

weillcornellmedicine

WINTER 2020

A BRIGHTER FUTURE

Thanks to a transformative scholarship initiative, most WCM students will graduate without medical school debt



Weill Cornell Medicine

Reunion 2020 September 11-12

The Weill Cornell Medical College Alumni Reunion will take place from Friday, September 11, through Saturday, September 12, offering engaging guest speakers, institutional updates and tours, class get-togethers, a gala dinner dance, and opportunities to mingle and network with old friends.

While class years ending in '4, '5, '9, and '0 are celebrating milestone reunions, all alumni are invited back to campus to commemorate another year since graduation.



We hope to see you there!

For updates, please visit
alumni.weill.cornell.edu/medical-college-alumni/reunion-2020

THE MAGAZINE OF
WEILL CORNELL MEDICINE
WINTER 2020



Features

20 DEBT RELIEF

In September, Weill Cornell Medicine made a groundbreaking announcement: beginning with the current academic year, it will eliminate medical education debt for all students who qualify for financial aid. “Now, all students are playing on the same field,” says Dean Augustine M.K. Choi, MD. “Just think about it: if you want to be a doctor and you come to Weill Cornell Medicine, you don’t have to worry about debt. That’s an amazing message to send to young people.” Under the sweeping new initiative—made possible by \$160 million in landmark gifts from the Starr Foundation and Maurice Greenberg, Joan and Sanford I. Weill and the Weill Family Foundation, and other donors—loans will be replaced by scholarships. And those funds will cover not only tuition but housing and personal expenses—an additional boon for future physicians studying in one of the world’s most expensive cities.

30 DIGITAL DOMAINS

Technology is often blamed for worsening our mental health, whether through compulsive social media use or addictive videogames. But investigators at WCM are among a growing number of mental health providers and researchers who see the potential for it to be a force for good—through apps and other platforms that help people manage anxiety or depression, access treatment resources, connect with providers, and more. And while technology may never fully substitute for treatment by an in-person clinician, a new generation of tech-based solutions—including several now in clinical trials at WCM—may improve access to care and expand the ability of therapists to help their patients outside the office. “Our focus is on providing care that’s well-tested and validated,” says Avital Falk, PhD, an assistant professor of psychology in clinical psychiatry, “so that we know exactly what people are getting and that it will actually benefit them.”

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ON THE COVER: HEBA SHAABAN '23
ATTENDS AN ANATOMY LECTURE WITH
OTHER MEMBERS OF HER CLASS.
PHOTO BY ASHLEY JONES.

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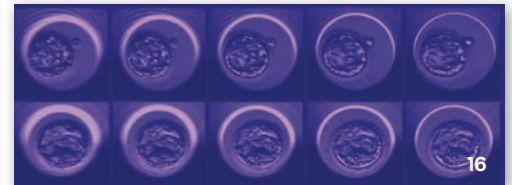
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Augustine M.K. Choi, MD
Dean of Weill Cornell Medicine

Debt-Free Medical Education: Investing in Our Students



We strive for excellence in everything we do at Weill Cornell Medicine, whether it's teaching the next generation of healthcare leaders, providing exceptional care for our patients, or developing breakthrough treatments for some of humanity's most formidable health problems. It's who we are as an institution—one that is always advancing efforts to have a significant, positive effect on the lives of people in New York City and around the world.

Yet medicine is always changing, and more rapidly than ever before. We know that the only way to continue our commitment to excellence—and to meet the healthcare challenges of today and tomorrow—is to be daring, innovative, and always focused on the future. We're doing that in many different ways, but perhaps there's no better example of our forward-thinking approach than our transformative new scholarship initiative.

It's a game-changer for everyone here, and something that I was thrilled to announce in September. As explained in this issue, this groundbreaking plan will eliminate medical education debt for all students who qualify for financial aid. That means any student—regardless of economic situation—will now be able to pursue an MD at Weill Cornell Medicine without having to take on an undue financial burden. They'll also have the ability to focus solely on their talents and interests, without having to worry about paying back a crushing amount of debt.

Made possible by the generosity of our visionary donors, this program is our way of leveling the playing field to ensure that financial constraints are no barrier to becoming a doctor. There are so many talented individuals across the country who could make invaluable contributions to science and medicine, but because of the rising cost of earning an MD, might end up entering other professions. This new initiative will hopefully encourage the best and brightest to come here, bringing diverse experiences and perspectives that will enrich our institution and allow us to keep pace with the evolution of science, patient care, and healthcare delivery. We want this plan to attract students like

Nigerian immigrant Ikenna Onyekwere '23, who now sees academic medicine as a career option because he won't have to pay off as much as he expected in loans, and Natalie Nguyen '23, who was raised by a single mother and whose commitment to caring for patients from underserved communities is now strengthened by our additional scholarship support.

Expanded scholarship support is not all we're doing when it comes to big, bold ideas. Just as the new debt-relief plan acknowledges the profound, real-world costs of high tuition and debt on student and physician wellbeing, so does our growing reflection upon what medical schools can do to reduce student burn-out. This fall WCM hosted the National Conference on Medical Student Mental Health, the first comprehensive, multidisciplinary symposium designed to address the increasing rates of psychological distress among medical students across the country. At WCM, we aim to create an optimal learning and living environment for our students, but we also want to be leaders in those efforts among our peers. Our conference attendance of more than 350 medical school educators, mental health professionals, students, and researchers—mostly from other institutions—underscores our emerging prominence in this critical area. As a community, it is vital that we develop interventions that make students feel included and cared for, so they can master skills that promote their overall wellbeing—which, in turn, will help them become the very best doctors and healthcare leaders they can be for our patients and profession.

I am proud that WCM is leading the charge in understanding that when it comes to the success of our students, academic support is only one piece of the puzzle. It is vital that we promote their overall wellbeing, and financial, emotional, and spiritual wellness are all part of that. When students worry about finances or are drained or overwhelmed by the demands of their studies, it takes focus away from their training and patient engagement. That's another reason why our financial aid program and wellness initiatives—including the new Feil Family Student Center, described on page 6—are so crucial: they're key to our mission to enable aspiring doctors to reach their full potential. When that happens, it not only benefits our students. Quite simply, it's good medicine. ■

We know that the only way to continue our commitment to excellence—and to meet the healthcare challenges of today and tomorrow—is to be daring, innovative, and always focused on the future.

\$160 Million in Donor Support Eliminates Medical Student Debt

A transformative new scholarship program established by Weill Cornell Medicine will eliminate medical education debt for all students who qualify for financial aid.



A lead gift from The Starr Foundation, directed by Weill Cornell Medicine Overseer Maurice R. Greenberg, in partnership with gifts from Joan and Board of Overseers Chairman Emeritus Sanford I. Weill and the Weill Family Foundation, have made this longstanding goal possible.

“It is a great privilege to make such an important and impactful contribution to the futures of our medical students,” says Mr. Greenberg, chairman of The Starr Foundation and the architect of this ambitious new scholarship program. “Scholarships are crucial to the success of our trainees, freeing them from the weight of excess debt that has traditionally accompanied medical education.”

Through these landmark gifts, including those from other generous donors that together total \$160 million, the institution will ensure that the best and brightest aspiring doctors have the financial support and freedom to seek careers in medicine.

“It is with extraordinary pride that we are able to increase our support of medical education for our students, ensuring that we can welcome the voices and talents of those who are





From left: Third-year medical student Sarita Ballakur, Overseer Chairman Emeritus Sanford I. Weill, Dean Augustine M.K. Choi and Florence A. Davis, president of The Starr Foundation

STUDIO BROOKE

passionate about improving human health,” says Dr. Augustine M.K. Choi, the Stephen and Suzanne Weiss Dean of Weill Cornell Medicine and provost for medical affairs at Cornell University.

The announcement of the debt-free initiative was made at an event held on September 16. By replacing student loans with scholarships, the program ensures that all students, including those from economically diverse backgrounds, can pursue their medical education without financial burden.

“Joan and I and the Weill Family Foundation have been honored to support Weill Cornell Medicine’s mission over the last 30 years, making an impact where the need is greatest,” says Mr. Weill. “Providing debt-free medical education isn’t just what’s right for our students, it is critical to creating the finest doctors for all generations to come and helping level the playing field between underserved and wealthy communities. We really believe that this is the best thing we have ever done.”



To support Weill Cornell Medicine, please contact:
Lucille Ferraro, Assistant Vice Provost for Development,
at (646) 962-9491 or luf2003@med.cornell.edu.

New Feil Family Student Center Dedicated



COLLABORATIVE

SPACE: The new student center (below) was inaugurated with a ribbon-cutting featuring (from left) Yoon Kang, MD, acting senior associate dean of education and the Richard P. Cohen, MD, Associate Professor of Medical Education; Dean Augustine M.K. Choi, MD; Jessica Bibliowicz, chair of the Board of Overseers; Jeffrey Feil, vice chair of the board; and board Chairman Emeritus Sanford I. Weill.

In early October, the campus celebrated the opening of the 16,200-square-foot Feil Family Student Center, an interdisciplinary hub that features small group study rooms, a student activity room, a computer lab, lounges, and state-of-the-art instructional spaces. The new center—which occupies renovated space on the first and second floors of the main campus buildings on York Avenue—was made possible by a \$12.5 million gift from the Feil Family. “Students are the heart of this institution,” said **Jeffrey Feil**, vice chair of Weill Cornell Medicine’s Board of Overseers. “You see their enthusiasm. You see their yearning to learn. They are so inspiring.”

The ribbon-cutting ceremony was the last of three events held last fall that were dedicated to enhancing student wellness;

the other two were the announcement of WCM’s new scholarship program (see cover story on page 20) and the institution’s hosting of the inaugural National Conference on Medical Student Mental Health and Well-Being (see story on page 10). “Today’s event cements our approach to enhance the lives of our students by providing them 75 percent more space,” said Dean **Augustine M.K. Choi, MD**. “Space to study, to lounge, to have a cup of coffee and have get-togethers with friends. I can’t thank Jeffrey Feil and the Feil family enough for making this happen.”



TIP OF THE CAP...

Lewis Cantley, PhD, the Meyer Director of the Sandra and Edward Meyer Cancer Center at WCM and NewYork-Presbyterian/Weill Cornell, winner of the Horwitz Prize, awarded for work on a critical cancer pathway. In the mid-Eighties, his lab discovered the PI3K signaling pathway, showing that PI3K triggers cells to take up glucose in response to insulin and other growth factors and tracing the molecular signals that interact with PI3K to control cell growth.

Kathryn Dupnik, MD, assistant professor of medicine and of microbiology and immunology, winner of a three-year, \$495,000 Clinical Scientist Development Award from the Doris

Duke Charitable Foundation for her research on how integration of HIV DNA into the host cell’s genome impacts, and is impacted by, tuberculosis infection.

Silvia Formenti, MD, chair of radiation oncology and the Sandra and Edward Meyer Professor of Cancer Research at WCM and radiation oncologist-in-chief at NewYork-Presbyterian/Weill Cornell, awarded the ASTRO Gold Medal by the American Society for Radiation Oncology, the clinical specialty’s highest U.S. honor. She also received the Roentgen Prize for Oncology from Italy’s Accademia Nazionale dei Lincei, the oldest scientific society in Europe.

Kyu Rhee, MD, PhD, associate professor of

medicine in the Division of Infectious Diseases, winner of a Physician-Scientist Institutional Award from the Burroughs Wellcome Fund. The \$2.5 million, five-year grant will help WCM support medical trainees and physicians without doctorates who wish to establish careers as independent lab-based investigators.

Rahul Sharma, MD, chairman of emergency medicine at WCM and emergency physician-in-chief at NewYork-Presbyterian/Weill Cornell, named a Top-25 Innovator by *Modern Healthcare*. He was also selected as one of the Emergency Medicine Residents’ Association’s “45 Under 45 Influencers,” given to people shaping the future of emergency medicine.

Alonso Named Chief of Endocrinology



Laura Alonso, MD

Physician-scientist **Laura Alonso, MD**, has been named chief of the Division of Endocrinology, Diabetes, and Metabolism at WCM and NewYork-Presbyterian/Weill Cornell. Alonso, who comes to WCM from University of Massachusetts Medical School, will also lead the Joan and Sanford I. Weill Center for Metabolic Health. In addition to her clinical work, Alonso conducts research on developing a cutting-edge approach to treating diabetes by replenishing the body's population of insulin-producing beta cells. "She is a distinguished physician-scientist whose work in understanding pancreatic beta cell function and regeneration has the potential to transform the paradigm for diabetes care for patients around the world," says **Anthony Hollenberg, MD**, the Sanford I. Weill Chair of the Weill Department of Medicine at WCM and physician-in-chief at NewYork-Presbyterian/Weill Cornell. Alonso succeeds **Julianne Imperato-McGinley, MD**, who led the division for twenty-five years.

Researchers Win Prestigious NIH Grants

Four WCM faculty recently received major grants from the National Institutes of Health to support their research. They are:

Peter Goldstein, MD, professor of anesthesiology, who received a two-year, \$1.75 million grant through the NIH's Helping to End Addiction Long-term Initiative for his work to develop a non-opioid, non-addicting medicine for neuropathic pain, which is notoriously hard to treat.

Chun-Jun "C.J." Guo, PhD, assistant professor of immunology in medicine in the Division of Gastroenterology and Hepatology and a scientist at the Jill Roberts Institute for Research in Inflammatory Bowel Disease, winner of a \$1.5 million NIH Director's New Innovator Award to support study of how bacteria in the gut contribute to human health and disease.

Samie Jaffrey, MD, PhD, the Greenberg-Starr Professor of Pharmacology, awarded a Maximizing Investigators' Research Award from the NIH's National Institute of Neurological Disorders and Stroke. It will provide more than \$8 million over eight years to fund research on how RNA is regulated in neurons, focusing on the role it plays in disorders like Fragile X syndrome.

Simon Scheuring, PhD, professor of physiology and biophysics in anesthesiology, who won an NIH Director's Pioneer Award to study long-standing mysteries about the structural workings of important proteins. It will provide his lab with about \$1.2 million per year for five years as he develops techniques for recording the structural dynamics of ion channel proteins that are activated by physical stimuli.

White Coat Ceremony Welcomes Class of 2023



MD TRADITION: Medical studies begin.

