Harvard Medical School Office of Alumni Affairs and Development

401 Park Drive, Suite 505 Boston, MA 02215

FOR INFORMATION

Contact Randy Fox, senior editor and writer, at 617-384-8629 or randall_fox@ hms.harvard.edu

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MERRY MATCH DAY

Graduating HMS students gathered online March 19 to find out where they will spend the next phase of their medical training. A chorus of "Woo-hoo!" and "Congratulations!" from faculty members was followed by students announcing their matches. They waved "I Matched" signs and wore crimson HMS Match Day 2021 T-shirts. More than 300 classmates, faculty, staff, and loved ones participated in the video call. **Read more and view photos of students celebrating their residency placements at tinyurl.com/HMS-Match-Day-21.**

VARNEL ANTOINE, AB '16, MD '21, Happily shares that he matched At Brigham and Women's Hospital In Urology.

I MATCHED!