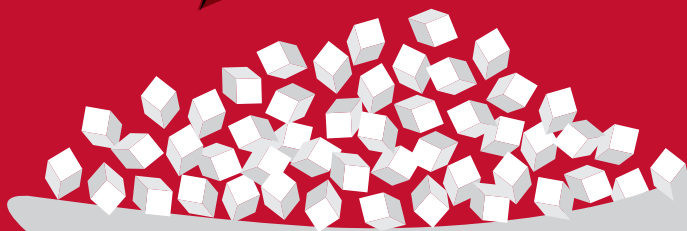


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WINTER 2019



FEEDING THE BEAST

Lewis Cantley, PhD,
investigates how sugar
may drive cancer growth

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THE MAGAZINE OF
WEILL CORNELL MEDICINE

WINTER 2019

LETTERS TO THE EDITOR

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JENNIFER KLOIBER INFANTE



FEATURES

26 SICKENINGLY SWEET?

AMY CRAWFORD

A diet high in sugar has long been a known risk factor for health problems such as obesity and diabetes. But according to an accumulating body of research by Lewis Cantley, PhD, the Meyer Director of the Sandra and Edward Meyer Cancer Center at Weill Cornell Medicine, and his team, excess sugar has another danger: it helps many types of cancer grow faster. “As we learn more and more about cancer metabolism, we understand that individual cancers are addicted to particular things,” Cantley says. “In a lot of cancers, that’s insulin—and sugar.” Their findings not only have implications for cancer prevention, but could lead to new approaches to treatment.

34 TECH THERAPY

HEATHER SALERNO

As Sara Czaja, PhD, notes, “there’s a misconception that older adults are technophobic.” But Czaja—one of the world’s leading experts on technology and aging—has done nearly three decades of research that challenges that myth. She has shown that older adults are actually eager to embrace new technology, that they have little trouble mastering it given the right resources and training, and that tech literacy can improve their overall health and wellbeing. Building on work she began at the University of Miami, Czaja and her WCM team are now studying a range of inventive, tech-based ways to keep older adults dynamic and productive. Says Czaja: “People don’t stop growing intellectually or emotionally when they turn sixty-five.”

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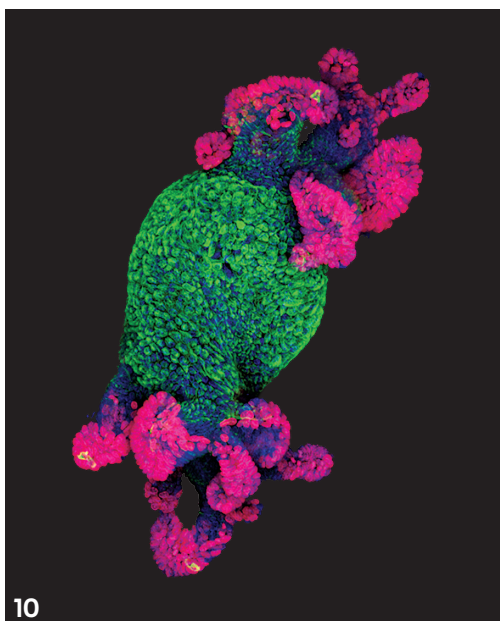
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**Weill
Cornell
Medicine**

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3 DEAN'S MESSAGE

Comments from Dean Augustine M.K. Choi, MD

4 GIFT ADVANCES NEW RESEARCH IN ALZHEIMER'S DISEASE

6 SCOPE

Barbara Hempstead, MD, PhD, named dean of the Weill Cornell Graduate School of Medical Sciences. *Plus:* A \$9 million grant for lymphoma research; Travelers Summer Research Fellowship celebrates fiftieth anniversary; Massimo Loda, MD, chairs Department of Pathology and Laboratory Medicine; Said Ibrahim, MD, named senior associate dean for diversity and inclusion; two win NCI Outstanding Investigator Awards; and the Daedalus Fund for Innovation supports a new round of projects.

10 LIGHT BOX

In addition to their research value, organoids created in the lab of Lukas Dow, PhD, make for striking viewing—with colorful dyes and intricate forms that approach abstract art.

12 TALK OF THE GOWN

How a simple questionnaire can identify patients with undiagnosed COPD. *Plus:* Ting Jia, PhD '09, guides his firm's investment in biotech; exploring the gender gap in Alzheimer's disease; Bruce Reidenberg '81, MD '85, leads a New York agency for the developmentally disabled; Omar Vandal, PhD '07, oversees grants at the Gates Foundation; a conversation with Rebecca Gilbert, PhD '02, MD '03, chief scientific officer of the American Parkinson Disease Association; and a seminar challenges stereotypes about geriatric patients.

40 NOTEBOOK

News of alumni

47 IN MEMORIAM

Alumni remembered

48 POST DOC

Richard Isaacson, MD, and actor Seth Rogen team up to promote Alzheimer's prevention.

Weill Cornell Medicine (ISSN 1551-4455) is produced four times a year by Cornell Alumni Magazine, 401 E. State St., Suite 301, Ithaca, NY 14850-4400 for Weill Cornell Medicine. Third-class postage paid at New York, NY, and additional mailing offices. POSTMASTER: Send address changes to Office of External Affairs, 1300 York Ave., Box 123, New York, NY 10065.

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

As the Population Ages, Preparing Doctors for a 'Silver Tsunami'



Geriatricians have been saying it for years: We're living longer than ever before. That's great news—but it also means that our country is looking at a rapidly growing population of senior citizens, a wave that's been dubbed the "Silver Tsunami." By 2030, one in every five Americans will be at least sixty-five years of age, with older adults outnumbering children for the first time in U.S. history. That rise is only expected to accelerate, with a recent federal report predicting that the number of seniors will reach 98 million by 2060.

Such a groundswell will no doubt spark many changes throughout society. Few areas will be affected more than healthcare, which will require a larger, more accessible workforce that is uniquely skilled to meet the needs of an expanding elderly demographic. Older adults will need help treating

careers—and that they will need to apply their expertise to these patients' specific needs. Taking care of the elderly is the common denominator across specialties—indeed, across all sectors of society—and it's our responsibility to prepare our students and trainees to do so, from the earliest stages of their education.

As noted in this issue, our second-years are now required to attend a seminar called "Introduction to the Geriatric Patient," intended to dispel stereotypes and offer fresh perspectives about seniors. There's also the Longitudinal Experience to Advance Patient Care (LEAP) program, which pairs students with older patients whom they follow throughout their four years of medical school. Trainees at all levels participate in the EGL House Call Program, which lets them leave the classroom and hospital and visit an elderly patient's home. Through these efforts, we hope our future caregivers will truly get to know older patients and learn firsthand about the difficulties they face.

Research is equally important, and Congress has recognized this, infusing the National Institute on Aging with increased funding for this fiscal year. With a wide portfolio of bench and translational research in geriatrics and age-related diseases, Weill Cornell Medicine reflects this commitment. For example, each year, students are selected for the Geriatrics and Palliative Medicine Scholars program, where they spend the summer working on a research project related to the care of older adults, under the mentorship of our experts. This issue also highlights several of our institution's many scientists who are working to find solutions for illnesses that tend to affect older patients including Alzheimer's and Parkinson's disease. And in a feature story, we describe interventions developed by Sara Czaja, PhD, who was recently recruited to direct our newly founded Center on Aging and Behavioral Research, dedicated to maximizing the quality of life of older adults.

All of these initiatives, and many others, reflect the breadth of how we are addressing the "Silver Tsunami." They are a moral imperative of our mission to provide the farthest-reaching, most compassionate care we can for our oldest patients.

One of the biggest challenges moving forward is the coming shortage of primary and specialty physicians, particularly when it comes to geriatricians and other healthcare professionals who primarily serve older patients.

an array of chronic conditions, which tend to develop and accrue over time. Thanks to advances in diagnostic technologies and improved treatments and therapies, we can help our older patients live longer and better than they would have in the past. But healthcare providers must be adequately trained in the physiological changes age brings to capitalize on the tools we have at our disposal.

One of the biggest challenges moving forward is the coming shortage of primary and specialty physicians, particularly when it comes to geriatricians and other healthcare professionals who primarily serve older patients. So it's critical for medical schools nationwide to encourage up-and-coming doctors to enter those fields, in order to ensure that our loved ones receive the best care possible as they celebrate more birthdays. Yet regardless of what they ultimately specialize in, medical students need to know that they'll encounter older adults throughout their



Weill Cornell Medicine

Gift Advances New Research in Alzheimer's Disease

As the new director of the Helen and Robert Appel Alzheimer's Disease Research Institute, Dr. Li Gan is committed to making a transformational impact on patient care. Overseer Vice Chair Robert Appel and Helen Appel recently made a \$5 million gift to bring Dr. Gan to Weill Cornell Medicine.

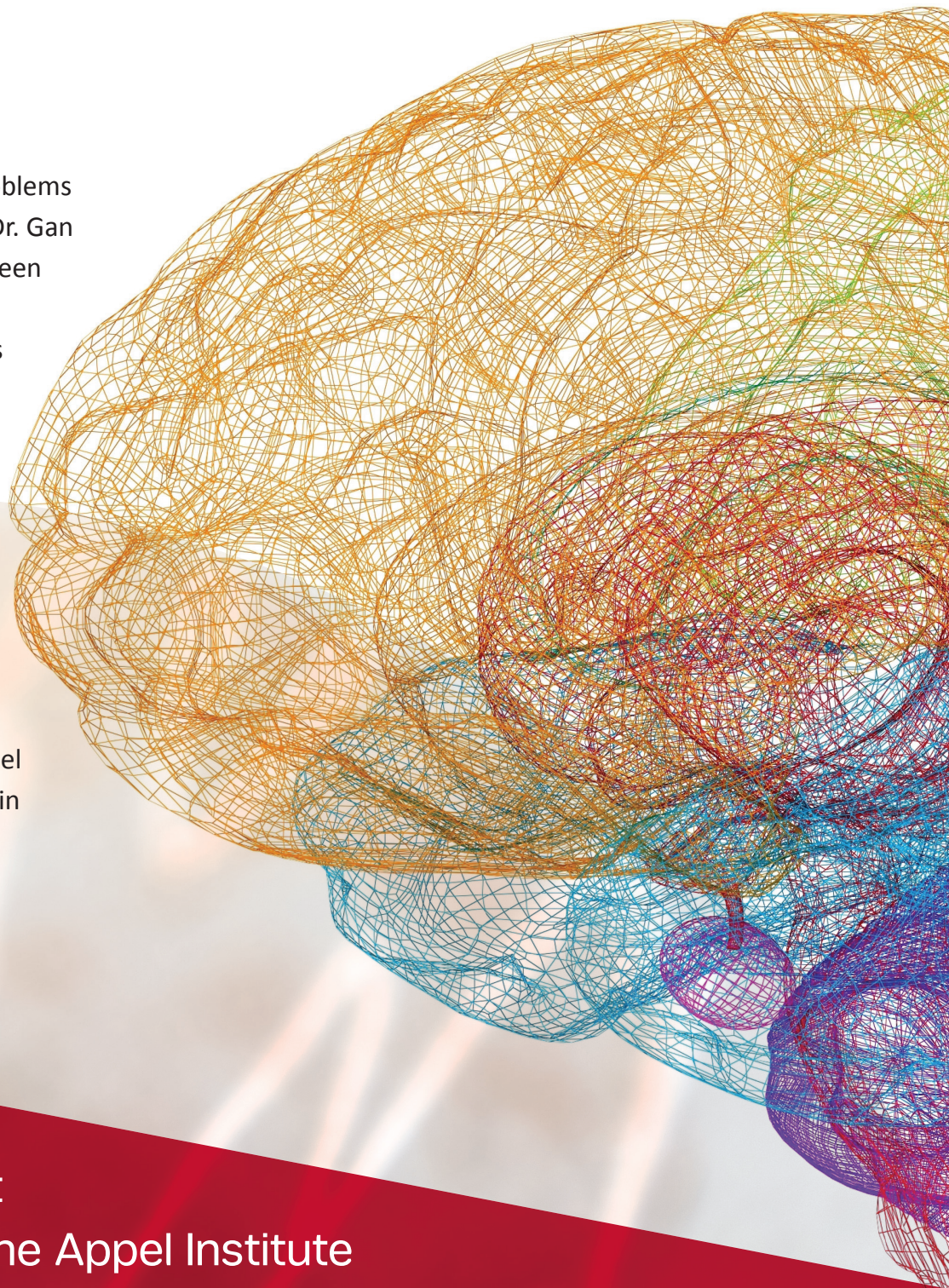
Through the Appels' generosity, Dr. Gan – a leading neuroscientist whose research has advanced the understanding of Alzheimer's disease and related neurodegenerative disorders – was recruited to Weill Cornell Medicine as the Burton P. and Judith B. Resnick Distinguished Professor in Neurodegenerative Diseases.



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Interested in understanding problems that may arise as the brain ages, Dr. Gan investigates the relationship between the loss of functional neurons, accumulation of the toxic proteins amyloid beta and tau, and abnormal immune responses in neurodegenerative diseases, specifically in Alzheimer's and in frontotemporal dementia.

The Helen and Robert Appel Alzheimer's Disease Research Institute was established in 2006 with a \$15 million gift from the Appels. In 2009, Mr. and Mrs. Appel made a second gift of \$15 million in support of the Institute.



"We are thrilled that Dr. Gan is leading the Appel Institute into a **new era of discovery in the fight** against this debilitating and fatal disease."

Robert Appel
Overseer Vice Chair

Hempstead Is New Graduate School Dean



Barbara Hempstead, MD, PhD

Barbara Hempstead, MD, PhD—who has served Weill Cornell Medicine for more than three decades as a distinguished hematologist, neuroscientist, and academic leader—has assumed the deanship of the Weill Cornell Graduate School of Medical Sciences. In her new role, she will build on the school's exemplary academic reputation by enhancing its curriculum and expanding the research opportunities it offers to students, including encouraging interdisciplinary collaborations between trainees and their counterparts on the Ithaca campus and at Cornell Tech on New York's Roosevelt Island. She will also seek to more closely integrate the academic programs at WCM to enrich doctoral, medical, and master's students' scientific and medical perspectives. "Technological advances over the last decade have transformed how we think about science," says Hempstead, also the O. Wayne Isom Professor of Medicine and a professor of neuroscience. "Our work today is collaborative, capitalizes on large datasets, and harnesses state-of-the-art techniques to ask questions that haven't been addressed before. This evolving landscape requires us to think more broadly about how we train the next generation."

Hempstead's previous roles at WCM include serving as co-chief of the Division of Hematology and Medical Oncology in the Weill Department of Medicine, as associate dean for faculty development, and most recently as senior associate dean for education. In

'Technological advances over the last decade have transformed how we think about science,' Hempstead says. 'This evolving landscape requires us to think more broadly about how we train the next generation.'

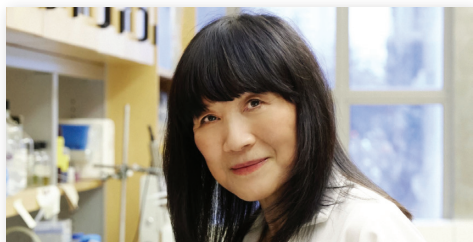
the latter position, she oversaw implementation of Weill Cornell Medical College's innovative curriculum, which integrates the scientific basis of disease with early exposure to clinical care and a formal curriculum on professionalism, and provides a dedicated six-month research block to complete the Areas of Concentration capstone program.

An undergraduate alumna of Tufts University, Hempstead earned her medical and doctoral degrees from Washington University School of Medicine in St. Louis; she joined the WCM faculty in 1987. A board-certified hematologist, she has had her research continuously funded by the NIH for more than three decades. Four patents have been filed for her work, and she has published more than 130 scholarly papers. Her many honors include the Burroughs Wellcome Clinical Scientist Award in Translational Research and election to the American Society for Clinical Investigation and to the American Association of Physicians.

"Dr. Hempstead is an accomplished physician-scientist, leader, and educator whose pioneering research contributions have improved our understanding of cellular biology," says Augustine M.K. Choi, MD, the Stephen and Suzanne Weiss Dean of WCM. "I can think of no one better than her to lead the Weill Cornell Graduate School of Medical Sciences as its dean, kindling the passions and talents of our scientific trainees, whose groundbreaking discoveries can transform medicine."