The 106 members of the Class of 2023 donned their short coats in the annual White Coat Ceremony in August. At the event marking the beginning of their medical education, students also received stethoscopes, supported by the Moss Family Foundation and the Paul F. Miskovitz, MD '75, Stethoscope Fund for Medical Students. Women comprise more than half the class; nearly a quarter of members are from groups underrepresented in medicine; nine class members are Cornell alumni and another nine hold master's degrees; and students hail from sixteen countries. For more photos, see Notebook starting on page 39.

FROM THE BENCH

Mutant Protein Leads to Dementia



LI GAN, PHD

A mechanism that regulates activity in the brain may help explain the origins of frontotemporal dementia (FTD). Investigators previously knew that one type of FTD is caused by a mutant form of the tau protein in the brain's neurons—but exactly how it leads to dementia has been a mystery. In work published in *Neuron*, senior author **Li Gan, PhD**, director of the Helen and Robert Appel Alzheimer's Disease Research Institute in the Feil Family Brain and Mind Research Institute, and colleagues shed light on that process, describing how tau alters activity in a region of the neuron called the axon initial segment. "Essentially what we discovered is that tau works as a thermostat to modulate neuronal activity," explains Gan, also the Burton P. and Judith B. Resnick Distinguished Professor in Neurodegenerative Diseases. "When tau is mutated, neuronal activity in the brain cannot be adjusted based on input, and the system will become overactive and cause the hyperexcitability we see in frontotemporal dementia." The work points toward tau as a potential target for therapies that enhance cognitive function in people with FTD as well as Alzheimer's, which is also linked to the protein.

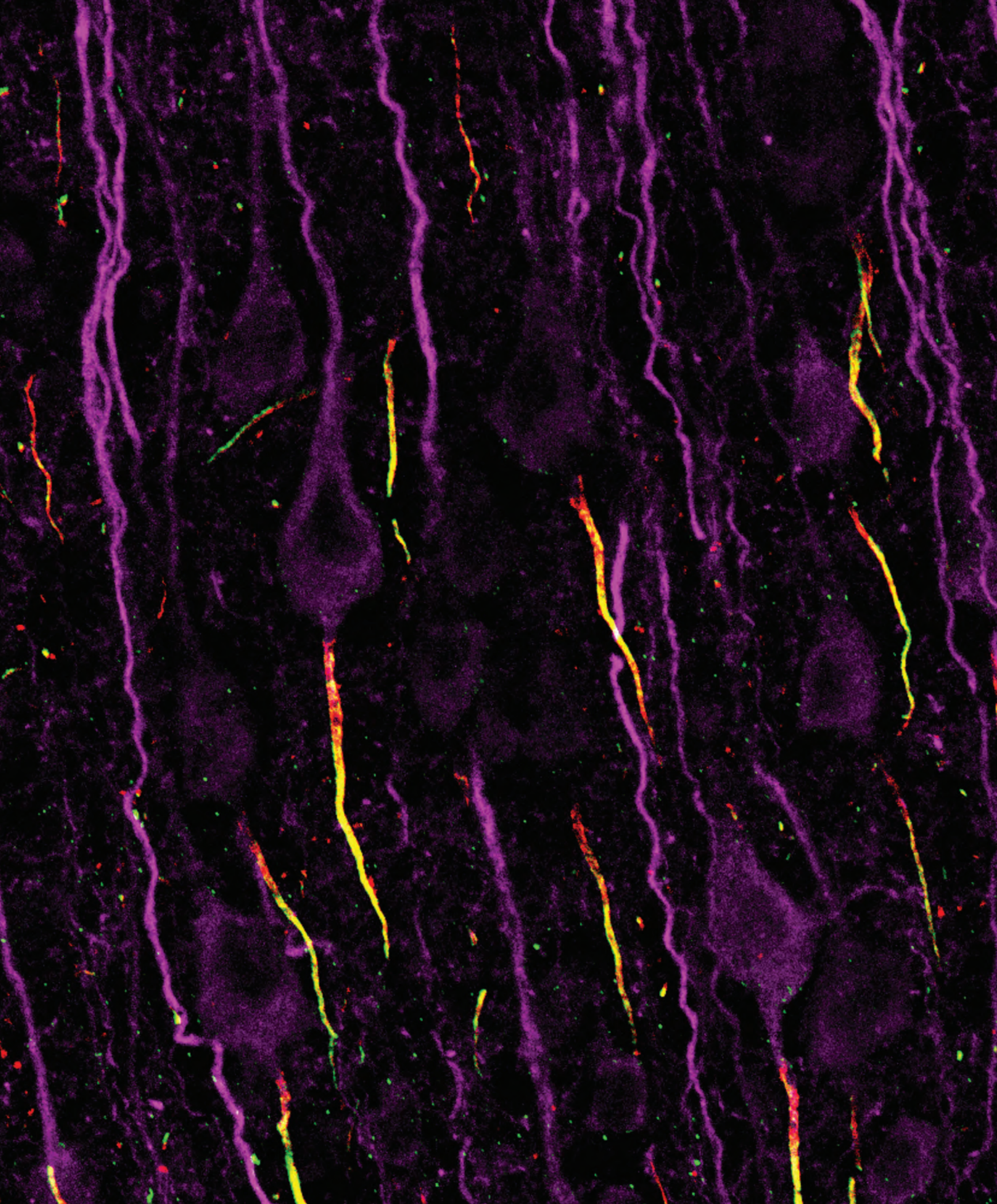
Criteria for Bleeding in Children

WCM and NewYork-Presbyterian researchers have developed definitions for the severity of bleeding in critically ill children. When adopted, it would allow specialists around the world to describe bleeding using standardized terminology—facilitating the study of potential treatments. To develop the criteria, the researchers first asked more than 200 pediatric intensive care specialists to describe the factors they consider most important in assessing bleeding in their patients. The team then established a panel of experts who developed definitions for distinct levels or types of bleeding: severe, moderate, minimal, progressive, and fatal. The researchers described the criteria—along with its rationale and an initial clinical validation involving forty patients at NewYork-Presbyterian/Weill Cornell—in *Critical Care Medicine*. **Marianne Nellis, MD, MS '14**, the John D. & Lili R. Bussel, MD, Assistant Professor in Pediatric Hematology at WCM and a pediatric intensivist at NewYork-Presbyterian/Weill Cornell, was lead author.

Purple Rain

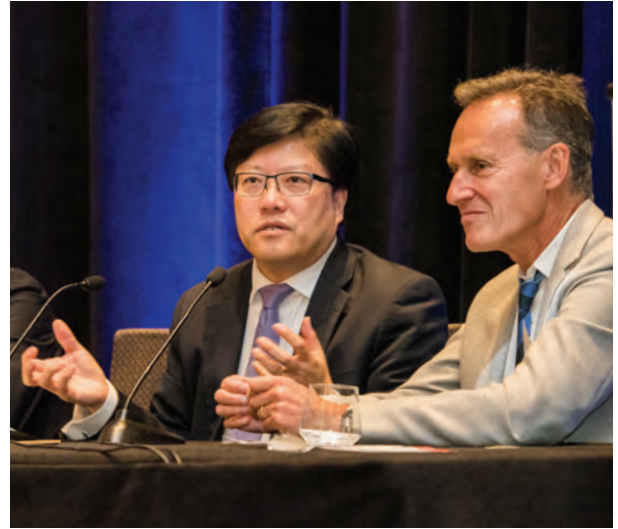
Yared Bayleyen, a third-year doctoral student in neuroscience, is studying mutations in brain cells that are linked to autism. His work—for which he won a National Science Foundation fellowship—includes exploring a gene called SCN2A, one of those most closely associated with autism spectrum disorders. This scientific image he produced shows fluorescently labeled proteins in the brain of a mouse genetically engineered to have an SCN2A mutation that predisposes the animals to have autism-like behaviors.

“Since SCN2A is highly expressed in the developing brain and it encodes for a protein important for electrical activity, we hypothesize that altered electrical communication between brain cells is one of the main causes for the abnormal behaviors seen in our mouse model,” explains Bayleyen, who works in the lab of Geoffrey Pitt, MD, PhD, director of the Cardiovascular Research Institute and the Ida and Theo Rossi Distinguished Professor of Medicine. In the image, dendrites—parts of neurons that bring electrical impulses to the cell body—are seen as magenta lines. Axons (which transmit impulses from the cell body) are depicted in red, while ion channels (which are crucial for initiating electrical activity within neurons) are green; together, the two colors appear yellowish orange.



Safe Space

Weill Cornell Medicine hosts a groundbreaking national conference on medical student mental health



VITAL TOPIC (clockwise from top right): Dean Augustine M.K. Choi, MD (left), and Richard A. Friedman, MD, director of Student Mental Health Services at WCM, participate in a panel discussion at the conference; speakers address the subject of suicidality; retired psychiatrist Mildred Rust, MD '56, comments from the audience; and attendees chat during a break.

Mildred Rust, MD '56, doesn't often attend Weill Cornell Medicine events. The ninety-one-year-old retired psychiatrist, who was one of only four women in her graduating class, currently lives far from Manhattan in a retirement community in Silver Spring, Maryland. Living with Parkinson's disease, it's not always easy for her to travel—but she felt compelled to make the journey to attend the first-of-its-kind National Conference on Medical Student Mental Health and Well-Being. "The topic is really important to me, because I have a history of depression," Rust explains. "I was depressed in medical school. I had good treatment,

but to know what is being done about it now, with the programs and so forth, is very important. Weill Cornell's openness and respect, as shown to me by my classmates and faculty when I was a student, foresaw its attitudes in its current programs and in initiating this conference. That was another reason why I had to come."

Rust was one of more than 350 medical school educators, mental health professionals, students, and researchers who attended the two-day symposium in September, hosted by Weill Cornell Medicine in partnership with the Association of American Medical Colleges, Associated Medical Schools of New York, and the

American Foundation for Suicide Prevention. Designed to address the increasing rates of psychological distress among medical students nationwide, the event spotlighted the findings of leading mental health researchers, clinicians, and educators while giving a needed platform for students and stakeholders to destigmatize the conversation around mental health. The symposium served as a safe space for frank discussions about what the medical school climate has been like in the past, where it is now, and what needs to change for the future.

In 2014, researchers from the Mayo Clinic and Stanford University published a paper in *Academic Medicine*, the journal of the Association of American Medical Colleges, that found more than half of medical students in the U.S. experienced symptoms of depression. In the same report, students were found to be up to five times more likely to live with clinical depression than college-educated peers in other fields. In an opinion piece published on the medical news site STAT a month ahead of the conference, Augustine M.K. Choi, MD, the Stephen and Suzanne Weiss Dean of Weill Cornell Medicine, cited that paper and wrote that “for many generations of students, medical school has traditionally promoted a culture of self-sacrifice over self-care,” adding that the “pressure to perform academically is relentless.” Choi’s piece sounded the alarm for institutional change, stressing the fact that students training to safeguard the health and well-being of others must also care for themselves.

During the conference’s opening session, Choi stood before the audience in the hotel ballroom of the Grand Hyatt New York with a similar call to action. “Arguably, medicine is the most noble profession,” he said, “and we have to intervene so we’re not placing so much stress on our students and preventing them from becoming the best doctors they can be.” His remarks launched two days of presentations from a range of researchers and mental health advocates. They highlighted such topics as reassessing how medical schools handle the stresses of exams and the challenges faced by student populations often underrepresented in medicine. While most of the attendees were clinicians, researchers, and administrators from other medical schools, about twenty WCM students—including those pursuing MDs, PhDs, and physician assistant degrees—were in the audience.

MD-PhD candidate Andrew Griswold, who serves as the student representative to WCM’s Board of Overseers, called the conference “incredibly useful,” adding that one of the highlights for him and his fellow students was connecting with people from other schools around the country. “It was a great opportunity to hear about what struggles other institutions face and what best practices have emerged,” he says. “My main takeaway from the two days of presentations is that there is a community of faculty, staff, and—most importantly—students who care deeply about improving student

mental well-being and will be a resource for tackling this national crisis.” He says he was encouraged to see WCM not only address the issue head-on, but use the symposium as a way to elevate the topic on the national stage. “It’s quite powerful that over 350 people attended the first conference,” he says, “and that attendees expressed interest in making this a regular event.”

Lisa Meeks, PhD, an assistant professor of family medicine at the University of Michigan Medical School who spoke at the conference, says she “was touched by the self-disclosure of many of the presenters and audience members.” Her own lecture on students with psychological disabilities such as depression, anxiety, or bipolar disorder looked critically at medical schools’ standard responses

‘Arguably, medicine is the most noble profession,’ Dean Choi told the attendees, ‘and we have to intervene so we’re not placing so much stress on our students and preventing them from becoming the best doctors they can be.’

to student mental health concerns. Oftentimes, this means that schools utilize leave of absence policies that are one-size-fits-all in their scope, failing to take into account the vast spectrum of experience that comes with different psychological disabilities. Of the conference itself—which also included yoga breaks and networking sessions—Meeks says bringing so many different people together to tackle how the medical school culture can change is a “major shift.”

On the second day, the entire ballroom was especially moved by the conversations around suicide. In her talk, Christine Moutier, MD, chief medical officer for the American Foundation for Suicide Prevention, stressed that suicide is one of the most undertreated and mismanaged health conditions and that officials in academic medicine have to “become the helpers who are walking the walk of what science is telling us.” Later in the session, Timothy Marchell, PhD, director of the Skorton Center for Health Initiatives at Cornell Health (the health center on the Ithaca campus), reflected on the life’s work of his friend and colleague Greg Eells, PhD, the center’s former head of counseling and psychological services; Eells, who had moved to a similar job at another university, had taken his own life the previous week. It underscored one of the larger themes Choi touched on in his own remarks: sometimes caregivers need care themselves.

It’s a dynamic Rust knows all too well. Despite having specialized in psychiatry, it has only been in recent years—encouraged by an article from the National Alliance on Mental Illness on the healing power of storytelling—that she has been publicly open about her own history of mental health struggles as a medical student. “Very few people where I lived knew about it, but it turned out to be very good for me,” Rust says. “It felt good to be open.” ■

— Brian Mastroianni

Real-World Problems

Winner of a prestigious fellowship for postdocs, Adrian Jinich, PhD, aims to spur health in developing countries—and inspire the next generation of STEM students



PHOTO: JOHN ABBOTT

Adrian Jinich, PhD

Adrian Jinich, PhD, came to Weill Cornell Medicine in 2018 as a new postdoc—with the goal, he says, of doing cutting-edge research “while making the world a better, healthier, and more just place.” He was already on that path: he’d previously co-founded a series of free STEM workshops for high school and college students in his home country of Mexico and elsewhere, as a way to improve access to high-quality science education for the underserved. At WCM, Jinich has continued his interest in combating social inequity by working under Kyu Rhee, MD, PhD, an associate professor of medicine and of microbiology and immunology in the Division of Infectious Diseases whose lab is focused on battling tuberculosis, a deadly infectious disease that disproportionately affects impoverished nations. “It resonated with me because it’s mainly a burden in developing countries,” says Jinich. “I really want to do science that contributes to solving real-world problems.”

