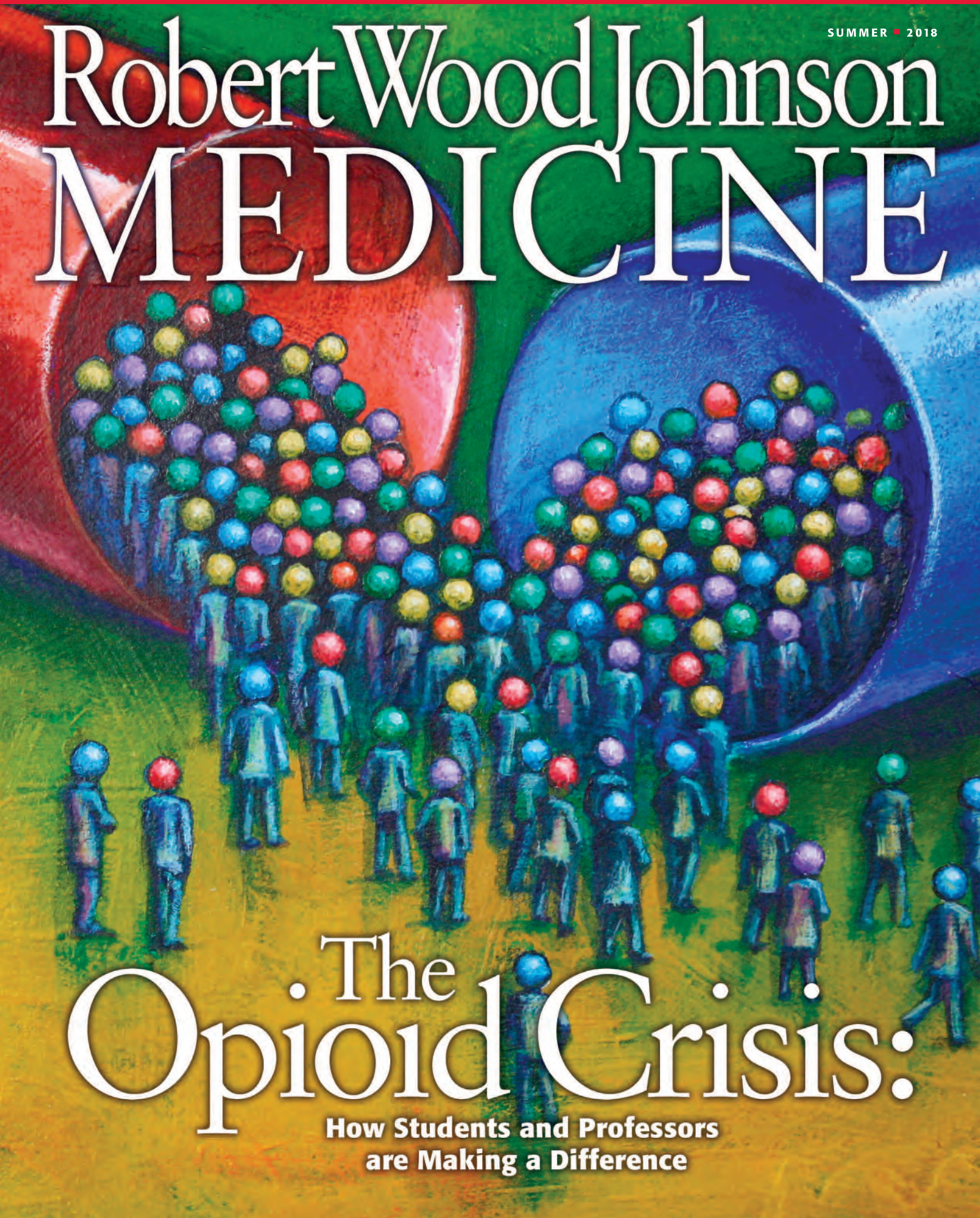
A PUBLICATION FOR ALUMNI & FRIENDS OF RUTGERS ROBERT WOOD JOHNSON MEDICAL SCHOOL

SUMMER ■ 2018

Robert Wood Johnson MEDICINE



The Opioid Crisis:

How Students and Professors are Making a Difference

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LETTER FROM THE DEAN

Dear Friends,

I am thrilled to share news of the Chancellor's Scholarship Challenge. We are honored that the office of Brian L. Strom, MD, MPH, chancellor, Rutgers Biomedical and Health Sciences, selected Rutgers Robert Wood Johnson Medical School for this initiative that will double, and in some cases even triple, scholarship donations for our students ("Chancellor's Challenge Will Match $1M in Scholarship Donations," *page 19*). The challenge will expand the scholarship program, reduce student debt, and help better position the medical school for the future.

One of my greatest satisfactions as dean is learning of our students' commitment to tackling today's foremost issues. In response to student concern about the opioid epidemic, Jill M. Williams, MD '93, associate professor of psychiatry, designed a highly successful, full-year elective focused on safe prescribing, which immediately attracted one-quarter of our students ("The Opioid Crisis: How Students and Professors Are Making a Difference," *page 10*).

JOHN O'BOYLE

That deep-rooted commitment to action continues among our alumni. I was impressed to read of one alumna's career in the trenches of addiction medicine, 20 years beyond graduation ("Dedication to Addiction Medicine and Recovery," *page 48*). Michele DiLauro, BSN, MD '98, counsels and treats people with addictions in settings from the Philadelphia prisons to community clinics.

And as the #MeToo movement took off last fall, the women of our alumni board proposed sharing their experiences with sexual harassment in the context of medical training and practice ("#MeToo?: The Changing Role of Women in Medicine," *page 56*). Incidents of inappropriate, gender-based behavior while wrong, our alumnae found, had actually reinforced their determination and deepened their commitment to their profession.

Outstanding professionalism by plastic surgeon Richard L. Agag, MD, associate professor of surgery and chief, division of plastic surgery, and microsurgery specialist Jeremy Sinkin, MD, assistant professor of surgery, exemplifies the integrated, state-of-the-art care we provide in partnership with Robert Wood Johnson University Hospital and the Rutgers Cancer Institute of New Jersey ("Helping Women Look and Feel Complete Again after Breast Cancer," *page 4*). Thanks to our dedicated faculty, we offer our patients not only top-level care but also compassion and peace of mind.

This issue of *Robert Wood Johnson Medicine* reminds me once again how proud I am to be part of this medical school's commitment to excellence. I hope you will enjoy reading the magazine as much as I did.

Sincerely,

Sherine E. Gabriel, MD, MSc
Dean

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Robert Wood Johnson Medical School

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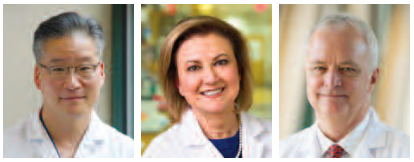

expanded clinical services and research, and share a vision that includes an integrative, cross-departmental approach.

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Robert Wood Johnson MEDICINE

A Publication for Alumni and Friends of Rutgers Robert Wood Johnson Medical School

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BY JACQUELINE CUTLER

Helping Women Look and Feel Complete Again after Breast Cancer

The black cloud of cancer looms every time a woman examines her breasts and frets: Is that a lump? Do I call my doctor? Will I need surgery? Should I worry?

No matter how calm and logical her approach, the last question answers itself as anxiety manifests.

Two women, diagnosed with breast cancer (twice each), had asked those questions and received the answers no one wants. Once they knew they had cancer, each had to decide how to proceed, and ultimately both underwent mastectomies and state-of-the-art breast reconstruction surgery at Robert Wood Johnson University Hospital, an RWJBarnabas Health facility. Both women, pleased with their care and surgical results, shared their experiences after finding their way to Richard L. Agag, MD, associate professor of surgery and chief, division of plastic surgery, Rutgers Robert Wood Johnson Medical School.

"I want women to know they have options, and they should know all of them when they make a decision," Dr. Agag says. "They should feel well informed and comfortable with the decisions they have made."

With these life-altering determinations, complicated surgery, and sometimes-exhausting treatments behind them, the women have happily resumed their lives without defining themselves strictly as patients.

"It's been almost a year and I am feeling great," says Ana Costa, a mother of three in South River. "I never had to actually look in the mirror and see myself without my breasts, so every time I look in the mirror I feel normal." Costa completed her treatment and wants to return to her old job as a warehouse manager.

"I want women to know they have options, and they should know all of them when they make a decision," says Richard L. Agag, MD, associate professor of surgery and chief, division of plastic surgery *(right)*, with Jeremy Sinkin, MD, assistant professor of surgery.

Despite radiation treatments, Patangi Amin, a mother of two, is remarkably upbeat and recently resumed her job at the Federal Reserve. Instead of commuting from Monroe Township to Manhattan's Financial District, Amin is currently telecommuting and paving new paths. She transformed the diagnosis, surgery, and treatments into an impetus for personal growth.

"The surgery along with chemo has grounded me on discipline," Amin says. "Before surgery, I had a Type A personality, but perhaps was not disciplined on the right things."

She's concentrating on herself a bit more, keeping a food journal, setting goals such as walking a quarter of a mile a day on the treadmill, and reading.

"I feel very liberated," says Patangi Amin (facing page and above with her daughter, Kareri). "The surgery has made me feel positive about what I look like. You have to learn to accept a new body. It looks different, but beautiful."

All of this leads to the striking realization that "the quality of my life has definitely improved," Amin says. "I still have to see my oncologists at Rutgers Cancer Institute of New Jersey. But I do not need mammograms anymore, which was one of my goals."

It wasn't only the discomfort and scheduling of mammograms but the anxiety of waiting for results that had been taxing for Amin. She knew she was high risk for breast cancer because of family history, and her first 3D mammogram revealed ductal carcinoma in situ. After a lumpectomy, she mulled over whether a double mastectomy made the most sense. Amin eventually found her way to Dr. Agag. He arrived at Robert Wood Johnson Medical School in August 2016 after spending five years as the director of microsurgery at Albany Medical College. Dr. Agag brought in Jeremy Sinkin, MD, assistant professor of surgery, in September 2017, following Dr. Sinkin's completion of a microsurgery fellowship at Memorial Sloan Kettering Cancer Center. Both physicians express similar goals of creating a practice where patients heal and the process is not part of the problem.

"I am interested in complex, oncologic reconstruction of the breast, specifically using patients' own tissues to reconstruct the defects," Dr. Sinkin says, explaining what drew him to the medical school. "It is a technique that not only requires a skilled surgeon but also an institution that can support this kind of surgery, including nurses who are skilled and can monitor the patients. And I wanted to work with residents. I enjoy the teaching that is possible at an academic institution."

In addition to the more traditional breast implants after mastectomies, the physicians specialize in procedures where the patients' tissue from their abdomen, thighs, or buttocks is used to rebuild the breast. The surgeons transfer the skin, fat, and blood vessels to reconstruct the breast; then, using an operative microscope, they reattach these vessels to blood vessels in the women's chests. Although such procedures are commonly performed at larger academic institutions, they were not as accessible to patients in New Jersey.

"We are aiming to create an environment where patients can come and receive top care in the area they live," Dr. Agag says of the team he has forged. "We need to let people know we are doing it here and they don't have to travel to New York City or Philadelphia."

The double mastectomy and tissue flap reconstruction take about 12 hours. Working collaboratively, the mastectomies were performed by Rutgers Cancer Institute surgical oncologists Lindsay Potdevin, MD, and the late Thomas Kearney, MD, and Dr. Agag and Dr. Sinkin completed the breast reconstructive surgery. The women continue to receive care at the Rutgers Cancer Institute from Dr. Potdevin, medical oncologists Deborah Toppmeyer, MD; Nancy Chan, MD; and Bruce Haffty, MD, professor and chair, Departments of Radiation Oncology, Robert Wood Johnson Medical School and New Jersey Medical School. The surgical procedure and medical care before and after surgery is reflective of the effectiveness of a multidisciplinary team approach.

"Our team is made up of residents, PAs, nurses, and surgical techs. Everyone has a role, and they do it well. The goal of the team is to make something complex feel routine, to some extent," Dr. Agag says.

PHOTOS BY JOHN EMERSON

The physicians are keenly aware that women come to them at a devastating time in their lives. A cancer diagnosis rocks people to their souls, and surgical options are frightening.

"It is overwhelming, and if they have to go to different locations, it can be very troubling for the patient," Dr. Sinkin says. "We want to integrate ourselves as plastic surgeons and work with oncologic surgeons to make it seamless for the patients and make it easy for them to get back to their lives."

Now ensconced back in those lives, Costa and Amin revisit the paths each took to her choice of breast reconstruction. With one of her master's degrees in decision sciences, Amin approached her medical care with the research-driven analysis she brings to her work. She checked doctors' records, read voraciously, and sought additional physicians' opinions before selecting Dr. Agag.

Costa came from a different perspective: she did not question physicians. When a friend's sister was diagnosed with breast cancer, Costa examined herself that night in the shower and found a lump.

Her husband tried to provide comfort, reassuring her it was nothing to worry about. She saw a general practitioner, who told her the same thing. "The doctor said I was too young to have breast cancer and to not worry," Costa recalls.

But she was so anguished that the doctor sent her for an ultrasound, which turned up nothing.

"I didn't see the doctor anymore because she already told me it was nothing," Costa says. "She said if it grew or caused pain, I could get it surgically removed."

That physician seemed unconcerned, leaving Costa with the feeling, "Who am I to disagree?"

Because of this, she went on with her life—as the mass in her breast continued to grow, until the lump was visible through her bra. She was 27 and terrified.

A friend who worked in a doctor's office helped her navigate the process. Costa underwent chemotherapy, then a lumpectomy, followed by radiation. Six months later, her cancer recurred. A series of communication mishaps with a former physician's office only left Costa more fraught.

Costa finally made her way to Dr. Agag—and as she recollects this, the relief in her voice is palpable. "He talked to me and said one of the options was to have surgery with reconstruction the same day, and it would be better if my own tissue was used," she says. "I always try to do what doctors recommend. He is a wonderful doctor who did a wonderful job."