PHOTOS: HEMPSTEAD, LODA; ASHLEY JONES; CHEN-KIANG, LEUKEMIA AND LYMPHOMA SOCIETY; TRAVELERS, IRA FOX

\$9 Million Grant for Lymphoma Research



Selina Chen-Kiang, MS '67, PhD

WCM has won a five-year, \$9 million grant from the National Cancer Institute to better understand why patients with mantle cell lymphoma (MCL) initially respond to treatment but relapse over time. The work, involving a dozen investigators pursuing three related projects, could point the way to new therapies that are effective, well tolerated, and tailored to individual patients. An aggressive, incurable form of non-Hodgkin lymphoma, MCL was diagnosed in about 70,000 people—most of them elderly—in the U.S. in 2017. “Currently, we have a number of approved drugs and experimental therapies for MCL, yet we don’t precisely know how they work or why patients ultimately become resistant to them,” says the effort’s principal investigator, Selina Chen-Kiang, MS '67, PhD, a professor of pathology and laboratory medicine and member of the Sandra and Edward Meyer Cancer Center at WCM and a professor in the Microbial Pathogenesis and Immunology Program in the Graduate School of Medical Sciences. “We need to know how to use these drugs based on scientific principles so that we can better patients’ lives and ultimately cure their disease.”



HAPPY MEMORIES: At last fall’s reunion of Travelers Summer Research Fellowship participants, held in honor of the program’s fiftieth anniversary, Marcus Williams, MD '01 (right), greets Bruce Ballard, MD, former associate dean of student affairs and equal opportunity programs. Behind them is Carlyle Miller, MD '75, also a former associate dean of student affairs and equal opportunity programs and a past director of Travelers.

Loda Named Pathology Chair



Massimo Loda, MD

Massimo Loda, MD, is the new chair of the Department of Pathology and Laboratory Medicine at WCM and pathologist-in-chief at NewYork-Presbyterian/Weill Cornell. A renowned molecular pathologist who specializes in the study of prostate cancer, Loda was recruited from Dana Farber Cancer Institute, where he chaired the Department of Oncologic Pathology. In his new role, and as a member of WCM’s Sandra and Edward Meyer Cancer Center, he will enhance the department’s diagnostic capabilities by introducing new techniques, including those that leverage computational pathology and large datasets to identify patterns and trends in disease. Loda, who earned his MD from the University of Milan, Italy, succeeds Daniel Knowles, MD, who chaired the department for nearly a quarter-century.

TIP OF THE CAP...

Mary Crow, MD '78, the Joseph P. Routh Professor of Rheumatic Diseases in Medicine, physician-in-chief at Hospital for Special Surgery (HSS), and chief of rheumatology at WCM and NewYork-Presbyterian/Weill Cornell, winner of the Presidential Gold Medal from the American College of Rheumatology.

Deborah Estrin, PhD, a professor of healthcare policy and research at WCM and of computer science at Cornell Tech, winner of a MacArthur Foundation fellowship (commonly called a “genius grant”) for her work using mobile devices and data to address social challenges.

Anthony Hollenberg, MD, the Sanford I. Weill Chairman of Medicine at WCM and physician-

in-chief at NewYork-Presbyterian/Weill Cornell, winner of the Sidney H. Ingbar Distinguished Lectureship Award from the American Thyroid Association.

Jyotishman Pathak, PhD, the Frances and John L. Loeb Professor of Medical Informatics, chief of the Division of Health Informatics, and professor of healthcare policy and research, elected a fellow of the American College of Medical Informatics.

Enrique Rodriguez-Boulan, MD, the Charles and Margaret Dyson Professor in Ophthalmology Research and a professor of cell and developmental biology and of cell biology in ophthalmology, winner of a Fellows Award from the American Society of Cell Biology.

Rahul Sharma, MD, chair of emergency medicine at WCM and emergency physician-in-chief at New York Presbyterian/Weill Cornell, appointed by the Regents of the University of the State of New York to a five-year term on the State Board for Medicine.

Peter Schlegel, MD, senior associate dean for clinical affairs, the James J. Colt Professor of Urology, and chairman of urology, winner of the Barbara Eck Founder’s Award from RESOLVE: The National Infertility Association.

Philip Stieg, MD, PhD, chairman of neurologic surgery at WCM and neurosurgeon-in-chief at NewYork-Presbyterian/Weill Cornell, awarded the Ellis Island Medal of Honor.

Ibrahim to Lead Diversity and Inclusion Efforts



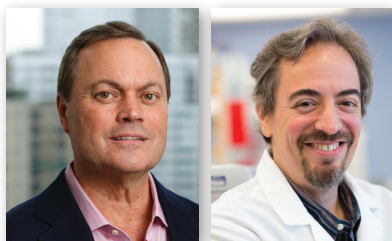
Said Ibrahim, MD

as a leader in the healthcare industry while also enriching the experiences of our academic community.”

Born in Somalia, Ibrahim came to the U.S. in the mid-1980s to pursue higher education; he holds a bachelor's degree from Oberlin College and an MD from Case Western Reserve University School of Medicine. An NIH-funded clinician-investigator, he focuses his research on unequal healthcare access and quality among minority and other underserved communities. In his new role, he will oversee initiatives aimed at recruiting, retaining, and nurturing faculty, students, and trainees who are members of racial or ethnic groups underrepresented in medicine, as well as women and people who identify as lesbian, gay, bisexual, and transgender. “Having grown up in East Africa, I understand firsthand how inequalities in healthcare access can significantly affect people's lives,” he says. “Diversity and inclusion—things that people had fought passionately for during the civil rights movement—made it possible for someone like me to attend medical school in the United States. It's important to me that we maintain and grow that kind of opportunity for everyone.”

A WCM physician-scientist who studies why health outcomes vary among demographic groups has been appointed the institution's inaugural senior associate dean for diversity and inclusion. Said Ibrahim, MD, will lead the Office for Diversity and Inclusion, working to unify diversity initiatives and foster a stronger culture of equity and belonging at WCM. “We want our physicians, researchers, and trainees to be representative of the populations we serve, so patients see us as a reflection of who they are,” says Ibrahim, chief of the Division of Healthcare Delivery Science and Innovation in the Department of Healthcare Policy and Research, where he also serves as vice chair for development and strategy. “Our diversity initiatives will help us achieve that goal and position us

Researchers Win National Cancer Institute Outstanding Investigator Awards



David Lyden, MD, PhD (left), and Ari Melnick, MD

immune cell called B-cells—which should in theory protect the body by producing antibodies—can transform into cancer itself. Lyden and Melnick are among just twenty researchers who received Outstanding Investigator Awards from the NCI in 2018. Created to support leaders in cancer research whose work may lead to major breakthroughs, the awards offer \$600,000 in annual funding for seven years.

Two faculty have been honored with Outstanding Investigator Awards from the National Cancer Institute. David Lyden, MD, PhD, the Stavros S. Niarchos Professor in Pediatric Cardiology and a professor of pediatrics, studies how cancer spreads to distant organs; Ari Melnick, MD, the Gebroe Family Professor of Hematology/Oncology and a professor of medicine, focuses on understanding how a type of

Daedalus Fund Supports Faculty Investigators

Eight faculty have been selected in the fifth round of awards from the Daedalus Fund for Innovation, which helps advance promising applied and translational research projects and emerging technologies that have commercial potential. Winners, chosen twice annually, receive awards of \$100,000 or \$300,000. The winning faculty, and the subjects of their work, are:

Julie Magarian Blander, PhD, the Gladys and Roland Harriman Professor of Immunology in Medicine: harnessing the innate immune system to fight cancer.

Lewis Cantley, PhD, professor of cancer biology in medicine and Meyer Director of the Sandra and Edward Meyer Cancer Center: a potential way to inhibit a subset of cancers, including triple-negative breast cancer and non-small-cell lung cancer.

Juan Cubillos-Ruiz, PhD, the William J. Ledger, MD, Distinguished Assistant Professor for Infection and Immunology in Obstetrics and Gynecology: new therapeutic vaccines for cancer.

Peter Goldstein, MD, professor of anesthesiology and associate professor of medical ethics in medicine: non-opioid treatments for neuropathic pain.

Matthew Greenblatt, MD, PhD, assistant professor of pathology and laboratory medicine: new therapies to prevent bone loss in cancer patients.

Barbara Hempstead, MD, PhD, dean of the Graduate School of Medical Sciences, the O. Wayne Isom Professor of Medicine, and a professor of neuroscience: using monoclonal antibodies to prevent brain injury during seizures.

Steven Lipkin, MD, PhD, the Gladys and Roland Harriman Professor of Medicine, professor of genetic medicine, and vice chair for basic and translational research in the Weill Department of Medicine: a vaccine to reduce the risk of colorectal cancer.

Shahin Rafii, MD, the Arthur B. Belfer Professor in Genetic Medicine, director of the Ansary Stem Cell Institute, and chief of the Division of Regenerative Medicine: generating engraftable stem cells for the treatment of blood diseases.

PHOTOS: IBRAHIM, LYDEN, JONES; MELNICK, ROGER TULLY

FROM THE BENCH

Even with Normal BMI, Fat Raises Breast Cancer Risk



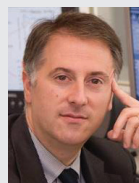
ANDREW
DANNENBERG, MD

Andrew Dannenberg, MD, the Henry R. Erle, MD—Roberts Family Professor of Medicine, and colleagues have found that postmenopausal women with higher levels of body fat have a significantly increased risk of developing breast cancer—even if they have a normal body mass index (BMI). As Dannenberg, who is also associate director of cancer prevention at the Sandra and Edward Meyer Cancer Center, notes, “It is possible to be at a normal BMI but have excess body fat and the risks associated with that excess fat,” such as inflammation and metabolic abnormalities associated with several types of cancer, including breast cancer. The study, which involved 3,460 postmenopausal women with normal BMI, was published in *JAMA Oncology*.

Gut Fungi Affect Airway Allergies

In *Cell Host & Microbe*, researchers report that common drug treatments that lead to changes in gut fungi can exacerbate asthma and other allergic airway diseases. The findings suggest that the prevalence of such diseases may be attributable in part to widespread use of antimicrobial drugs, including antifungals. In the study, Iliyan Iliev, PhD, assistant professor of immunology in medicine and a researcher in the Jill Roberts Institute for Research in Inflammatory Bowel Disease, and colleagues demonstrated that several weeks of treatment with the antifungal drug fluconazole exacerbates mice’s asthma-like allergic response to dust mites—an effect that lasted several weeks after treatment ended.

Identifying Cognition in Brain-Injured Patients



NICHOLAS SCHIFF,
MD '92

Measuring brain activity in response to hearing a brief narrative can identify patients with severe brain injury who have preserved high-level cognition despite showing limited or no consciousness. In *Current Biology*, researchers described a method for measuring the delay in brain processing of continuous natural speech in patients with severe brain injury reflected in the EEG. The results correlated with evidence obtained using fMRI to identify the capacity to perform cognitively demanding tasks; variations in degree of the processing delay correlated with a range of remaining cognitive ability measured by behavioral assessments. “This approach may be a more effective and efficient method for initially identifying patients with severe brain injuries who are very aware but are otherwise unable to respond,” says senior author Nicholas Schiff, MD '92, the Jerold B. Katz Professor of Neurology and Neuroscience in the Feil Family Brain and Mind Research Institute and co-director of the Consortium for the Advanced Study of Brain Injury at WCM.

Mothers’ Cancer Death and Kids’ Mortality



SILVIA FORMENTI,
MD

In what’s believed to be the first study to estimate the effect of a mother’s death from cancer on child mortality, researchers have found that in some developing countries, the death rate of children whose mothers have died from breast or cervical cancer may be as high as 30 percent. “The role of the mother is so important to the health of a child that her death has a direct impact on the survival of her children,” says senior author Silvia Formenti, MD, chair of the Department of Radiation Oncology, the Sandra and Edward Meyer Professor of Cancer Research, and radiation oncologist-in-chief at NewYork-Presbyterian/Weill Cornell. While the reasons for the kids’ deaths were unclear, researchers theorize they could stem from malnutrition or neglect. Formenti hopes that the study, which was based on computer modeling and was published in *Cancer*, will make NGOs “start thinking about the collateral damage that occurs to children when their mother dies.”

Cardio Risk Rises Before Cancer Diagnosis



BABAK NAVI, MD,
MS '15

Older adults with cancer are nearly 70 percent more likely to suffer a stroke or heart attack in the year prior to diagnosis, finds a team led by Babak Navi, MD, MS '15, associate professor of neurology in the Department of Neurology and of neuroscience in the Feil Family Brain and Mind Research Institute and a neurologist at NewYork-Presbyterian/Weill Cornell. The work, published in *Blood*, found that the increased risk begins five months before cancer is diagnosed and peaks in the month prior. “Since cancers take months to years to develop, the cancer was probably there all along and, at least in some of those patients, caused their stroke or heart attack,” says Navi, also chief of the Division of Stroke and Hospital Neurology in the Department of Neurology at WCM and NewYork-Presbyterian/Weill Cornell. “If we can identify the highest-risk patients, we can determine the utility of screening them to help diagnose their cancers earlier, which may lead to better outcomes.”

High-Fat Diet Has Lasting Effects on Liver

Scientists at WCM and Memorial Sloan Kettering Cancer Center have found that consuming a high-fat, high-sugar diet causes a harmful accumulation of fat in the liver that may not reverse even after adopting a healthier diet. For the study, in *Science Translational Medicine*, investigators developed a nanosensor that can track the accumulation of liver fat and used it to assess the effects of a high-fat, high-sugar diet on mice. They found that while fat accumulation decreases after switching to a healthy diet, some fat remains in liver cells long afterwards. “Going on a short-term, unhealthy diet binge is a bad idea,” says senior author Daniel Heller, PhD, an associate professor in the Pharmacology and Physiology, Biophysics, and Systems Biology program in the Weill Cornell Graduate School of Medical Sciences and head of the Cancer Nanomedicine Laboratory at Memorial Sloan Kettering. “The liver remembers.”

Volume Key to Valve Replacement Outcomes

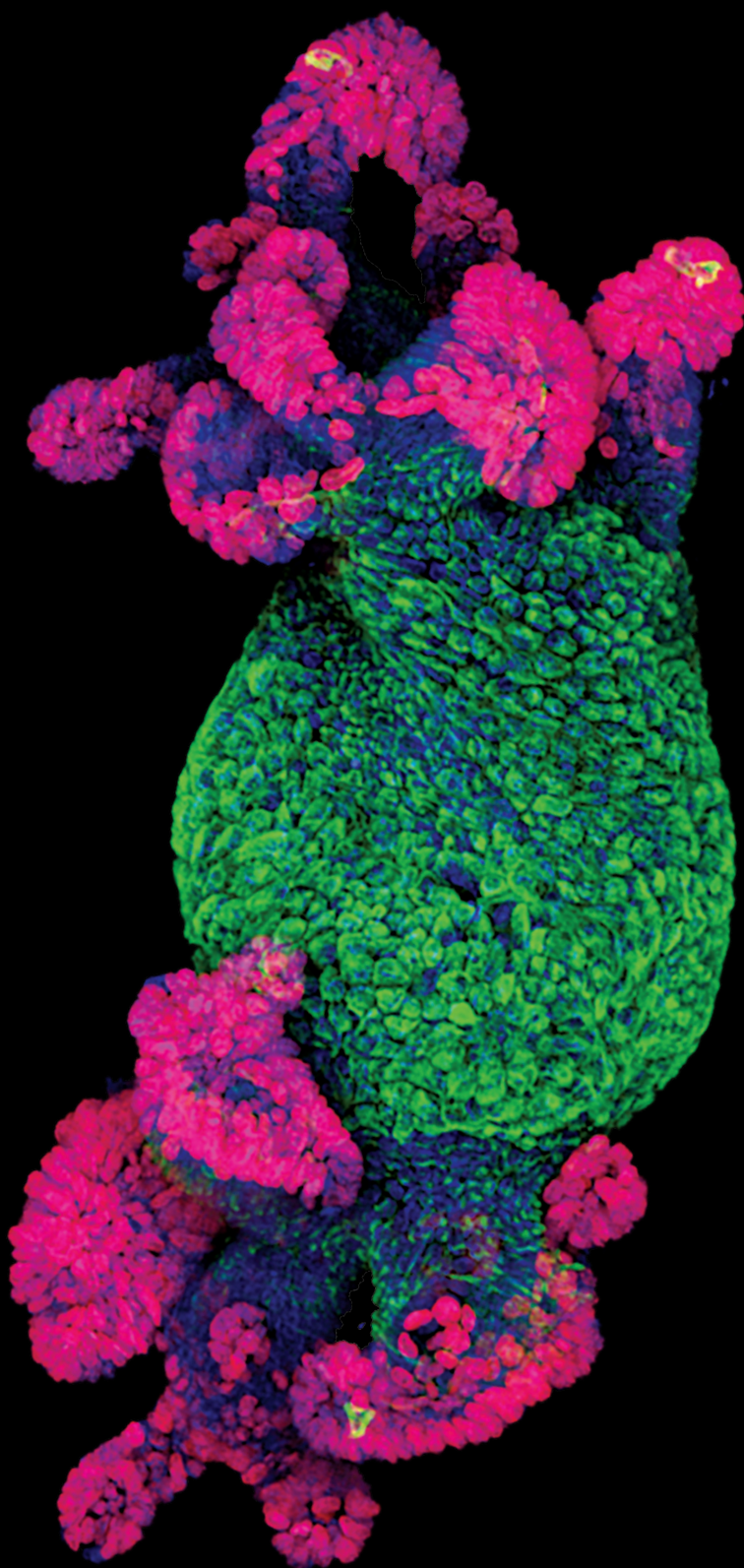


ART SEDRAKYAN,
PHD

A team led by Art Sedrakyan, PhD, professor of health-care policy and research, has explored the relationship between a hospital’s volume of performing surgical aortic valve replacement (an open procedure known as SAVR) and its outcomes with a newer, less invasive technique. The study, in *JAMA Cardiology*, found that when hospitals have high caseloads of both, it raises the likelihood of positive outcomes for patients who undergo the newer procedure, transcatheter aortic valve replacement (TAVR). To tease out that relationship, researchers analyzed more than 60,000 TAVR procedures performed at hospitals between 2011 and 2015. When they looked at mortality rates thirty days and then one year after TAVR, they found that patients treated at hospitals with high SAVR and TAVR volumes had the lowest mortality. Says Sedrakyan: “Patients need to know that getting care at institutions with the highest volume of aortic valve interventional care is most beneficial to them.”