In early September, Jinich was honored with a prestigious award aimed at helping him achieve that dream. He was named one of this year’s Hanna H. Gray Fellows, a nationwide program established in 2017 by the Howard Hughes Medical Institute (HHMI) to identify and retain young researchers with the potential to make significant contributions in the biomedical and life sciences; intended to increase diversity in those disciplines, it strives to recruit women, minorities, and other underrepresented groups. Each fellow receives up to \$1.4 million over eight years through a two-phase arrangement that provides funding from early postdoc training through the beginning of a tenure-track faculty position, as well as offering mentoring and networking opportunities within the HHMI community. The idea is to provide support for these scientists through what can be a tricky career transition, so they forge ahead to become academic leaders and inspire future generations. “It’s exciting to be a postdoc, but it’s also a relatively tough stage—there’s this bottleneck of uncertainty wondering what’s going to happen next,” says Jinich. “This opens up so many doors.” Another benefit of the Gray fellowship: throughout the duration of the award, recipients are allowed to explore different avenues of research. Says Jinich: “It gives you the flexibility to follow your curiosity.”

Jinich’s background is unusual among biomedical researchers. After attending a private school in Mexico City, he earned a BS in physics and astronomy from Northwestern in 2006. In three separate stints during and after undergrad, he conducted research at Israel’s Weizmann Institute of Science, then returned to his home country for a master’s in applied math from the Center for Mathematical Research in Guanajuato, followed by two years working as a technician in a yeast genetics lab at Mexico’s National Laboratory for Genomics and Biodiversity. In 2011, he enrolled at Harvard to pursue a PhD in systems biology. For his dissertation, he studied metabolism—the biochemical reactions occurring in cells that are central to sustaining life—using advanced computational techniques to better elucidate the thermodynamics of the process, which are still

not fully understood. “For six years I didn’t touch a pipette,” he recalls. “I was just at the computer, programming all the time.” Now he’s doing more hands-on work under Rhee, who notes that Jinich’s multidisciplinary experience brings a fresh perspective to the lab. “He has the ability to master complex scientific concepts, while at the same time he’s able to see the big-picture relevance for clinical application,” Rhee says. “It’s really quite striking.”

For his fellowship application, Jinich outlined a project to develop computational and experimental tools designed to discover the functions of “orphan enzymes”—those that have no known associated gene in any organism—that make up the genome of the bacteria that causes tuberculosis. With that information, Jinich believes, scientists might be able to identify vulnerabilities that could lead to new treatments. Improved therapies are vital, since doctors are seeing a rise in drug-resistant strains and only a few new classes of antibiotics for tuberculosis have been approved in the last twenty years. “The more you know about your enemy,” he says, “the better position you’re in to kill it.”

**‘He has the ability to master complex scientific concepts,’
Kyu Rhee, MD, PhD, says of Jinich, ‘while at the same time he’s
able to see the big-picture relevance for clinical application.’**

Jinich notes that his upbringing factored into launching the STEM education nonprofit he co-founded, *Clubes de Ciencia Mexico* (Science Clubs of Mexico). Though he was fortunate to attend a school with a strong science curriculum as a child, he realized that wasn’t true for many in Mexico’s public school system. During his time at the Weizmann Institute, he’d noticed the positive effect that STEM enrichment and training programs had on Israel’s young people. That greatly influenced his decision to continue his studies back in Mexico, where he and a few colleagues started offering science workshops to local high school students in the hopes of deepening the teens’ interest in the field. “It was a very shoestring operation,” Jinich recalls. “We had zero budget. We even bought the equipment ourselves.”

In 2014, Jinich mined the academic community at Harvard to expand the project. With friends and colleagues, he recruited volunteers to teach one-week summer workshops in communities around Mexico; Jinich himself led a plant biology class in which students built a rooftop garden. He also secured funding from organizations like the David Rockefeller Center for Latin American Studies. Within two years, *Clubes de Ciencia* had grown far beyond its country of origin; now under an umbrella group called *Science Clubs International*, it has chapters in twenty-one cities in seven nations, including Colombia, Bolivia, and Brazil, and has taught more than 8,000 students. A number of alumni—now PhD candidates—are currently working as instructors. Says Jinich: “We have a second generation paying it forward.” ■

— Heather Salerno

Sand Storm

Does a toxin found in the Arabian Desert raise the risk of neurodegenerative diseases like ALS?

Ten years after the first Gulf War ended, a disturbing medical pattern began to emerge. Military personnel who'd been deployed to the Middle East were being diagnosed with amyotrophic lateral sclerosis (ALS)—commonly known as Lou Gehrig's disease—at about three times the rate of those from a similar demographic who hadn't been deployed. A devastating disease for which there is no cure, ALS causes nerve cells to break down, reducing muscle function until patients eventually lose the ability to move, speak, swallow, and even breathe.

In recent years, an international group of researchers has developed an intriguing theory for what's behind the spike in ALS cases among soldiers: a neurotoxin they may have encountered on deployment. "The hypothesis is that military vehicles driving in the desert were disturbing biocrusts where the neurotoxin accumulates, releasing it into the air," explains ecologist Aspasia Chatziefthimiou, PhD, "and personnel walking behind the vehicles were inhaling it." A visiting research scientist at Weill Cornell Medicine–Qatar, Chatziefthimiou is studying the neurotoxin, called beta-Methylamino-L-alanine (BMAA), and why it is produced. From her home base in Doha, she travels around the country collecting samples of the microorganisms that produce BMAA and bringing them back to her lab, with the aim of learning how the organisms interact with their environment.

Chatziefthimiou's work is one facet of investigations by a global consortium of scientists that has been researching the neurotoxin and its possible link to neurodegenerative diseases—such as ALS, Alzheimer's, and Parkinson's—since the early Aughts. Led by ethnobotanist Paul Alan Cox, PhD, of the Brain Chemistry Labs (a nonprofit research institute in Jackson Hole, Wyoming), the team of neurologists, molecular biologists, marine biologists, ecologists, and others have been making headlines for a series of potentially groundbreaking discoveries, even landing on the cover of *Fortune* in January 2019. Brain Chemistry Labs scientists have shown that vervet monkeys fed on a BMAA-rich diet developed hallmarks of neurodegenerative diseases. Researchers in Sweden found that rodents given large doses of BMAA developed neurological patterns similar to those of humans with Alzheimer's. A team at Dartmouth found that there were an unusually high number of ALS cases near bodies of water polluted with BMAA. After studying a population in Japan that has very few instances of neurodegenerative disease, Brain Chemistry Labs researchers found evidence that the amino acid L-serine—naturally found in many staples of the Japanese diet, such as sweet potatoes—may act as a sort of BMAA blocker, combatting and

even reversing some of the toxin's effects.

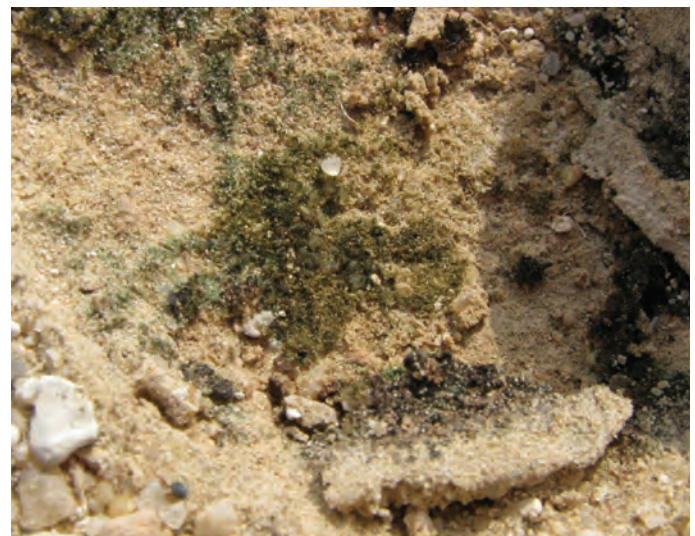
Still, this public attention has been accompanied by some skepticism in the scientific community. A 2017 report from the EPA (the federal agency charged with protecting public health from environmental toxins), which heavily cited the consortium's findings, concluded that "the hypothesis of a causal BMAA neurodegenerative disease relationship is not supported by existing data." But Chatziefthimiou and her colleagues—while acknowledging that not everyone exposed to BMAA is vulnerable to these diseases—remain confident that a link exists. As a direct result of the consortium's work, two FDA-approved, phase 2 clinical trials on L-serine's potential for slowing disease progress—one in ALS, the other in Alzheimer's—are currently under way at Dartmouth.

The microorganisms that produce BMAA, called cyanobacteria (commonly known as blue-green algae), are typically associated with aquatic environments such as lakes and ponds. But in 2012, consortium researchers discovered that cyanobacterial crusts may actually occupy more than 87 percent of the surface area in certain parts of Qatar. In the Arabian Desert—the vast region spanning from the Red Sea to the Persian Gulf—the conditions are so extreme that few other competing life forms can survive, paving the way for cyanobacteria to proliferate. "We think of the desert as

Chatziefthimiou's work is one facet of investigations by a global consortium of scientists that has been researching the neurotoxin and its possible link to neurodegenerative diseases—such as ALS, Alzheimer's, and Parkinson's—since the early Aughts.

dry, brown, and dusty," Cox observed in *Toxic Puzzle*, an award-winning 2017 documentary on the consortium's work, narrated by Harrison Ford. "Actually, this desert is one gigantic, green cyanobacteria mat, given the right conditions." (When asked whether the local population demonstrates elevated levels of neurodegenerative disease, Chatziefthimiou says that although the percentage of affected individuals has not yet been determined, one hypothesis holds that natives to the region may have evolved a natural resistance to BMAA that isn't yet understood.)

Thanks to grants from the Qatar Foundation and the Qatar National Research Fund, Chatziefthimiou and her WCM–Q team joined the consortium with four goals: to find where cyanobacterial crusts exist in the desert; to understand how they grow and produce



HOT TOPIC: Aspasia Chatziefthimiou, PhD (left), conducts fieldwork in the desert where she collects samples of cyanobacteria (top and bottom right).

toxins during different seasons of the year; to learn how physical disturbances, such as being moved or crushed, affect the organisms; and to discover how these toxins are transmitted to humans. Their findings have already been published in a number of scientific journals. “Dr. Chatziefthimiou is an extraordinarily gifted microbial ecologist,” Cox says. “Her insights have been key in unraveling the importance of—and occasional peril posed by—cyanobacteria in deserts across the world.”

Though Chatziefthimiou’s work is ongoing, she has concluded that these organisms behave very differently depending on climate; for example, temperature, humidity, and light intensity all affect how and when the cyanobacteria release BMAA. “We are trying to understand the reason they produce this toxin,” she says. “The microbes have no concept of humanity; they are producing BMAA because it does something in their world. They use this neurotoxin for communication, possibly regarding changes in their environment—like a text message or a distress call—and that’s what

we’re trying to figure out.” To protect against the neurotoxin’s potentially harmful effects, she and her team take precautions including wearing masks when crushing and collecting cyanobacterial crusts in the field, using a chemical flow hood in the lab, and taking daily doses of L-serine.

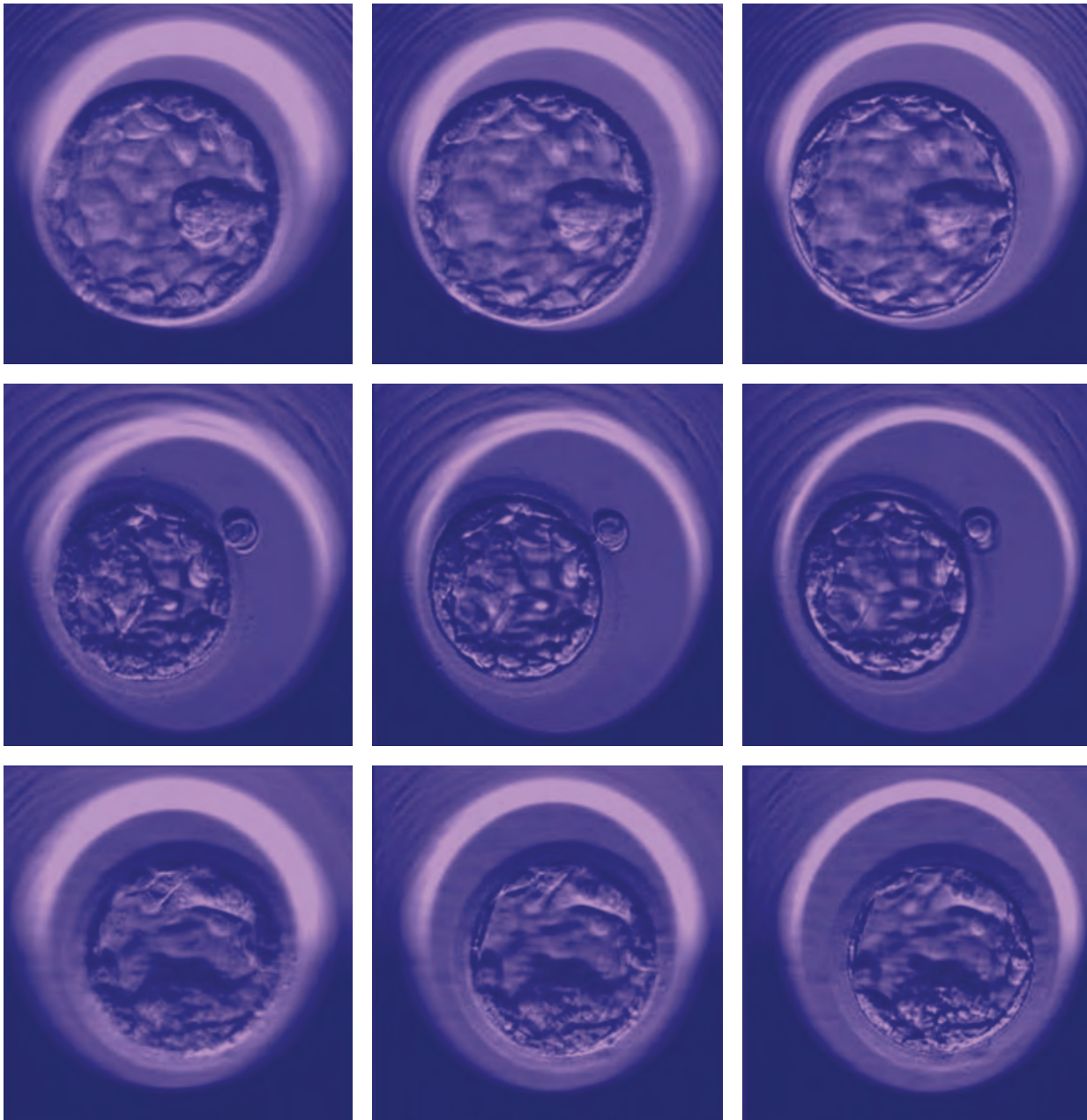
To gather her samples in the desert, Chatziefthimiou has to cope with a few unique challenges. First there’s the extreme heat, which can top 120 degrees Fahrenheit with 80 percent humidity. As she notes, many scientists who do fieldwork in Qatar avoid the summer, a luxury she can’t afford since her research involves studying the organisms in every season. (Retreating to air-conditioned cars for breaks helps, she says.) And then there’s driving over sand dunes to reach her desert field sites. “I’ve gotten stuck a few times,” she says with a laugh. “Luckily, I could always just put it in reverse and roll back down the dune and try again—and a rescue car is always a phone call away.” ■

— *Alexandra Bond*

PHOTOS: PROVIDED

A Keen Eye

In an IVF breakthrough, artificial intelligence helps identify the embryos most likely to lead to successful pregnancies



MAKING THE GRADE: These microscopic images show three examples of early stage human embryos of varying quality, as designated by the embryologists' grading system and additional statistical analysis: good (top row), fair (middle), and poor (bottom). The three images within each row depict the same embryo photographed at different depths of focus.