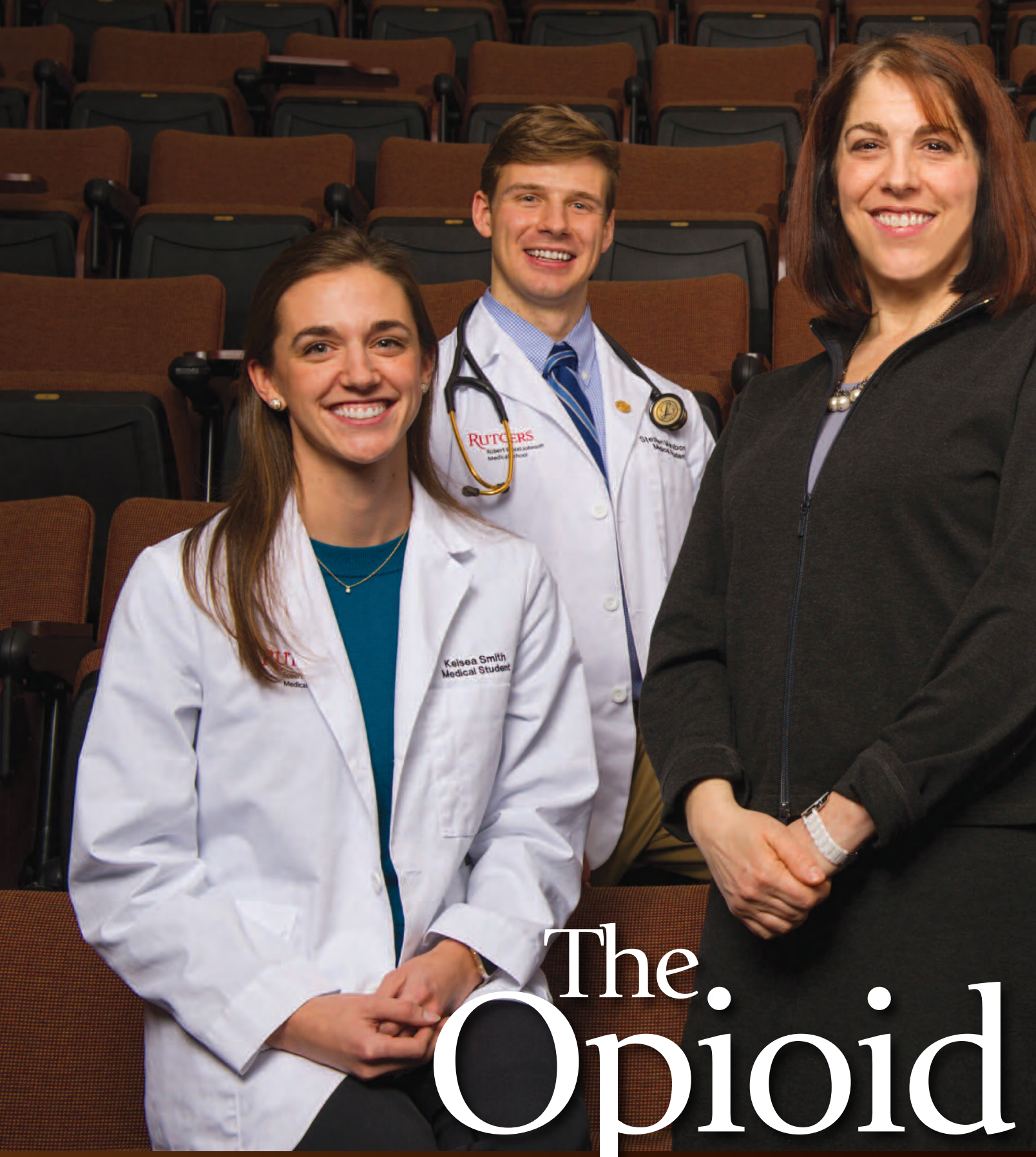
She learned a tough lesson along the way. "You have to know your body," Costa says. "If you think something is wrong and the doctor says everything is OK, don't let the doctor tell you it is nothing. Get a second opinion. If I had listened to my gut, maybe I would not have gone through as much."

Amin, too, still gleaned lessons from this experience. "People have this view that cancer is all evil," she says. "I am not going to argue; the journey sucks. It is not exciting, and nobody signs up for this. However, if you give yourself the opportunity to accept the very personal experience, you will get to know yourself at the deepest levels possible. Then you will find the good that can come out of it. I have learned to slow down and let go."

Amin has also learned to live with her new self. "I feel very liberated," Amin says. "The surgery has made me feel positive about what I look like. You have to learn to accept a new body. It looks different, but beautiful." M

"Dr. Agag is a wonderful doctor who did a wonderful job," says Ana Costa, left, and with her husband Ronaldo and their children (left to right): Luan, Alicia, and Mateus.

PHOTOS BY JOHN EMERSON



The Opioid

How Students and

BY JACQUELINE CUTLER

Crisis:

Professors Are Making a Difference

PHOTOS BY JOHN EMERSON

Jill M. Williams, MD '93, professor of psychiatry and director, division of addiction psychiatry (center) with second-year students behind the opioid crisis initiative (left to right): Kelsea Smith, Stephen Marabondo, Lefan He, Kitae Chang, and Daniel Haddad.

The question is no longer if you know someone with an opioid problem, but how many people you know.

Overdoses from opioids reach every state, every ethnicity, and every socioeconomic level. The Centers for Disease Control and Prevention (CDC) uses the term "epidemic;" in the latest available data, 66 percent of all overdose deaths were from opioids.

"In New Jersey, it is something like six [fatalities] a day, which is higher than it has ever been," says Jill M. Williams, MD '93, professor of psychiatry and director, division of addiction psychiatry.

Dr. Williams was already considering what she could do when Rutgers Robert Wood Johnson Medical School students approached her. They wanted to learn how to help tackle this crisis. Last fall, the school established a full-year elective class, which meets 12 times per year. Even as a new offering, it instantly attracted a quarter of the students.

One topic Dr. Williams discusses is "how to be a safe prescriber," she says. "These are students, so they have not yet gone into practice. We are talking about how to shape them so they understand safe prescribing."

Topics covered include New Jersey's opioid problem, overdose prevention, use of naloxone, treatment and harm reduction, alternative treatments for acute pain, and alternative treatments for chronic pain.

First-year students completing a Narcan training session during orientation.

Last fall, the medical school established a full-year elective class for students who want to learn how to they can help to tackle the opioid crisis.

Students behind the initiative recall how the opioid crisis was constantly garnering attention before they began their studies. Once enrolled as medical students, they felt obliged to learn more. Even though the epidemic has been years in the making, teaching how to combat it is relatively new. Yet Robert Wood Johnson Medical School students and faculty moved quickly and are doing a lot to educate future physicians to examine the epidemic from different perspectives.

"I saw that this school had become a very good home to not only learn more about the opioid epidemic as a medical

Back row *(left to right): Lefan He; Stephen Marabondo; Jill M. Williams, MD '93; Nina A. Cooperman, PsyD; Ann-Jeannette Gieb, MD; and Kitae Chang.*
Front row *(left to right): Kelsea Smith, Daniel Haddad, Ava Hart, Sally Tarabey, and Ariel Schneier.*

student but to also find a way to engage," says Kitae Chang, a second-year student and one of those who approached Dr. Williams.

Chang; his roommate, Stephen Marabondo; and classmates Kelsea Smith, Daniel Haddad, and Lefan He wanted to heighten awareness about the epidemic and learn how to recognize the signs of an overdose and administer Narcan, a brand name of naloxone, the life-saving drug that stops the effects of an overdose. This may not have been the first problem the students thought they would encounter, but it is undeniably a priority.

"For a while in medicine, we were taught that obesity would be our biggest problem," Chang recalls. "Although obesity is readily visible, for someone suffering from opioids it can be anybody; it could be somebody who attends medical school but in private is suffering from these demons. It is going to be a tricky problem, and it may require solutions that come from grass roots."

Although the overriding and overwhelming problem is the same everywhere, different states adopt a variety of legislation, resulting in diverse approaches toward access to naloxone.

"At one time, it was not actually easy to obtain," Chang says of naloxone. "It is a very local problem for our state. As it turned out, [then] Governor Christie signed the OD Prevention Act that permitted pharmacies to sell it. The pharmacy had to obtain a standing order, a contract signed between the physician and pharmacy."

Students again took the initiative. In addition to creating awareness, they are now calling all the pharmacies in Middlesex County to ensure they have the necessary paperwork so naloxone is available to the public without a prescription. These students also want to make the opioid training a permanent part of the curriculum.

"More people will become vulnerable," Chang says. "As future physicians, we may be complicit because we are part of the access to opioids. That adds to the impetus for me to want to understand and fix it."

"We are also currently working on a research study to understand the effectiveness of providing the naloxone training and opioid elective on first-year medical students' attitudes and knowledge regarding the current opioid epidemic," Marabondo adds.

As with any epidemic, it did not suddenly appear as a scourge, and Dr. Williams puts it in historical context. Opioid addictions grew out of a well-intentioned, albeit unsound, mind-set of pain management guiding physicians in the 1990s. "Even if you wanted to send your patients to a pain clinic for comprehensive pain management, insurance might not pay for it," Dr. Williams says. "Insurance only pays for the pain pills, but not the management. And we are still dealing with that today in terms of HMOs [Health Maintenance Organizations] and managed medicine."

Ultimately, Dr. Williams wants to see a holistic approach toward pain and greater access to treatment for substance use disorders. This epidemic, as we are constantly reminded, knows no boundaries.

"It has affected everyone, including people in the suburbs, which is very unusual," Dr. Williams says. "It really has reached everyone in our society, not just the disenfranchised. And the truth is, the rates are still increasing."

As with so many programs at Robert Wood Johnson Medical School, this initiative reaches across disciplines. Nina A. Cooperman, PsyD, associate professor of psychiatry, has been working with various coalitions to provide people with training and the naloxone kit. The Opioid Overdose Prevention Network trained close to 1,000 people in a three-month period.

Dr. Cooperman, principal investigator for a grant from the New Jersey Division of Mental Health and Addiction Services, strives to bring the naloxone training and kits to as many as people as possible. "We are just trying to decrease the harm until we can get someone to go into treatment and recover," says Dr. Cooperman, who with Dr. Williams is the elective's class coordinator.

"We put out the word that we are doing this, and we are now getting requests to do trainings from all different community organizations," she says. "We started out with substance abuse treatment programs."

Since then, they have talked with police, school nurses, and librarians. If librarians seem a curious group to target, Dr. Cooperman explains that people are overdosing in library bathrooms. "Anybody can get trained, and we train them on how to recognize an overdose, and rescue breathing, and administering naloxone. And we provide them with a naloxone kit, with instructions on calling 911 to make sure the person gets to the emergency room."

As news stories constantly remind us, no one is immune. Whether it's from prescribed painkillers or heroin, the insidiousness is in how final the effect can be. Everyone hears about the death of Philip Seymour Hoffman, the Oscar-winning actor who overdosed with a syringe in his arm four years ago. Then there are cases such as a Short Hills teen who died a week later, also in February 2014. That beautiful girl, a freshman at her dream school, went to a hotel and overdosed. Most people won't know most of those whose lives are cut short, given estimates of 150 people in the United States dying every day.

While statistics can become abstract, this one can be put in concrete terms. Imagine the city of New Brunswick as a ghost town. Its population of 55,000 is very close to the annual number of estimated deaths from opioids in the United States.

"It can impact anyone," Dr. Cooperman warns. "People have the belief it cannot happen here—not to my community or my family—but it's everywhere."

Yet despite the drug's relentless death march, Dr. Williams sees glimmers of optimism. "I think things are getting better," she says, adding, "Public awareness has been really helpful and a huge step forward." Nevertheless, she says, "We need funding. Substance abuse treatment is usually underfunded compared to other aspects of medicine. We can always be doing more of that."

And as more doctors receive training, a turnaround is bound to happen. "Our goal is to learn and raise awareness so that as the next generation of physicians, we are well equipped to serve our patients," says Marabondo. M

"It has affected everyone, including people in the suburbs, which is very unusual," says Jill M. Williams, MD '93."It really has reached everyone in our society, not just the disenfranchised. And the truth is, the rates are still increasing."

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Federico Sesti, PhD

Studying and Appreciating the Integral Importance of

Potassium Channels *and* AGING

Very few people become as genuinely excited about potassium channels as Federico Sesti, PhD, professor of neuroscience and cell biology.

BY JACQUELINE CUTLER

PORTRAIT BY KIM SOKOLOFF

Naturally, scientists are well aware of how vital potassium is to life. Yet his passion propels Dr. Sesti's reflections on potassium channels to poetic eloquence.

"Potassium channels are expressed in any living organism, from the most obscure bacteria that live 10 kilometers beneath the sea to the one that causes infection to humans, because, essentially, potassium is a fundamental aspect of life," he says from his lab at Rutgers Robert Wood Johnson Medical School. "Life could not exist without potassium or potassium channels."

To put Dr. Sesti's work in perspective, remember (or learn) that ion channels, proteins found in cell membranes, make minuscule openings in those membranes, permitting only specific ions to pass. Potassium channels are the most common and exist in all living organisms. Dr. Sesti's research of potassium channels in the cortex and the hippocampus led him to a more global discovery a decade ago.

Using a worm, *C. elegans*, Dr. Sesti and his team proved that during aging, potassium channels became oxidized by free radicals, which are a by-product of aging. Oxygen metabolism, over time, leads to free radical production, meaning that these molecules have a single unpaired electron floating around. Electrons like to be paired up, so when they're single, as in free radicals, they can cause a slew of diseases, including Alzheimer's, Parkinson's, and cancer.

That realization, however, is more of a beginning than an end to his research. Dr. Sesti is, after all, a physicist. Major questions loomed.

"What are the implications of this thing?" he asks. "You have to consider two things: potassium channels, and free radicals, or what is called oxidative stress. These are not only seen in aging, but in a variety of diseases like Alzheimer's, diabetes, stroke, other brain injuries, cancer, you name it."

In his lab, Dr. Sesti engineered mice to prevent their potassium channels from being oxidized. It was a promising result: no free radicals were bouncing around, and the result was healthier mice.

Still, Dr. Sesti goes about his work humbly. "What is unusual is not only that he is an excellent scientist, but very modest," says Cheryl F. Dreyfus, PhD, professor and chair, Department of Neuroscience and Cell Biology.

Dr. Dreyfus notes there are potentially broad applications for Dr. Sesti's research.

"By manipulating the ion channel he is studying, he may have insights to reverse the debilitation associated with aging, so he has published some work not only looking at aging but how this model influences brain trauma and injury," she says.

COURTESY OF FEDERICO SESTI, PHD

Dr. Sesti wants to continue doing research and training scientists. He is also the father of two boys and relaxes by going sailing.

Among his laboratory's findings was recognizing that a drug approved by the U.S. Food and Drug Administration, Sprycel, intended to treat leukemia, has off-label benefits that prevent oxidation of potassium channels. That means it could potentially be used to treat early stages of Alzheimer's and other diseases.

Following this discovery, Dr. Sesti worked toward establishing a team at Robert Wood Johnson University Hospital, in collaboration with Shan Chen, MD, PhD, assistant professor of neurology, to put together a grant application for a clinical trial to test Sprycel on Alzheimer's disease patients.

Another exciting project includes the development of a technology for drug screening. Rutgers is so certain of its significance that the university filed an international patent to protect the technology, which is designed to foster a simpler way for pharmaceutical companies to test compounds. Developing new drugs is expensive and time-consuming, and Dr. Sesti has set about trying to establish a better way.

"One of the major problems of the pharmaceutical industry is the ability to screen drugs in a way that is efficient," Dr. Sesti says. "We developed a simple method that can be totally automated."