Technique Gives a Detailed Look at Gene Activity

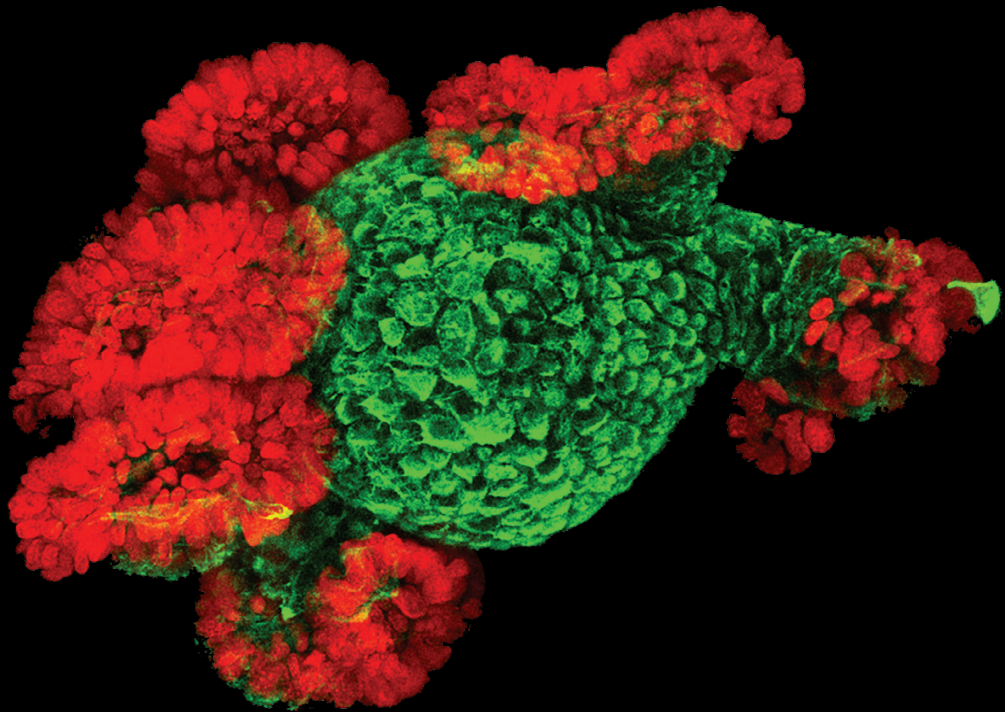
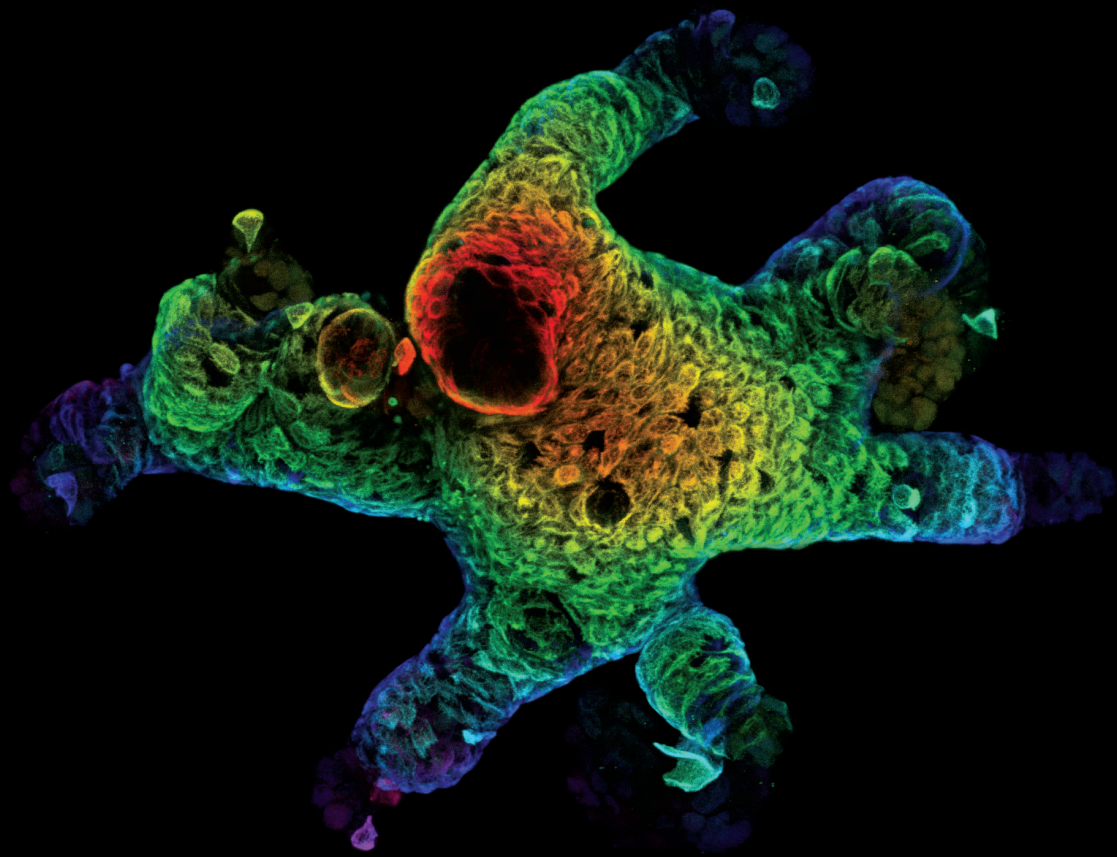
Scientists can now learn how the fine details of gene activity differ from one cell type to another in a tissue sample, thanks to a technique invented by WCM researchers and described in *Nature Biotechnology*. “An individual gene can ‘say’ different things, and the true meaning often requires listening to entire phrases, rather than single words,” explains senior author Hagen Tilgner, PhD, assistant professor of neuroscience in the Feil Family Brain and Mind Research Institute. “Our new method essentially allows us to record complete phrases, called isoforms, that each gene expresses in each cell.” The technique, called single-cell isoform RNA sequencing, could lead to improved understanding and treatment of diseases caused by abnormal gene activity.



Vital Organoids

The lab of Lukas Dow, PhD, assistant professor of biochemistry in medicine, studies the critical drivers of colorectal cancer. By understanding how genetics and other factors influence the disease—its onset, progression, and therapeutic response—they aim to spur the development of more effective treatments for the second leading cause of cancer-related death in the West, which claims some 50,000 lives each year in the U.S. alone.

The Dow Lab's work involves both mouse models and organoids—masses of cells grown in culture that mimic the function of an organ for scientific study. In addition to their immense value to research, these structures can make for striking viewing, with colorful dyes and intricate forms that approach abstract art. As *Cell* noted in an online slideshow last fall that featured the lab's organoids: "The incredible range of tissue models and techniques have also given way to some of the most captivating images being created in biology."



Clearing the Air

Pulmonologist Fernando Martinez, MD, hopes that a simple questionnaire can help identify patients with COPD who are undiagnosed—and improve countless lives around the globe



Fernando Martinez, MD

Chronic obstructive pulmonary disease, or COPD, is the fourth-leading cause of death worldwide. And as the population ages, rates are rising: while there were an estimated 227 million cases in 1990, by 2010 that number had reached 384 million. But studies suggest that as many as 70 percent of people who have COPD—a generally progressive disease with lung inflammation and scarring—go undiagnosed, and therefore miss out on treatments that can improve quality of life and potentially slow the progress of this still-incurable disease. “If we can find these undiagnosed patients, we think we’ll be able to have a major beneficial impact for them and for the healthcare system,” says COPD expert Fernando Martinez, MD, chief of pulmonary and critical care medicine at WCM and NewYork-Presbyterian/Weill Cornell Medical Center, who has spent much of his thirty-year career

caring for COPD patients, investigating new methods of identifying patients at risk for the disease, and developing new treatments for it. “There are multiple therapies now available that improve quality of life and reduce shortness of breath, acute events, emergency department visits, and mortality.”

Why are so few people diagnosed? For one thing, Martinez says, sufferers tend to be older, and they and their doctors may blame symptoms like shortness of breath on normal aging. And there are lingering misconceptions about the disease’s demographics. Although women are actually more likely to die of COPD, it’s still largely considered a man’s disease—and while tobacco use remains the primary cause, a quarter of COPD patients have never smoked.

But, Martinez says, the key to getting more people diagnosed and treated may simply be a matter of asking the right questions. So with

PHOTO: JOHN ABBOTT

colleagues at WCM, the University of Michigan, and other institutions, he developed a simple screening instrument called the COPD Assessment in Primary Care to Identify Undiagnosed Respiratory Disease and Exacerbation Risk (abbreviated as “CAPTURE”) that may prove revolutionary. Preliminary data from small trials in physicians’ offices—which involved a total of about 350 patients and control subjects at six locations across the U.S.—indicate it is much more effective than current screening methods, and Martinez and his colleagues recently received a grant from the NIH to test it more widely. “CAPTURE was developed in partnership with patients,” Martinez says. “We asked them, ‘What are the questions that you think we should be asking? How should we ask them?’ Eventually, we came up with this very simple set of five carefully worded questions, some of which I would never have thought to ask.”

The CAPTURE questions are: Have you ever lived or worked in a place with dirty or polluted air, smoke, second-hand smoke, or dust? Does your breathing change with seasons, weather, or air quality? Does your breathing make it difficult to do things such as carry heavy loads, shovel dirt or snow, jog, play tennis, or swim? Compared to others your age, do you tire easily? In the past twelve months, how many times did you miss work, school, or other activities due to a cold, bronchitis, or pneumonia? A score is calculated, with a point for each affirmative answer to the first four questions added to the number of missed events reported in the fifth question. Fewer than two points indicates that a patient probably does not have COPD; between two and four should be followed up with a basic measure of pulmonary function, known as a peak flow test. A patient who does poorly on the peak flow measure, or who scores five or more on the questionnaire, will receive further clinical evaluation, including a test known as spirometry, which may lead to a formal diagnosis.

In developing the questionnaire, Martinez and his colleagues studied whether certain questions were more likely to indicate that a given patient had COPD. Surprisingly, they found that those that focused too heavily on a person’s smoking history—asking how many packs a day they smoked, for example—proved less relevant than more general inquiries about exposure to environmental contaminants. Asking patients about whether breathing problems made specific activities difficult was more likely to identify COPD than simply asking whether a patient ever experiences shortness of breath; after all, most people get breathless when they exercise vigorously. And asking them to compare themselves with their peers helps control for the fact that COPD symptoms may be confused with normal aging. “This questionnaire,” he says, “has addressed those potential initial biases that we all have.”

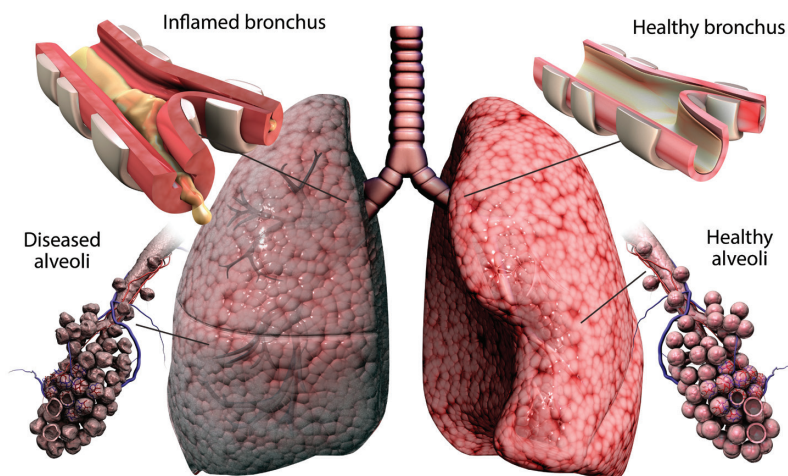
Originally published in 2016, CAPTURE has been translated into fourteen languages and is being used in academic studies around the world. Martinez now wants to know how it will work with a large, diverse population, so the new study will involve 5,000 patients in one hundred primary care centers around the country, in a variety

‘CAPTURE was developed in partnership with patients,’ Martinez says. ‘We came up with this very simple set of five carefully worded questions, some of which I would never have thought to ask.’

of communities (such as those that are urban, rural, wealthy, or economically disadvantaged). Another goal of the study is to determine whether primary care doctors are willing to take the extra five to ten minutes per office visit to administer the questionnaire. Finally, the new study will seek to determine whether CAPTURE helps more patients access treatments that improve their quality of life. In addition to new medicines that can lessen symptoms and improve quality of life, patients may benefit from pulmonary rehabilitation therapy and other nonmedical treatments. And in the future, Martinez hopes physicians will be able to intervene even sooner: he is planning a new study to develop better ways of finding patients as young as their thirties and forties who are at risk for developing COPD.

For Martinez, the fight against COPD is driven by more than a professional passion. A close relative, who’s now eighty, has suffered for years from severe COPD, which has significantly affected his quality of life. “He was a man who always seemed to be in charge of everything—a wonderful guy, but you look at him now and he’s like a shadow of himself,” Martinez says. “It’s sad, and it’s something my family deals with every day. So I have a personal stake in helping others to avoid going down that path.” ■

— Amy Crawford



BREATHING PROBLEMS: An illustration of a lung with (left) and without COPD

Smart Money

Ting Jia, PhD '09, taps his science skills to guide investment in biotech

As a student in immunology and microbial pathogenesis at the Weill Cornell Graduate School of Medical Sciences, Ting Jia, PhD '09, published eight papers in top journals, including four as first author. Working with Eric Pamer, MD—a member of Memorial Sloan Kettering Cancer Center, where he serves as head of the Division of Subspecialty Medicine and the Enid A. Haupt Chair in Clinical Investigation—Jia explored how immune cells and signaling proteins migrate from bone marrow to points of inflammation. Not only did he graduate in just four years and three months, he produced research results that have been cited more than 2,200 times in other publications.

Jia (who goes by the nickname “T.J.”) went on to do a postdoc in the Pamer laboratory at Sloan Kettering, and he was clearly on track to run his own lab one day—so his professors, classmates, and family were surprised when he opted to pursue a career in finance. “My father is a marine chemist and my mom’s a physician, so I guess part of them always wanted me to be a scientist or a doctor,” says Jia, who grew up in China and earned his BS in biological sciences at Sun Yat-sen University in Guangzhou. His shift to the business world, he says, “was uncharted territory for them.”

Pamer, who is also a professor of medicine at WCM, confesses to being surprised when Jia announced his career plans. “Ting is super smart, and he had a lot of potential as an immunologist,” he says. “His work made a real impact. I still see him as a scientist.”