Since its development in the Seventies, in vitro fertilization has been a boon for the estimated 8 percent of couples who struggle with fertility, helping millions become parents. But each round of IVF is both expensive and emotionally fraught, and the procedure's ultimate success remains far from assured. That's partly due to the complex array of factors involved, including the prospective parents' ages, their health, and whether the woman has given birth before. Most of all, though, what matters is the quality of the embryos selected for implantation—but determining which are most likely to result in a healthy pregnancy has long been as much art as science. “Embryologists have different experience and systems of categorizing embryos,” says Zev Rosenwaks, MD, director and physician-in-chief of the Ronald O. Perelman and Claudia Cohen Center for Reproductive Medicine at Weill Cornell Medicine, where he is also the Revlon Distinguished Professor of Reproductive Medicine in Obstetrics and Gynecology. “There is an element of subjectivity that is almost unavoidable.”

Collaborative research by the Perelman-Cohen Center for Reproductive Medicine and WCM's Caryl and Israel Englander Institute for Precision Medicine, however, has found that artificial intelligence (AI) can evaluate embryo morphology more accurately than the human eye. It's an advance that has the potential to help reduce the number of embryos that are transferred, lower the risk of multiple pregnancies (which come with myriad risks to mother and fetuses), and lessen the time it takes for patients to become pregnant. “It's one of the most important challenges in IVF: how can we select the single best embryo so we can maximize success rates and lower obstetrical risks?” says Rosenwaks, a co-senior author of a study on the artificial intelligence technique that was published in *NPJ Digital Medicine* in April. “AI will allow us to do this in a way that is more objective and reliable.”

Currently, most fertility clinics select embryos with essentially the same method they've been using for more than forty years. As Nikica Zaninovic, PhD, director of the embryology lab at the Perelman-Cohen Center for Reproductive Medicine and another co-senior author on the paper, explains, at many IVF clinics worldwide it simply involves taking a petri dish out of its incubator and looking at the days-old embryos under a microscope to assess cell multiplication and form. At WCM—home to the largest academic IVF center in the U.S.—the process is state of the art: incubation takes place beneath cameras that create a time-lapse record of development, allowing embryologists to take more factors into consideration. But embryo selection remains dependent on the embryologists' experience and judgment—and, it seemed to Zaninovic, it was ripe for an update. “Artificial intelligence was a normal, logical next step,” says Zaninovic, an associate professor of embryology in clinical obstetrics and gynecology and in clinical reproductive medicine. “My idea was to automate the process and make it more objective. Could we optimize the system of embryo evaluation by training a computer to recognize a good-looking embryo?”

Zaninovic then teamed up with Englander Institute computational biologists Olivier Elemento, PhD, and Iman Hajirasouliha, PhD. They began with a deep neural network—a class of AI algorithms modeled

after the neurons in a biological brain—that had been trained to process images, mimicking the way humans find and recognize shapes, lines, and textures. To further educate the AI—a process called “deep learning”—the researchers showed it 12,000 photos of human embryos taken 110 hours after fertilization (known as the blastocyst stage, this is the point at which embryos have about 200 to 300 cells). The program was also told that each embryo was “good” or “poor,” based on embryologists' opinions and known pregnancy outcome. After reviewing the images, the AI—now dubbed “Stork”—was given new embryos to rate. While the researchers aren't sure what criteria the AI used to judge the images, it graded them with an astounding 97 percent accuracy based on the majority opinion of a panel of embryologists, suggesting to the researchers that the AI had a better chance of getting it right than any individual human doctor. “We're working to find out what the AI is looking for—but whatever it is, it correlates with a quality embryo and could be validated,” says Hajirasouliha, an assistant professor of physiology and biophysics and another co-senior author on the paper. “We also hope to develop an AI model that, instead of looking at a few time-lapse images, will look at hundreds of frames that show an embryo's development over time.”

‘Embryologists have different experience and systems of categorizing embryos,’ says Zev Rosenwaks, MD. ‘There is an element of subjectivity that is almost unavoidable.’

As Hajirasouliha notes, the work is part of a larger revolution in the use of artificial intelligence for medical imaging. Physicians and scientists at the Englander Institute are also studying how AI can be used to analyze MRIs to detect prostate cancer, to find polyps via laryngoscopic videos, and to identify sub-types of cancer based on microscopy images of tissue sections, among other projects. “Today we have computers that are more powerful than any we've ever had,” says Elemento, director of the Englander Institute and a professor of physiology and biophysics and of computational genomics in computational biomedicine. “Assuming that you have enough data, you can train these neural networks to be as good as—if not better than—humans at performing these sorts of tasks.”

Meanwhile, the Stork project—led by Pegah Khosravi, PhD, a postdoctoral researcher in Hajirasouliha's lab—has the potential to revolutionize fertility treatment for the many couples whose hopes for a child depend on IVF. Rosenwaks is investigating how computers are using AI to help evaluate other factors that could affect a patient's chances of successful pregnancy, such as the number of eggs in a woman's ovaries and the condition of her endometrial lining. “Artificial intelligence,” he says, “will allow us to treat patients in a much more objective, precise, and personalized way.” ■

— Amy Crawford

Elemento is the co-founder and equity stakeholder of OneThree Biotech, an artificial intelligence-driven drug discovery and development company.

Anatomy Lesson

A medical student contemplates her life-long struggle with her weight—and how it may make her a more sensitive clinician



Alice Zhao '22

PHOTO: JOHN ABBOTT

When I sit in the doctor's office, I wonder what she thinks of me. When she walks in, there's the initial glance: young female, pleasant appearance. Then there's the quick logging into the chart, the swift downward scroll through my vitals. Pulse, 75. Oxygen saturation, 99 percent. Height, five foot six; weight, 175 pounds. Here, she might pause—just briefly.

We exchange the usual pleasantries. How are you; I'm fine, thank you; what brings you in today; I'm just here for my annual check-up. She listens to my heart and lungs. I lay down as she palpates my stomach, which is warm and a bit too fleshy. I imagine looking at her face—her serious face that betrays no opinion—when she tells me that my weight is not where they want it to be.

I will apologize, just a little, for being too busy to properly take care of myself. She will stress—in that calm, advising tone—that diet and exercise are important and being overweight can predispose you to high blood pressure, high cholesterol, and diabetes. (I know this; I've known this for a while.) She will give a gentle, reassuring smile and say she wants to draw blood just to check. Our interaction will end with a few more genial phrases, maybe a comment about Weight Watchers. The door will close behind her, and I will get up to leave.

From the average patient's point of view, we had a perfectly normal interaction. But as a medical student, I have to wonder how much went unsaid. Does my physician judge me for my extra pounds, since I am—must be—well aware of the health dangers of being overweight? How is this girl who can't even keep her own body in check going to lecture patients on how to take care of themselves?

With my white coat on, it's easy to think about solutions. If you smoke, stop. If you drink too much, give up alcohol. And if you're eating too much, just eat less. If you can't? Well, you must lack discipline.

It all feels so frustratingly routine. I am twenty pounds overweight. I have a family history of high blood pressure, high cholesterol, and high blood sugar. I leave the office with a sheaf of pamphlets in my fist, as though a few slips of paper will magically change everything.

In the examination room, there's no context for me to explain a relationship to food that stretches back before I was born, before my parents even moved to this country. My mother and father grew up in Beijing—and while they weren't poor, they were by no means wealthy. My mother often went to bed hungry; my father's morning dumpling was considered a luxury. When they moved to America, a whole world unfolded before them: what a strange, excessive place this country must have seemed, where there was so much food—so many different kinds that you could spend your life eating and never taste it all! My parents love food in that way you love anything you might lose.

For me, I suppose that love is both a blessing and a curse. I don't think my parents ever told me that they loved me—at least not out loud. I guess speaking of their affection, their pride, was too intimate. Even now, I think if

IT'S TAKEN ME A LONG TIME TO REALIZE THAT MY WEIGHT SHOULDN'T BE THIS SOURCE OF SHAME, THIS MARK OF FAILURE ALWAYS STINGING AND HOT. LIKE MOST THINGS IN LIFE, IT'S COMPLICATED: A PRODUCT OF GENETICS, CULTURE, THE WORLD I LIVE IN, THE PERSON I AM.

they said anything close to “I love you” or “I'm so proud of you,” I would squirm and change the subject. But whenever I come home, my mother always takes me to eat my favorite Chinese casserole. And whenever my father visits me in New York, we go out for a massive slab of prime rib with that perfect, juicy trim of fat.

God, I love food. I am sitting at Big Wong's in Chinatown with my medical school friends; our chopsticks dip into crispy noodles drenched in seafood stir-fry, snag pieces of perfectly roasted duck with glistening skin. I am sitting with my mother and father at home, that first bite of too-hot *xian bing* spurting into my mouth, pork and chives and soy sauce coating my tongue. And, even farther back, dimmer in memory but still sharp: it is noon in my grandparents'

small apartment in Beijing, the air conditioning is on, and we are eating noodles over a small fold-out table. The cucumbers crunch between my teeth, the sesame paste is smeared around my lips.

How can I think of discipline when these are the associations I have with food? How can I count calories when these moments of joy and closeness are immeasurable?

I want to tell the doctor I have tried—that I knew the consequences even before I was handed an ID badge with “Medical Student Class of 2022” under my name. I was diagnosed pre-diabetic twice, once in high school and once in college. The first time I swore off bread and dessert and lost twenty pounds; the second time I trained for a 5K in the middle of an Arizona summer. I have discipline, believe me. But it is so hard to keep that kind of energy going. And when you love food the way I do—the way you love something so integral to yourself it is a piece of your identity—it is exhausting.

It's taken me a long time to realize all of this, to realize that my weight shouldn't be this source of shame, this mark of failure always stinging and hot. Like most things in life, it's complicated: a product of genetics, culture, the world I live in, the person I am. Trying to categorize the fluctuating numbers on my scale into something as simple as success or failure would be a mistake.

Here's what I imagine, instead.

In the future, I am an endocrinologist. When I walk into the examination room, I see my patient sitting in a chair. Young female, pleasant appearance. Vitals are good, but the BMI is high. She doesn't yet have diabetes, but she's close—just on the cusp.

I want to know what her job is. I want to know what her family is like. I want to learn more about her relationship with food and exercise, how many meals she eats per day, if her neighborhood is safe to walk in. And I'll understand that it will be hard for her—because I've gone through the same thing. There will be times when her numbers will be better and times when they will be worse, and there will be times when she feels frustrated and wants to give up entirely.

But I'll be there to listen to her. I want her to know that she's not alone. ■

— Alice Zhao '22





WELCOME NEWS: Students celebrate the announcement of Weill Cornell Medicine's financial aid initiative in September.

Debt Relief

A transformative scholarship initiative will eliminate loans for many of Weill Cornell Medicine's future MDs

By Heather Salerno
Photos by Ashley Jones

Sarita Ballakur '21 can't imagine any career but medicine. Growing up, she'd visit patients with her cardiologist grandfather, witnessing his close bond with the people he treated and how much he enjoyed helping them. She dreamed of being that kind of doctor—but the reality of paying for her education hit hard once she was accepted to Weill Cornell Medicine. By the time she began her third year last fall, she'd accumulated \$70,000 in student loans, a figure she expected to double by graduation. Like many of her classmates, Ballakur knew it would take years—possibly even a decade or more—to pay off that debt. Thinking about how much she'd owe as a young physician sometimes left her feeling overwhelmed. "It's this cloud that sits on my shoulders," she says, "this chest tightness that comes from time to time."

Much of that anxiety evaporated in September, when WCM made a

sweeping announcement: beginning with the current academic year, it would eliminate medical education debt (based on standard annual cost of attendance) for all students who qualify for financial aid. With \$160 million in landmark gifts from the Starr Foundation and WCM Overseer Maurice R. Greenberg, Joan and Board of Overseers Chairman Emeritus Sanford I. Weill and the Weill Family Foundation, and other donors, loans will be replaced by scholarships that cover not only tuition but housing and personal expenses—an additional benefit for those studying in one of the world's most expensive cities.

For students like Ballakur, the announcement was life changing. Amid champagne and confetti at an event in the Belfer Research Building, where the plan was unveiled, she held back tears speaking about how she'd been working at two part-time jobs—answering phones at WCM's radiology >

'Medical education will always be an equal opportunity pursuit at Weill Cornell Medicine—accessible to all students who are passionate about improving human health,' says Dean Augustine M.K. Choi, MD.

department and teaching MCAT review courses for a test prep company—to help pay for books, food, and other expenses. Now that her anticipated debt has been cut in half, Ballakur may reduce her work hours to focus more on her studies—not to mention pay for groceries without worry. “I’m in shock, honestly,” she says. “I can’t believe the debt I’ve accrued so far is all I’m going to have. I’m going into the future with a much lighter load.”