The technology involves experimenting, again, with *C. elegans* worms, an easier and more cost-effective method than using more highly evolved animals for screening drugs. Just as Dr. Sesti used the worms to research complex issues of brain damage, he works with the simple worm to discover the complexities that will lead to developing new drugs.

Dr. Sesti tends toward the big picture.

"Because of my grounding in physics, I am not hypothesis driven," he says. "I observe and let reality lead me. I discovered this mechanism and mechanism fixation, and it is working very well in Alzheimer's disease. What makes me really happy about studying the channels is that they are present in the human brain. I will prove in the next 10 years it is not just Alzheimer's but in many diseases."

In addition to his research, Dr. Sesti teaches histology to medical students and serves as course director for a class on aging and neurodegeneration.

Dr. Sesti wants to continue doing research and training scientists, including undergraduates. He also spends as much time as possible with young people. As the father of two boys, ages 13 and 9, Dr. Sesti relaxes by sailing.

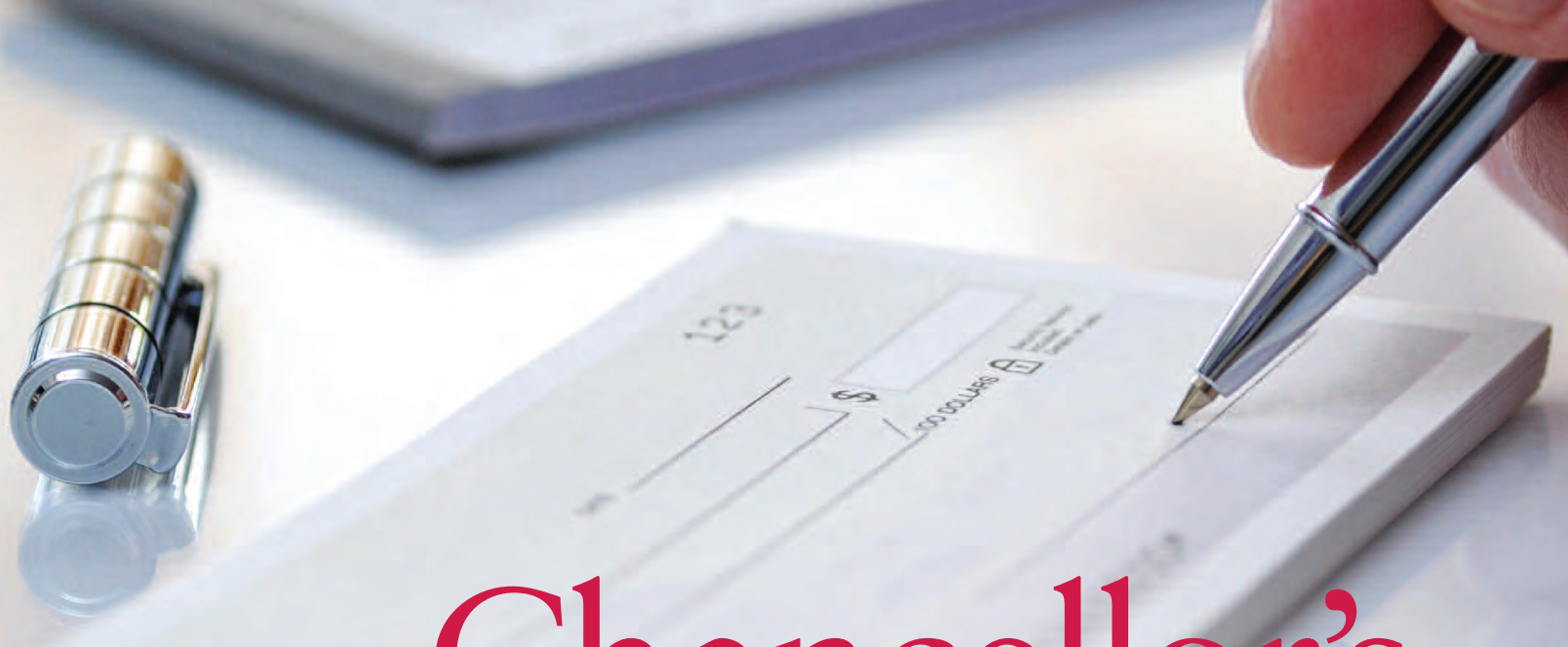
Although he's made such strides, Dr. Sesti is not wildly optimistic that he's looking at a cure for Alzheimer's.

"Each disease can be caused by multiple mechanisms," he says. "Curing some types of diseases may be easier with antibiotics or surgery. But we look at the level of the cells, and then there are many different ways that disease can arise. We study something that is in many different situations and contributes to many diseases."

He adds, "There is no cure at the moment."

Incrementally, however, there are victories. He notes how infections that were once death sentences are now treated with antibiotics, and how so many developments have changed the course of cancer treatment.

"I think the same thing will happen with Alzheimer's disease," Dr. Sesti says. "The fight is being able to act very early. And once we find a way of doing that, there will be a dramatic improvement. I think it is a matter of time, but it is going to happen. In that I am pretty confident. That is really the key." M



Chancellor's *Challenge*

Will *Match* $1M in Scholarship *Donations*:

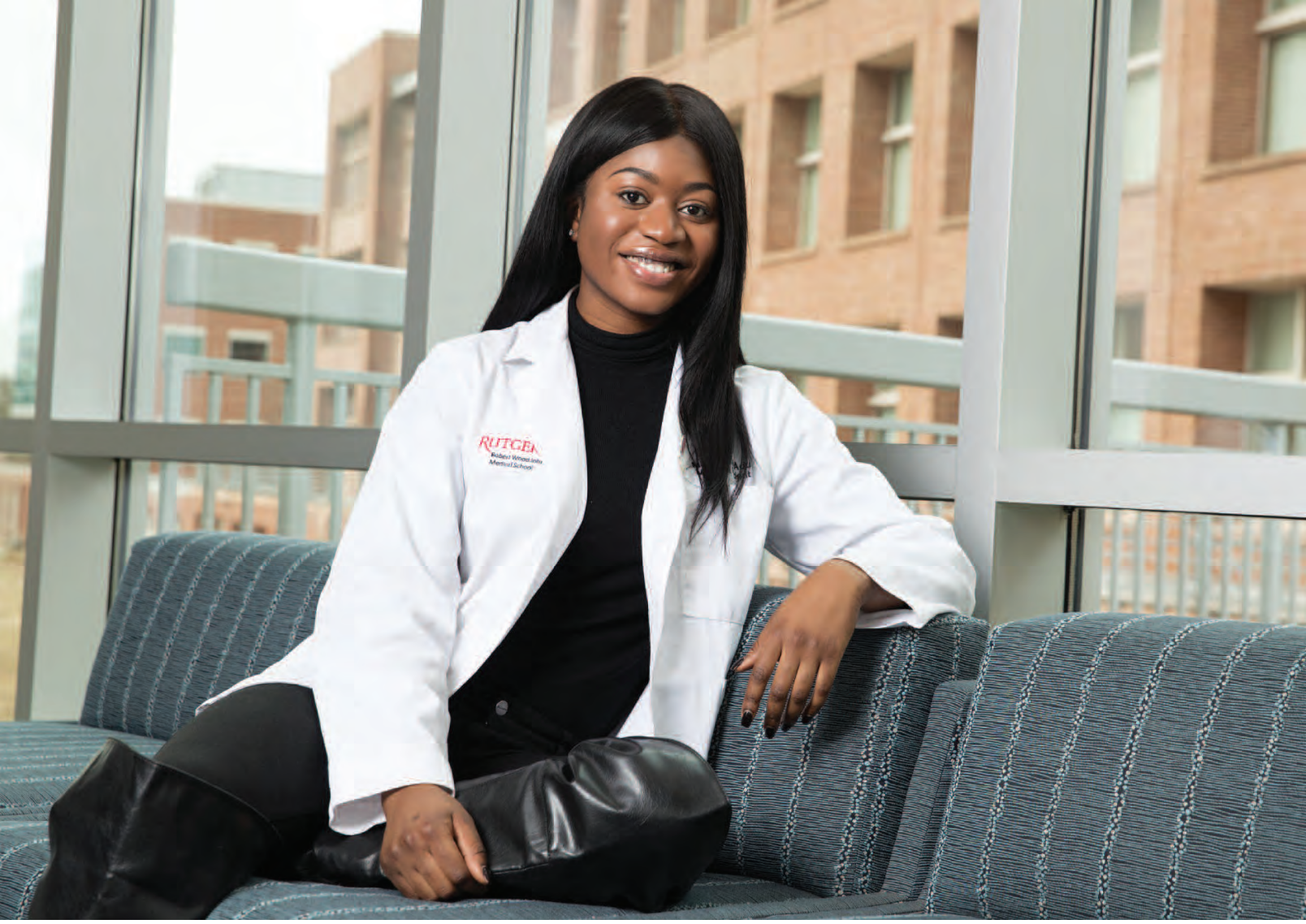
Contribute online at rwjms.rutgers.edu and click "donate."

BY KATE O'NEILL

Students at Rutgers Robert Wood Johnson Medical School are bright, caring, and diverse. They are dedicated to learning, practicing, and advancing humanistic patient care. Above and beyond the central curriculum, many challenge themselves in dual-degree programs like MD/PhD, at both bench and bedside; in public health programs, both locally and globally; and by contributing to school governance.

Like medical students across the United States, students at Robert Wood Johnson Medical School assume large debt as part of their highly specialized education. "Our student indebtedness exceeds the national median," says Carol A. Terregino, MD '86, professor of medicine, senior associate dean for education, and associate dean for admissions. "In 2017, median indebtedness at graduation, $200,000, exceeded the national median, $180,000. Nationally, 33 percent of medical students graduate with debt exceeding $200,000, versus 39 percent at Robert Wood Johnson Medical School."

Tuition and fees for the current academic year are $43,895. "While tuition increases have been modest, the availability of scholarships has not kept pace with these increases," says Dr. Terregino, "and changes in loan subsidies and state grants have added to higher indebtedness."



The $1M Chancellor's Scholarship Challenge, announced in December 2017, provides a golden opportunity to the medical school community. The initiative, introduced by Brian L. Strom, MD, MPH, chancellor, Rutgers Biomedical and Health Sciences (RBHS), commits his office to matching up to $1 million donated to medical student scholarships.

Every donation up to $25,000 will be matched 1:1. However, a 2:1 match for gifts from first-time donors and alumni faculty puts the focus on intra-institutional support for medical student scholarships. The challenge continues throughout 2018, or until the $1 million threshold is reached.

"The Chancellor's Challenge leverages philanthropy with intramural institutional support," says Dr. Terregino. "It is all about culture: we must believe we are the best, contribute to future generations of graduates, and enhance the reputation of and pride in our school. A successful drive will go a long way to bringing us there."

Scholarship awards are not only an honor; they also confer on the recipient the trust and partnership of a community.

Here, three scholarship recipients describe how the awards are changing their lives.

Motunrayo Adu '21: *Dean's Scholar*

Medical school was a longtime dream for Motunrayo Adu *(above)*. Her parents had immigrated here from Nigeria to give their children a better life, instilling in them hard work and determination and encouraging them to aim for their dreams. "Always do your best," Francis Adu told his children. "Your hard work will pay off."

As a Rutgers University undergraduate, Motunrayo Adu participated in two programs jointly run by Robert Wood Johnson Medical School and Rutgers: the Biomedical Careers Program, a summer enrichment program, and Access-Med, which allows selected Rutgers undergraduates to complete first-year medical school courses during their senior year.

Being awarded a Dean's Scholarship was "a completely unexpected blessing," says Adu. After a lively discussion on racism in her group in Patient Centered Medicine (PCM), Adu spoke passionately to her classmates: "If we react with love, we can take steps forward in fixing the issue."

Dr. Terregino, Adu's PCM instructor, later offered her a

Dean's Scholarship—a full four years' tuition. "Dean T. explained that the scholarship isn't only about academics; it recognizes what you're made of—who you are as a person," says Adu.

Adu, now a first-year medical school student, works as a graduate residential assistant at Rutgers, volunteers at The Promise Clinic, and serves as president of the Student National Medical Association. The medical school provides an exceptionally friendly environment, she says. Students support one another, and the highly accessible faculty generously make time to help students conquer hurdles.

"This scholarship encourages me to keep working toward my dream and makes me want to encourage premeds to keep pushing toward their goal. If they stay true to who they are, someone will recognize their work and reward them accordingly," she says.

"Giving back and becoming a mentor for individuals underrepresented in medicine and pursuing academia are big passions of mine," she adds. "One day, I hope to return to the medical school not only as a practicing physician, but as faculty as well."

STEVE HOCKSTEIN

Shane Neibart '21: *Chancellor's Global Health Scholar*

Leadership at RBHS is shaping the medical school to become a leader in global health, says Shane Neibart *(right)*. This mission attracted Neibart to the medical school as a strong, supportive base where he could continue using his background in research not just to "provide resources," he says, "but also to build sustainable systems that can address problems in global health." He promptly found faculty mentors and advisers who have been extremely supportive of his goals.

While earning a bachelor of science degree in engineering at Duke University, Neibart traveled to the Central American nation of Belize, as a National Academy of Engineering Grand Challenge Scholar, to identify barriers to accessing cancer treatment, while building a network to support future missions.

For low- and middle-income countries, where prevention and treatment services are limited, Neibart developed a plan to reduce cervical cancer mortality, including vaccination, screening, early treatment, and deployment of educational programs designed to prevent the spread of infectious diseases such as human papillomavirus (HPV) that are related to cervical cancer.

Neibart's current project seeks to build on his experience in Belize and includes a proposal to stabilize health care networks in low-resource areas by establishing collaborations between local government programs, the medical school, and the private sector. After his acceptance to Robert Wood Johnson Medical School, he applied for—and was awarded—the Chancellor's Global Health Scholarship. The scholarship, which covers tuition for four years of medical school, also provides stipends for living costs, books, travel, and research necessary to advance his ideas from proposal to reality.

After receiving the scholarship, Neibart met with Chancellor Strom to emphasize, he says, "that I would make every dollar count not just for me, but also for the medical school and the communities that I will reach."

JOHN EMERSON

Peter Trinh '20: *Dean's Scholar*

As Peter Trinh *(above)* weighed his medical school acceptances, the offer of a four-year Dean's Scholarship at Robert Wood Johnson Medical School was the clincher. Trinh had already accumulated experience in diverse fields of medicine. A 2014 graduate of Princeton University, he majored in molecular biology and minored in global health and health policy. As an undergraduate, volunteering in Bolivian clinics, he gained clinical skills and cultural awareness. At Princeton, he served as an emergency medical technician, while also training student leaders in first aid.