To Jia, however, the move made sense—because he, too, still sees himself as a scientist. But instead of making advances in the lab, he uses his background to inform decisions about whether biotech and life science ventures have the potential to become profitable companies, and whether the therapeutic advances they’re developing will ultimately benefit patients. “In healthcare or biotech investments, the value of a company is really reflected by its clinical data—and one predictive factor of clinical outcome is the underlying biology,” he says. “My PhD and postdoc training equipped me to thoroughly understand the biology in a short period of time. For example, if I meet with a new company and they say, ‘We’re working on a particular target, a protein called ABC,’ I can immediately—even while I’m still in the meeting—go on PubMed, read through key articles quickly, extract information, synthesize it, and ask thoughtful questions on the spot.”

Jia’s first job after graduation was as a management consultant with McKinsey & Company, where he learned as much as he could about pharmaceutical R&D and biotech mergers and acquisitions.

He then joined the private investment firm BVF Partners in San Francisco before spending three years building up the New York office of Hillhouse Capital, a Hong Kong-based investment management firm. This fall, he founded his own healthcare-focused fund, dubbed Octagon Investments. The numeral “8”, he notes, symbolizes “fortune” in Chinese culture—and when turned on its side, it resembles an infinity sign. Says Jia: “I want to support infinite innovation in the biotech space and generate handsome returns for my investors.” The new fund will not only invest in companies in the U.S. and Europe, but explore potential opportunities in China. “When I look at the trend in healthcare, undoubtedly innovation becomes more and more globalized,” he says. “I believe a lot of value can be unlocked by exploring synergies between the West and the East.”

How does Jia decide if a company is worthy of investment? He and his team pore over journals, attend medical and scientific conferences, and steep themselves in the research upon which each promising start-up is based. “We like to invest in companies that have a strong biology rationale—for example, where a gene has been identified that is linked strongly with the targeted disease,” he explains. Jia is also careful to examine the reputations and qualifications of a company’s leaders, trying to understand how they think and work. Jia notes that while his research background has been useful when evaluating immunology-related ventures, he often taps a broader skill set he developed at Weill Cornell Medicine. “PhD

‘In healthcare or biotech investments, the value of a company is really reflected by its clinical data—and one predictive factor of clinical outcome is the underlying biology,’ Jia says. ‘My PhD and postdoc training equipped me to thoroughly understand the biology in a short period of time.’

training is more than just knowledge in a specific area,” he says. “It’s about logical and critical thinking.”

Jia says he sometimes misses life as a bench scientist, but has no regrets about leaving academia. He notes that PhD research consists of “digging into a very, very specialized project,” whereas his current work allows him to think more broadly. “The way my brain is wired is more about collecting information from a vast field, then processing it and connecting the dots,” he says. “Investing is a perfect blend of people, science, business, and finance. I hope my experience and skill set will allow me to make investments in innovations that improve patients’ lives.” ■

— Amy Crawford

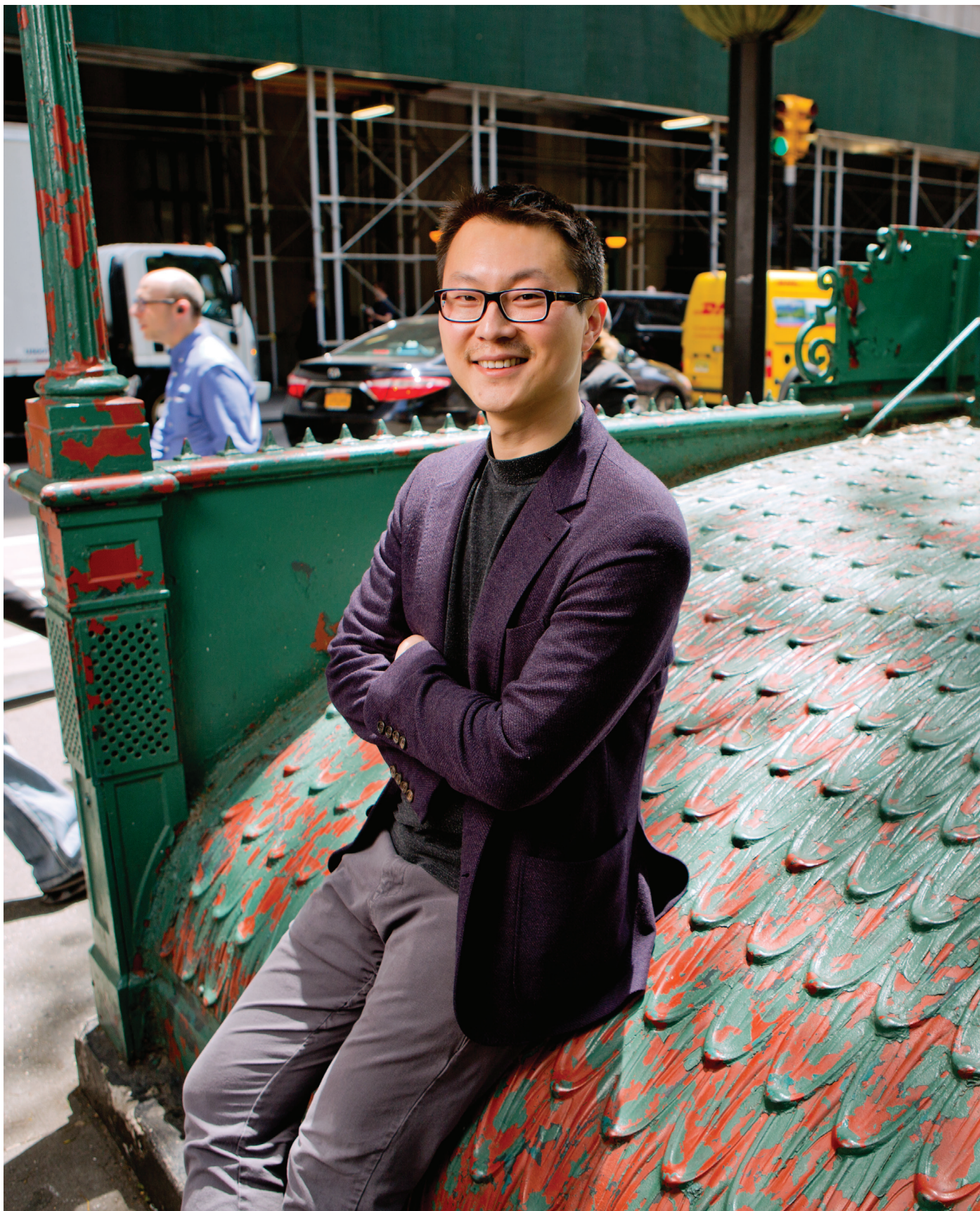


PHOTO: ABBOTT

INVESTING IN THE FUTURE: Jia outside the Wall Street subway station in Lower Manhattan

Gender Disparity

Neuroscientist Lisa Mosconi, PhD, explores why women have a much higher risk of Alzheimer's disease than men



PROTECTIVE MEASURES: Mosconi (left) counsels a patient at the Alzheimer's Prevention Clinic, where she stresses the importance of a brain-healthy diet.

Alzheimer's disease affects some 34 million people worldwide—two-thirds of them women. The most common form of dementia, Alzheimer's was historically thought to be an inevitable consequence of aging; if more women were afflicted, physicians and scientists chalked it up to their longer lifespans. But recent research suggests that changes in the brain that lead to Alzheimer's actually begin in midlife, decades before symptoms begin. That's especially true for women, whose brains appear to be uniquely vulnerable during an already tumultuous time: menopause. "The major thing to happen to women and not to men in midlife is that we lose our hormones," says Lisa Mosconi, PhD, associate professor of neuroscience in neurology, who conducted innovative brain-imaging studies that revealed the connection. "What we think is that going through menopause changes your brain, as surely as it changes your body. And these changes seem to set the stage for Alzheimer's in some women."

In research published in 2017 in the journals *Neurology* and *PLoS One*, Mosconi and her team looked at women between the ages of forty and sixty, some of whom were pre-menopausal, some peri-menopausal (in the midst of the transition), and others post-menopausal. They also compared the women—none of whom showed any symptoms of dementia—with middle-aged men. Controlling for age, Mosconi found that the peri- and post-menopausal women were more likely to have brain changes connected with Alzheimer's, including amyloid-beta deposits, or plaques, as well as reduced brain activity and lower gray and white matter volumes—a surprising discovery, given that women generally aren't diagnosed with dementia any earlier than their male counterparts. "Not all women showed these changes, but up to 80 percent showed declining brain metabolism—by as much as 50 percent—and about half showed some plaque deposition," Mosconi says. "And that was not found in the men at all."

It may sound like bad news, since menopause is not something any woman can avoid. But Mosconi explains that knowing when women's brains are most vulnerable offers an opportunity for targeted therapies. (Additional research is occurring in the Helen & Robert Appel Alzheimer's Disease Research Institute.) One might be hormone replacement, which, if prescribed within five years of menopause, may protect against dementia—although the benefits would have to be weighed against a possibly increased risk of cancer and heart disease. But another, less fraught way women might protect themselves, Mosconi says, is through adopting a brain-healthy diet. "There is a good amount of literature showing that a high-fiber, moderate- to low-fat diet is good for women in particular, and it clearly is associated with a reduced frequency of hot flashes and also less severe symptoms of menopause," Mosconi says. "But aside from that, we have found that this kind of diet—which is similar to the Mediterranean diet—keeps the brain young and is associated with a lower risk of dementia later in life."

In studies published in spring 2018 in the journals *Neurology* and *BMJ Open*, Mosconi and colleagues at NYU School of Medicine

and the University of Florence, Italy, compared brain scans of cognitively normal middle-aged men and women who ate a Mediterranean-style diet—fruits, vegetables, whole grains, and lean protein—with similar people who ate a Western-style diet, which is higher in processed food, refined sugar, and red meat, and much lower in fiber. It turned out that the Western-style diet was associated with a decline in brain metabolism of about 3 percent per year, while the brains of Mediterranean-style eaters remained stable. The Western-style eaters also had about 15 percent more plaques when their brains were first scanned, and their plaques increased by about 2 percent per year, while the brains of people who ate a Mediterranean diet generally showed no changes. "And that's even when you account for cardiovascular health and physical activity, which are associated with reduced risk of Alzheimer's," Mosconi says. "Diet really impacts the brain."

It's a lesson with personal import for Mosconi, whose grandmother and two great-aunts suffered from dementia (although, consistent with the disease's disproportionate impact on women, their brother did not). She makes sure that her family, including her young daughter and elderly parents, eat a brain-healthy diet, and she feels strongly enough about the issue that this year she published a

'Whenever we think of women's health, we usually think of reproductive issues and fertility,' Mosconi says. 'Somehow, women's brains have been really overlooked.'

well-reviewed book aimed at popular audiences, entitled *Brain Food: The Surprising Science of Eating for Cognitive Power*.

Mosconi also stresses the importance of eating well to her patients at Weill Cornell's Alzheimer's Prevention Clinic, where she is the associate director, and where she and her colleagues work with people who have risk factors for Alzheimer's, such as a family history. Behavioral and lifestyle changes are their main strategies, she says, and diet may be the most important. "It slowly but steadily improves your health overall," she says. "It's not just your brain. It's also your heart, digestion, blood, respiration; it's everything at once."

That lesson holds especially true for women, Mosconi emphasizes—and it's vital that their doctors keep it in mind as a way to safeguard not only their patients' physical wellbeing, but their brain health as well. As she continues to tackle the issue in her own research in the Department of Neurology's newly formed Women's Brain Initiative and in her clinical work, she hopes her recent findings inspire other researchers in the fields of Alzheimer's and women's health to broaden their thinking. "Whenever we think of women's health, we usually think of reproductive issues and fertility; somehow, women's brains have been really overlooked," she says. "There are currently 850 million women all over the world who have just entered menopause, or are about to enter it—and for quite a lot of them, this is a high-risk state for future dementia. So we women need to understand how to take better care of ourselves, our brains included." ■

— Amy Crawford

Compassionate Care

After decades in pharmaceutical research, Bruce Reidenberg '81, MD '85, has found great satisfaction treating the developmentally disabled

On any given week, Bruce Reidenberg '81, MD '85, spends a good deal of time on the road. With his old fashioned black doctor's bag in tow, he drives across three counties north of New York City to visit patients as the Hudson Valley region's medical director for the New York State Office for People With Developmental Disabilities. In this role, he oversees the medical care of about 830 adults who legally qualify for state services. Some qualify because they have an intellectual disability, such as Fragile X syndrome, and have an IQ below 70—ten points less than what's generally needed to graduate from high school. Others receive services due to autism, cerebral palsy, a severe seizure disorder, or some other disease or disability.

Some of these patients are only mildly disabled and can hold down a simple job; they typically live in supportive apartments or group homes and have standard health problems that can be managed by a primary care physician. But about half are severely disabled—with an intellectual disability that prevents them from understanding what's going on around them and/or physical disabilities that make movement difficult. These people require highly specialized medical care, as well as someone to help them meet all their basic needs.

As medical director, Reidenberg handles administrative and logistical tasks, such as getting everyone vaccinated for the flu and shingles in a timely manner. But he also coordinates regular and end-of-life care for the sickest and most challenging patients. In some cases, he makes house calls and provides care himself. "For the really confusing and difficult patients, I'm the last resort," says Reidenberg, who stresses that treating such complicated patients gives him immense personal satisfaction. "I like to develop relationships and be close to these families, who have advocated for these patients their entire lives. I like to understand their problems and work with them through a crisis."

Reidenberg's passion for his current job comes after many years in pharmaceutical research. After graduating from Weill Cornell Medicine and completing a residency in pediatrics at NewYork-Presbyterian/Weill Cornell Medical Center, he did fellowships at The Rockefeller University (in biology) and Mount Sinai Medical Center (in infectious diseases). Driven by what he calls "a passion for discovery," he took a full-time job in clinical research for a division of Merck & Co. He continued in that field with positions at Novartis and Purdue Pharma; since 2009, he has been an independent consultant, working with small biotech companies on drugs for conditions ranging from asthma to Parkinson's disease.

But Reidenberg has always kept a hand in the clinical realm—in part to inform his drug development work, but also to continue caring for patients, which he calls his first love and the reason he became a doctor. For years, he provided pro bono care in New York City emergency rooms, then worked with hospitalized children recovering from coma. He started caring for developmentally disabled adults and doing house calls for his current agency in 2011. When the previous medical director retired in 2016, he took over—glad for the opportunity to offer continuity of care and to improve his patients' health and quality of life over time.

In many ways, Reidenberg notes, working with severely disabled adults is a natural fit, given his training in pediatrics. "Many of my patients can't speak because they don't understand what language is," he says. "While taking care of them is a huge challenge, many of my skills from being a pediatrician transfer over to caring for a nonverbal adult, such as reading nonverbal cues and communicating

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with a parent or caregiver." The position has also tapped into Reidenberg's passion for problem solving, giving him the opportunity to address complex medical challenges that may come from unexpected places.

As an example, Reidenberg cites the question of whether to introduce a gastrostomy tube to feed patients who lose the ability to swallow—a common problem for developmentally disabled people as they age, including those with cerebral palsy and a variety of genetic disorders. "There are a great number of conditions that all lead down the same path," Reidenberg says, "and result in difficulty swallowing." When they reach their late thirties, many of these patients can no longer coordinate the voluntary and involuntary aspects of swallowing; the transfer from one aspect to the other happens at the airway, Reidenberg explains, which means that difficulty in swallowing can often lead to choking.

While the question of whether to insert a G-tube comes up quite often, Reidenberg says, it's often a surprisingly complicated issue—in ways that may be opaque to practitioners outside his field. "In medical school, you learn to put in the G-tube as soon as someone has trouble swallowing, so they get nourished," he says. "But for these patients, this comes with many repercussions." For caregivers,



HOUSE CALL: Reidenberg at work in the Hudson Valley

spoon-feeding can take up to ninety minutes per meal, and it requires the patient's total concentration to avoid choking; tube feeding, by contrast, takes just ten minutes, eliminates the choking danger, and guarantees nutrition. But being orally fed greatly enhances quality of life for patients who don't have many other sensory pleasures. Meanwhile, Reidenberg says, families place huge, negative symbolic value on the G-tube, often seeing its placement as a precursor to death.

But if a patient is hospitalized with a condition like pneumonia, or is otherwise too ill to concentrate on swallowing, medical staff may see the tube as a logical step, unaware of its symbolic import and potential long-term consequences (since oral feedings may not

resume even after recovery). "These are the types of discussions that are very hard to have with physicians and families, especially in a busy hospital with multiple specialists," Reidenberg says. "My role is to make sure all the priorities are aligned and help with the decision-making process."