Easing the Burden

According to the latest data from the Association of American Medical Colleges (AAMC), 76 percent of medical students face huge debt when they graduate—a median of \$200,000. The Class of 2019 at WCM, which costs about \$90,000 a year to attend, had an average debt of nearly \$157,000. Though that’s less than the burden of many students at peer schools—due to increased efforts by WCM to make students more aware of ways to reduce borrowing—most graduates were still entering their residencies saddled with significant debt that they needed to start paying back within six months.

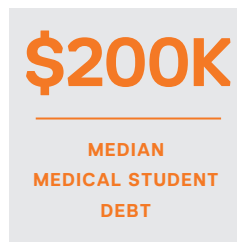
Augustine M.K. Choi, MD, was determined to change that when he was named the Stephen and Suzanne Weiss Dean of WCM and provost for medical affairs at Cornell University in 2017. Making medical education more affordable has been a top priority for Choi, who oversees a school where more than half of the 373 current MD students qualify for need-based aid. The new program is effective as of the 2019–20 academic year for all four classes, which means that current first-years and those enrolling at WCM in the future will have their debt eliminated or drastically slashed. WCM students pursuing a joint degree through the Tri-Institutional MD-PhD Program already receive full tuition funding and stipends for living expenses through the program and the National Institutes of Health, which means that two-thirds of WCM’s future physicians will graduate

largely debt-free moving forward. Says Choi: “Medical education will always be an equal opportunity pursuit at Weill Cornell Medicine—accessible to all students who are passionate about improving human health.”

Choi says it was essential to create a financial assistance plan that aligned with the institution’s values. It was important to reflect the view that the cost of medical school includes more than just tuition; after all, many students are forced to borrow substantial amounts of money to cover housing and other expenses while attending. By prioritizing those in need, the program also aims to ensure that any talented, aspiring doctor—regardless of socioeconomic background—can attend without an undue financial burden. “Now, all

students are playing on the same field,” he says. “Just think about it: If you want to be a doctor and you come to Weill Cornell Medicine, you don’t have to worry about debt. That’s an amazing message to send to young people.”

Even those who are not directly impacted by the plan—or who are closer to graduation and will therefore benefit less—have recognized the importance of the move. Shortly after the announcement, Choi hosted a dinner for students at his apartment, and one fourth-year attended with a mission in mind: to thank Choi on behalf of her entire class. “Not all of the students were affected, but it was still uplifting for them,” he says. “You can tell they’re all just more united.” Yoon Kang, MD, acting senior associate dean for education, adds that the financial aid initiative illustrates the depth of care that WCM has for its students—and confirms its commitment to a broad definition of diversity and inclusion. “WCM’s new initiative sends a very strong underlying message to applicants about who we are,” says Kang. “Diversity in thought and perspective is what we believe in, and we understand that students are the pipeline to the future of medicine. No matter who >





KNOWLEDGE BASE: Ikenna Onyekwere '23 (center) takes notes during a pre-anatomy lab lecture.

you are, we want you to have an opportunity to come study here and be part of our community.”

An Ethos and a Trend

The new payment model comes amid a national debate about soaring student debt, with U.S. presidential candidates offering proposals on how to tackle the rising cost of higher education. Other medical schools around the country are concerned about the problem as well and have recently tried to address the issue by implementing a variety of measures. Within the last two years in New York City, NYU Robert I. Grossman School of Medicine announced that it would go tuition-free for all MD students regardless of need, while Columbia University Vagelos College of Physicians and Surgeons and the Icahn School of Medicine at Mount Sinai launched their own debt-relief programs. Elsewhere, schools like the David Geffen School of Medicine at UCLA and the Perelman

School of Medicine at the University of Pennsylvania award full merit-based scholarships for a select number of students.

Indeed, eliminating medical school debt could be an important step in building a more diverse physician workforce—which can lead to better outcomes for a patient population that is becoming increasingly multicultural. Studies show that students trained at diverse schools are more adept at treating patients from a wide range of ethnic backgrounds; minority patients, too, report higher levels of trust and satisfaction when they encounter healthcare providers who look like them. Kang points out that having doctors and physician-scientists with different skills, viewpoints, and life experiences can only

accelerate advancements in treatments and technology. “Healthcare delivery is becoming more and more complex on every level,” she says. “To main-

tain excellent standards of patient care—which come from discovery and education and clinical training—we absolutely must have a diverse pool of people thinking about all facets of patient care.” Removing debt may address another looming challenge, since according to data published by the AAMC in 2019, there

will be a projected shortage of roughly 122,000 physicians in the United States by 2032—a gap that will disproportionately affect healthcare access in rural areas and for underserved populations.

Francesca Voza '20 agrees that the plan will likely encourage more individuals from underrepresented groups

21%

INCREASE
IN U.S. MEDICAL
SCHOOL TUITION
COSTS SINCE 2003
(SOURCE: AAMC)



COLLABORATIVE LEARNING: Class of '23 members (from left) Rinu Alakiu, Heba Shaaban, and Chimsom Orakwue study in the new Feil Family Student Center.



HANDS ON: Using a dummy that simulates a patient's responses, Francesca Voza '20 (left) practices bagging in the Margaret and Ian Smith Clinical Skills Center with guidance from Joy Howell, MD, associate professor of clinical pediatrics and vice chair for diversity in pediatrics.

to consider medicine as a career. Voza did part of her undergraduate work at Manhattan's Hunter College, which has a highly diverse student body; some of the students she currently mentors there have told her that becoming a doctor seems an unattainable goal, largely because of the crushing cost. "Education should not be a luxury; it should be accessible to everyone," says Voza, who will have at least one-quarter of her overall debt erased. "This is really a visionary move." With living expenses included, Ikenna

52%
 PORTION OF WCM
 STUDENTS WHO
 QUALIFY FOR
 FINANCIAL AID

Onyekwere '23 believes the new initiative will also attract bright minds who may otherwise have pursued an MD elsewhere because they couldn't afford to study and live in Manhattan. Even though WCM was Onyekwere's first choice—he'd earned his bachelor's degree on Cornell's Ithaca campus—he admits to some hesitation on the day he had to commit. "Looking at the numbers, I knew I was going to be putting myself in a huge hole," he recalls, adding: "This is going to open doors for a lot of people." >

'Education should not be a luxury; it should be accessible to everyone,' says Francesca Voza '20. 'This is really a visionary move.'



CLINICAL SIGNS: Anthony Palillo '22 (left) practices performing a neurological exam on classmate Ananth Punyala '22 during their Brain and Behavior module.

'I can continue to pursue my career goals with more positive feelings,' Natalie Nguyen '23 says of having much of her projected debt wiped out. 'This is such a monumental change.'

WCM's leaders hope the program will also encourage future physicians to chart careers based on their own talents and interests—as well as where they might do the most good in the world—rather than feel pressure to pursue higher-paying specialties like plastic surgery or orthopedics in order to repay loans more quickly. Their hope is that more new MDs will enter fields such as internal medicine, pediatrics, and global medicine, which may earn less but are vital to improving health in the U.S. and abroad. "I've been thinking about geriatrics or primary care, and this makes me feel a lot more comfortable

about that," says Anthony Palillo '22. "It's nice to know I have more freedom to pursue those desires." The plan also eases the strain on Natalie Nguyen '23. She entered WCM determined to work with underserved populations after graduation, despite facing an estimated \$200,000 in loans. That concern stayed in the back of her mind, since she knew a different professional path could better provide for her family; her mother is a single parent trying to put two other daughters through school. But now that much of Nguyen's projected debt has been wiped out, "I can continue to pursue my career goals with more positive feelings," she says. "This is such a monumental change."

Reducing Stress

The new financial aid system won't just help students realize their dreams: it's also part of Weill Cornell's overall commitment to wellness, since today's medical students are experiencing higher rates of mental health issues than their peers. A 2016 study in the *Journal of the American Medical Association* found that 27 percent of medical students worldwide experienced depression or symptoms of depression, with more than one in ten reporting suicidal thoughts. Medical school is known for its long hours, lack of sleep, and pressure to perform academically. Yet tight finances may play a part: a 2016 report in the *Journal of the American Board of Family Medicine* noted that high debt has been linked to worrisome consequences that include "callousness, stress,

suicidal thoughts, failing medical licensing exams, and leaving or being dismissed from medical school." Eliminating debt removes a key stressor for students, contributing to a better environment in which they live and

learn. "It's a huge first step in an ongoing, comprehensive program to support students academically and non-academically," says Kang. "Financial wellness is going to be tied to their >





STAYING IN TOUCH: Natalie Nguyen '23 shows off her stethoscope while video chatting with her boyfriend from her dorm room.



ON THE WARDS: Sarita Ballakur '21 (center) talks with urology resident Samantha Thorogood, MD (left), and Hospital for Special Surgery intern Patawut Bovonratwet, MD, between rounds and meetings during Ballakur's trauma clerkship.

emotional wellness.”

There’s the notion, too, that happier, healthier doctors means improved patient care. Notes Choi: “We all know that if you have physician burnout, you’re not as good a doctor.” Heba Shaaban ’23, who was looking at \$175,000 in loans but now will have very little to pay back, is of the same opinion. “I went into medicine because it’s a noble career and you get to help people,” she says, “but at the end of the day, it’s difficult to help patients when you feel like you’re drowning in debt.”

Such an ambitious aid plan was made possible by the generosity of WCM donors. Choi notes that many medical schools are not as fortunate to have this kind of assistance, so it might be challenging for others to adopt similar measures; therefore, he says, the overall problem of student debt still needs to be tackled on a broader level. Even at WCM, another \$51 million needs to be raised to fully fund its scholarship endowment. Alumni like Barbara Cox Koehler, MD ’69, and her husband, Bob Koehler, MD ’68, have already offered support, pledging to cover full tuition and fees for a student for four years. It’s a way for Barbara—who worked with noted human sexuality researcher William Masters and at the Family Planning Division of the Centers for Disease Control and Prevention early in her career—to give back. Because of a scholarship, she left medical school with zero debt. “I probably couldn’t have gone to Weill Cornell Medicine without it,” she says. “It made an incredible difference in my life.” So she’s thrilled that other students will get the chance to experience the same joy and freedom that being debt-free can offer. “I think it’s going to ripple through the medical community and the whole country as these students move forward,” she says. “And if other medical colleges can do the same thing? Even better.” ■

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PROPORTION OF WCM STUDENTS WHO WILL GRADUATE WITH A MEDICAL DEGREE DEBT-FREE

A Philanthropic Milestone

Weill Cornell Medicine’s expanded financial aid program is the culmination of thirty years of generosity from numerous alumni and other benefactors, whose steadfast philanthropy has established and strengthened the institution’s scholarship endowment. The new program is powered by a landmark gift—the single largest in WCM’s history—from the Starr Foundation, led by Overseer Maurice R. Greenberg, in partnership with gifts from Joan Weill and Sanford I. Weill, chairman emeritus of the Board of Overseers, and the Weill Family Foundation.

These donations and others from longtime supporters—including Christine Seix and Overseer Robert S. Dow, who in March made an eight-figure commitment toward scholarship support—together total \$160 million. The milestone allows WCM to provide a debt-free education to all of its medical students with demonstrated financial need, beginning with the newly admitted Class of 2023 and each class moving forward. The contributions enabled WCM to launch the new program now; however, over the next decade it will aim to raise \$51 million more to ensure that it continues. “Students whose passions, skills, and talents point the way to medicine can now pursue their career aspirations, unencumbered by the pressure that comes with significant debt burdens,” says Jessica M. Bibliowicz, chairman of the Board of Overseers. “We are immensely thankful to our visionary donors, who are committed to making this program possible for our students.”



DIGITAL DOMAINS

Apps, videogames, and other media
are filling gaps in mental healthcare

By Amy Crawford

Illustrations by Stephanie Dalton Cowan

Photos by John Abbott

Tegan Lee always thought of himself as “a very systematic thinker,” the sort of person who solves problems quickly and efficiently. It’s a style that served him well through a long career as a project manager and consultant in the tech industry. But two years ago, when Lee was in his late fifties, a diagnosis of late-onset bipolar disorder forced him into early retirement—and upended his life. “I wouldn’t wish this on anybody,” says Lee. “I was very motivated to get better.”

Lee, who lives in suburban New York City, considered suicide. But he found a way through his mental health crisis as an inpatient at NewYork-Presbyterian Westchester Division, where he volunteered for a clinical trial involving a psychotherapy that utilizes a tablet-based app called WellPATH, which would help him identify and defuse the emotional triggers that led to his thoughts of self-harm. As lead researcher Dimitris Kiosses, PhD, associate professor of psychology in clinical psychiatry at Weill Cornell Medicine, notes, while talk therapy can help patients see and get past their triggers—in Lee’s case,

for example, a feeling that his life was worthless often led to thoughts of suicide—outpatient appointments typically only take place once or twice a week. “What about the rest of the days, or during emotional crises?” Kiosses says. “That’s when patients need it the most.”

To Kiosses and his research collaborators, technology offered a potential solution. If a patient and their therapist could pre-load an app with positive messages—either text or video—and selected personalized coping strategies, they theorized, the patient could get help whenever they feared thoughts of suicide were on the horizon. “That approach worked spectacularly for me,” says Lee, who used the app as an outpatient for several months after he was released from the hospital (and still uses the strategies he learned then with his current therapist). “I’m not a geek, but I am a computer guy—and with apps, it’s not cumbersome like pencil and paper might be.” Where he might once have had to search through notes to help himself remember which emotional management strategies had worked before, >



ONLINE AID:
An app called WellPATH (above) has helped Tegan Lee (left) cope with bipolar disorder.

now, he says, “I have my smartphone right there. The technology simplified everything.”