After graduation, through a one-year fellowship from the Princeton in Asia program, he taught physiology—one of his favorite subjects—to 80 students per semester in Singapore. He subsequently worked at Oscar Health, a technology-focused health insurance start-up, learning the terminology needed to help policyholders evaluate which plan best suited their needs.

The medical school curriculum suits Trinh well, and he has become an active participant, serving as a student representative to the Curriculum Committee. "Curriculum 2010 brought a shift and continues to evolve," he says, "with changes in lectures, courses, and an emphasis on small-group activities like POPS (patient-oriented problem solving), an exercise in which students teach each other and collaborate to make a diagnosis and plan treatment." In addition, Trinh served as co-president of the Internal Medicine Interest Group.

Two favorite courses, medical Mandarin and culinary medicine, represent the variety he enjoys in the curriculum, and he loves the continuity-of-care approach at the student-run Promise Clinic.

Trinh foresees ultimately dividing his career between having a practice—probably in internal medicine—and serving in hospital administration. He is currently considering applying to the dual MD/MBA program, in which he would take an extra year to earn a master of business administration degree at Rutgers Business School. "The Dean's Scholarship freed me to do this; it wouldn't have been possible otherwise," he says.

How You *Can Help*

As part of the Chancellor's Challenge, all donations up to $25,000 to medical school scholarships will be matched—essentially doubling, even tripling, the impact for our students.

Support our students by sending in your donation in the enclosed envelope, or contributing online at rwjms.rutgers.edu and clicking "Donate." M

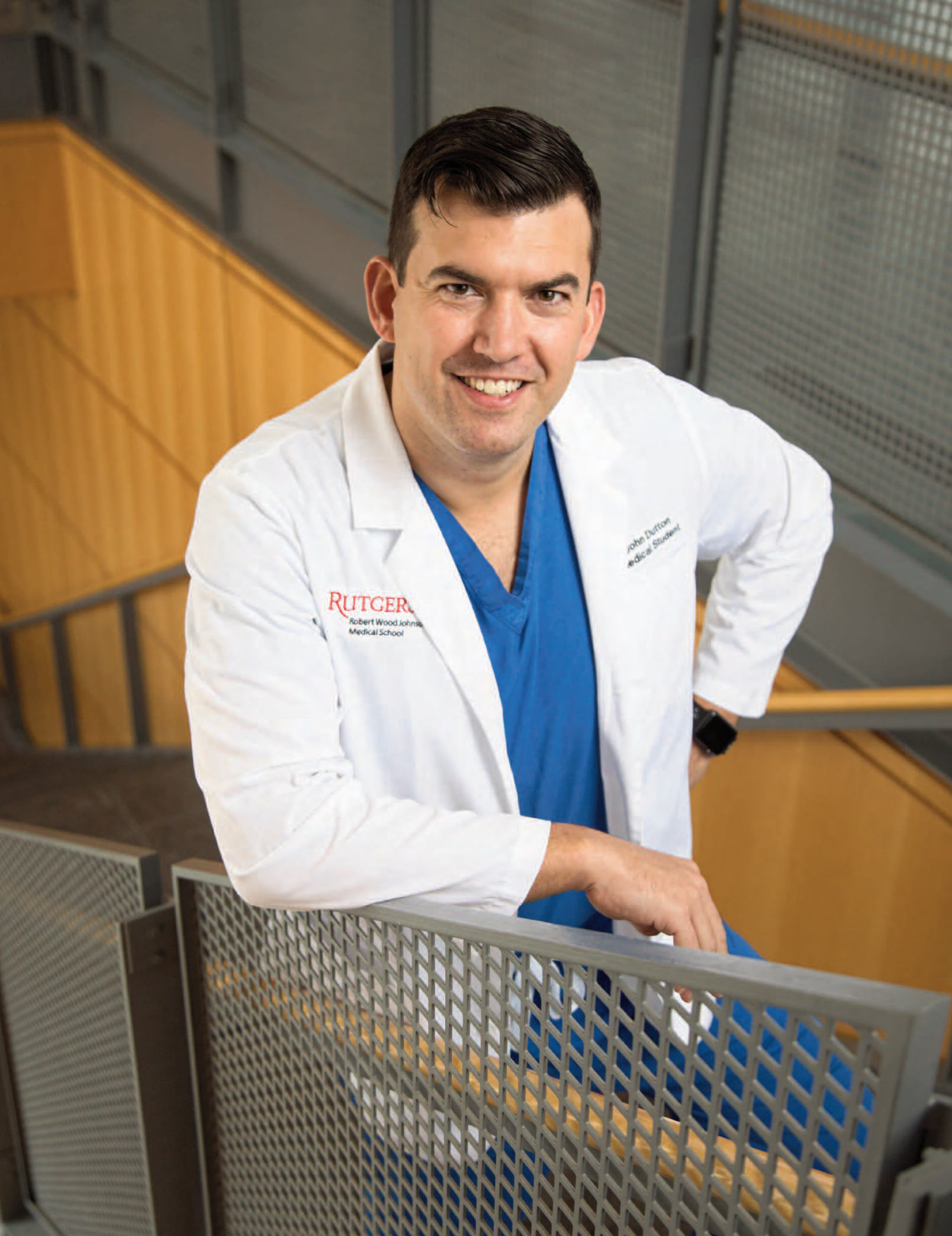
BEN

Has a Prescription for Building a Business

Physicians have always been entrepreneurs. After all, setting up a practice mandates some business acumen. And if anyone doubts doctors' abilities to improvise, observe them in an emergency.

What happens when doctors devise ways to improve procedures? Perhaps they stumble on a solution to a problem long plaguing the community. How can they transform an idea from conception to reality? And if an invention materializes, how can they shepherd it and retain ownership?

BY JACQUELINE CUTLER


Medical School

These are not hypotheticals, and they have very real implications, as John Dutton, MD '18, learned. A recent graduate of Rutgers Robert Wood Johnson Medical School, Dr. Dutton had an invention tweaked, then co-opted, eight years ago.

Rather than become litigious, he remained innovative. Dr. Dutton, Matthew Michel, MD '18, and Steven Shterenberg, class of 2019, founded Biomedical Entrepreneurship Network (BEN). All of them had already been in the working world as students, where Dr. Dutton was researching biliary system development at Children's Hospital of Philadelphia. He fashioned a simpler way to access and cast microscopic vascular systems in mice.

"I was thinking there had to be a better way," he recalls. "I sat down at the bench and built a micro injector."

Granted, not everyone encounters a problem and heads to a workbench to hammer out a solution. The essence of BEN was to spur that thought process, and "to expose medical students to the process of innovation," Dr. Dutton says. "We, as scientists, have this mind-set to come up with solutions when we encounter problems. Medical school is full of smart people. In order to improve patient care, innovative solutions have to make it past the ideation phase."

The essence of BEN was "to expose medical students to the process of innovation," says John Dutton, MD '18 *(left)*, one of the founders of BEN.

As medical students they inherently seek to improve matters, observes faculty adviser Paul F. Weber, MD '87, RPh, MBA, associate dean for continuing medical education and alumni association president. Their sparks of entrepreneurship stem from a need to heal.

In BEN's fourth year, second-year students and 2017-'18 co-presidents Gregg Khodorov and Julia Tartaglia took it to the next level. BEN now holds summits and other events, publishes an annual report, and has a website—all geared toward crafting innovation. In December 2017, BEN collaborated with the Robert Wood Johnson Medical School Alumni Association to host "Alternative Career Paths in Medicine." Three alumni panelists spoke to students about nontraditional ways to use their medical degrees.

Medical students need not approach BEN with a precise blueprint for an invention.

"It is about crossing that bridge," Dr. Weber says, adding that people may have the misconception they need to be Steve Jobs to become entrepreneurs. "If you have an idea, who is that person to contact? If you can contact a group of more like-minded individuals, it is more likely to happen."

Students are exposed to business concepts in the first year through lectures and workshops. BEN helps students realize that success requires expertise in many disciplines and offers lessons on how, for instance, to pitch venture capitalists. If entrepreneurship beckons, BEN members can continue their entrepreneurial education through the DiMIE (Distinction in Medical Innovation and Entrepreneurship), the spin-off of BEN and another program produced by BEN founders; the 2015 BEN leadership team; and faculty leaders Susan Engelhardt, executive director, Center for Innovative Ventures of Emerging Technologies, Rutgers School of Engineering, and Tomer Davidov, MD, associate professor of surgery.

"I just instantly knew this was the way to continue my business education as I pursued medicine," says Khodorov, who deferred medical school acceptance and earned a business degree. "This is my way of bridging the two, understanding the marketplace a little bit better."

Ideas percolating at BEN run the gamut. Khodorov and two classmates are developing an app for what they're calling prehab. It suggests exercises to do before operations and aims to improve postsurgical outcomes. Dr. Dutton and another student are working on a web-based platform to connect patients with necessary resources after being discharged from hospitals.

Not every BEN idea is an app. Students are also working on:

- a new form of delivering chemotherapy to the lungs
- a surgical mesh for hernia repair and
- a super-absorbent pad to soak up fluids during surgery.

Although inventions should be welcome, some in academia view entrepreneurship in physicians skeptically, if not downright suspiciously.

"Once, my intent to practice was questioned because I had an entrepreneurial background," Tartaglia recalls.

Like her colleagues, Tartaglia's experience extends beyond school. After earning her undergraduate degree from Harvard University, she and her sister Christina founded the Scientista Foundation, a nongovernmental organization encouraging women to pursue STEM careers. Wanting to improve Scientista spurred Tartaglia to take business classes at Columbia University.

"The BEN program is part of the reason I applied to Robert Wood Johnson Medical School," she says. "I want to be a practicing physician who also is an entrepreneur. They

JOHN O'BOYLE

NICK ROMANENKO

"We are at the cusp. More and more top medical schools are creating entrepreneurial programs, and Rutgers is one of the programs at the forefront," says Julia Tartaglia (above) with her co-president of BEN, Gregg Khodorov.

call them 'doctorpreneurs.' I met a lot of women who were instituting digital practices and innovations into practice, and I found that exciting."

What shines through with BEN's founders, co-presidents, and faculty adviser is that cultivating entrepreneurship does not negate the powerful motivation to heal.

The two can happily coexist.

"The reason I find so much value in this organization is, first of all, we are giving students a different perspective from what their curriculum gives them," Khodorov says. "Traditional clinical practice can often be limited to complex pattern recognition, with little room for creativity. Most medical students are excited by the opportunity to flex their creative side."

BEN's leaders want to expand it, beginning with New Jersey and ideally taking it across the country. They work with other colleges at Rutgers, eager to collaborate.

"Our future vision is to expand the organization to not just be the largest of its kind in New Jersey, but also we have toyed with the idea of a chapter model and introducing it to other schools," Khodorov says. "There is some talk about expanding to New Jersey Medical School. At this point, we have built a model that works and is sustainable at Robert Wood Johnson. Now, with additional school support, we want to bring it to as many medical schools as we can."

"We are at the cusp," Tartaglia adds. "There is a growing awareness of innovation and entrepreneurship within the medical community. More and more top medical schools are creating entrepreneurial programs, and Rutgers is one of the programs at the forefront." M

How Neurosurgery Helped Me Cope with Parkinson's Disease

BY BILL SWAYZE ■ PORTRAIT BY JOHN O'BOYLE

At 47, I Felt My Life Was Over, and Then Deep Brain Stimulation Gave It Back to Me

I was attracting unwanted attention again. My head would not stop moving. It swiveled side to side while my body wiggled.

It was April 2014. I was trying to watch my daughter's kindergarten teacher get married inside a beautiful church in South Orange. I couldn't stand still.

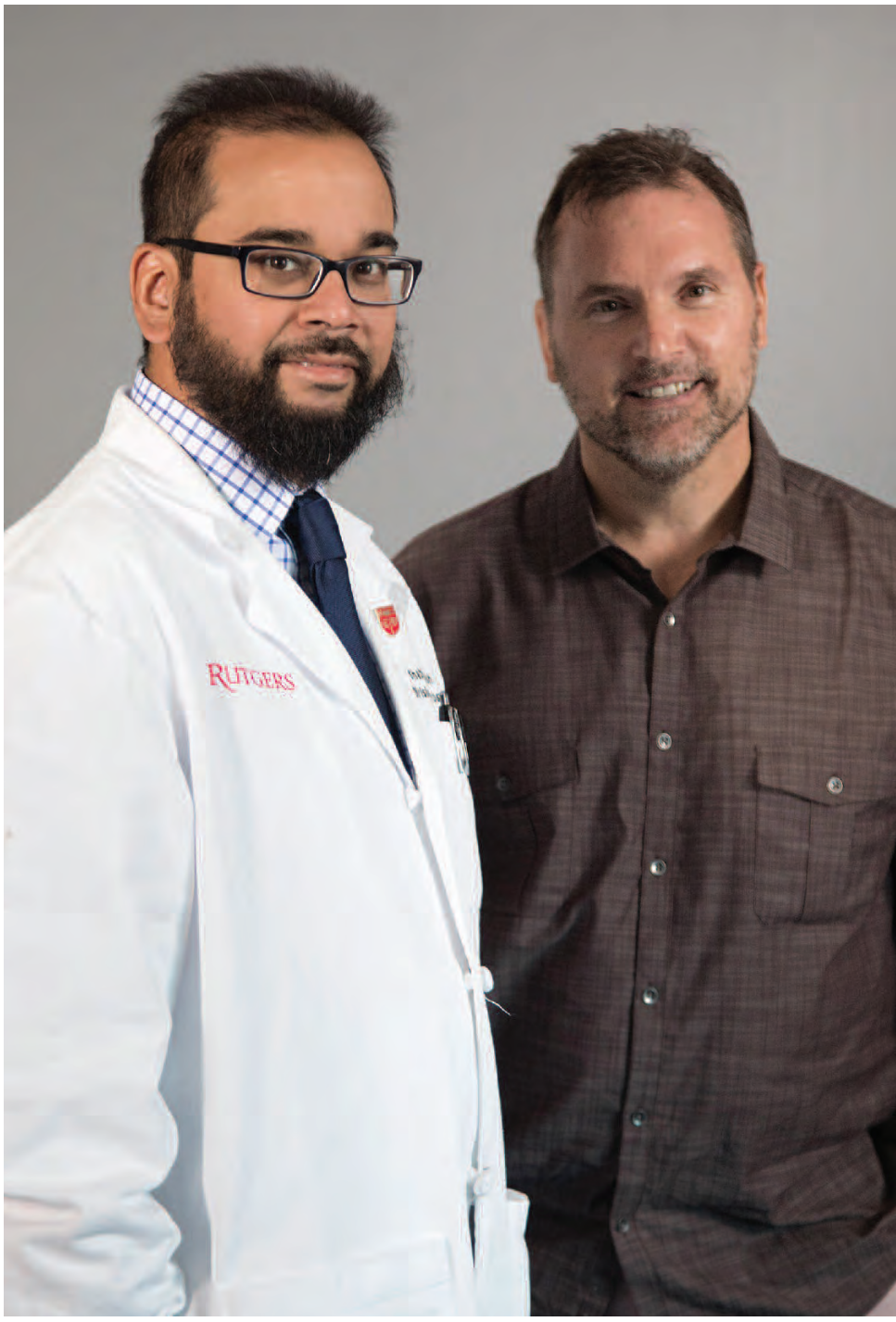
"I have Parkinson's," I whispered to a woman who I thought was sympathetically looking at me.