Advocating for these patients and their families is often emotionally intense, Reidenberg says. But the rewards energize him. "It has been a lesson in love for me to watch families support these patients—to continue visiting and taking them home on weekends," he says. "It is a real honor to work with them, develop relationships with them, and help them through difficult times." ■

— Anne Machalinski

Helping Hand

Trained in TB research, Pakistani native Omar Vandal, PhD '07, now oversees Gates Foundation grants that save lives worldwide



Omar Vandal, PhD '07

Omar Vandal, PhD '07, came to Weill Cornell Graduate School of Medical Sciences determined to make a difference in the world—focusing his studies on tuberculosis, the world's most deadly infectious disease and one that sickens an estimated half-million people each year in his homeland of Pakistan. He did innovative doctoral research, identifying a key protein that the TB bacterium needs to survive within the host cell—information that may help scientists develop better drugs. But after all those years in the lab, Vandal wondered if he could help people even more by working outside it. "I had an incredible PhD experience, but as a postdoc, I'd be working in a narrow area of science—and often, you don't see the fruits of your labor until much later," he says. "I wanted something with more breadth, where I could have more of an immediate impact."

PHOTO PROVIDED

For the last eight years, Vandal has been doing just that as a program officer for the Bill & Melinda Gates Foundation. The Seattle-based nonprofit—established in 2000 by the Microsoft cofounder and his wife—spends about \$4 billion a year on innovative ways to eradicate disease and improve health and wellbeing, particularly for people who have the fewest resources. Vandal has overseen grants focusing on such areas as new global health technologies, early-stage drug discovery, and other interventions for major health threats like malaria and tuberculosis. And he's a hands-on manager, logging tens of thousands of miles visiting biotech firms, pharmaceutical companies, academic institutions, and more—trying to judge which up-and-coming technologies have the most potential, and evaluating the progress of initiatives the foundation has funded. “We’re like a nonprofit venture capitalist,” says Vandal, “but investing in things that will serve the developing world.”

The foundation's approach to philanthropy has had a dramatic effect: its \$15 billion investment in vaccines alone has helped save the lives of an estimated 5 million children since 2000. It's also known for embracing bold ideas, giving money to projects that the NIH or other traditional funders might consider too high-risk. For instance, Vandal is currently overseeing a portfolio of grantees working on a synthetic form of colostrum, the first milk a woman produces after childbirth, which is packed with beneficial antibodies to help babies ward off illness. The hope is that it could supplement breastfeeding in nations where mothers are malnourished, helping boost newborns' immune systems. “We’re constantly challenging ourselves to think in different ways,” says Vandal. “To be better, bolder, more creative.”

Carl Nathan, MD, chair of microbiology and immunology at Weill Cornell, served as Vandal's doctoral co-adviser. He says that his former student plays a crucial role in facilitating medical research—one that's often overlooked. Nathan is a member of the Gates Foundation's TB Drug Accelerator program, which brings together researchers from pharmaceutical companies and academia to develop new therapies for the disease. The foundation has given his lab about \$9.5 million in funding over the last decade, including a grant that Vandal began managing in 2011. That award was part of a foundation program called Grand Challenges Explorations, created to support innovative, early-stage global health research. Initial funding is \$100,000, but successful projects can receive follow-up awards of up to \$1 million.

Nathan received an initial one-year grant to study one of the “last-line” defenses that the TB bacterium uses to survive, which could be key to understanding why the disease has become increasingly resistant to current antibiotics. But at the end of the term, he and his colleagues hadn't collected

enough evidence to officially qualify for the next level of funding. Vandal's review, however, found that the work had great potential, and he helped secure another one-year \$100,000 award, which eventually led to a \$646,000 second-phase grant and a pivotal 2015 study published in *Cell Host & Microbe* that illustrates another potential target for TB drug development. That study inspired others in Nathan's lab to launch related projects that he believes could inform more effective tuberculosis treatments. “At the typical, bureaucratically managed program, that funding would have just stopped,” says Nathan. “But Omar made the judgment that there was promise in this. He kept these projects alive.”

‘We’re constantly challenging ourselves to think in different ways,’ says Vandal. ‘To be better, bolder, more creative.’

Vandal is also trying to promote change in another way: by co-producing a documentary about Nobel Prize-winning Pakistani physicist Abdus Salam, PhD. Released in January 2018 and screened at several international film festivals, *Salam* took more than a decade to make—but Vandal says it was important to him to honor the late physicist's life and achievements. Salam grew up in a poor farming town but went on to do pioneering research, including work that led to the discovery of the Higgs boson, also known as the “God particle.” Though he was the first Muslim to win a Nobel for science, he has been rejected in Pakistan, Vandal explains, because he belonged to a minority sect of Islam that the government considers heretical. Says Vandal: “He's an unsung hero and we should really tell his story, because he may serve as inspiration for future generations.” Vandal and his colleagues are currently doing initial development on other films that may inspire children in the developing world to pursue scientific careers.

Vandal's own passion for science goes back to childhood, when he filled his family's backyard with roosters, peacocks, turtles, and other animals to study. As an undergraduate, he majored in biology at Ohio's College of Wooster, a small school that he expected to attend for a year before returning to Pakistan for medical school. Finding a passion for research, a track largely unavailable in Pakistan, he opted to stay in America to earn his BS and PhD. He worked for two years at the Global Alliance for TB Drug Development before being recruited by the Gates Foundation, which sent him to London for six months to hone his skills at a venture capital firm. Vandal says he's humbled that his job allows him to help so many others—and that he's grateful for the foundation's commitment to its employees. “Going to the Gates Foundation was a dream opportunity,” he says. “There's really no place like it.” ■

— Heather Salerno

Guiding Vision

Neurologist Rebecca Gilbert, PhD '02, MD '03, serves as chief scientific officer for the American Parkinson Disease Association



RESEARCH AND OUTREACH: Gilbert at APDA headquarters on Staten Island

Driven by a passion for discovery, Rebecca Gilbert, PhD '02, MD '03, chose neurology in part because it's a specialty in which so much remains unexplored. "Although something like cardiology or nephrology might be very interesting, I didn't want to go into a field where the basic knowledge was firm," she says. "We know very little of what actually goes on in the brain. It felt like something I could spend my life learning about." As chief scientific officer of the American Parkinson Disease Association (APDA)—a grassroots organization, headquartered on Staten Island, that works to

support patients, educate the public, and provide research funding—Gilbert is playing a key role in the battle against one of the world's most common neurological disorders, affecting about a million people in the U.S. and 10 million globally. In the post since spring 2018, after nearly a decade as a movement disorders specialist at NYU, Gilbert oversees the nonprofit's research grant program, offers expert opinions in the press, spearheads development of the APDA's research strategy, ensures the scientific accuracy of the information it disseminates to the public, authors a blog, and more.

PHOTO: ABBOTT

What's the state of Parkinson's treatment today?

Generally, treatments are conceptualized as either symptomatic or disease-modifying—medications that help symptoms or those that may alter the course of disease. For Parkinson's, unfortunately, we don't have any approved medications for that second category; the Holy Grail is to find a medicine that slows down the disease or halts its progression. Right now, what we're really capable of is symptom management. Parkinson's is varied, and it has multiple effects on the body. Everybody knows that it affects how people move; it makes them slow and stiff and they can have tremors and problems with balance. Many of those problems come from a degeneration of the cells that release dopamine, a chemical in the brain that allows nerves to communicate with each other. However, there are other aspects of the disease that can affect mood, cognition, sleep, blood pressure management, gut and bowel function, urinary function—the list goes on. So Parkinson's doesn't just affect these dopamine-producing nerves, it affects all sorts of areas in the brain and nerves throughout the body.

What potential treatments are in the pipeline?

One theory as to why these nerve cells are damaged is because of abnormal accumulation of a protein called alpha-synuclein—so a lot of the research is dedicated to figuring out what alpha-synuclein is meant to do, why it accumulates, and how to get rid of it. One research effort is creating an alpha-synuclein vaccine, which is very exciting. Another way to look at the problem is to accept the fact that this nerve group has died and try to replace what it does. Currently, the way we do that is to prescribe medications that convert to dopamine in the brain, which has been the mainstay of Parkinson's treatment for decades. We're working on ways to make dopamine delivery better and smoother, so people have a more even response to the medication throughout the day, which is a major issue.

Does the public have misconceptions about Parkinson's?

Absolutely. People think of Parkinson's as a tremoring disease of old people. And for some that's true, but there is such a thing as young-onset Parkinson's, which can develop in the twenties or thirties. The concept that Parkinson's is a multi-systemic disorder is something that even the medical community was a little late in fully appreciating; it's only been in the past ten to fifteen years that we've really understood that this is not just a movement problem. If you talk to people with Parkinson's, as their disease progresses movement stops being the overwhelming issue. Depression, sleep problems, cognitive problems—these things become more prominent. A big part of what we do at APDA is educate people about the symptoms

and treatments of this disease, as well as help people get the support and care they need in order to live life to the fullest despite their Parkinson's.

You're still seeing patients one day a week. Why was that important to you?

Doing this job without having that connection, you could quickly get into your little silo and forget about the people that you're really working for. To that end, as part of this job

'The concept that Parkinson's is a multi-systemic disorder is something that even the medical community was a little late in fully appreciating,' Gilbert says. 'It's only been in the past ten to fifteen years that we've really understood that this is not just a movement problem.'

I'm also going to all sorts of educational forums and meetings where I'm interacting with people with Parkinson's in a different way. Understanding their challenges is absolutely essential.

As a clinician, what do you find gratifying about working with Parkinson's patients?

It's a chronic disease, which means that you're going to be with each person for a long time, and you develop relationships with them. I end up knowing a tremendous amount about my patients—their personal lives as well as their disease—so that's a nice element. Once you know the person, you can get a better sense of how they're doing [from an office visit], and you can use that information to modify medications and the treatment plan, and hopefully make a difference. And it is motivating on the other end: when you watch a patient develop more difficulties despite your best efforts, that inspires you to search for better solutions.

How have the celebrities who have been open about their struggles with Parkinson's—most famously Michael J. Fox, who was diagnosed in his late twenties, but more recently Alan Alda—affected public understanding of the disease?

Those two examples really make it clear that Parkinson's is a varied disorder. Michael J. Fox, who's such a beloved actor, has been followed for decades as his disease has unfolded; he also created a fantastic foundation that has given millions of dollars to research. Then you have Alan Alda, also a beloved actor, who obviously developed it much later in life, and thankfully has minimal symptoms at this point. They have certainly raised awareness. Both of them sharing their stories with the public has been phenomenal. ■

—Beth Saulnier

Generation Gap

A seminar challenges stereotypes about treating geriatric patients

One morning last fall, a group of second-year medical students watched an uncomfortable situation unfold. Having recently experienced some chest pain, a woman in her eighties had come to see a geriatrician, accompanied by her daughter. In a misguided attempt to help, the daughter kept interrupting and talking over her mother, who was becoming visibly anxious. After an initial assessment, the doctor asked to speak to the patient alone—and only then did he discover a likely cause of her chest pain. Having recently lost her husband, the woman had been feeling lonely, drinking more, and experiencing symptoms of major depression. “That wasn’t something that was possible to uncover in the presence of her daughter,” says Ronald Adelman, MD, the Emilie Roy Corey Professor of Geriatrics and Gerontology, director of the Irving Sherwood Wright Center on Aging at Weill Cornell Medicine, and an attending geriatrician at NewYork-Presbyterian.

Though the mother and daughter were portrayed by professional actors (with Adelman as the physician), the scene—played out in a WCM lecture hall—illustrates a type of encounter that’s distressingly common for older patients. According to Adelman, many destructive stereotypes about older people that are prevalent in society—including that they are depressing, unproductive, and forgetful—are mirrored in the healthcare system. “Unfortunately, medical students only see the sickest people, when they’re in their worst shape,” says Veronica LoFaso, MD, associate professor of clinical medicine and an attending geriatrician at NewYork-Presbyterian, “so it’s easy to perpetuate this way of thinking.” Ageism in the medical world can take many forms, she explains, such as a physician assuming that it’s natural for one’s quality of life to decline, addressing the caregiver instead of the patient, and patronizing older adults with pet names like “sweetie.” “We felt strongly that students should be able to see healthy, vibrant, functional geriatric patients,” says LoFaso, “because that’s what we see in our practice.”

To that end, in the early Aughts Adelman and LoFaso teamed up with Carol Capello, PhD, associate professor of geriatric education in medicine, to create a single-session seminar course called Introduction to the Geriatric Patient. Initially made possible by a \$2 million grant from the Donald W. Reynolds Foundation, the course is held each fall and is mandatory for second-year students. It opens with a skit or two highlighting common challenges for geriatric patients and practitioners during medical encounters; then students are invited to question the actors, who answer both in and out of character. “It was very engaging,” says Maria Minor ’21, who attended in 2018. “It was really helpful to see that someone’s mind doesn’t necessarily go downhill when they get older. There’s an increased risk for things like dementia, but that doesn’t mean it’s the norm.”

Students then break up into smaller groups and, along with

a geriatrician or nurse practitioner, meet with a “real life” older adult. The visitors, all patients at the Wright Center, are leading vibrant and full lives—whether they’re traveling internationally, participating in the arts, or doing volunteer work. The students receive a checklist of questions to start them off, covering such topics as who manages the patient’s finances, how they do their grocery shopping, and whether they’ve discussed their wishes for end-of-life care with their family. “It was eye opening to see the kinds of things that might be important to a physician about a geriatric patient,”

Ageism in the medical world can take many forms, such as a physician assuming that it’s natural for one’s quality of life to decline, addressing the caregiver instead of the patient, and patronizing older adults with pet names.

recalls Anu Goel ’21, whose volunteer patient described navigating New York City as an older person, among other experiences. “It helps reframe how you think about older adults in a clinical setting.” Eighty-eight-year-old Marcia Levine has been participating in the seminar for more than a decade; she notes with a chuckle that one topic tends to make the future physicians particularly uncomfortable. “The students always ask questions about sexuality, and I want them to know that you’re sexual your whole life,” she says. “There are a lot of jaws hanging open at that.”

The course’s creators hope that by the end of each annual session, they’ve given the students some key tools to combat ageism in medical encounters. Those lessons include understanding how prevalent this bias is, both in society in general and in the medical world in particular, and knowing how to ascertain a patient’s level of independence in such areas as mobility and self-care. Perhaps most importantly, they want students to appreciate the importance of taking a comprehensive history—which, as in last fall’s scenario, often means asking a caregiver to leave the room. “If they’re going to be my doctor, I want them to know who I am and what’s important to me,” Levine stresses. “That way, if something happens to me, they know I’m not just that illness.”

While Adelman and LoFaso admit that they hope to inspire students to pursue geriatrics, they note that regardless of what specialty the future doctors choose, they’ll almost certainly interact with older patients. “The idea is to educate a cadre of physicians who understand the issues of aging, who have the knowledge of the pharmacology and the chronic issues that go with aging, and who are sensitive and respectful of older adults,” says LoFaso. “Once you really get to know the individual, ageism goes out the window.” ■

— Alexandra Bond



LIFE LESSONS:

As second-years observe, actor Elizabeth Shepherd (at left in above photo) portrays a patient being interviewed by geriatrician Ronald Adelman, MD. Left: Shepherd, no longer in character, chats with students about her own experiences as an older adult.

SICKENINGLY Sweet?

Biochemist Lewis Cantley, PhD, is finding increasing evidence of a strong connection between sugar and cancer

By Amy Crawford

Illustration by Jennifer Kloiber Infante

Lewis Cantley hasn't eaten sugar in decades. "I have a very simple rule," he says. "I eat fruit, but I don't eat anything that has sugar added to it. And I guarantee everybody would be better off if they ate zero sugar."

Swearing off sugar may sound like a difficult proposition in a society where the sweet stuff—in Halloween candy or birthday cake, breakfast cereal or caramel macchiatos—is not only ubiquitous but central to our daily rituals and major celebrations. Indeed, according to the World Health Organization, the average American consumes 126 grams of sugar a day, more than people in any other country and nearly four times what nutritionists recommend. "It's an addiction," maintains Cantley, PhD, the Meyer Director of the Sandra and Edward Meyer Cancer

Center at Weill Cornell Medicine, who was inspired to become a sugar teetotaler when he saw friends and relatives struggling with their weight in the Seventies, at the dawn of the American obesity epidemic. "If I say to someone, 'Don't eat anything sweet for two days,' they'll look at me like, 'That's impossible, nobody can do that.' It's very much like an opioid addiction or an addiction to nicotine."