Technology is often blamed for worsening our mental health, whether through compulsive social media use or addictive videogames. But Kiosses and his team are part of a growing number of mental health providers and researchers who see the potential for it to be a force for good. One market research report found that nearly half of healthcare consumers use mobile health (or “mHealth”) apps, and according to a recent World Health Organization survey there are now an estimated 350,000 available, more than a quarter of which focus on mental health. Some, like WellPATH, use emotion regulation techniques (also utilized in cognitive behavioral therapy) to help people manage anxiety or depression. Others offer a way to keep track of a user’s mood, or provide text-message contact with therapists who can respond in real time. While technology may never fully substitute for treatment by an in-person clinician, a new generation of evidence-based apps and computer programs—including several now in clinical trials at WCM—may improve access to care and expand the ability of therapists to help their patients outside the office. “Some people think it’s going to democratize mental healthcare, and certainly there is that potential,” says JoAnn Difede, PhD, a professor of psychology in psychiatry and director of the Program for Anxiety and Traumatic Stress Studies at WCM, who’s a pioneer in the use of virtual reality to treat post-traumatic stress disorder and a scientific advisory board member for Pear Therapeutics, which is developing prescription digital therapeutics to treat patients suffering from a range of serious diseases, including depression. “I think it’s also going to increase the efficiency of the treatment, in part by increasing patient motivation and engagement. This is a really exciting time for mental health, and it seems like the possibilities are almost limitless.”

A Tech-Oriented World

The explosion of mHealth apps and software comes at a time when patients are increasingly accustomed to living their lives through technology—especially young people like fifteen-year-old Manhattan resident Brad Lynch, who used a videogame called Secret Agent Society to help him overcome paralyzing social anxiety. “The day before I started sixth grade, I was super nervous,” Brad remembers. “I had no real friends, and I struggled with talking to adults.” The game, in which a player acts out the role of a spy who learns to read people’s emotions and uses social skills to solve challenges, began as the doctoral project of Renae Beaumont, PhD, now an assistant professor of psychology in clinical >

‘Some people think it’s going to democratize mental healthcare,’ JoAnn Difede, PhD, says of the use of technology in treating patients, ‘and certainly there is that potential.’





'Gaming is very attractive to lots of kids in today's society,' says Renae Beaumont, PhD, 'so it seems like a natural platform to help them learn and apply the skills that they need to be successful in life.'

psychiatry at WCM. Now produced by the nonprofit Social Skills Training Institute, the game offers a virtual world with risk-free opportunities to learn and practice. The format appeals to kids like Brad, who are often already fans of videogames. "Unlike reading a book to learn these things, I wanted to play," he says, explaining that the system of increasing challenges and rewards—an approach known as "gamification"—made the endeavor more fun. The game and accompanying group sessions with a therapist were so effective that by the end of eighth grade Brad had enough confidence to give a speech at his middle school graduation. "He was really struggling, and this videogame gave him the motivation to try something new," says Brad's mother, Christine Lynch, noting proudly that her son's speech received a standing ovation from his classmates. "The game and the class changed his life and our family's lives."

Brad's outcome is consistent with the results of clinical trials that have demonstrated the game's effectiveness at improving social skills and reducing social anxiety in children from eight to twelve, including those on the autism spectrum, Beaumont says. The results have helped overcome initial skepticism from parents, who are often more likely to see videogames as detrimental to their child's social life than as a tool to improve it. "There is definitely a counterintuitive dimension to this," acknowledges Beaumont, who is a founder of Secret Agent Society. "But my thinking is, let's play to kids' strengths and their interests. Gaming is very attractive to lots of kids in today's society, so it seems like a natural platform to help them learn and apply the skills that they need to be successful in life."

And therapeutic videogames aren't just for kids. Faith Gunning, PhD, associate professor of psychology in psychiatry, is currently conducting a clinical trial of up to 76 patients at WCM and the University of Washington to gauge the effectiveness of an iPad game for older adults with depression. It's an intervention that she and her collaborators hope will alleviate their mood symptoms and lessen the cognitive weaknesses that can occur in some patients with depression. "We know that a subgroup of older individuals with depression has specific difficulty with executive function," Gunning explains, referring to a set of cognitive processes that include paying attention, planning, using working memory, and managing multiple tasks at the same time.

Created by a firm (unaffiliated with WCM) that bills itself as "a prescription digital medicine company," the game asks participants to manipulate an iPad, using the accelerometer-equipped device like a steering wheel, to avoid obstacles such as walls and cliffs in a virtual environment. The game requires players to be aware of and react to different streams of information▶



VIRTUAL WORLD: Manhattan teen Brad Lynch played the therapeutic videogame Secret Agent Society to curb his social anxiety.

'We should be taking advantage of how integrated technology is into people's lives,' says Faith Gunning, PhD. 'A lot of people are now more comfortable with that format than they might be in traditional therapy.'

simultaneously, which provides a stimulating workout for their executive function. "It's a fun and engaging game that looks like a videogame, but it's designed based on neuroscience principles," Gunning says. She notes that the number of people assigned to play the game who stayed in the four-week study from beginning to end was close to 100 percent. "That's frankly unheard of," she says. "I've never seen this level of engagement with any intervention I've tried, which is one of the things that makes this promising." It helps, she notes, that today's older generation has become relatively adept with technology, to the point where a clinical intervention that looks like a videogame can feel intuitive and natural.

"We should be taking advantage of how integrated technology is into people's lives," Gunning says. "A lot of people are now more comfortable with that format than they might be in traditional therapy."

A recent Pew survey found that 81 percent of Americans now have a smartphone, including 95 percent of people between the ages of 18 and 34. Mobile technology offers the potential to reach patients where they are—which is the idea behind a new smartphone-based cognitive behavioral therapy protocol for young adults with anxiety, co-developed by Avital Falk, PhD, an assistant professor of psychology in clinical

psychiatry and director of the Pediatric OCD, Anxiety, and Tic Disorders Program at WCM. The app, called Maya, is currently undergoing preliminary trials with a group of patients, and Falk and her colleagues hope to one day make it available free for anyone to download. (Its development has been facilitated by support from the Weill Cornell Children's Health Council as well as the NewYork-Presbyterian Youth Anxiety Center.) It includes videos and interactive exercises that help the user develop skills to manage anxiety—for example, by recognizing and shifting disordered thinking. "We're really excited about the possibility that we can increase access to care when people don't have the option of seeing a therapist right away," Falk says. "Also, anxiety sometimes gets in the way of people getting out and going to a therapist. This allows them to get over that initial hump in the comfort of their own homes."

The Treatment Gap

Data from federal agencies show a clear need for better ways to help people access mental healthcare. According to the National Institute of Mental Health, about one in five Americans has a mental health condition—but the Department of Health and Human Services has found that about a third live in areas with a shortage of providers. Meanwhile, a National Council for Behavioral Health survey found that 29 percent of Americans wanted treatment for themselves or a loved one but did not seek it, in part because they weren't sure how. "There are a number of barriers: lack of providers in different areas, costs, knowledge," Falk says. "People don't necessarily know what they're even looking for."

While Falk has high hopes for the ability of technology to reach those who might otherwise go without mental healthcare, she and her WCM colleagues caution against seeing it as a substitute. Market data indicates mHealth apps are popular, and studies of specific programs show promise (primarily for anxiety and depression), but there is still much research to be done into the format's effectiveness, especially as a stand-alone intervention. And while psychiatrists and psychologists are working to ensure that their apps and games are backed by strong clinical evidence, some worry that quality may be left behind as the industry expands—especially since many apps are published by amateur or commercial developers without clinical experience, and very few apps are regulated by the FDA. "Our focus is on providing care that's well-tested and validated, so that we know exactly what people are getting and that it will actually benefit them," Falk says. "We don't want people getting advice that may or may not be well suited to what they're struggling with." Gunning agrees, noting that companies seeking to take advantage of the current popularity of mental health technology may create apps that are not well-grounded in science. Still, she says, "I do think we have almost a crisis, from the standpoint of limited accessibility to mental healthcare. Figuring out how technology can help us close that gap is incredibly important, since we're simply never going to have enough mental health providers to meet the needs of our population."

Technology may also help expand the reach of clinicians who find themselves overstretched. According to one recent survey, three out of four physicians report using mHealth apps in their practice at least weekly (although there is no data about mental health apps specifically). The researchers behind Iris Ob Health Inc., a digital startup that spun out of WCM and won the \$75,000 first prize in the 2019 Biomedical Business Plan Challenge, which is sponsored by WCM's BioVenture eLab, hope that their project becomes one of them. The



company's co-founders are Alison Hermann, MD, assistant professor of clinical psychiatry, and Jyotishman Pathak, PhD—the Frances and John L. Loeb Professor of Medical Informatics, chief of the division in the Department of Healthcare Policy and Research, and Iris's CEO. They aim to take advantage of recent advances in artificial intelligence and big data to address a pressing clinical issue: while more than 1.5 million women suffer from depression or anxiety connected with pregnancy and childbirth, it can be difficult to know which mothers need help before their symptoms become severe. The digital health platform that Iris is developing can flag pregnant and new mothers whose self-reported symptoms and medical history indicate a higher risk of mental health issues. "Right now, the trend is for universal screening, and that burden is falling on the front-line providers like obstetricians," explains Hermann, Iris's chief medical officer. "But they really don't have psychiatric training, other than the little bit that they learned during medical school." Iris would help providers predict which patients are at highest risk for problems like postpartum

depression, so they can refer them for preventive psychotherapy or schedule additional appointments after childbirth to check on their mental health.

Like many of the clinicians and researchers now boldly entering a new technological era, Hermann never imagined herself as a software developer. A specialist in mental health issues connected to the reproductive cycle, she still thinks of herself as someone whose skills lie in building connections with patients, and in understanding the interdependence of mind and body. "I've never taken a computer science course, and I'm not a techy person," she says. "But there are so many new opportunities, whether in AI or digital health, that clinicians need to take advantage of. Certainly, we have to be sure that we use the technologies to help us, and not hinder us, in developing strong relationships between providers and patients. But I'm convinced that bringing these technologies into our clinical work really is the future."

If you are thinking about suicide, please call the National Suicide Prevention Lifeline at 800-273-TALK (8255). ■

NEWS OF MEDICAL COLLEGE AND GRADUATE SCHOOL ALUMNI



Dear Alumni,

When I look at photos of my father's medical school class and compare them to my own, the differences are striking. His photographs show row upon row of young, white men—with the same haircuts, jackets, and ties. My class photo is more varied: there are men and women of all ages, of various races and cultural backgrounds. And a quick glance at the Weill Cornell Medicine Class of 2019 shows an even more diverse group. While these differences only reflect that which can be captured in a snapshot, they are a symbol of an increasingly inclusive medical profession—looking more like the beautifully diverse country that we are.

Weill Cornell Medicine has long prioritized supporting individuals of varied and wide-ranging backgrounds to succeed in medicine and science. When Dean Choi began his tenure, he made this an even more central priority. He said, "Fostering diversity in all its forms . . . is essential to ensuring that faculty, trainees, students, and staff are functioning optimally to achieve excellence. Diversity and gender equity in the workforce enable us to develop new solutions to complex problems in medicine and healthcare." By spearheading a transformative new scholarship program—which provides debt-free education to all medical students with demonstrated financial need—WCM has ensured that the best and brightest students, including those from economically diverse backgrounds, have the freedom to seek careers in medicine. This program was built upon decades of extraordinary philanthropy from WCM benefactors and alumni, and will last in perpetuity with continued scholarship support.

Through this effort and other key initiatives—the new Office of Student Diversity, appointing new deans for faculty and student diversity, expanding the Office of Diversity and Inclusion, and creating two full-tuition Dean's Diversity scholarships—our alma mater is leading strongly by example. The Alumni Association also recognizes the importance of empowering all of our students and fostering an atmosphere in which differences are respected and valued. Some recent examples of our efforts to support diversity in our community include:

Creating key connections—We connect alumni mentors with underrepresented minority students and female students. This allows our alumni to provide support by sharing their own experiences, insight, and advice.

Funding student initiatives—We provide funding for diverse student-run initiatives such as the Wellness Qlinic, the first student-run clinic in New York City to offer free mental healthcare for those who identify as LGBTQ+, regardless of insurance status, and Community Perspectives in Medicine, a student-run elective course that teaches first-year students about social determinants of health and health disparities, with input from community-based organizations representing underserved populations.

Conducting relevant ASK sessions—We recently held our first-ever Alumni-to-Student Knowledge (ASK) sessions featuring underrepresented minorities in medicine (led by Carol Storey-Johnson, MD '77, professor emerita of medicine), and women in medicine (led by Susan Pannullo, MD '87, associate professor of clinical neurological surgery). Each of these sessions featured information on ways to deal with discrimination in the workplace.

Diversifying the Alumni Association board—We recognize the importance of having our leadership best reflect our 5,800-strong alumni community—and have made focused efforts to diversify our board of directors by gender, race, and age.

As the community of students, alumni, and patients that we serve continues to grow and change, we must ensure that our programs meet their needs. We are committed to that charge and welcome your feedback regarding programming. Increased diversity in medical school is critical—but it's not the endgame. As physicians better represent the incredible pluralism in our communities, we further open our eyes to the many different needs and viewpoints of our patients. This type of understanding is fundamental to our work and central to our primary goal as physicians: to help all people lead healthier lives.

*Natasha Leibel, MD '98
President, Weill Cornell Medical College Alumni Association
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WEILL CORNELL WELCOME: Members of the Class of '23 including (in front row, from center left) Artine Arzani, Quillan Austria, and Christopher Babu celebrate after receiving their short coats in the annual White Coat Ceremony.

Medical College

1940s

Herb McCoy, MD '45: "I'm pushing 99 years. I'm ambulatory and still traveling. I feel good and still have my marbles. Retired but still licensed. I feel lucky I came to California to practice. The best thing in my life is my wife."

1950s

Francis A. Wood, MD '50: "My daughter and I attended the Charlotte, NC, funeral of classmate **Willard Chandler Thompson, MD '50**, on May 16. We also attended the Dean's Circle dinner on June 20."

James A. Amlicke, MD '59: "I retired from orthopedic surgery practice on December 3, 2018. I started my practice in July 1967 in Michigan, and always had practice ownership until 1999 when I retired to South Carolina, renewed my medical license, and practiced at the US Naval Hospital and was an assistant

clinical professor of orthopedics at the Medical University of South Carolina. While in Michigan, I was the first to do total ankle arthroplasty, intra-medullary rods in femurs. Twenty percent of my practice involved pediatric orthopedics. I was chief of surgery at three hospitals and vice chief of hospital at another. I'm married with six children, 12 grandchildren, and nine great-grands."

Paul Bleakley, MD '59: "I'm celebrating 20 years of retirement. I'm still running almost every day—never fast, but slower now since a-fib."