Was she looking at me? I thought she was. And if she was, of course she knew I had Parkinson's. Anybody glancing my way could see that. I was diagnosed with Parkinson's when I was 29. So some 18 years after the diagnosis, you'd think I was comfortable saying those words to people in that church.

But I still felt awkward, extremely self-conscious, and, no matter what I might have told people close to me, I was so unhappy I just wanted to stay in my apartment most days, when I wasn't spending time with my daughter.

My daughter. What kind of future would I have with her? She was a headstrong 7-year-old at the time who didn't yet grasp the uncertainty of my health. And that would drag me into a dark, depressing place.

I reminded myself that there was hope. I was going to have brain surgery to improve my quality of life: a procedure called deep brain stimulation, or DBS. Surgeons would implant a medical device that uses electrodes in sections of the brain controlling movement, to block signals that trigger motion problems.



JOHN O'BOYLE

Having brain surgery was scary. But having Parkinson's was maddening. There were times I had problems walking. My right leg dragged. I took medication to boost mobility, but that only caused side effects—daily periods of exhaustion, stiffness, and involuntary head and body movement called dyskinesia.

When surgery day arrived, I was both nervous and excited. My parents drove me at 6:30 a.m. to Robert Wood Johnson University Hospital (RWJ) in New Brunswick, where I would be operated on by Shabbar F. Danish, MD '01, associate professor of surgery and director, stereotactic and functional neurosurgery, Rutgers Robert Wood Johnson Medical School and RWJ, respectively, and member, Rutgers Cancer Institute of New Jersey.

I met Dr. Danish weeks before at a seminar about DBS and knew I was in good hands. Since his arrival at the medical school in 2009, Dr. Danish had performed 147 device implants. The youngest to have the surgery was 32; the oldest, 85. When I told him I was thinking about the surgery for myself, he gave me his cell phone number, which I called twice, getting reassuring answers to my questions.

In May 2014, Dr. Danish led a 10-person team—surgeons, nurses, anesthesiologists, a physiologist, and surgical technicians—in the operating room. The team prepped me for two hours, attaching a metal head frame to my skull to keep my head steady. They created a brain map and drilled two small holes in my skull. Then, for the next three hours, they kept me awake. Though numb and groggy, I needed to be able to respond to verbal and movement tests to see if they were implanting the electrodes in the best possible location. At one point, Dr. Danish asked me to sing my favorite tune. I sang a Depeche Mode song.

The surgery required implanting extension wires below my scalp and under my neck, which would connect my brain to a battery-powered stimulator, called an internal pulse generator. Similar to a pacemaker and about the size of a pocket watch, the generator was surgically implanted in my chest during a same-day procedure a week later.

COURTESY OF BILL SWAYZE

"Most patients tell us after the surgery they wish they had done it sooner. But it is a difficult decision to make. . . . It is a scary thing—until you go through it," says Shabbar F. Danish, MD '01, associate professor of surgery and director, stereotactic and functional neurosurgery *(facing page, left)*, with his patient, Bill Swayze.

"Now, well over four years after the procedure, my life continues to improve. I became more outgoing and positive . . . and I met and married an incredible woman who sees and appreciates life as I do," says Bill Swayze *(above right)* with his wife, Annelle Swayze.

During the first few weeks following surgery, I could detect a subtle impact. I felt better. Within two months, my periods of dyskinesia stopped. My head no longer moved uncontrollably. My daily periods of stiffness and fatigue and walking difficulties diminished. I reduced my medication and whittled away at the side effects the medication caused.

Now, well over four years after the procedure, my life continues to improve. I became more outgoing and positive about life, and I met and married an incredibly funny, witty woman from Jersey City who loves music and art, and sees and appreciates life as I do.

I learned that exercise is an effective way to slow the progressive movement disease. So I try to exercise five mornings each week for three hours, riding a stationary bike and taking yoga, Pilates, Zumba, and other classes at the West Essex YMCA in Livingston and Jewish Community Center MetroWest in West Orange.

Statistically, I am far from an anomaly. More than 10 million people worldwide are living with Parkinson's disease. The incidence of Parkinson's increases with age, but an estimated 2 percent of people with the disease are diagnosed before the age of 40.

The DBS procedure on one side of the brain was approved by the U.S. Food and Drug Administration in 1997 to treat tremors. It was approved for both sides of the brain in 2002 to treat Parkinson's symptoms.

Two weeks after surgery, I met with Deborah Caputo, APRN, a nurse practitioner who coordinates the Deep Brain Stimulation Clinic in New Brunswick, and Eric Hargreaves, PhD, instructor of neurosurgery and clinical DBS neurophysiologist at Robert Wood Johnson Medical School and RWJ, who is on Dr. Danish's team and was integral in the surgery.

They explained the game plan to me, how medication would be reduced over time, and how the electrodes implanted in my brain would affect my movement. I was given a handheld wireless controller to increase and decrease the DBS system settings. The procedure is not a cure, and the stimulation settings can be adjusted as my condition changes. I see them every two to three months, and we are close. They even came to our wedding in July.

I wish I had had the surgery years ago. I'm not alone.

"Most patients tell us after the surgery they wish they had done it sooner," Dr. Danish says. "But it is a difficult decision to make. Everybody has to get to that point in their lives where they want to undergo something like this. It is a scary thing—until you go through it." M

A version of this story ran in Rutgers Today.

JOHN EMERSON

Rutgers Robert Wood Johnson Medical School *Welcomes* New Clinical Department *Chairs*

BY KATE O'NEILL

Sherine E. Gabriel, MD, MSc, dean, was pleased to announce the appointment of three clinical department chairs at Rutgers Robert Wood Johnson Medical School. The new chairs look forward to sustaining the proven strengths of their respective departments while furthering growth and collaboration, particularly in the areas of clinical services and research.

Leonard Y. Lee, MD '92
Chair of the Department of Surgery

Leonard Y. Lee, MD '92, professor of surgery and James W. Mackenzie, MD, Endowed Chair in Surgery *(left)*, was named chair of the Department of Surgery, effective January 31. Prior to this appointment, Dr. Lee served for three years as interim chair. He also served as senior associate dean for clinical affairs and vice president–clinical affairs of Rutgers Health Group.

Dr. Lee completed residency training in general surgery at St. Vincent's Hospital in New York City, where he served as chief resident. He performed a clinical cardiothoracic fellowship at New York–Presbyterian Hospital/Weill Cornell Medical Center and at Memorial Sloan Kettering Cancer Center, under the guidance of Ronald Crystal, MD, and

As chair, Dr. Lee looks forward to the medical school's investment of additional resources that will support the department's growth, especially in clinical services and research. In addition to recruiting new faculty, he foresees expanding the strength of the department in surgical subspecialties by developing these areas of expertise at RWJBarnabas Health and its affiliate community hospitals.

Todd Rosengart, MD, that focused on gene therapy research for the treatment of cardiovascular diseases. His research culminated in a human trial sponsored by the National Heart, Lung, and Blood Institute. He served on the faculty of Cornell for more than 10 years as a researcher and active clinician and rose to the rank of associate professor of cardiothoracic surgery.

Dr. Lee served as vice chair for heart and vascular surgery at Hackensack University Medical Center for one year prior to joining Robert Wood Johnson Medical School, his alma mater, in 2012 as chief of the division of cardiothoracic surgery. During his tenure, cardiac surgery volume grew nearly 50 percent, with significant improvements in quality metrics, including decreases in mortality rates, strokes, renal failure, length of stay, and readmission rates.

As chair, Dr. Lee looks forward to the medical school's investment of additional resources that will support the department's growth, especially in clinical services and research. In addition to recruiting new faculty, he foresees expanding the strength of the department in surgical subspecialties by developing these areas of expertise at RWJBarnabas Health and its affiliate community hospitals.

One of the most productive clinicians in the practice, Dr. Lee annually performs 400 heart surgeries. Continuing his high level of productivity in education and research, he recently submitted an RO1 multi-principal investigator proposal to support clinical research on cardiac repair using stem cells. He has published nearly 200 articles and abstracts and continually receives excellent reviews as a mentor and educator from students and residents alike.

Sally Radovick, MD
Chair of the Department of Pediatrics

Sally Radovick, MD, professor of pediatrics and senior associate dean for clinical and translational research *(above)*, was named chair of the Department of Pediatrics, effective June 1, 2017. Dr. Radovick joined the faculty in 2015 and was designated a chancellor scholar at Rutgers Biomedical and Health Sciences.

Dr. Radovick previously served as Lawson Wilkins Profes-

STEVE HOCKSTEIN

sor of Pediatrics, director of the division of endocrinology, and vice chair for research in the Department of Pediatrics at the Johns Hopkins University School of Medicine. An expert in pediatric growth and development disorders, she focuses her research program on steroids that control sexual maturity and reproduction, as well as on neurotransmitters and growth factors. In addition, she studies the deficiency of hormones produced by the pituitary gland in children with growth failure.

"Pediatricians have a great responsibility," says Dr. Radovick. "Our biggest challenge as a nation is the socioeconomic differences in the quality of care for our children." She calls for better

> "Pediatricians have a great responsibility," says Dr. Radovick. She calls for better advocacy for health care reform, starting with prenatal care.

JOHN EMERSON

advocacy for health care reform, starting with prenatal care.

Her primary goals as chair are to expand the department faculty and build its research core. Important resources are already in place, says Dr. Radovick, including the Pediatric Clinical Research Center, the Child Health Institute of New Jersey, The Bristol-Myers Squibb Children's Hospital at RWJ and PSE&G Children's Specialized Hospital.

As dean for clinical and translational research—a position she continues to hold—Dr. Radovick has worked to form collaborative research groups composed of Rutgers faculty members across a wide spectrum of expertise. Since 2015, under Dr. Radovick's leadership, clinical trials at the medical school increased by more than 50 percent and investigator-initiated protocols more than doubled.

Dr. Radovick was instrumental in the creation of the state-of-the-art adult Clinical Research Center facility. She also played a key role in the development of a strategic plan for the medical school, with the goals of increasing research potential and improving core and administrative services available to investigators.

Mark V. Sauer, MD, MS
Chair of the Department of Obstetrics, Gynecology, and Reproductive Sciences

Mark V. Sauer, MD, MS *(left)*, was named chair of the Department of Obstetrics, Gynecology, and Reproductive Sciences and senior associate dean for women's health, effective January 1.

A well-known clinician, researcher, and medical educator specializing in reproductive medicine, Dr. Sauer was a tenured professor, chief of the division of reproductive endocrinology and infertility, and vice chair of the Department of Obstetrics and Gynecology at Columbia University for 21 years. While there, he also earned a master of science degree in bioethics and taught reproductive ethics at the graduate school.

Dr. Sauer retired from Columbia University in 2016 and accepted a position as professor of obstetrics, gynecology, and reproductive sciences at the University of California, San Francisco, where he served before being recruited to join the faculty at Robert Wood Johnson Medical School.

Early on, Dr. Sauer envisioned a career as a community doctor. But a fellowship in reproductive endocrinology and infertility at the University of California, Los Angeles/Harbor-UCLA Medical Center captured his interest in clinical research and redirected his career. "It was infectious," he says. "I became involved in a series of projects that challenged contemporary medical practice using innovative techniques. These initiatives led to the establishment of egg and embryo donation as an infertility treatment.

"We also pioneered the use of methotrexate as a medical alternative to surgical treatment for ectopic pregnancy. Our studies had real impact on patients' lives and truly changed the practice of medicine. I suppose I just never stopped questioning conventional wisdom, which is why I love academic medicine—it provides me an acceptable conduit for asking, 'Why not?'"

Following his early years at UCLA, he joined the faculty at the University of Southern California, where he was instrumental in further developing the field of egg donation and constructing treatment paradigms to assist women of advanced reproductive age achieve safe pregnancies.

"Menopausal pregnancy" was international news. In 1995, he was recruited to Columbia University, where he expanded his research and clinical practice into other controversial areas. These included fertility care of HIV-seropositive patients, stem cell therapy, and, most recently, research involving "three-parent" mitochondrial replacement therapy to help women at risk of transmitting serious mitochondrial diseases to their children.

Dr. Sauer's decision to accept the chair position at the medical school was both personal and professional. He and his wife raised four children in New Jersey and for 21 years have considered it home. "I embrace the challenge of leading a solid core of dedicated faculty who are here because of their loyalty to the mission and their faith in its quality," says Dr. Sauer. "In the next few years, we plan to recruit additional faculty to bolster our fine clinical programs and upgrade our medical student and resident educational mission. I am eager to move us forward and to motivate students and residents not only to train in New Jersey but to stay and practice here."

"I embrace the challenge of leading a solid core of dedicated faculty who are here because of their loyalty to the mission and their faith in its quality," says Dr. Sauer.