And it's an addiction with consequences, Cantley notes. A diet high in sugar is a known risk factor for health problems including obesity and diabetes—a risk that reducing sugar intake seems to mitigate. But according to an accumulating body of research by Cantley and his team at WCM, excess sugar also helps many types of cancer to grow more rapidly. The findings have implications >



'As we learn more and more about cancer metabolism, we understand that individual cancers are addicted to particular things,' Cantley says. 'In a lot of cancers, that's insulin—and sugar.'

for cancer prevention, and they could help unlock the potential of new drugs to shrink and destroy tumors. An evolving understanding of how sugar feeds cancer may also lead to a new approach to treatment: alongside chemotherapy, radiation, or surgery, a cancer patient could be prescribed a diet plan that might help those treatments work better. "We're beginning to conduct trials, but in the meantime the pre-clinical data is overwhelmingly supportive, and the retrospective data in patients is strong," says Cantley, also a professor of cancer biology in medicine at WCM. "As we learn more and more about cancer metabolism, we understand that individual cancers are addicted to particular things. In a lot of cancers, that's insulin—and sugar."

A Vital Pathway

Cantley was a professor at Tufts University School of Medicine in the Eighties when he identified a previously unknown enzyme, phosphoinositide-3-kinase, or PI3K, that would turn out to be a sort of master switch for cancer. The protein's normal function is to alert cells to the presence of insulin, prompting them to pump in glucose, cells' metabolic fuel. This signaling pathway is crucial to cells' growth, proliferation, and survival, so it makes sense that malfunctions can cause

serious problems. If the pathway runs too slowly, the body becomes insulin-resistant and cells fail to take up enough glucose: this is Type II diabetes. In cancer, however, the pathway shifts into high gear, providing tumors with an overabundant supply of glucose, which drives their growth.

It turned out that the gene that encodes PI3K is the most frequently mutated cancer-promoting gene in humans—and in the years since Cantley's revolutionary discovery, it has been implicated in as many as 80 percent of cancers, including those of the breast, brain, and bladder. The pathway has also served as a target for new drugs, including the breakthrough lymphoma and leukemia drug idelalisib, which in 2014 became the first PI3K inhibitor to be approved by the FDA. Cantley came to WCM in 2012, his scientific reputation well-established; he has won a host of prestigious international awards, and his name comes up frequently when colleagues speculate about future Nobel laureates. Since setting up his lab at Weill Cornell Medicine, he has continued to investigate the role of PI3K.

One of oncology's major frustrations is that some drugs that aim to inhibit PI3K have been less successful in clinical trials than originally hoped. Blocking the enzyme should impede the signals that allow cancer cells to take in the high levels of glucose they need to survive, but it doesn't always work that way. In many patients, PI3K inhibitors cause blood sugar to spike, suggesting that the drugs meant to starve tumors were telling the liver that the body itself was starving, too. In response, the liver—which stores extra glucose in the form of a compound called glycogen—was sending too much sugar into the blood, which triggered the pancreas to release excess insulin. Meanwhile, these patients' tumors continued to grow.

Cantley and his colleagues wondered whether the excess insulin might be countering the effect of the drugs by reactivating the PI3K pathway in the cancer cells. They theorized that a diet very low in carbohydrates—limiting both sugar and starch, which breaks down into simple sugars in the body—would prevent spikes >



Lewis Cantley, PhD



HEALTHY EATING: Katie Hootman, PhD '15, in the CTSC Metabolic Research Kitchen

in blood sugar and might help the drug do its work, starving the tumor while the patient's body fueled itself with fat and protein instead, a state called ketosis. So researchers in Cantley's lab, including instructor in medicine Benjamin Hopkins, PhD, worked with colleagues at Columbia University Irving Medical Center and NewYork-Presbyterian to test the hypothesis.

Using mice that had been genetically engineered to develop pancreatic, bladder, endometrial, and breast cancers and treated with a new PI3K inhibitor (which

is currently in clinical trials), they demonstrated that spikes of insulin did indeed reactivate the pathway in tumors, countering the anti-cancer effect of the drug. But when the researchers severely restricted the mice's carbohydrate intake, putting them on what's known as a ketogenic diet in addition to the medication, the tumors shrank. (Adding a diabetes drug meant to lower blood sugar levels also helped, but the effects of the diet in conjunction with the PI3K inhibitor were more dramatic.) The encouraging results were published in the journal *Nature* in July 2018 with

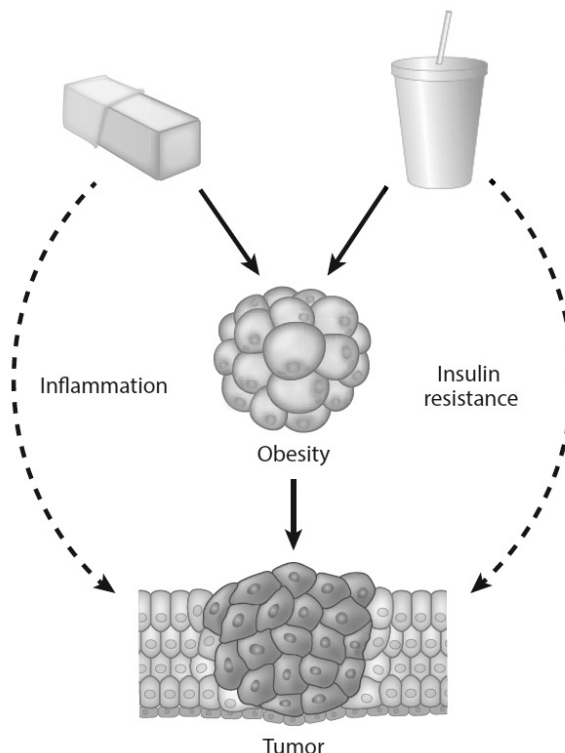
PHOTO: JOHN ABBOTT

Hopkins as lead author. “The mutations to the PI3K pathway that cause cancer also enhance the ability of insulin to activate the enzyme,” Cantley explains. “Our preclinical research suggests that if somewhere in your body you have one of these PI3K mutations and you eat a lot of rapid-release carbohydrates, every time your insulin goes up, it will drive the growth of a tumor. The evidence really suggests that if you have cancer, the sugar you’re eating may be making it grow faster.”

Is Ketosis Key?

The Internet is full of diet advice, and among today’s hottest fads is a low-carb regimen popularly known as “keto.” It was the most Googled diet trend of 2018, a popular weight loss strategy among celebrities like reality TV star Kourtney Kardashian and basketball icon LeBron James, who sometimes refer to it as “paleo,” for its supposed resemblance to the diets of our Paleolithic ancestors. But that’s not what clinicians or researchers mean when they talk about a ketogenic diet, explains Katie Hootman, PhD ’15, a registered dietitian and director of the Metabolic Research Unit at WCM’s Clinical and Translational Science Center (CTSC). “The diets on the Internet tend to be way too high in protein,” she says. “There is a pretty big difference between that and a clinical ketogenic diet, one that’s actually intended to get the patient into ketosis.”

Ketosis, Hootman explains, is a state in which the body relies on the metabolism of fat as the primary fuel to meet energy demands, rather than glucose, cells’ preferred source of energy. From the breakdown of fat, the liver circulates molecules called ketone bodies, which cells use as fuel until carbohydrates become abundant again. This metabolic process evolved to help mammals survive food shortages, but in a clinical context it has been used since the early twentieth century to reduce seizures in people with epilepsy. A few studies in the late twentieth and early twenty-first centuries suggested a ketogenic diet might also be helpful against some forms of cancer, but it is only recently that researchers have studied its usefulness



VICIOUS CYCLE:

An illustration of how fatty and sugary foods, such as butter and soda, can fuel obesity, inflammation, and insulin resistance—potentially feeding cancers

‘The evidence really suggests that if you have cancer, the sugar you’re eating may be making it grow faster,’ Cantley says.

in conjunction with anti-cancer drugs. Among the clearest evidence is the Cantley Lab’s mouse study, which Hootman is now helping to translate to human patients.

Marcus Goncalves, MD, PhD, an assistant professor of medicine at WCM and an endocrinology fellow in the Cantley Lab, and Vicky Makker, MD, a clinical investigator and gynecological medical oncologist at Memorial Sloan Kettering Cancer Center and an assistant professor of medicine at WCM, are working with Hootman and the CTSC to investigate whether a ketogenic diet reduces >

tumor growth in pre-surgical patients with endometrial cancer. “Endometrial cancer is one of the most insulin-sensitive tumors, and that’s because over 90 percent of those tumors have some genetic alteration in PI3K signaling,” says Goncalves, an endocrinologist. “Even a small amount of insulin will drive tumor growth.”

The diet Hootman and her team designed for the study derives about 85 percent of its calories from fat, 10 percent from protein, and 5 percent from carbohy-

team’s efforts, says Makker. “The food is delicious. They don’t feel deprived. They don’t feel hungry.”

The trial, which will ultimately enroll thirty women, was designed as a proof of concept. The researchers hope to show that patients are willing to eat this way, and that restricting carbohydrates will reduce insulin to levels that starve their tumors. Eventually, Goncalves says, cancer patients may routinely be treated with what he and his colleagues are already referring to as “precision nutrition,” a diet tailored to the unique genetic profile of a patient’s tumor. “Ultimately,” he says, “we’d like to say, ‘Okay, if you’re receiving a certain type of cancer treatment, you should be on a diet that facilitates its effectiveness—it’s just part of your therapy.’ ”

Cautious optimism is de rigueur when speculating about future treatment for cancer—an incredibly complex and challenging disease—and Makker cautions that although the initial findings of a connection between nutrition and cancer are encouraging, “we need to learn more about what really happens at the blood serum and tissue levels. We’re still investigating all of this.” Nonetheless, Cantley and his colleagues are excited by the possibilities their recent work has opened up. One of the most common questions newly diagnosed patients ask of their clinicians is whether a change in diet might help them get well. Now, physicians can say they’re looking for an answer. “You need to know the logic of the cancer in order to understand what would be the best dietary intervention for a given patient,” Cantley says, explaining that what dietary changes a patient may need to make will depend on the genetics of his or her tumor. “Some cancers are addicted to sugar, but others depend on very high levels of the amino acids glutamine or serine, for example.”

Indeed, in 2017, researchers in the United Kingdom published a study in *Nature* that showed that limiting certain non-essential amino acids in the diets of mice slowed the growth of lymphoma and intestinal cancer. It was a strictly controlled regimen, and not one that patients would be encouraged to try for themselves—but like the Cantley Lab’s work, it points to

‘Ultimately,’ Goncalves says, ‘we’d like to say, “Okay, if you’re receiving a certain type of cancer treatment, you should be on a diet that facilitates its effectiveness—it’s just part of your therapy.” ’

drates. That’s a major change for anyone used to eating a typical American diet, in which as many as 65 percent of the calories come from carbs. Recipes, including options like chicken stir fry and beef stroganoff, as well as nut flour-based bread and muffins, are developed, tested, and prepared in the CTSC Metabolic Research Kitchen, with meals packaged in coolers for MSK patients to pick up once a week. “We get as much fat as we can into the recipe—we use cream instead of skim milk, or add extra oil,” Hootman says. “We try to make the foods seem like typical foods, so when the patients are consuming it, not only does it taste good and look good, but it’s also similar to what the people they live with might be eating, just a high-fat version.” And so far study participants have appreciated the culinary





EXPLORING 'PRECISION NUTRITION': Marcus Goncalves, MD, PhD, in the lab

a day when a personalized diet may be just as important to cancer treatment as chemotherapy, radiation, and surgery. As Makker notes, “so much about cancer is out of the patient’s control”; while oncologists may be loathe to suggest burdensome lifestyle changes when patients are already reeling from their diagnosis, she says, “it could be wonderful if they feel like there is something that they can control—that through diet, they can participate in their

treatment and potentially affect their long-term outcome.”

In the meantime, Cantley—ever the anti-sugar evangelist—adds that limiting sweets certainly couldn’t hurt. Eating less sugar, he says, is clearly beneficial. “It’ll help you in so many different ways, with so many different diseases,” he says. “And once you don’t have that addiction anymore, it’s actually quite easy. After all, I’ve had no trouble doing it for forty years.” ■

Cantley is a founder of and holds equity in Agios Pharmaceuticals and Petra Pharmaceuticals and is a member of the scientific advisory board for these companies. Petra provides financial support for his laboratory research. Cantley is also a member of the scientific advisory boards of Cell Signaling Technologies and EIP and holds equity in these companies. Vicky Makker has served on the advisory board of Takeda Pharmaceutical Company, Ltd., and currently serves on the advisory boards of Eisai Co, Ltd., ArQule and Merck, from which she also receives honoraria.



Tech Therapy

Gerontologist Sara Czaja, PhD, studies how technology can help older adults live happier, healthier, more active lives

By Heather Salerno

Illustration by Colleen O'Hara

As one of the world's leading experts on technology and aging, Sara Czaja, PhD, knows exactly how older adults are perceived when it comes to digital know-how. They can't text. They barely e-mail. They can't figure out Facebook or FaceTime. They don't know how to look up information online. "There's a misconception that older adults are technophobic—that they're unwilling to learn new skills and are uninterested in new technology," says Czaja, a professor of gerontology in medicine who joined Weill Cornell Medicine last summer as the inaugural director of the Center on Aging and Behavioral Research. "But over the years, we've developed quite a bit of data to dispel those myths."

Though there's a notable digital divide between older and younger Americans, nearly thirty years of Czaja's research in this area shows that older adults are actually eager to embrace new technology. And with the right resources and training, not only do they have little trouble mastering it, but becoming technologically literate can also improve their overall health and wellbeing—a key priority for geriatricians. Building on work that she began at the University of Miami, Czaja and her WCM team are looking at a range of inventive, tech-based ways to keep older adults dynamic and productive, which might also maximize the effectiveness of their caregivers. Other doctors and researchers at WCM are also keeping older patients in mind when it comes to refining telemedicine and other digital healthcare services so seniors have fewer barriers to access. "All of this will likely enhance older adults' physical wellbeing," says Ronald

Adelman, MD, the Emilie Roy Corey Professor of Geriatrics and Gerontology, director of the Irving Sherwood Wright Center on Aging at WCM, and co-chief of the Division of Geriatrics and Palliative Medicine at NewYork-Presbyterian/Weill Cornell. "But it also has potential support for their spiritual and psychological wellbeing."

Czaja has traveled the world trying to upend stereotypes and advocate for change. She has co-written handbooks that offer guidelines on product design, given keynote addresses and educational workshops, and even testified before the U.S. Equal Employment Opportunity Commission. Says Czaja: "People don't stop growing intellectually or emotionally when they turn sixty-five."

Indeed, there's a growing body of research about how the use of computers and mobile devices can have a positive impact on older adults—especially when it comes to improving social relationships. The Internet, e-mail, video chats, and other applications can help them maintain links to family, friends, and the community, and can keep them abreast of current events, health information, and recreational opportunities. That's crucial for older adults, many of whom live alone and become less mobile as they age. Czaja's own work designing and studying the use of a senior-friendly software program suggests that such tools can substantially improve quality of life. "Technology offers ways for older adults to remain connected and engaged," she says. "It's not a panacea, but if well-designed and implemented, it can really help offset problems like loneliness and isolation."

In fact, technological advancements >

are changing how an entire generation ages, allowing older adults to remain self-sufficient—and therefore happier and better able to manage their health or cope with illness—for far longer than they have in the past. Ride-booking apps let adults who no longer drive get to appointments, stores, and activities without relying on a loved one or public transportation; health management devices can help keep track of overall wellness and give reminders to take medication; and groceries and prescriptions can be delivered at the touch of a button. Experts say this technology will play an increasingly key role in the future, since the U.S. Census Bureau estimates that one in five Americans will be sixty-five or older by 2030. “Technology offers older people enormous opportunities to retain their dignity and independence, which are strongly associated with improvements in mood, health, and even longevity,” says Mark Lachs, MD, the Irene F. and I. Roy Psaty Distinguished Professor of Clinical Medicine, co-director of Cornell’s Center for Aging Research and Clinical Care, and director of geriatrics for the NewYork-Presbyterian Health System. He notes that a number of his patients utilize home monitoring systems that e-mail their families and him if they haven’t eaten or taken their medicines by a certain time of day—which has the added benefit of sparing patients from feeling like they’re being babysat by an aide. “At the end of the day there needs to be human interaction,” he says, “but these kinds of tools really help older adults.”