Peter M. Burkholder, MD '59: "My wife, Barbara, and I attended the memorial service arranged by Jim Connor and his extended family in August for his wife, **Elizabeth Barrett-Connor, MD '60**, who recently passed away. Elizabeth was in the medical class behind ours and had been a roommate at Mount Holyoke College with my

wife. Elizabeth, known to many of us as 'Libby,' was a well known, celebrated, and richly awarded epidemiologist who crafted and managed the Rancho Bernardo health study. This study has continued to result in outstanding information for the understanding of health outcomes related to life behaviors and habits. We all will miss this vibrant, intelligent, lovely, and celebrated person. After an academic career in the field of pathology (teaching, research, and clinical service) at several medical schools, I finished off professional activity with teaching and administration at the Southwest College of Naturopathic Medicine in Arizona, where we pioneered in fostering integration of teaching and clinical service in allopathic and naturopathic medicine. Along the way, I had stints as chief of staff at the Michigan Ann Arbor VA Medical Center and as director of clinical laboratories at Maricopa Medical Center in Phoenix, AZ. Currently,



PROUD PARENTS (from left): Orhan Norman, Sofya Norman '23, and Julie Chen at the White Coat Ceremony

Barbara and I, with our little seven-year-old Shi-Poo canine companion, Petey, are retired in Phoenix close to our older daughter, Kristen, a family practice physician with the Indian Health Service in Pinon, AZ, and a little farther away from our other daughter, Lianne, a general practice internist in Truckee, CA. For the most part, life has been good, and now at our age we must continue our focus on looking after those we love, maintaining good health, and continuing good social works."

Jim Van Buren, MD '59: "While Mary and I were in San Diego on August 4 for the funeral celebration for her cousin, **Elizabeth Barrett-Connor, MD '60**, we had a pleasant and unexpected visit with **Peter Burkholder, MD '59**, and his wife, Barbara, who was Elizabeth's roommate at Mount Holyoke. We're still in Atlanta at our same house for the past 47 years enjoying full retirement, golf, yard work, and afternoon naps. Come see us!"

1960s

Gideon G. Panter '56, MD '60: "Although I retired from the active practice of ob/gyn two years ago, I'm having great fun as

a consultant to an Israeli company producing transvaginal robotics."

Marilyn R. Brown, MD '61: "I have just retired after 59 years at the University of Rochester, most of those wonderful years as a pediatric gastroenterologist. I still keep in contact with my classmates mainly through **John Hughes, MD '61**, who keeps our class up to date. Thank you, John!"

Donald A. Fischman, MD '61: "I've looked into my anti-hypertensive medications. I have mild 'essential' hypertension: ~145/85. It was 130/80 before I was put on two generics: metoprolol and lysartan that replaced Toprol and Cozaar. I requested the non-generics and as I expected, my insurance company wouldn't cover the name-brand drugs. I paid for the name-brand stuff and early results suggest that the generic metoprolol was ineffective. After two days on Toprol my systolic BP has fallen to 130. It's too early to trust these data, but I'm very suspicious that the generic metoprolol (made in China) is less effective than the American Toprol."

John L. Knause Jr., MD '61: "I have reached a goal: 15 years living with chronic myelogenous leukemia. It has been difficult, but I look forward to our 60th Reunion in

2022. I hope to be there and I hope that many will make it."

William R. Winn, MD '61: "I recently began to take Pradaxa (thrombin inhibitor) for atrial fibrillation-related embolic stroke prophylaxis. I feel fine, but thought that the old rat poison warfarin was a little dated and the monthly INRs would be time consuming. I have now made two monthly Pradaxa co-payments for a total of \$450, and tomorrow I will ask my doctor to shift to warfarin—with a retail price around \$35 for 30 5mg tablets. My other drug adventure this year was having to recently discontinue generic irbesartan when the FDA belatedly withdrew this Chinese-made generic product. It apparently increases the likelihood of cancer. I am now taking valsartan, which I am told is made in New Jersey. I asked my pharmacist if she knew that 90 percent of the generics were made offshore. She said that 90 percent is the correct figure and that most of them now seem to be coming from India and China. Formerly, many generics were made in Germany, but the Germans seem to have backed off. I urge you all to read *Bottle of Lies* by Katherine Eban. It's a powerful investigative look into the generic drug industry. I was shocked to learn that 90 percent of drugs sold in the US are generics, and most are manufactured overseas. Our insurance companies won't cover brand-name drugs after their patents run out. This book investigates much of the filth and corruption in the generic market. The data scared the hell out of me. It is very difficult to find out the purity or efficacy of generics we all take. The FDA is underfunded and too short-staffed to oversee the many drugs out there. It is a serious problem getting worse every year. It is very frustrating to not be able to easily use new drugs that offer real promise as in type 2 diabetes and difficult asthma."

Jon Goldstein '59, MD '63: "On August 22, I had the pleasure of attending the welcome reception for the Class of 2023. Of course, a lot had changed since we started 60 years ago. What had stayed the same—the enthusiasm, eagerness to learn, and idealism—was more important. My only complaint was I was so busy talking and listening, I didn't get enough to drink."

Ira Stephen Davis '60, MD '64: "I'm fully retired as an orthopedic surgeon and pursuing my passion as a magician,

entertaining patients at the University of Colorado Children's Hospital. It's a great feeling to help put a smile on the face of these children and to share a few moments of happiness with them."

Anne A. Gershon, MD '64: "I received the Maxwell Finland Award from the National Foundation for Infectious Disease in May 2019, in Washington, DC, for my research on varicella zoster virus."

Frances Judy Storrs, MD '64: "Normal CBC with clinical trial of FT-2102 for my MDS and mutant gene IDH-1. The professorship in my name is fully funded and soon to be named by my department at Oregon Health Sciences University. I live in the same house on 3.5 acres with a large garden, 11 chickens, and one cat. Family are all near, including five grandchildren."

Deborah Pavan Langston, MD '65: "I'm turning 80 on my next birthday and

'I had the pleasure of attending the welcome reception for the Class of 2023. Of course, a lot had changed since we started 60 years ago. What had stayed the same—the enthusiasm, eagerness to learn, and idealism—was more important.'

— Jon Goldstein '59, MD '63



PRECIOUS INSTRUMENT: Ryka Sehgal '23 (right) receives her stethoscope from Elizabeth Wilson-Anstey, EDD, assistant dean for diversity and student life.



NEW FRIENDS: First-years (left to right) Sakila Nazia, Ageline Sahagun, Chimsom Orakwue, and Ikenna Onyekwere model their white coats.

rather stunned at the prospect. I retired as a corneal transplant surgeon at Mass Eye & Ear at age 75 and am now publishing the last of my book chapters and research papers that finally came to fruition. Life is good at my senior living community in Lincoln, MA. Everyone seems to be a Harvard or MIT chemist, physicist, or MD, and each day is filled with interesting activities and excellent dining. My daughter and her family live ten minutes away, so I get to enjoy my granddaughters here and at my house on Martha's Vineyard. I still miss New York City and Weill Cornell Medicine greatly—those were the happiest days of my life."

Andrew Dahl, MD '66: "Fifty-five years ago, members of the Class of 1966 had completed their non-clinical years and were eagerly looking forward to their initial clinical clerkships in medicine, surgery, and pediatrics. We were anticipating an exciting opportunity to put our book knowledge to good use in diagnosing and treating the diseases we had heretofore merely read about. The demographics of today's entering medical school class have changed remarkably since 1962, the curriculum has been radically altered, and undergraduate medical education has incorporated computers for both instruction

and patient examination and care. Electronic media is the primary means of communication among students and faculty. The transformation of medical practice has been even more dramatic, with essentially the disappearance of the solo practitioner, the dominance of specialists and sub-specialists, the replacement of the physical examination and history by testing and procedures, and the vast change in the economics of medical practice. From 1972 through 2000, I experienced the overhead of my medical practice increase from 15 percent to almost 70 percent due to decreasing reimbursement in the face of an ever-increasing staff count, a myriad of insurance forms, regulatory demands, and wage inflation, together with the necessary recurrent investment in newer practice-management computer systems and costly modern technology designed to examine every portion of the eye and visual system.

"Ziva and I have been married 55 years and have two children and two granddaughters, the older one having been accepted at University of Southern California, where she will study communications at the Annenberg School. We have sold our New York home and become Florida residents, spending the early spring, late fall, and part of the winter in Naples,

with endless outdoor adventures at our fingertips together with many cultural activities only minutes away. We still have our 22-year-old home in Telluride, CO, where we ski in the winter and hike, fly-fish, and forage for mushrooms in the delightful summer without any need for air conditioning. Ziva is a freelance journalist, publishing articles at least monthly in the mainstream press focusing on US foreign policy, politics of the Middle East, the new anti-Semitism, and the politically correct craziness destroying our educational system. I have stopped seeing patients and significantly cut back on my medical-legal work. I still teach and write, am chief medical editor of WebMD, and continue to consult with financial institutions on the impact that newly approved or pipeline ophthalmic drugs and devices will have on the marketplace. I treasure the experience and memories of my four years at what was then CUMC and year of NYH medical internship and cannot imagine a place that I would have preferred to receive my training to become a complete physician."

Jeffrey Borer, MD '69: "Having relinquished my administrative roles as chairman of medicine and chief of cardiovascular medicine at SUNY Downstate, I have continued to perform as a full-time academic cardiologist. I serve as chairman of the biomedical devices subcommittee of the International Standardization Organization, which sets manufacturing and regulatory approvability standards for cardiovascular and other biomedical devices throughout the world (except in the US, where the FDA sets such standards). I have continued to lecture in my areas of expertise throughout the world and to publish regularly in the cardiology literature, as well as to provide patient care and medical student teaching."

John A. Rothschild '65, MD '69: "Rena and I continue to rusticate in North-eastern Pennsylvania, where I am the county's only recovering nephrologist."

1970s

Peter Blumencranz, MD '70, was appointed medical director, Oncology Service Line, at Baycare Health System in Clearwater, FL.

Barry Levy, MD '71, an adjunct professor of public health at Tufts University School of Medicine and a consultant in occupational

and environmental health, edited the third edition of *Social Injustice and Public Health* (Oxford University Press, 2019), the 20th book he has edited or co-edited. It describes the adverse effects of social injustice on population health and on areas of public health. It also proposes an agenda for action to address social injustice and its health consequences. He has also co-edited seven editions of the textbook *Occupational and Environmental Health* (Oxford, 2018) as well as the book *Climate Change and Public Health* (Oxford, 2015).

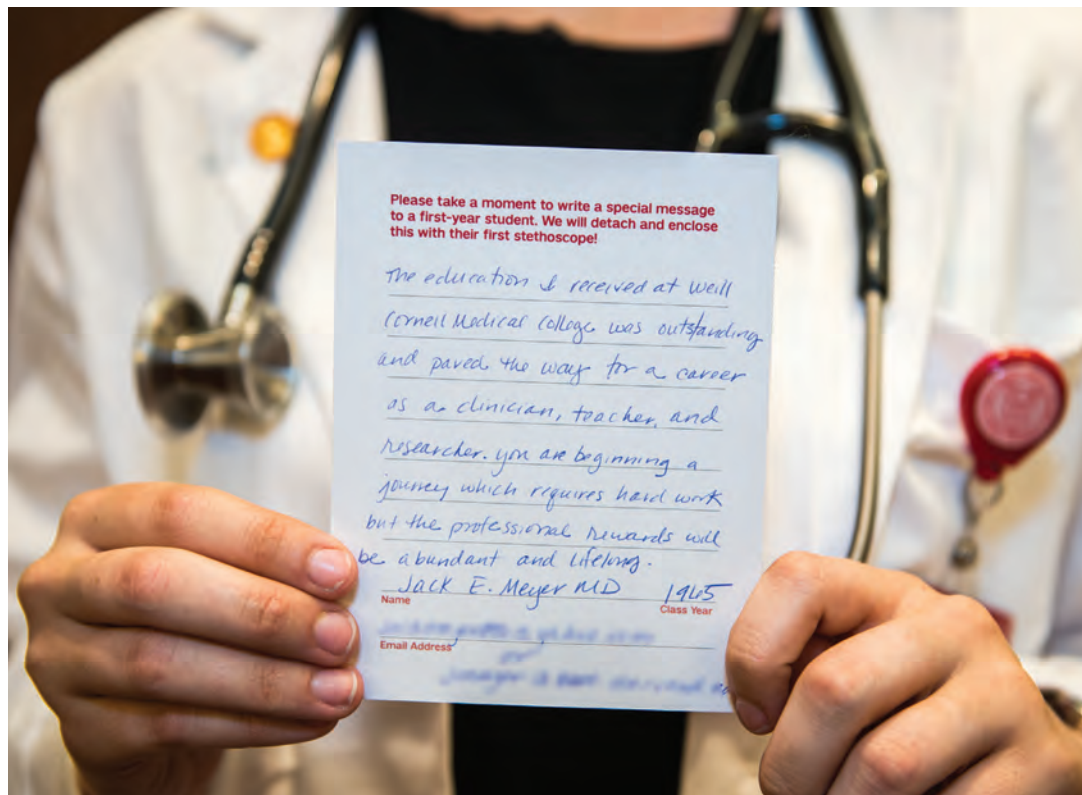
David Schwenker, MD '71: "I'm now retired from Adirondack Cardiology. Mary Lynn and I remain active in the community. We enjoy the outdoors of northern New York and New England, frequently with our eight grandchildren."

Richard E. Tosi, MD '73, was honored at a dinner on November 28, 2018, by his medical group, Plymouth Bay Medical Associates, for outstanding performance in patient care. He had obtained the highest scores in quality and patient satisfaction. He had previously worked in the Southcoast Hospital Group, where he was in the top 1 percent of 600 providers.

'I'm now retired from Adirondack Cardiology. Mary Lynn and I remain active in the community. We enjoy the outdoors of northern New York and New England, frequently with our eight grandchildren.'

— David Schwenker, MD '71

WORDS OF WISDOM: All new students received cards from alumni offering advice as they begin their medical training; this one came from Jack Meyer, MD '65.



James F. Caravelli, MD '74: "As of July 1, I retired from Memorial Sloan Kettering Cancer Center after 41 years as an attending radiologist. Paula and I look forward to having time to visit our four sons and six grandchildren (the seventh is expected in November)."

Judith Nowak '70, MD '74: "I am still practicing psychiatry, which I love—especially in Washington, DC, where, alas, I am not the President's analyst. I am interested in the honesty and transparency in medicine movement, embodied in the CANDOR project and the Telluride Experience. I have endowed a lectureship with Medstar in DC, named for my deceased husband and called the Bennathan Patient Safety Lecture. It was wonderful to see **Stephen Hoffman, MD '75**, after 44 years at a Weill Cornell Medicine Alumni and Friends Reception in Washington. Does everyone still remember our first class in clinical medicine, when Dr. Elliot Hochstein gave his seminal lecture on the structure of medicine and brought along the Broadway cast of *Hair*?"