Looking ahead, Dr. Sauer hopes to build the department's translational research division and collaborate with basic researchers at the Rutgers Cancer Institute of New Jersey and the Child Health Institute of New Jersey, especially in the area of genetics and reproductive medicine. "On a broader scale," he says, "I would like us to explore working in a more integrative fashion, across department lines, since women's health is a vital part of all departments." M

Medical School Scientist Helps Uncover Key *Mechanism in* IMMUNE RESPONSE

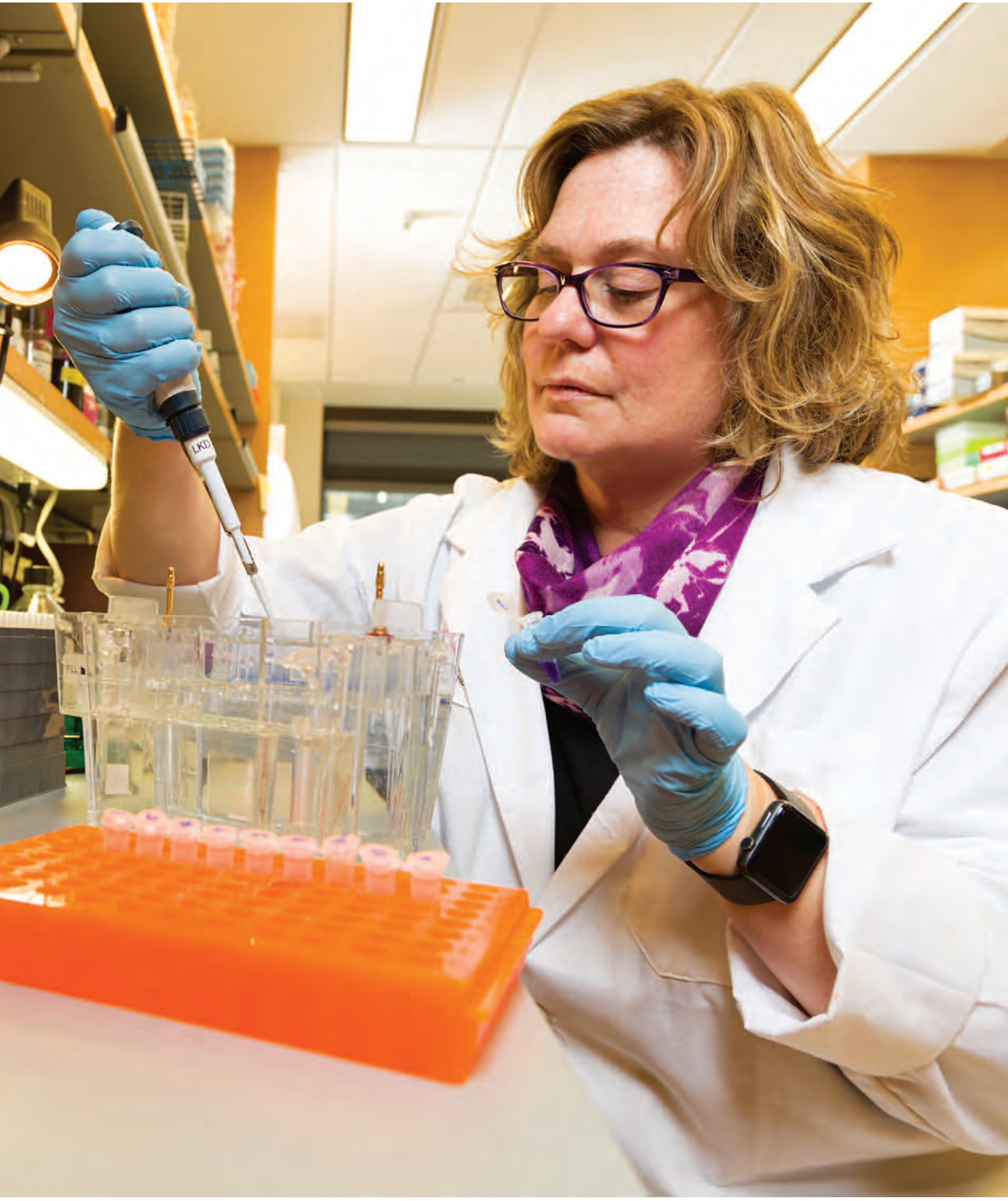
SUCCESSFUL COLLABORATION TARGETS THE GENETICS OF IMMUNITY

For more than 15 years, Lisa K. Denzin, PhD, associate professor of pediatrics at Rutgers Robert Wood Johnson Medical School's Child Health Institute of New Jersey (CHINJ) *(right)*, has been studying the control of immunity and autoimmunity at a molecular level. Her progressive work on antigen presentation and regulation of the immune response has shown the roles of variant protein molecules in regulating autoimmune disorders, such as Type 1 diabetes.

Most recently, her work with a University of Chicago microbiologist and her team uncovered a critical mechanism in immune response, yielding results that challenge the accepted dogma regarding mechanisms of immunity and resistance. Dr. Denzin never suspected, however, that a contact she made in her postdoctoral years would eventually be the catalyst to this latest collaboration—one that she considers one of the most successful of her career.

BY BETH-ANN KERBER

PORTRAITS BY STEVE HOCKSTEIN


LKD

It was during her postdoctoral studies in immunology at Yale University that Dr. Denzin was introduced to Alexander V. Chervonsky, MD, PhD, a colleague of her husband, Derek Sant'Angelo, PhD. Dr. Sant'Angelo, Harold L. Paz, MD, Endowed Professor of Developmental Biology and professor of pediatrics and pharmacology—now also a researcher at the Child Health Institute—worked in a lab with Dr. Chervonsky that was housed in the same department as Dr. Denzin's. Although Dr. Denzin and Dr. Chervonsky eventually coauthored a paper while at Yale, on major histocompatibility complex (MCH) class II molecules, their professional paths remained separate otherwise.

In the subsequent years, Dr. Denzin's work regarding the MHC protein H2-O led to a number of discoveries regarding its potential role in autoimmune diseases and immunological tolerance and helped establish her as one of the authorities on H2-O.

Meanwhile, Dr. Chervonsky's wife, Tatyana V. Golovkina, PhD, had come to a crossroads in a nearly 20-year hunt to locate the mechanism by which the body's immune system detects retroviral infection (from a class of viruses that includes the human immunodeficiency virus, HIV) and initiates virus-neutralizing adaptive immune responses. Throughout her painstaking search for the location of the specific molecule responsible for producing this effect, Dr. Golovkina identified some candidate genes, one of which was H2-Ob, using mouse models.

"My husband suggested I contact Lisa because she was *the* expert in this field," recalls Dr. Golovkina, professor of microbiology at the University of Chicago, where Dr. Chervonsky serves as professor of pathology and chair of the department's Committee on Immunology.

A Perfect Fit

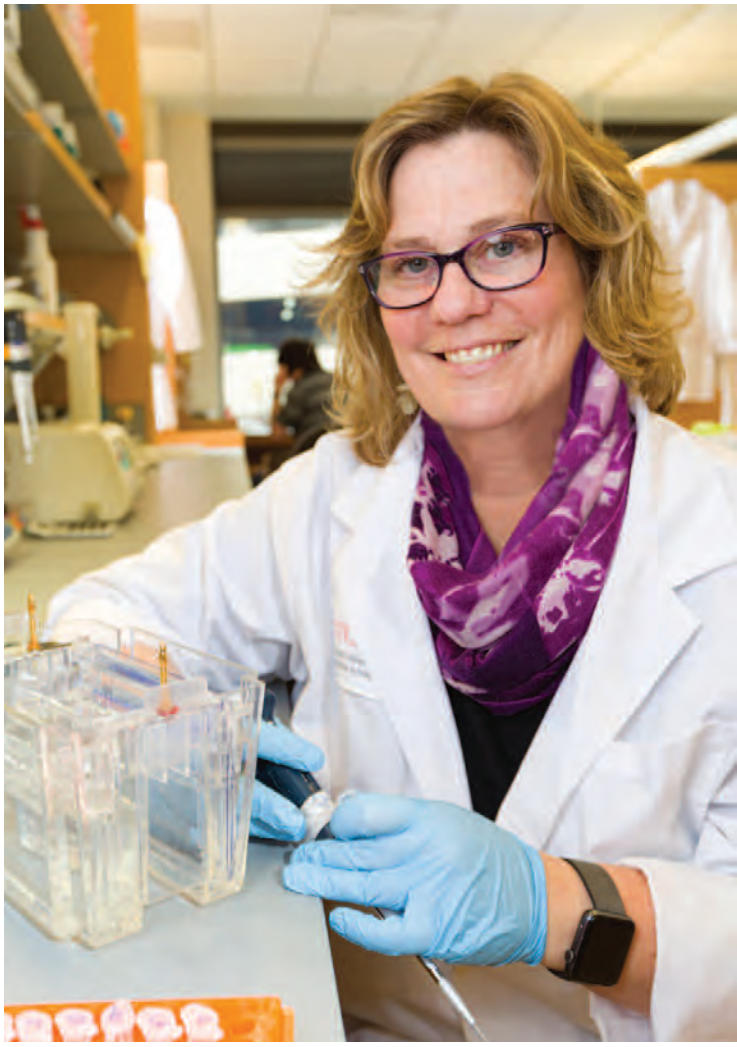
Combining their talents on this study made perfect sense, Dr. Denzin says.

"I'd been looking for the function of this molecule for about as long as Tatyana had been hunting for her gene," she notes. "We were both doing our own thing—I was working on the function of the molecule, she was looking for a gene that mediates her phenotype—and when she figured out it could be Ob [the H2-O gene at a specific location], everything I had done over the last 20 years pointed to the fact that it really made sense that it would be that gene.

"Then we worked together to prove it actually was," Dr. Denzin says matter-of-factly.

And prove it, they did. Over the course of the next few years, through in-person visits to Dr. Golovkina's lab at the University of Chicago, frequent FaceTime discussions, and what Dr. Denzin describes as "nearly constant" text messages, the two scientists forged a partnership that paired their unique skill sets to solve this biological puzzle.

"She has biochemical expertise, which I really don't have, and I have genetic expertise and microbiological expertise that she doesn't have, so together it's a great fit," Dr. Golovkina explains. "We work together really well."



"If that hypothesis proves true, it establishes a number of different targets for improving immune response to chronic viral infections such as hepatitis B and C and HIV," says Lisa K. Denzin, PhD.

Together with a computational biologist from the Toyota Technological Institute at Chicago, researchers Francesca Virdis and Michele Witkowski at CHINJ, and a team from the University of Chicago that included Dr. Chervonsky, Dr.

Denzin and Dr. Golovkina not only definitively identified H2-Ob as the gene mediating the productive immune response to mouse retroviruses, but also uncovered some surprising results.

Their study, published as the cover story of the August 15, 2017 issue of *Immunity*, revealed—through the use of positional cloning—that the H2-Ob allele was responsible for producing retrovirus-neutralizing antibodies. Their findings shed light on the previously unappreciated role of the H2-O gene in providing immunity to infections and controlling persistent viral infections, as well as offered some clues as to how the gene might work to control antivirus immune responses. In addition, because H2-O is analogous to the human leukocyte antigen HLA-DO, their findings offer implications as to the role of HLA-DO in influencing control of hepatitis C and hepatitis B infections, and why certain individuals may be either resistant or susceptible to these viruses.

Contrary to the accepted dogma regarding resistant mechanisms, the researchers also discovered that this particular mechanism is recessive, meaning two copies of the molecule would be needed in order to resist the pathogen.

Implications for the Future

Now in the first years of a five-year grant funding the project, there is much more to accomplish, Dr. Denzin and Dr. Golovkina say, particularly since the initial findings have prompted a number of additional questions. These questions include determining the molecular and immunological mechanisms by which the protein operates, says Dr. Denzin. She notes that they will be taking a closer look at the mechanics not only of how the proteins interact to effect a positive outcome, but also of how the changes H2-O brings about in the way antigens are presented actually lead to differences in immune response.

"My lab has shown before that small changes in this pathway can make a big difference in the immune response, but which cells are doing it?" says Dr. Denzin. "How is it happening? When is it happening? What are the important events during the immune response that lead to either an antibody response or no antibody response? The virus could be subverting the immune response, preventing down-regulation of H2-O, for example, somehow. Those are the kinds of questions we hope to answer in the next couple of years."

Ideally, Dr. Golovkina says, they hope to be able to translate their findings to human immune response, to determine whether their discovery might explain why people respond differently to the same viral infections.

"Right now we're trying to understand in more detail how this mechanism is working—when this regulator gets turned on and why it turns off. Ultimately, we want to understand how we can manipulate what this molecule can do, to our own benefit: to turn it on when it's needed, to turn it off when it's no longer needed, to allow a response, and then to block it when we don't need the response. Now the study is becoming more and more about how we can manipulate the mechanism," Dr. Golovkina says.

Better understanding of this mechanism could lead to different therapeutic options and potential for individuals whose immune response is not working as well as it should, adds Dr. Denzin.

"People can get the same virus and some get very sick while others don't. It could be in part due to different variants of these molecules. Your [HLA-DO] could be different from mine, and I have a better immune response than you do because my DO doesn't function as well in inhibiting antibody responses," she says.

If that hypothesis proves true, it establishes a number of different targets for improving immune response to chronic viral infections such as hepatitis B and C and HIV, Dr. Denzin notes. It could be important in terms of developing pharmaceuticals to promote immune response in people who are sick, she explains. It could also be important in helping prevent autoimmunity by "turning up" the molecule's normal functioning. Or it could potentially be used as an additive during vaccination, where you would incorporate a molecule into the vaccine design to inhibit the function of the HLA-DO molecule, thereby giving the person a stronger immune response to that vaccine, she says.

Pursuing the Goal

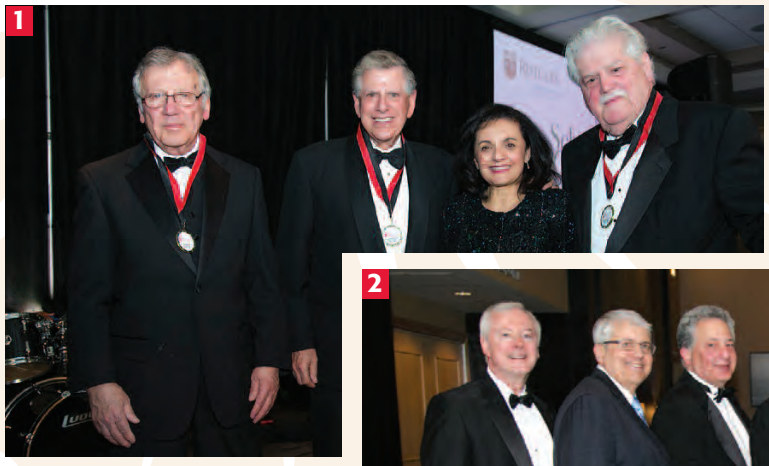
In addition to the resulting scientific discovery, their research also exemplifies an important lesson for young investigators, Dr. Denzin and Dr. Golovkina say: the value of persistence.

"Along the way it can get very frustrating," Dr. Denzin acknowledges. "Yet you keep going, you keep going, and as you do, suddenly you have a great result—that moment where you go, 'Oh, that actually makes sense! Finally!' But it doesn't happen unless you continue to keep working at it."

And while this type of doggedness sometimes earns Dr. Golovkina good-natured teasing from her peers, she said she believes this type of patience is essential in the area of scientific study. It's important not to pick an area of research just because it can be completed quickly, she stresses: "At the end, what's really important is to tackle the really interesting scientific puzzle, regardless of how long it will take to solve."

"You need to choose your area of research because you're interested in it," Dr. Denzin agrees. "Because it's *important*, and you're interested in it—because otherwise, you can't continue to do it." M

Scholarship Gala



The 8th Annual Scholarship Gala, on April 7, raised nearly $300,000 for student scholarships. Three members of the medical school community were honored: Distinguished Alumni Awardee **James M. Metz, MD '95**, Henry K. Pancoast Professor and chair, Department of Radiation Oncology, Perelman School of Medicine, University of Pennsylvania; Honorary Alumni Awardee and former Rutgers Robert Wood Johnson Medical School dean **Norman H. Edelman, MD**, professor, Departments of Family, Population, and Preventive Medicine, Internal Medicine, Pulmonary Diseases Division, Stony Brook University School of Medicine; and Meritorious Service Awardee **Gloria A. Bachmann, MMS '72, MD**, professor of obstetrics, gynecology, and reproductive sciences, associate dean for women's health, and director, Women's Health Institute.