The New ‘Old Age’

Today’s older Americans are appreciably different from their predecessors: they’re generally healthier, living longer, and choosing to stay in the workforce. Says Czaja: “This is a very active, engaged cohort of older people.” Tech adoption is climbing among the older population, too. A recent Pew Research Center survey found about two-thirds of those sixty-five and over are online and four in ten seniors own smartphones, a huge gain from 18 percent in 2013. Yet despite this shift, many older adults are lagging behind. One-third of those over sixty-five say they never use the

Internet, and the number of seniors who do own smartphones is 42 percent lower than the eighteen-to-sixty-four demographic.

That puts older adults at a disadvantage as technology becomes more widespread—something Czaja started to become concerned about decades ago. In 1999, she launched the Center for Research and Education on Aging and Technology (CREATE), an NIH-funded, multi-university collaboration dedicated to expanding tech use among older adults. Since then, she and her colleagues have gathered extensive data in an effort to understand why seniors might be hesitant to join the digital revolution. In a study published last year in *Innovation in Aging*, a journal of the Gerontological Society of America, the researchers assessed the willingness of older adults to adopt an unfamiliar online product or service like Instagram, Lyft, or the personal finance software Quicken.

They learned that the decision hinged on several factors, including—unsurprisingly—whether the person felt a particular technology was valuable. Participants were also more likely to reject a technology they considered too complicated or difficult to master. “Usability is a huge problem,” says Czaja. “In general, designers of systems have not thought of older people as users of technology, and they tend to overlook changes that come with age, such as declines in vision, dexterity, and cognition. They kind of design for themselves—and most designers are younger people.”

Czaja took that into account when she and her associates created Personal Reminder Information and Social Management (PRISM), a computer system designed for older adults who have little tech experience. The goal was to evaluate whether information and communication technologies could boost social support—but first, they wanted to remove potential stumbling blocks. So the group involved seniors in the development of PRISM’s software, instructions, and training materials; the resulting system offered streamlined access to e-mail, a calendar, games, and links to local resources like senior centers. PRISM also incorporated features like an uncluttered interface, easy-to-read fonts, and a “buddy tab” that gave users a way to >

‘In general, designers of systems have not thought of older people as users of technology, and they tend to overlook changes that come with age, such as declines in vision, dexterity, and cognition,’ Czaja says. ‘They kind of design for themselves—and most designers are younger people.’



Sara Czaja, PhD



STAYING ACTIVE:
 Ronald Adelman, MD
 (right), sees patient
 Gilbert Boas at the
 Irving Sherwood Wright
 Center on Aging.



CONTINUITY OF CARE:
 Patient Neva Sharon
 (right) with Mark Lachs,
 MD, at the Wright Center.

PHOTOS: R. JULIA XANTHOS LIDDY

'Those of us who work in geriatrics believe that social integration is the answer to—if not every problem, then most of them,' says Mark Lachs, MD.

contact new people with similar interests.

Then Czaja and her colleagues studied 300 seniors, ranging in age from sixty-five to ninety-eight, who lived alone and were at risk for social isolation. Half used PRISM for one year; the rest received a paper notebook with content similar to that contained in the online system. Findings in the *Gerontologist* showed that the PRISM group reported significantly less loneliness and an increase in perceived social support and wellbeing. "We also found that people who used the system became much more proficient with use," says Czaja, "and much more confident in their ability to use technology."

That's no surprise to Tom Kamber, who founded Older Adults Technology Services (OATS), a Brooklyn-based nonprofit that has helped more than 30,000 seniors get online since 2004. The organization runs computer classes geared expressly for seniors—teaching everything from navigating the Internet to starting an online business—in New York and four other states. Kamber, a longtime follower of Czaja's work, has seen firsthand how life-changing technology can be for older adults. He recalls one client, an actor who came in wanting to learn how to use e-mail so he could get updates on auditions—and wound up reconnecting with his Korean War buddies on Facebook and starting a blog. "People have lower expectations of seniors as they get older," says Kamber. "We have people in their seventies and eighties doing JavaScripting. It's awesome."

Lachs agrees that staying productive

and interacting with others in this way helps older adults thrive. "In some ways, some of the most heartbreaking things I see in my medical practice is not diabetes or hypertension, it's actually loneliness. It worsens existing illness and it causes new ones," he says. "Those of us who work in geriatrics believe that social integration is the answer to—if not every problem, then most of them. By using Dr. Czaja's technologies to increase the social interactions of our older patients, we believe we can improve their health."

Czaja is now working on a project she calls PRISM 2.0—making the system available in Spanish, testing it in assisted living facilities in Georgia and Florida, and adapting a version at WCM that will examine how it might aid people with mild cognitive impairment. She's also recruiting for a trial involving Alzheimer's patients and their caregivers; participants will be given a laptop loaded with an app that provides online support and other resources for caregivers, as well as cognitive exercises for patients. "We need to keep coming up with ways for older adults to remain active members of society," she says. "That benefits them—and everyone else." ■

Lachs is an equity stakeholder for CompassCare, cofounded with Ithaca and Weill Cornell Medicine faculty, which seeks to improve the training and oversight of direct care workers in aging. He has also served as a paid and pro bono expert witness in civil and criminal matters related to elder abuse and neglect.

Connected for Health

Jessica Ancker, PhD, an associate professor of healthcare policy and research, studies how to improve healthcare through the use of information technology—an area with huge potential to benefit older adults. She has been exploring how to make online patient portals more user friendly, since they've been shown to improve outcomes by encouraging people to learn about their medical conditions. Ancker is also collaborating with doctors at Memorial Sloan Kettering Cancer Center on a new portal feature that lets post-operative patients check in with hospital nurses after discharge, in the hope that it will prevent complications. She and her colleagues are now getting feedback from early users, including seniors, about what improvements are needed; her ultimate goal, she says, is to make portals so intuitive that anyone can navigate them. "That's going to be helpful for a lot of people," she says, "but particularly for older patients, who might be less tech-savvy."

Similarly, the Department of Emergency Medicine at Weill Cornell Medicine is exploring ways to enhance digital communication. According

to Peter Greenwald, MD, co-director of emergency medicine telehealth services at NewYork-Presbyterian, the ED is working on a method of texting and e-mailing videoconference links to patients, so they can simply click and connect with doctors and nurses for follow-ups. That way, they can potentially avoid a return hospital visit—a particular benefit for older adults, who are more susceptible to infection. Greenwald, an attending physician in the ED and an assistant professor of clinical emergency medicine at WCM, notes that the department's on-site telemedicine platform, NYP OnDemand ED Express Care, has been surprisingly popular among older patients, including those in their nineties. He suspects that NYP OnDemand Urgent Care, the hospital's online platform for non-life threatening illness or injuries, might prove similarly appealing to older patients. Since getting to a doctor's appointment or the ED can be a challenge for those who have problems with mobility, hearing, or vision, he says, "the ability to do a home telemedicine visit in those circumstances is tremendously valuable."

NEWS OF MEDICAL COLLEGE AND GRADUATE SCHOOL ALUMNI



Dear Alumni,

When I was a fellow at the University of Chicago, I was fortunate to be mentored by one of the finest clinicians and researchers I've ever known. We were an unlikely match—he was a well-seasoned professional in his late sixties, and I was a new mom in my early thirties, trying to understand how to balance the high demands of my career with my personal responsibilities.

During that year, my mentor taught me so much about the importance of high-quality patient care and creating beautifully designed studies, and he gave me a strong foundation for the clinical research that I've since done. At the end of my fellowship, as I was thanking him for everything he had taught me, I was surprised when he told me that he was grateful for everything he had learned from me. He explained that by working so closely with me, he had a much better understanding of how difficult it can be to find work-life balance as a young parent in the early stages of her medical career. He told me that I had opened his eyes to these challenges—and that it would have an impact on his future interactions.

As Dean Choi described in a recent letter, “the benefits of mentorship are not one-directional. Rather, they infuse a transcendence and universality into the professional mission of the mentor, enriching his or her life and career.” This has certainly been my experience to date. My career and my daily professional interactions are better and more fulfilling because I have been mentored by some incredible people along the way—and because I have taken the time to mentor others. We all need people in our lives who can help us get through the difficult and pivotal times in our careers—people who have been through it before us—and can help guide us and put things in perspective.

Many of us are so busy balancing our work lives with our personal responsibilities that it might be hard to imagine finding the time to be a mentor. With that in mind, the Weill Cornell Medical College Alumni Association has created a variety of unique and simple ways to mentor our current students. Please consider joining us! You can help inspire the next generation of Weill Cornell physicians by:

Attending the **new student orientation reception**, where new students are encouraged to speak with alumni in a casual setting;

Sponsoring a stethoscope for first-year students and attaching a personal note of welcome and good wishes with your contact information;

Participating in the **ASK (Alumni to Student Knowledge) program**—a roundtable discussion where students are able to ask alumni the hard questions about being a doctor;

Joining our **HOST (Help Our Students Travel) program**, which allows alumni nationwide to host students who are traveling around the country as they interview for residency programs.

I believe that each of you can have a great impact on our students by sharing your personal experiences in the medical field with them. And—better yet—our students, who are some of the best and brightest out there, may even change your own journey in some significant way.

Natasha Leibel, MD '98
President, Weill Cornell Medical College Alumni Association
NL121@columbia.edu



TEN YEARS LATER: Members of the Class of 2008 celebrate at the Gala Dinner Dance at the Plaza Hotel during last fall's Reunion festivities.

Medical College 1940s

Renee Olinger has endowed the **Mervin G. Olinger '39, MD '43**, Scholarship with a generous gift to carry on her late husband's legacy. Dr. Olinger, who died in 2016 at age 98, served as a physician in the US Army in Europe during World War II. After his discharge, he completed a residency in pathology and bacteriology at Mount Sinai Hospital and had further training at Bellevue Hospital. He worked at the Essex Mountain Sanatorium in New Jersey as a pulmonary specialist before establishing a private practice as an internist in Verona, NJ, that he continued for 50 years.

1950s

Howard C. Lucas, MD '51: "I am still doing some office practice of ophthalmology. My license is good for another year. I am recovering well from right knee replacement surgery done three weeks ago by David Lucas, an excellent orthopaedic surgeon who is the son of my brother **Roy Lucas, MD '52**. Roy is retired from radiology practice and healthy."

Jack Richard '50, MD '53: "I retired from my New York State Health Department job in March, and now, under somewhat

unusual circumstances, have returned to an old love, acting. I presently have a significant role in a movie, which is being shot in New York City. When and if it is completed and becomes available I will let you know. I am still playing some golf—poorly—and continue to travel, having recently returned from a trip to Slovenia and Croatia."

1960s

Bill Webber '54, MD '60: "I turned 86 last June. I never expected to live this long after surviving hepatitis and pulmonary tuberculosis during my surgical internship and residency in the Cornell Bellevue programs in the Sixties. I've been retired now 20 years from a wonderful 26-year practice in St. Louis, MO, of plastic, reconstructive, and hand surgery followed by four years of consulting and assisting in Ithaca, NY, while we helped get EcoVillage at Ithaca up and running. In 1998, we moved to Tucson, AZ, to be closer to my two daughters and their families, and I finally retired from active medicine. Fortunately, I found myself occupied with many hobbies and activities that had been neglected

during medical practice. I joined a community chorus and sang bass with them for 18 years. We built a solar house complete with solar electric, solar hot water, a solar swamp cooler, rainwater harvesting, composting, desert gardening, etc. Unfortunately, my wife of 45 years (and former NYH RN), Mary, died of small cell lung cancer in 2004, after ten months of chemo and all the home care we could muster. A year later, I had the good fortune of marrying my high school sweetheart, who was divorced and willing to join me out here in the desert and even join me singing in our chorus. I've been lucky to still be able to ride my bicycle ten miles, M-W-F, at Saguaro National Park East with a great bunch of retired guys from all over the place. We call ourselves 'The Wobblies.' My youngest daughter, an ASL teacher, has had me give talks on my surgical career to senior students at her school, and I've recently given a talk to our neighborhood group on climate change, which took me about eight months of research to prepare. We've taken trips to Hawaii (twice), an Alaska cruise, a Canadian Rockies train tour, and numerous trips to visit our combined six kids and ten grandkids from coast to coast. We look forward to going

**'Walking my dear doggie,
Summer, she and I stumbled
upon a fully furnished and
managed site for a new solo
office about 30 yards from
my front door. So I finally
put out my shingle and
opened my very first office
for the practice of psychiatry.
About time!'**

— Michael Schwartz, MD '69

back to Ithaca next June for our 65th Reunion and hope classmate RBG will show up."

At the 40th anniversary of the Pediatric Infectious Diseases Society in October, **George H. McCracken, MD '62**, received the Lifetime Achievement Award for his contributions to the society and to infants and children worldwide with infectious diseases. He is professor emeritus in the Department of Pediatrics at UT Southwestern Medical Center in Dallas, TX.

William Schaffner, MD '62, professor of preventive medicine in the Department of Health Policy and a professor of infectious diseases at Vanderbilt University School of Medicine, received the 2018 D.A. Henderson Award for Outstanding Contributions to Public Health from the Infectious Diseases Society of America. A proponent of adult immunization, he has served on the CDC's Advisory Committee on Immunization Practices since 1982. In addition, he is an associate editor of the *Journal of Infectious Diseases* and medical director of the National Foundation for Infectious Diseases.

Steven D. Douglas '59, MD '63, professor of pediatrics at the Perelman School of Medicine at the University of Pennsylvania and chief of the immunology section in the Division of Allergy-Immunology at Children's Hospital of Philadelphia, received the 2018 Herman and Gertrude Silver Award for his commitment to helping children and adolescents living with HIV. In October, he presented the 25th Herman and Gertrude Silver Lecture, in which he reviewed major milestones in the field of pediatric HIV/AIDS and shared his optimism about future discoveries. His lecture looked back at the beginning of the HIV/AIDS epidemic in the early 1980s when scientists did not yet understand the role of mother-to-child transmission and children with untreated HIV infection had an extremely high mortality rate. Currently, mothers with HIV receive medicines to protect their infants from infection, and fewer than 100 babies are born with HIV each year in the US. Dr. Douglas noted that the epidemic is expanding among adolescents and that half of young people with HIV are unaware of their status.

James Bernstein, MD '64, is taking the Eniware portable sterilizer into sub-Saharan Africa and was most recently in Sierra Leone. He was a featured panelist at a conference at

the UN General Assembly, speaking on the importance of impact investment in global health.

Donald Catino, MD '64: "Life is good. I recently retired from clinical practice of internal medicine/geriatrics. I am keeping my hand in by teaching at Dartmouth Medical School, Colby-Sawyer College Sports Medicine Program, and lay public adult education courses on aging well. I interned on the Cornell Medical Division at Bellevue. I am now reading David Oshinsky's *Bellevue*, which is a fascinating history of the hospital and of NYC. Most of my reading is non-medical now, and I am back to drawing and painting. We traveled to Vietnam and Cambodia recently, and plan a bicycle/barge trip from Nuremberg to Budapest next summer. Recently I celebrated my 80th birthday with most of our five children and 15 grandchildren, and some of my siblings—a wonderful family gathering."

Jane Thomson Hickok '60, MD '64: "I have sad news to report. My husband of 52 years, Bill Hickok, died on July 21, 2018. He was diagnosed with mantle cell lymphoma in 2006 and had no detectable cancer at the time of his death, for which I am very grateful. Last February we moved to a residence for independent seniors in Rochester, NY, where I am enjoying the easier living and the many music, educational, and social activities that are available."

Lawrence Raymond, MD '64: "I'm still enjoying my three-day weeks with Atrium Health, mostly working with Charlotte, NC, employers to identify and reduce pre-diabetes in their workers. I revisited Carmel in December. Three abstracts were accepted for the annual clinical research meeting there. It's like being a fellow all over again."

N. Reed Dunnick, MD '69, was awarded honorary membership in the Chinese Society of Radiology on November 8, 2018.

Michael Schwartz, MD '69: "I've just returned from speaking engagements in Europe at the medical school of the University of Ulm in Germany and at a special symposium at Oxford University's TORCH program (The Oxford Research Centre for the Humanities) where I was keynote speaker. The topic was 'diversity and mental disorders,' which I have written and published about. Several additional presentations on this topic are scheduled/in planning. Best of all, walking my dear doggie, Summer, she and I stumbled

upon a fully furnished and managed site for a new solo office about 30 yards from my front door. So I finally put out my shingle and opened my very first office for the practice of psychiatry. About time! And three months later we are full speed ahead."