Warren L. Barrett, MD '75: "As I approach the 70th anniversary of my birth, I am most grateful for my career and family, which includes three children and five grandchildren."

SUITED UP: Lauren Sweetland-Martin '23 proudly displays her new coat and stethoscope.



Stuart Katz, MD '76: "Madeline and I have been bouncing back and forth this summer between Eastport, Long Island, and Juno Beach, FL, where I am a member of the town council. I joined the Weill Cornell Medical College Alumni Association Alumni Engagement Committee, so I invite contact if you're in my neighborhood this winter."

Vincent de Luise, MD '77: "I am retired from the clinical practice of ophthalmology. I still teach at Yale and am on the advisory board of the Weill Cornell Music and Medicine Initiative, where I serve as program annotator for its superb orchestra. I was honored to be featured in an article in the June 2019 issue of *Eye World* that discusses my current involvement at the intersection of medicine and the humanities."

1980s

Brian Y. Changlai, MD '80: "An English edition of my autobiography was published on July 22, 2019, by the Taiwanese American weekly newspaper *Pacific Times*."

Carolyn Heyward Grosvenor, MD '80: "Although retired, I am as busy as ever, working occasionally at the VA and once a week at a local free clinic; also medical missions, this year to the Dominican Republic, and serving as a volunteer chaplain. However, a good chunk of my time is serving as a co-caregiver for my 88-year-old mother. I took early retirement so we could keep her at home, and I am very happy we've been able to do that."

Rochelle Peck, MD '80: "I'm happily retired from my ophthalmology practice for two years. I have an adorable grandson, now 14 months old, who lives in San Francisco, and a recently married younger daughter who lives in Detroit. I just completed an emotionally fascinating trip to Prague, Berlin, and Poland with my interfaith Muslim-Jewish sisterhood and will be traveling to Iran in October on my own for a long-awaited immersion into Persian history, architecture, design, and food. I am taking several courses at the New School and NYU and loving every minute. I'm looking forward to seeing many of our classmates again at the 2020 Reunion. How can it be 40 years?"

Tim A. Fischell, MD '81: "I was inducted into the National Academy of Inventors in



DEDICATED TO MEDICINE: Dean Augustine M.K. Choi, MD (fourth from left), poses with first-years (left to right) Jin Pyon, Zhaorui (Roy) Wang, Katie Liu, Jodie Nghiem, Hector Salazar Martinez, Won Jun Kim, Julianna Kostas, and Ganiat Alakiu.

2018. I founded Ablative Solutions Inc., which has raised nearly \$120 million to develop and test in clinical trials chemical renal de-nervation for the treatment of hypertension.”

Ted Donnelly, MD '82: “Karen, my beloved wife of 33 years, informed me I can never retire because, ‘What else would you do?’ I do still enjoy practicing family medicine in Cincinnati. Now I’m seeing the children of the newborns I cared for 20-plus years ago.”

Barnaby Starr, MD '82: “After building a private practice in general pediatrics over a 31-year period, I have sold it and am in the second year of a three-year workout agreement. I still look back fondly at our years in med school.”

David Roth, MD '83: “I’ll be retiring in mid-2020 from my position as chief of ob/gyn at Yale Health in New Haven after 19 years there—still doing deliveries on call overnights! My wife, Nan, and I will be moving to New Jersey, across the Hudson from Manhattan, where we both hope to find part-time work and ease into retirement, while enjoying easier access to New York City. Our son, Matt, is in San Francisco, and daughters Melanie in Manhattan and Abigail in Nashville.”

Yuman Fong, MD '84: “I have enjoyed relocating to Southern California, where I teach robotic liver and pancreatic surgery at

the City of Hope Medical Center and continue gene therapy research there and at the California Institute of Technology. I recently published my 15th book, *The SAGES Atlas in Robotic Surgery*, hoping to help educate the next generation of surgeons in this emerging field. I was also blessed to have just been inducted as a fellow of the American Institute of Medical and Biologic Engineering, as well as to receive the Layton F. Rikkers Master Clinician Award from the SSAT.”

Larry Robinson, MD '84: “I’m still clinically quite active in endocrine surgery as well as managing the ambulatory surgical services at the South Clinical Campus of Albany Medical Center. Wow, where does 35 years go? Greetings to all.”

Sven Berg, MD '87, will assume the presidency of the American Health Quality Association (AHQA) at its annual leadership summit this November. He was elected to the post during the organization’s annual membership meeting in August 2018. AHQA is a nonprofit national membership association dedicated to promoting and facilitating fundamental change that improves the quality of healthcare in the US. Founded in 1984, it represents Quality Improvement Organizations and other professionals working to improve healthcare quality and patient safety.

‘I just completed an emotionally fascinating trip to Prague, Berlin, and Poland with my interfaith Muslim-Jewish sisterhood.’

— Rochelle Peck, MD '80

Dr. Berg is the chief executive officer of Quality Insights Inc., a nonprofit that specializes in developing and maintaining measures of healthcare quality, collecting and analyzing performance data, and providing collaborative learning opportunities and individualized technical assistance to providers across all clinical settings.

Michael Bernardo '78, MS '86, MD '89: "For seven years I have served as medical director for Vets with a Mission, founded by Vietnam vets and doing humanitarian missions in country since 1988. As the vets are retiring, I have helped transition to a teaching mission, providing hands-on instruction in partnering with Hue University Medical College. We have brought upper-level medical students to remote villages to gain experiences they have not seen at the university teaching centers. Most of my days in the US are spent in geriatrics, hospice, and palliative care. I'm also enjoying teaching students at nursing homes and in the rural communities of South Carolina where I practice."

Sarah A. Stackpole, MD '89: "After finishing acupuncture training and certification, I have returned to clinical otolaryngology right here in Manhattan. I have joined a friend from residency at Manhattan Eye and Ear. That included a year of surgery at NewYork-Presbyterian/Weill Cornell as well as rotations

there all four years of residency, and at MSKCC as well. I still attend ENT grand rounds there! My new office: Totum ENT, which is a holistic ENT office, so it's right up the integrative medicine route. Finally, I participated in a health and wellness panel at my 35th college reunion, along with **Dan Javit, MD '88.**"

1990s

Hospital for Special Surgery (HSS) shared an inspiring story about **S. Robert Rozbruch, MD '90**, and current medical student **Amber Hamilton '22**. Hamilton recently did an eight-week research fellowship at HSS focused on the psychosocial needs of adolescents having orthopedic surgery—a subject she knew firsthand. Born with hypophosphatemia, Hamilton was severely bowlegged as a child, and Dr. Rozbruch performed several surgeries to straighten and lengthen her legs. This experience sparked her desire to become an orthopedic surgeon and led her to pursue her MD at Weill Cornell Medicine. Dr. Rozbruch was Hamilton's mentor during the HSS fellowship, where she helped develop a patient needs survey based on her own experiences, enrolled participants in the study, and analyzed data. She also shadowed Dr. Rozbruch during patient appointments and observed him in the OR.

PHYSICIAN'S UNIFORM:

Reine-Marcelle Ibala '23 (right) receives her white coat from Kevin Holcomb, MD, associate professor of clinical obstetrics and gynecology and director of the Division of Gynecologic Oncology.





FUTURE PHYSICIAN: Arsalan Haghdel '23 (right) and his sister, Delaram

Tamara Rozental, MD '99, was promoted to professor of orthopedic surgery at Harvard Medical School, where she has been chief of hand and upper extremity surgery since 2015.

2000s

Ameet Singh, MD '02: "I was appointed professor of surgery (otolaryngology) and neurosurgery at George Washington University Medical Center in July 2019. Hope to see a strong showing from my classmates at our 20th Reunion!"

2010s

Sam Boas, MD '15: "I graduated from my psychiatry residency at MGH/McLean in June, and I just started back at NewYork-Presbyterian/Weill Cornell as an inpatient psychiatry attending."

Graduate School of Medical Sciences

Thomas P. Hopp, PhD '77: "My new medical thriller, *The Great Seattle Earthquake*, shows all the signs of being my bestselling book so far."

Maureen Gannon, PhD '96: "Beginning October 1, 2019, I will be the associate dean for faculty development at Vanderbilt University Medical Center. I will also continue in my role as principal investigator of an NIH- and VA-funded diabetes research lab at the medical center. I recently received a new R01 grant to study the role of G-protein coupled receptors in pancreatic beta cell proliferation and survival."

Igor Dikiy, PhD '15: "I was named a finalist of the Blavatnik Regional Award for Young Scientists in chemistry for my post-doctoral work. I believe that the work I did in grad school helped prepare me well for my postdoc (and beyond)."

'48 BA, '52 MD—Herbert A. Zaccaro of Ulster Park, NY, June 20, 2019; ob/gyn; staff member at Northern Dutchess Hospital, Kingston Hospital, and Benedictine Hospital; veteran; enjoyed hunting and fishing; active in community, professional, and religious affairs. Wife, Margery Hrouda Zaccaro, BS Nurs '50.

'55 MD—Cedric J. Priebe Jr. of South Setauket, NY, January 19, 2019; founding chief of the division of pediatric surgery and professor of surgery at Stony Brook University Hospital; professor and chief of pediatric surgery, Louisiana State Medical Center and Charity Hospital; director of surgical education and founder of the pediatric burn unit, Children's Hospital, New Orleans; served on the faculty at Columbia University; practiced at Roosevelt Hospital; general surgeon, US Air Force; expert on newborn congenital anomalies, pediatric tumors, and childhood trauma; author; editorial consultant for the *Journal of Pediatric Surgery*; active in professional affairs.

'59 MD—Edward L. Krawitt of Shelburne, VT, July 18, 2019; professor emeritus of medicine, University of Vermont; former clinical professor of medicine at Dartmouth College; expert on autoimmune liver diseases; 1987 Teacher of the Year, University of Vermont College of Medicine; author; co-editor, *Auto-immune Liver Diseases*; general medical officer, US Air Force; active in professional affairs.

'60 MD—Elizabeth L. Barrett-Connor of La Jolla, CA, June 9, 2019; founded and led the Rancho Bernardo Study of Healthy Aging; professor of epidemiology, Dept. of Family Medicine and Public Health, UC San Diego; examined the role of estrogens on cardiovascular health; author; active in professional affairs.

'62 MD—Carl B. Weiss of Cresco, PA, August 3, 2019; founded Pocono Eye Associates; colonel, US Air Force; served in the Korean War and Desert Storm; supervisor, Barrett Township; active in religious affairs.

We want to hear from you!

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Match Day

A Brooklyn girl's need for a donor kidney inspires a community



HEALTHY & HAPPY: Khadijah Sabir gets a post-transplant check-up from her doctor, Eduardo Perelstein, MD.

On Khadijah Sabir's eleventh birthday—surrounded by friends and family during a party in her honor at her Brooklyn elementary school, PS 177—she received what she calls “the best gift ever.” After months of incapacitating exhaustion due to chronic kidney disease, which necessitated at least ten hours of dialysis every night for months, she got the news: a kidney donor had been found.

When Khadijah was just nine, her parents had started noticing that she seemed more fatigued than her three siblings, often falling asleep as soon as she got home from school. Eventually, high levels of creatinine in her bloodwork prompted a visit to a nephrologist, who discovered that her kidneys were failing, likely due to her extremely elevated blood pressure. “We couldn't believe it,” says Khadijah's father, Sajid Sabir. “Her blood pressure was worse than an old man's.” By the time the problem was identified, Khadijah's kidneys were in such bad shape that she was almost immediately transferred to NewYork-Presbyterian/Weill Cornell, put on dialysis, and added to the transplant list.

Though many relatives were tested, none were a viable match, so the family turned to the media to spread the word. “We did everything,” says Sabir. “We had the news come to her school; we hosted events to raise awareness on World Kidney Day. I guess the word spread.” As a result, more than twenty strangers came forward to be tested to see if they were a match. “It was so heartening,”

says Khadijah's doctor, Eduardo Perelstein, MD, director of the Division of Pediatric Nephrology in the Department of Pediatrics at Weill Cornell Medicine and chief of pediatric nephrology at NewYork-Presbyterian/Weill Cornell's Komansky Children's Hospital. “It's so important for everyone to understand how significant a kidney could be to a person. It could determine whether they live or die.”

Khadijah received the transplant just two weeks after her birthday. According to her father, the surgery—which was performed by Sandip Kapur, MD '90, chief of transplant surgery and director of the Kidney and Pancreas Transplant Programs at NewYork-Presbyterian/Weill Cornell—went as smoothly as it could have possibly gone. “Usually it takes a little time for the kidneys to work,” says Sabir, “but as soon as Dr. Kapur put it in, it started pumping immediately.”

A few months after the surgery, Khadijah was able to attend her fifth grade graduation ceremony along with her classmates. Her status as a transplant recipient has required some adjustments; she's currently on five medications (two of which she'll need to take for life), and she can't participate in contact sports. She's been hospitalized a few times due to high fevers—which Perelstein notes is not unusual for such

A few months after the surgery, Khadijah was able to attend her fifth grade graduation ceremony. 'Her quality of life has improved so much,' says Eduardo Perelstein, MD.

patients—but all in all, her good days far outnumber the bad. Says Perelstein: “Her quality of life has improved so much.”

Although the publicity generated by Khadijah's plight may well benefit other patients in the long run, her match came via a different route: a system known as a donor chain. In this arrangement, a viable donor whose loved one is in need of a kidney—but for whom they're not a match—can donate to another patient; that donor's loved one then receives a kidney from someone else in the same situation. Though Khadijah's donor, a woman, has chosen to remain anonymous, it's the girl's greatest wish to meet her—one she ranks above a family trip to Disney World. “Even though we don't know her, she's part of our family now, no matter what,” Sabir says of the donor. “She saved our daughter's life.” ■

—Alexandra Bond

"I thought Dr. Altorki was terrific, and I wanted to support his research and give back to Weill Cornell Medicine. **It's a wonderful feeling to be able to show your appreciation to your doctor this way.**"

Adelaide Hurst



After a positive experience at Weill Cornell Medicine, Adelaide Hurst expressed her gratitude to the institution and the physician who performed her successful lung surgery by establishing a charitable gift annuity in honor of Dr. Nasser Altorki, the David B. Skinner, MD Professor of Thoracic Surgery.

What will your legacy be?

We can help.



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