Serving as a reunion for alumni, this year's gala celebrated a special milestone—the 50th reunion of the first graduating class, the Class of 1968. Three members of the class and their families attended the gala and were joined by fellow alumni, faculty, staff, and students to commemorate the occasion.

This year's gala hosted a record-breaking number of alumni celebrating their reunions. ■

PHOTOS BY KIM SOKOLOFF

1. *Members of the first graduating class celebrating their 50th reunion with Dean Sherine E. Gabriel, MD, MSc. From left to right: Walter Rymzo, MD'68; Elliot Jacobs, MD '68; Dean Gabriel; and Eric Wurmser, MD '68.*
2. *Class of 1978 with their guests commemorating their 40th reunion.*
3. *Honorees (left to right) James M. Metz, MD '95; Gloria A. Bachmann, MMS '72, MD; and Norman H. Edelman, MD; with Dean Sherine E. Gabriel, MD, MSc, and Chancellor Brian L. Strom, MD, MPH.*
4. *Medical school students.*
5. *The Class of 1993.*

Medical School Appointment

Dr. Céline Gélinas Appointed Chair of Biochemistry and Molecular Biology

Céline Gélinas, PhD, has been named chair of the Department of Biochemistry and Molecular Biology. Dr. Gélinas, a professor in the department, will retain her position as senior associate dean for research, a position she has held since 2014.

STEVE HOCKSTEIN

Céline Gélinas, PhD

Dr. Gélinas joined the medical school in 1988 as a resident member of the Center for Advanced Biotechnology and Medicine, where she became internationally known in the fields of Rel/NF-kB signaling, cancer, and apoptosis for her research on key signaling pathways regulating gene expression.

In 1995, Dr. Gélinas became a member of the Rutgers Cancer Institute of New Jersey. She was named associate dean for research in 2008, then interim senior associate dean for research in 2013, before being permanently appointed to the position. As senior associate dean for research, Dr. Gélinas has advanced the strategic vision for research through greater collaboration among basic science and clinical investigators at the medical school, and strengthened our partnerships with researchers throughout Rutgers University. During her tenure, grant funding consistently rose, including a 27 percent increase in awards from the National Institutes of Health in two years. ■

Career Night

Celebrating its 30th anniversary, more than 40 alumni representing 25 specialties attended Career Night in the Great Hall on March 6. During Career Night, sponsored by the Alumni Association, students networked and learned about different paths in medicine from alumni who shared what it is like to be a physician in their specialty. ■

PHOTOS BY KIM SOKOLOFF

RWJMS NEWS

Medical School Leads New Jersey Maternal Health Awareness Day

New Jersey First Lady Tammy Snyder Murphy (center), with (left to right) Mary and Ryan Hansen; Patricia Hansen, MA; and Thomas Hecker, PhD, shared her thoughts on the maternal health crisis in New Jersey, noting that the statistics are not just alarming but a "call to action."

The medical school led the nation's first **Maternal Health Awareness Day** on January 23, which was highlighted in the *New York Times* after Serena Williams shared her postpartum challenges in a *Vogue* cover story. Through this statewide campaign, New Jersey families will be one step closer to having increased maternal health awareness.

In association with Maternal Health Awareness Day, the medical school hosted an interprofessional seminar on January 31 for students of medical, nursing, pharmacy, and other health professions on the subject of maternal health and safety.

Demonstrating the connection between health practice and health policy, Maternal Health Awareness Day included remarks by State Senator Joseph F. Vitale, chair of the Senate's Health, Human Services, and Senior Citizens Committee, and sponsor of the legislation establishing the event; Assemblywoman Nancy J. Pinkin; and Jackie Cornell, MPAP, principal deputy commissioner, public health services, New Jersey Department of Health. New Jersey First Lady Tammy Snyder Murphy also was on hand to share her thoughts on maternal mortality and to present the governor's proclamation about Maternal Health Awareness Day.

Match Day

STEVE HOCKSTEIN

Match Day, on March 16, marked the culmination of years of hard work, intense training, and planning for future successes for the Class of 2018. The 127 students learned where they would begin their residencies, in a ceremony that took place on the same day and time in medical schools across the country.

Ninety-seven percent of the class matched to a program of their choice, **exceeding** the national match rate. **Thirty-five** of the students matched to programs in New Jersey, **23** of whom matched to a program of Rutgers Biomedical and Health Sciences, 17 of whom matched at Rutgers Robert Wood Johnson Medical School. **Fifty-three** of the students matched to a primary care program (family medicine, internal medicine, pediatrics, or obstetrics/gynecology). ■

Maternal Health Awareness Day participants (left to right): Robyn D'Oria; Patricia Hansen, MA; Mary Hansen; Ryan Hansen; Thomas Hecker, PhD; Mark V. Sauer, MD; Christy Turlington Burns; Gloria A. Bachmann, MMS '72, MD; State Senator Joseph F. Vitale; Stephen Hasley, MD; Assemblywoman Nancy J. Pinkin; Principal Deputy Commissioner Jackie Cornell, MPAP; and Patricia D. Suplee, PhD, RNC-OB.

Helping set the stage for the importance of change in maternal health and safety was Ryan Hansen, founder of The Tara Hansen Foundation, whose wife passed away six days after the birth of their first son, due to complications from childbirth. He and the Hansen family, including **Patricia Hansen, MA**, director of communications and public affairs, have been staunch advocates for improving maternal health and safety in the United States.

In addition, Christy Turlington Burns, founder and CEO of Every Mother Counts, discussed maternal mortality in the United States. After experiencing a childbirth-related complication following the delivery of her first child in 2003, she was compelled to direct and produce the documentary film *No Woman, No Cry* to explore challenges and solutions impacting maternal and infant health around the world. ■

Roger C. Duvoisin, MD
July 27, 1927 – October 5, 2017
Professor Emeritus and Chair, Department of Neurology, 1979 – 1996

By Alice Lazzarini, PhD, clinical assistant professor of neurology

To his neurology colleagues and the broader Parkinson's disease community, he was known as "Dr. Parkinson's." To his faculty and staff, he was "the boss," a tribute to his mentor, H. Houston Merritt, MD, author of the classic *Textbook of Neurology* and director of Columbia University's Neurological Institute. In 1962, Dr. Merritt recruited a young **Roger C. Duvoisin, MD**, to be the first fellow of the Parkinson's Disease Foundation under Melvin Yahr, MD, professor of neurology and associate dean, Columbia University's College of Physicians and Surgeons.

"But I am more interested in working on stroke," the handsome father of four declared. A compromise was reached: Dr. Duvoisin would do *both*. And the career of the man who would revolutionize Parkinson's disease research was born.

Story Landis, PhD, director of the National Institute of Neurological Disorders and Stroke at the National Institutes of Health (NIH) from 2003 to 2014, spoke during a recent webinar about the process of drug development. When the question was raised about what researchers do when ideas that are entrenched in the fabric of a body of literature are shown to have been in error, Dr. Landis cited—some 20 years after the fact—Dr. Duvoisin's courage in publicly reversing his position on whether Parkinson's has a genetic basis.

Dr. Landis was paying homage to a man whose writer-artist father looked askance at his son's declared intent to become a physician. While living in rural Chester amid chickens and sundry animals, Dr. Duvoisin's father immortalized his son's pet in a classic series about Petunia, a muddled, lovable goose.

At 17 years old, Roger already knew his own mind. He volunteered for the U.S. Navy in 1945 and trained as a hospital corpsman. At the end of World War II, he served on a hospital ship taking tubercular Italian prisoners of war back home, then returned to New York to complete his undergraduate, graduate, and postgraduate training.

Appointed a medical officer in the U.S. Air Force, he was serving as chief of the Neurology Service at Lackland Air Force Hospital in San Antonio when Dr. Merritt offered him a faculty appointment at Columbia with a staff appointment at the Neurological Institute.

Confounded by pandemics of "encephalitis lethargic" during the years 1916–'26, colleagues were attributing a viral etiology to Parkinson's disease and scoffed at Dr. Duvoisin's naïveté in thinking he could define the fundamental nature of Parkinson's. However, reviewing reports from the Presbyterian Hospital from 1878 through 1962, Dr. Duvoisin demonstrated that there were no appreciable changes in the cases of "paralysis agitans" over those 84 years.

Having collected data on patients who had donated their brains to the newly established Parkinson's Brain Bank, Dr. Duvoisin partnered with neuropathology fellow Nathan Stadlan to correlate clinical features with postmortem findings. Together they documented that a group of Parkinson's patients with the abnormal aggregates of protein called Lewy bodies in the midbrain region known as the substantia nigra—the classic pathological hallmark of Parkinson's—was distinct from patients with post-encephalitic Parkinson's.

During 1966–'70, Dr. Duvoisin worked with Dr. Yahr and others on the L-dopa clinical trial and was instrumental in developing the classic Unified Parkinson's

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Roger C. Duvoisin, MD

— Continued from page 43

Disease Rating Scale. In 1973, he transferred with Dr. Yahr to Mount Sinai School of Medicine, and the course of Dr. Duvoisin's career was set.

With no formal training in genetics, he intuited the importance of twin studies, and during a sabbatical at King's College Hospital Medical School in London, he resolved to collect twin pairs to clarify whether there was an inherited basis for Parkinson's. Along with Roswell Eldridge, MD, a neurogeneticist, he eventually collected data on 65 pairs of mostly discordant identical twins, which he used to adamantly argue against a genetic component.

By 1979, when Dr. Duvoisin became chair of neurology at the then Rutgers Medical School, he had published his classic *Parkinson's Disease: A Guide for Patient and Family*. He was becoming aware of more and more familial cases of Parkinson's, but he remained uncertain whether these cases were true Parkinson's disease that tested positive for Lewy bodies. Lawrence Golbe, MD, then professor of neurology, identified the large Contursi kindred—named for their small ancestral village southeast of Naples—and postmortem studies confirmed the first Lewy body–positive familial Parkinson's.

"When Larry presented the findings at the 1992 International PD Symposium in Munich, he made quite a stir," Dr. Duvoisin later described in a March 7, 2006, document he sent me labeled "the straight poop." "I announced at the plenary session that I had changed my mind and, because of the growing number of families being recognized, I now believed that Parkinson's was a genetic disorder." Colleagues with a vested interest in believing Parkinson's was due to an environmental toxin were "especially vituperative" in denouncing his new view, he remembered.

"I saw that collecting and analyzing genealogies was crucial but was quite a considerable task," Dr. Duvoisin added. "I had a tiger by the tail, and clearly I needed a geneticist to do that and study the patterns of inheritance. Hence, I hired you!"

I remember the day Dr. Duvoisin launched the genetic revolution of the 1990s. Having hired me to work on the genetics of ataxia as part of his newly endowed William Dow Lovett Center for Neurogenetics, he revealed his new agenda with the request, "Alice, I want you to prove Parkinson's is genetic."

With analysis by Richard Myers, PhD, professor of neurology at Boston University School of Medicine, we conducted a study of 218 of Dr. Duvoisin's Parkinson's families. Presented at the 1994 American Academy of Neurology meeting in San Diego, "that paper prompted the NIH group (including Robert L. Nussbaum, MD, then chief of the Genetic Disease Research Branch of the National Human Genome Research Institute) to ask if we could collaborate," Dr. Duvoisin later recalled.

"I'll never forget the day Zach Hall, then the director of NINDS, phoned me at home to ask if I would agree to let their group work on the Contursi kindred. You know the rest of the story," Dr. Duvoisin concluded.

The rest of the story is a record-setting breakthrough in the hunt for Parkinson's disease treatment. Our finding the first mutation causing Parkinson's in the Contursi kindred was met with great acclaim. Shortly after we reported the chromosomal region labeled "PARK1" in the gene for alpha-synuclein, that protein was shown to be the main component of the protein clumps that make up Lewy bodies.

Researchers have subsequently found mutations in many other genes involved in the complicated neural pathways that result in Parkinson's disease, but even in these—as well as in nonfamilial cases—there is dysregulation of alpha-synuclein. Cited by the Michael J. Fox Foundation as "our most promising target for a therapy to slow or stop Parkinson's," alpha-synuclein remains in the forefront of Parkinson's research.

The American Parkinson Disease Association and other organizations have funded millions of dollars in research grants aimed at defining the role that alpha-synuclein plays in Parkinson's and searching for ways to counter its role in the disease pathology. One such grant has led to the first clinical trial of a vaccine that directly targets the alpha-synuclein protein.

For this, we give thanks to the man who doggedly swam against the prevailing tide in pursuit of his dream to clarify the basis of Parkinson's disease.

Note: At 90 years of age, Duvoisin completed *1817–2017: A Reflection on the 200th Anniversary of "An Essay on the Shaking Palsy,"* a volume commemorating the bicentennial of James Parkinson's initial description of the disorder. ■

Research News

By Kate O'Neill

Research Grants

The National Institutes of Health awarded grants of $1 million or more to the following members of the Rutgers Robert Wood Johnson Medical School faculty:

- **Steven Brant, MD**, professor of medicine, a $2,379,823 competing continuation of a U-01 grant for "IBD Gene Mapping by Clinical and Population Subset."
- **Gary A. Brewer, PhD**, professor of biochemistry and molecular biology, a three-year, $1,469,077 multi-principal-investigator award for "Defining the Structural Mechanisms of RNP Complexes That Regulate Enterovirus Translation."
- **Monica J. Roth, PhD**, professor of pharmacology, a five-year, $2,854,055 Maximizing Investigators' Research Award (MIRA) grant for "Targeting Retroviral and Virus-Like Particles for Gene and Protein Delivery." The coinvestigator is **Gaetano T. Montelione, PhD**, Jerome and Lorraine Aresty Chair and Distinguished Professor of Biochemistry and Molecular Biology, Rutgers University, and adjunct professor of biochemistry and molecular biology, Rutgers Robert Wood Johnson Medical School.
- **Martha C. Soto, PhD**, associate professor of pathology and laboratory medicine, a five-year, $4,786,559 competitive renewal for the "Biomedical Research and Education Training Program." **Gary A. Brewer, PhD**, is co-principal investigator on this grant.

Grants of $1 million or more from other sources include:

- **The Eric B. Chandler Health Center**, a three-year grant for "Health Center Cluster" from the U.S. Health Resources and Services Administration, with $3,007,529 to be awarded this year. **Sandra Hill**, executive director, Eric B. Chandler Health Center, is principal investigator.
- **Nancy E. Reichman, PhD**, professor of pediatrics, a four-year, $1,488,179 multi-principal-investigator grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development for "Gestational Age, Obstetric Interventions and Child Health." Coinvestigators are **Thomas Hegyi, MD**, professor and vice chair, Department of Pediatrics, and Julien Teitler, PhD, professor of social work and sociology, Columbia University School of Social Work.
- **Deborah M. Spitalnik, PhD**, professor of pediatrics and executive director, Boggs Center on Developmental Disabilities, a one-year, $2,856,226 renewal from the New Jersey Department of Human Services for "Boggs Center on Developmental Disabilities Technical Assistance, Training, and Information Dissemination in Developmental Disabilities Grant."