1970s

Peggy Bia, MD '72, received a lifetime achievement award from the National Kidney Foundation at its annual gala on November 1, 2018. She was recognized for her decades of caring for patients with kidney disease and transplants, as well as for mentoring fellows, residents, and medical students.

Allan Gibofsky, MD '73, received the Champion Award from the New York Arthritis Foundation, which recognizes career dedication to education, research, and care of patients with rheumatic diseases. He is a professor of medicine at WCM and co-director for inflammatory arthritis and biologic therapy at Hospital for Special Surgery.

Howard Greils, MD '73: "I continue to practice psychiatry; it's hard to believe it's been 45 years since I last saw my classmates. My career has taken me through various stages of practice, initially pharmacologically based inpatient and subsequently outpatient. Over the last 30 years my practice has focused on medical-legal assessment and evaluation. I have several offices in Northern and Southern California and oversee a staff of 12 clinical psychologists with whom I collaborate. I offer arbitrated opinions and function as an agreed medical examiner involving alternative dispute resolution in the medical-legal corporate world. I also consult in Hong Kong and London twice annually. I continue to enjoy international travel, entertaining, art collecting, and my homes in Manhattan and Santa Monica. I am forever grateful for the years spent at Weill Cornell Medicine and for the opportunities that have presented themselves to me, and hope to continue practicing as long as my health remains satisfactory. My best to all of you."

Thomas Anger, MD '75: "I have been off work since August recovering from a slight cycling incident, which resulted in a burst fracture of T3. I needed surgery to stabilize the vertebrae. No spinal cord injury. I finished formal rehab and should be back working



OUTGOING LEADER: Stuart Mushlin, MD '73, at the Weill Cornell Medical College Alumni Association's luncheon and business meeting during Reunion, when he completed his term as president

part time in December. Waldenstrom's is presently under control. My son Tom, an attorney and EMT in Columbus, has a job teaching legal aspects to first responders. His wife, Lori, is a marketing expert for a different law firm. Grandkids Maya and Livia are now 10 and 5. Maya loves science; Livy is undecided, but doesn't miss a thing. My daughter, Carly, lives in Chicago and works for an online university as a writing specialist. My wife, Ida, and I marked our 50th anniversary in July. She volunteers at Lurie Children's, Ronald McDonald House, and the anti-cruelty society. I love living 50 floors up in downtown Chicago with a view of Lake Michigan. Congratulations to the famous **Jean Pape, MD '75**, for all the great work he has done."

Stuart G. Katz, MD '76: "I was elected to the town council of Juno Beach, FL, during the most recent municipal election cycle this spring. Madeline and I have joined the host committee for the WCM Palm Beach Wellness Symposium, February 2019."

Gerald Kolski, MD '76: "I'm now semi-retired doing some consultant work. Susan and I celebrated our 51st anniversary. Children and grandchildren are doing well and providing us joy as parents and grandparents."

Vincent deLuise, MD '77: "I have retired from clinical practice, but am still active in

teaching in the Department of Ophthalmology at Yale University School of Medicine and at the national meetings. I was appointed a distinguished visiting scholar in the Department of Bioethics and Medical Humanities at Stony Brook University School of Medicine. I also serve on the advisory board of the WCM Music and Medicine Initiative and have been annotating the programs for its orchestra performances. If you have a chance, try to attend one of the biannual concerts of this superb orchestra comprising medical students and faculty from WCM and its Tri-Institutional affiliates, the other NYC medical schools, and music students from Juilliard. It is an extraordinary collaboration that keeps music and its powers of uplifting and healing centered in the hearts and minds of these remarkably talented and humanistic musicians."

Frank L. Douglas, PhD '73, MD '77, published a memoir, *Defining Moments of a Free Man from a Black Stream*, in November 2018.

David Frank, MD '79: "After many years of solo gastroenterology practice on Long Island, two years ago I joined the V.A. in Brooklyn as staff gastroenterologist as well as serving as associate chief of medicine. It's been enjoyable teaching GI fellows, Downstate medical residents, and students. Rhonda and I are also enjoying living back on the Upper

East Side since moving last year. And the best thing yet has been becoming grandparents three times over the last two years.”

Samuel M. Silver, MD '79: “I continue to be active as a professor of internal medicine in hematology/oncology and assistant dean for research at the University of Michigan Medical School. Most of my new patients have porphyria, and I am involved in drug trials for the acute porphyrias. I was just elected a fellow of the Royal College of Medicine of London; I am very honored to have been considered and look forward to the induction ceremony. I have recently stepped down as chair of the board of directors of the National Comprehensive Cancer Network. Medicine continues to be fun and rewarding.”

1980s

Jeffrey Kocher '76, MD '80, and Peri Petras, MD '80, are pleased to report that

Jeff is fully retired now and Peri finished on December 31. They write, “Good run in medicine, but right now skiing, travel, and two grandsons born this fall are much more appealing. Look us up in Telluride, CO.”

Rochelle Peck, MD '80: “I retired from my ophthalmology practice and am enjoying retirement immensely. My youngest daughter is married and my eldest gave birth to a boy in July 2018. Being a grandmother is the best job ever. I’d love to get together with any classmates who live in or visit NYC.”

Jonathan Javitt, MD '82: “In 2015, Marcia and I moved to Israel when she was invited to lead the Department of Radiology at the Rambam Health Care Campus/Technion University in Haifa. My brother, Daniel Javitt—a professor of psychiatry who first reported the role of the NMDA receptor in schizophrenia and depression—and I founded NeuroRx, a biopharma company to develop an NMDA-targeted antidepressant aimed at suicidal



TEACHING TOOLS: Alumni tour the Margaret and Ian Smith Clinical Skills Center during Reunion.



CATCHING UP: At Reunion, which is held biannually, members of the Class of 1957 reconnect over breakfast at the Griffis Faculty Club.

bipolar depression. We have just released positive phase-two results showing a sustained reduction in depression and suicidality in patients who present to the ED with severe bipolar depression and acute suicidal ideation. We have now been awarded the first FDA Breakthrough Therapy Designation for this indication. We hope to report out a phase-three registration study in mid-2020. Having just attended the memorial service of yet another extraordinarily talented, creative, and compassionate person who succumbed to bipolar depression, it's time we recognize the lethality of this disease and the need to address it on a neurochemical basis."

Susan L. McElroy, MD '83, was named the first Linda and Harry Fath Professor of Psychiatry at the Lindner Center of HOPE in Mason, OH. She has worked as a psychiatrist at the center for more than ten years and is also its chief research officer, overseeing studies on mood, anxiety, eating and impulse control disorders, genetics, and pharmacology.

Michelle Goldstein-Dresner '81, MD '85: "I'm still doing anesthesia for ophthalmology at the Outpatient Surgery Center. My son, Samuel, just began his 3-year ophthalmology residency at Case Western Reserve in

Cleveland, OH. My daughter, Rebecca, began her 3-year orthodontic residency at the University of Connecticut, Farmington, after graduating from the University of Pennsylvania School of Dental Medicine."

Sven Berg, MD '87, is the CEO of Quality Insights.

Sonja Gray, MD '88, just opened Inner Vault Wellness Center in Caldwell, NJ, located in a former bank vault. Its mission is to merge Eastern and Western healing traditions. It offers body movement, meditation, nutrition counseling, health seminars, and energy work to complement Western medicine.

1990s

Jim Conway '86, MD '90: "I'm a professor of pediatrics and pediatric infectious diseases fellowship director at the School of Medicine and Public Health at the University of Wisconsin, Madison, and now serve as director of the Office of Global Health and associate director for our Global Health Institute."

Ariel Anguiano, MD '92: "I enjoyed the 25th Reunion with fellow graduates of the Class of 1992. One week later, I went to the Grand Canyon and hiked rim to rim to rim."

'I retired from my ophthalmology practice and am enjoying retirement immensely. My youngest daughter is married and my eldest gave birth to a boy in July 2018. Being a grandmother is the best job ever.'

— Rochelle Peck, MD '80

'I'm a musculoskeletal radiologist, and I'm starting a new job in January, working at the Guthrie Clinic and living in Ithaca, NY. Looking forward to the Cornell bus to and from NYC!'

— Satre Stuelke, MD '10

Steve Diaz, MD '92, chief medical officer at MaineGeneral Health, has moved to Waterville, ME.

Evan R. Goldfischer, MD '92, published a book, *Even Urologists Get Kidney Stones*, which is available for purchase on Amazon. He was recently elected secretary of the Large Urology Group Practice Association and given an award for distinguished board service.

Curtis L. Cole, MD '94, was inducted into the New York Academy of Medicine in October.

Tammy Rosado Gruenberg, MD '94, won the Dr. Helen Rodríguez-Trias Award from the Albert Einstein College of Medicine Hispanic Center of Excellence. It is given to physicians who exemplify an extraordinary commitment to social justice, humanism, and mentoring in medicine through their leadership, scholarship, and advocacy for students, patients, and communities.

Tim Dellit, MD '97, has been named chief medical officer, UW Medicine, and vice president for medical affairs, University of Washington, as of January 1, 2019. He will continue to serve as president of UW Physicians,

the faculty practice plan for over 2,200 UW faculty who provide clinical care for adult patients. He is a professor of medicine in the Division of Allergy & Infectious Diseases at the UW School of Medicine.

Michael S. Irwig, MD '99, published the article "Financial Conflicts of Interest Among Authors of Endocrine Society of Clinical Practice Guidelines" in the *Journal of Clinical Endocrinology and Metabolism*.

2000s

Jason Portnof, DDS, MD '06, is president of the Florida Cleft Palate–Craniofacial Association, and is the oral and maxillofacial surgeon for the craniofacial team at Nicklaus Children's Hospital in Miami, FL. He recently opened a private practice in Boca Raton and serves on the medical faculty at Nova Southeastern University and Florida Atlantic University.

2010s

Erica Greenberg, MD '10: "I became



MAJOR MILESTONE: Dean Augustine Choi, MD (second from right), and his wife, Mary Choi, MD (far left), recognize alumni William Klingensmith III, MD '68 (second from left), and Oreste Arcuni, MD '68, with 50th anniversary medals at the Cornell Club during Reunion.



TAKING UP THE REINS: New alumni association president Natasha Leibel, MD '98, addresses the crowd during the Reunion gala.

director of the Pediatric Psychiatry OCD and Tic Disorders Program at Massachusetts General Hospital in Boston, MA."

Satre Stuelke, MD '10: "I'm a musculoskeletal radiologist, and I'm starting a new job in January, working at the Guthrie Clinic and living in Ithaca, NY. I finished my dual fellowship at Johns Hopkins and the University of Maryland in 2016 and have been working in private practice since. I'm still making art; you can see it at radiologyart.com and SATResearch.com. Looking forward to the Cornell bus to and from NYC!"

Katherine H. Saunders, MD '11, had a baby boy, Parker Heyman Saunders, on May 5.

Lakshmi Swamy, MD '11, is starting a new venture as a solo practice pediatric ophthalmologist in the Raleigh, NC, area. With her company, SeekMD, she hopes to build a system of patient engagement and adherence on a small scale—one that could be replicated by others, especially in this underserved specialty.

David J. Phillips, MD '12, recently joined the WCM faculty as an assistant professor of otolaryngology specializing in facial plastic and reconstructive surgery.

Daniel H. Wiznia, MD '12: "I've recently returned to Yale as an assistant professor of orthopaedics. My clinical focus is total joint

replacement of the hip and knee. My wife, **Julie Leviter '09, MD '13,** and I are enjoying being back in New Haven. I am fortunate to have the opportunity to teach within the mechanical engineering department. If anyone is passing through New Haven, please reach out. We'd love to see you!"

Paul W. Furlow, MD '15, began a cardiothoracic surgery fellowship at Massachusetts General Hospital. Earlier this year, he and his wife, Jennifer, were thrilled to welcome a son, William James Furlow.

Graduate School of Medical Sciences

Patricio Meneses, PhD '99, is now the chair of biological sciences at Fordham University.

Virginia Teijeiro, PhD '17: "After finishing a short postdoc in my PhD lab, I traveled for three months around Europe, Australia, New Zealand, and China (loved every minute of it!). I started a new job at Clearview Healthcare Partners this summer. I'm writing to you from Cambridge, UK, before my first face-to-face client meeting! Exciting times."

I-Li Tan, PhD '18, began a postdoctoral research fellowship at the University of California, San Francisco, in January.

IN MEMORIAM

'66 MD—Garry L. Smith of Long Beach, IN, September 12, 2018; retired general surgeon; veteran; fellow, American College of Surgeons; active in professional affairs.

'95 BS Ag, MD '99—Jessica Henderson-Chen of Allendale, NJ, September 12, 2018; emergency medicine specialist.

We want to hear from you!

Share your news with your classmates

Email Chris Furst:
cf33@cornell.edu

Send by mail to:
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401 East State Street
Suite 301
Ithaca, NY 14850

Write a letter to the editor

Weill Cornell Medicine welcomes comments and correspondence from readers. Letters may be edited for length, clarity, and civility. We may not be able to publish all correspondence received, but we would like to hear from you. Please write to: wcm@med.cornell.edu.

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Comic Relief

A Weill Cornell Medicine neurologist teams up with a popular actor to promote Alzheimer's prevention



ENTERTAINING AND EDUCATIONAL: Actor Seth Rogen (right) in one of the light-hearted videos he made at WCM in collaboration with Richard Isaacson, MD (left), and the Alzheimer's Prevention Clinic

Comic actor Seth Rogen and his wife are open about how Alzheimer's disease has affected their family: her mother suffers from its early-onset form, and by age sixty she could no longer speak. In 2012, the couple founded Hilarity for Charity, a nonprofit devoted to raising funds for research and engaging Millennials in the fight against the disease. And last year, the group partnered with the Alzheimer's Prevention Clinic at Weill Cornell Medicine and NewYork-Presbyterian/Weill Cornell to create a series of light-hearted—but highly informational—videos for the clinic's educational web portal, Alzheimer's Universe (AlzU.org). "In the fight against Alzheimer's, knowledge is power," says the site's founder, Richard Isaacson, MD, an associate professor of neurology, the clinic's director, and an attending neurologist at NewYork-Presbyterian.

The videos' content is customized for four groups: students in high school, college, and medical school, and residents in neurology. Many of the segments include lectures by "Professor Rogen"—Seth in a white lab coat—with some light comedy sprinkled in with vital facts about Alzheimer's, including ways to delay or prevent its onset through a brain-healthy diet (one that includes such foods as whole grains, leafy greens, nuts, and fish, and limits salt, saturated fats, and red meat), exercise, intellectual engagement, smoking cessation, and more. "For decades people have been taught that Alzheimer's is inevitable—you get older and your brain declines," Isaacson says. "But that's just not true anymore; one of

three cases may be preventable. And in the other two-thirds, you could delay the disease by years."

in which users help the actor fly, gaining a boost by answering questions about Alzheimer's. Says Isaacson: "They're learning, but we're trying to make it fun."

Isaacson stresses that Alzheimer's Universe isn't just educational; it's also a venue for rigorous, randomized studies on conveying information about the disease. A pilot study of 4,000 people recruited through Facebook during the site's development phase, published in the *Journal of Prevention of Alzheimer's Disease* in 2014, found that online interactive learning methods were indeed effective in teaching about prevention tactics and the disease's stages. Isaacson and

'For decades people have been taught that Alzheimer's is inevitable—you get older and your brain declines,' says Richard Isaacson, MD. 'But that's just not true anymore; one of three cases may be preventable.'

colleagues are currently refining a paper tracking behavioral changes in 11,000 subjects who visited AlzU.org, and are in the midst of a study following 58,000 participants over the course of a year, assessing whether their use of the educational materials has lowered their Alzheimer's risk. "I can see seven patients in a day in my clinic," Isaacson observes, "but to truly reach people, we need to harness the power of the Internet." ■

—Beth Saulnier

PHOTO: STEPHANIE DIANI

A portrait of Dr. Robert D'Acquisto, a middle-aged man with glasses, wearing a blue button-down shirt and a patterned tie. He is smiling and looking towards the camera. The background is a blurred green, suggesting an outdoor setting. An orange curved line separates the top image from the text below.

Creating a Legacy of Scholarship

**"I am determined
that my financial legacy
be used, in part, to help
others save lives."**

Dr. Robert D'Acquisto (MD '76), who has made a bequest to Weill Cornell Medicine to establish a scholarship that will provide annual support for medical students.

**What will your legacy be?
We can help.**

Contact Lisa Lager, Director of Planned Giving, at (646) 962-9510 or plannedgiving@med.cornell.edu.

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