  Dr. Spitalnik also received a five-year, $2,735,000 renewal from the U.S. Department of Health and Human Services for "University Center for Excellence in Developmental Disabilities Core Grant."

(Compiled with the assistance of the Research Support Team.)

Published Research

The following is a representative sample of articles by Rutgers Robert Wood Johnson Medical School researchers, published in leading biomedical journals:

- **Jeffrey L. Carson, MD**, Richard C. Reynolds Chair in General Internal Medicine and Distinguished Professor of Medicine at Robert Wood Johnson Medical School and provost, Rutgers Biomedical and Health Sciences, was first author of "Indications for and Adverse Effects of Red-Cell Transfusion," published in the *New England Journal of Medicine* September 28, 2017:28:377(13): 1261–1272.

  In addition, Dr. Carson was the author of "Anemia and Bleeding in Thrombocytopenic Patients," published in *Blood* September 7, 2017:130(10):1178–1179.
- **Jerry Q. Cheng, PhD**, assistant professor of medicine, was the author of "Pollen Magnetofection for Genetic Modification with Magnetic Nanoparticles as Gene Carriers," published in *Nature Plants* December 3, 2017:(12):956–964. (Epub ahead of print November 27, 2017.)
- **Lisa K. Denzin, PhD**, associate professor of pediatrics, was the author of "Neutralizing Antibody Responses to Viral Infections Are Linked to the Non-Classical MHC Class II Gene H2-Ob," published in *Immunity* August 15:201747(2):310–332:e7. The article was the cover story for this issue.
- **Sherine E. Gabriel, MD, MSc**, dean, was the author of "Impact of Risk Factors Associated with Cardiovascular Outcomes in Patients with Rheumatoid Arthritis," published in *Annals of the Rheumatic Diseases* January 2018:77(1): 48–54. (Epub ahead of print, September 6, 2017.)

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Research News

By Kate O'Neill

Published Research

The following is a representative sample of articles by Rutgers Robert Wood Johnson Medical School researchers, published in leading biomedical journals:

— *Continued from page 45*

- **Shridar Ganesan, MD, PhD**, associate professor of medicine and pharmacology and resident member, Rutgers Cancer Institute of New Jersey, was senior author of "Immune Activation and Benefit from Avelumab in EBV-Positive Gastric Cancer," e-published in the *Journal of the National Cancer Institute*, November 15, 2017.

- **William J. Kostis, PhD, MD '07**, assistant professor of medicine, was first author of "Severity of Illness and the Weekend Effect," e-pub ahead of print in *Lancet* October 14, 2017:390(10104):1734–1735. **Abel E. Moreyra, MD**, professor of medicine, was senior author.

  Dr. Kostis was also the author of "Effect of Intensive Versus Standard Blood Pressure Treatment According to Baseline Prediabetes Status: A Post Hoc Analysis of a Randomized Trial," published in *Diabetes Care* October 2017:40(10):1401–1408. (Epub ahead of print, August 2017.)

- **Shaohua Li, MD**, assistant professor of surgery, was the author of "Precise and Arbitrary Deposition of Biomolecules onto Biomimetic Fibrous Matrices for Spatially Controlled Cell Distribution and Functions," published in *Advanced Materials*. Epub September 20, 2017:29(35).

- **Chen Liu, MD**, professor and chair, Departments of Pathology and Laboratory Medicine, Robert Wood Johnson Medical School and Rutgers New Jersey Medical School, was the author of "Autophagy Protein ATG16l1 Prevents Necroptosis in the Intestinal Epithelium," published in the *Journal of Experimental Medicine* December 4, 2017:214(12):3687–3705. (Epub ahead of print, October 31, 2017.)

  In addition, Dr. Liu was the author of "Specifically Differentiated T Cell Subset Promotes Tumor Immunity over Fatal Immunity," published in the *Journal of Experimental Medicine* December 4, 2017:214(12):3577–3596. (Epub ahead of print, October 16, 2017.)

- **Ji Liu, PhD**, a postdoctoral fellow in the laboratory of **Zhiping Pang, PhD**, assistant professor of neuroscience and cell biology, was first author of "Enhanced AMPA Receptor Trafficking Mediates the Anorexigenic Effect of Endogenous Glucagon-Like Peptide-1 in the Paraventricular Hypothalamus," published in *Neuron* November 15, 2017: 5:96(4):897–909. (Epub ahead of print, October 19, 2017.) Dr. Pang was senior author of the article.

- **Ellen B. Rubinstein, PhD**, then a postdoctoral fellow, was first author of "Cancer Survivorship Care in Advanced Primary Care Practices: A Qualitative Study of Challenges and Opportunities," published in the *Journal of the American Medical Association Internal Medicine* December 1, 2017:177(12):1726–1732. **Benjamin F. Crabtree, PhD**, professor of family medicine and community health and director, the department's division of research, was senior author.

- **Melissa L. Santorelli**, a predoctoral student, was the author of "Impact of Preexisting Mental Illness on All-Cause and Breast Cancer–Specific Mortality in Elderly Patients with Breast Cancer," published in the *Journal of Clinical Oncology* December 20, 2017:35(36):4012–4018. The senior author was **Kitaw Demissie, MD, PhD, MPH**, professor of obstetrics, gynecology, and reproductive sciences at Robert Wood Johnson Medical School and chair, Department of Epidemiology, Rutgers School of Public Health.

- **Sumangala Shetty, PhD**, a research and teaching specialist in the laboratory of **Paul Copeland, PhD**, professor of biochemistry and molecular biology, was the author of "Multiple RNA Structures Affect Translation Initiation and UGA Redefinition Efficiency during Synthesis of Selenoprotein P," published in *Nucleic Acids Research* December 15, 2017:45(22):13004–13015.

- **Xiaoyang Su, PhD**, assistant professor of medicine, was the author of "Chemical Basis for Deuterium Labeling of Fat and NADPH," published in the *Journal of the American Chemical Society* October 18:139 (41):14368–14371.

- **Sudhir K. Yadav, PhD**, a neuroimmunology postdoctoral fellow in the laboratories of **Kouichi Ito, PhD**, associate professor of neurology, and **Suhayl Dhib-Jalbut, MD**, professor and chair, Department of Neurology, was the author of "Gut Dysbiosis Breaks Immunological Tolerance toward the Central Nervous System during Young Adulthood," published in *Proceedings of the National Academy of Sciences* October 31, 2017:114(44):E9318–E9327.

- **Xuetian Yue, PhD**, a postdoctoral fellow in the laboratory of **Wenwei Hu, PhD**, associate professor of radiation oncology, was first author of "Gain-of-Function Mutant p53 Activates Small GTPase Rac1 through SUMOylation to Promote Tumor Progression," published in *Genes & Development* August 15, 2017:31(16): 1641–1654.

(Compiled with the assistance of the Robert Wood Johnson Library at the Health Sciences.) M

LETTER FROM THE ALUMNI ASSOCIATION PRESIDENT

Dear Alumni and Friends:

Marked with milestones, 2018 has been a historic year for alumni, students, and the Rutgers Robert Wood Johnson Medical School community. The first class of graduates, the Class of 1968, celebrated its 50th–anniversary reunion, which was commemorated at the **8th Annual Scholarship Gala** on April 7. Three members of the class and their families attended the gala and were joined by fellow alumni, faculty, staff, and students to celebrate the occasion while raising vital funds for student scholarships. Two alumni were also honored, **Gloria A. Bachmann, MMS '72, MD**, and **James M. Metz, MD '95**, as well as former medical school dean Norman Edelman, MD. Thanks to all who supported our students!

Another milestone for alumni was **Career Night**, which observed its 30th anniversary on March 6. During Career Night, alumni shared their career paths with eager students and connected with classmates. I enjoyed seeing many of you there and reflecting fondly on the past three decades of a great relationship between students and alumni.

Further growing the bond with students, the alumni affairs office introduced a new mentorship program. Through an online survey, alumni can identify the ways in which they would like to be involved, which is entered into a database and shared with students. So far, more than 300 alumni have signed up, many of whom have already connected with students and offered them help with residencies, research, and shadowing opportunities. I encourage you to visit **rwjms.rutgers.edu/alumni/mentorship.html** to sign up and help the next generation of physicians.

COURTESY OF PAUL F. WEBER, MD '87, RPh, MBA

I am proud of my fellow alumni for their support of the first-ever Chancellor's Scholarship Challenge. Chancellor Brian Strom, MD, MPH, has dedicated Rutgers Biomedical and Health Sciences resources, up to $1 million, to inspire others to give to medical school scholarships by launching a Scholarship Match. Every donation from alumni up to $25,000 will be ***DOUBLED*** or, if you are a new donor or alumnus on the medical school faculty, ***TRIPLED***. With unprecedented financial burdens on our current and future students, the ability to provide scholarships has never been more important. I would like to thank you for your generous contributions in the past and invite you to support students again this year. Please use the enclosed envelope to mail in a donation, or contribute online at **support.rutgers.edu/RWJMSAlumni**.

Communication is key to staying connected with your alma mater. Please verify your email address [by visiting our website and updating your information] so you receive event invitations, medical school news, and special opportunities. Also be sure to follow us on Facebook **(@RWJmedicalschool)** and Instagram **(@RWJMS)** for the most up-to-date medical school news. I look forward to staying in touch.

Sincerely,

Paul F. Weber, MD, RPh, MBA

Paul F. Weber, MD '87, RPh, MBA
President, Robert Wood Johnson Medical School Alumni Association

Michele DiLauro, BSN, MD '98:
Dedication to Addiction Medicine and Recovery

"Addiction recovery has become my great love," says Michele DiLauro, MD '98. Now practicing as an addiction medicine specialist in Philadelphia, Dr. DiLauro feels fortunate to be able to dedicate herself to that love, as a practitioner, teacher, and administrator.

Dr. DiLauro, who is double board certified in family medicine and addiction medicine, began her career in medicine with studies in pharmacy and nursing. In her teens, as a pharmacy tech, she became interested in the art of compounding drugs, a way to target prescriptions to the individual patient's needs. Before beginning medical school, she studied at the Philadelphia College of Pharmacy. Then, after a semester at Rutgers University, she chose a nontraditional route to medical school, earning a bachelor of science degree in nursing at The College of New Jersey.

During clinical rotations on the Camden campus of Rutgers Robert Wood Johnson Medical School, Dr. DiLauro's primary interest turned from emergency medicine to family medicine. JFK Medical Center, in Edison, provided a "great family practice residency," she says. "Since it was a smaller hospital, we got to do everything."

As a resident, she got her first hint of how the addictive mind works, when she noticed a crush of mid-Friday-afternoon calls from patients begging for early refills on their painkiller prescription. "It fell into the toilet" was one of the common excuses to which Dr. DiLauro learned to take a firm stand, sending the caller to the emergency room. "Drugs lie to the brain, making addicts think they're going to die without them. They won't," she says.

After her residency, Dr. DiLauro joined a two-person family medicine practice in Eden, North Carolina. She had an excellent partner, and in the town's 100-bed community hospital, she did everything except obstetrics. After three years, however, she longed for a more urban environment, and she moved on to a family practice in Las Vegas.

The biggest drug concern in Eden had been a stolen prescription pad and some Xanax abuse, but by 2004, in Las Vegas, the era of opioid addiction had begun, and the crisis was exploding. Many people who had been abusing the prescription painkiller OxyContin could no longer afford it and were using street drugs such as heroin and crack cocaine. Two years later, Dr. DiLauro became certified to treat patients with Suboxone, a synthetic opiate, like methadone. Used in conjunction with regular therapy, Suboxone allows time, counseling, and therapies—ranging from group and art therapy to hypnotherapy—to gradually recondition the brain. "Drugs physically reconfigure nerve pathways in the brain, creating addicts' desperate cravings," says Dr. DiLauro.

In Las Vegas, her work increasingly focused on treating addicted and at-risk populations, as well as patients with associated mental health issues. In addition, she served as medical director in several new or expanding clinics and practices, putting her man-

BY KATE O'NEILL

COURTESY OF MICHELE DILAURO, BSN, MD '98

agement skills to work.

Since returning to the East Coast in 2009, Dr. DiLauro has served as a staff physician and addiction medicine specialist at Northwest Human Services (NHS) Parkside Recovery. NHS, recently renamed Merakey, is a large, multisite nonprofit company that offers comprehensive care, primarily to people with behavioral health issues ranging from autism to drug and alcohol addiction. Dr. DiLauro has worked in five NHS clinics in the greater Philadelphia area that use methadone and Suboxone in conjunction with other therapies for addiction treatment. Her firsthand patient involvement encompasses evaluations, crisis intervention, and education on addiction and chronic disease.

Dr. DiLauro recently rejoined NHS after spending three years with Corizon Health, which provides medical coverage for nine Philadelphia-area prisons. While with Corizon, in addition to serving for a year as medical director for the main intake jail for the Philadelphia Department of Prisons, she did intake, triage, and staff education, while providing primary care to inmates.

"I always felt safe, but it can be chaotic," says Dr. DiLauro. "Unforgettably, one prisoner complaining of chest pain, suddenly turned gray, and passed out," she recalls. She promptly diagnosed a pneumothorax from a collapsed lung and, without available oxygen or 911 services, grabbed a needle, inserted a chest tube, reinflated the lung, and had the patient breathing normally in moments.

"You can see Dr. DiLauro's nursing skills in her empathy for the patients. They always have her complete focus," says Kunchiha Jeoboham, RN, MSN, health services administrator for Corizon. "She's confident, knowledgeable, and fearless. You want her there in a crisis."

Dr. DiLauro enjoys teaching everyone from medical students to colleagues to patients, whom she teaches using both humor and a no-nonsense approach. "They're often shocked

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Phillip Blanc, MD '09, MPH:

Pursuing Opportunities Outside the Medical Mold

He remembers it well. It was the day when, as a medical student at Rutgers Robert Wood Johnson Medical School, Phillip Blanc, MD '09, MPH, learned that doctors don't all have to be the same and act the same to make an impact.

"I had a dean who said that what he wanted was for us to do something no one else had done before," Dr. Blanc says. "That led me down a different path. My message is, 'You don't have to conform to the mold of medicine.'"

That personal philosophy put Dr. Blanc in the media limelight. After appearances on *The Dr. Oz Show*, Dr. Blanc has continued to explore new and unique ways to influence change. Born in Brooklyn, he had an education that was anything but conventional. He earned a bachelor's degree in religion and biological sciences at Rutgers and a master's degree in public health at Harvard University between his third and fourth years of medical school on a scholarship.

Dr. Blanc then trained as an ER resident at Mount Sinai Medical Center and as a public health and preventive medicine resident at the New York City Department of Health and Mental Hygiene. Most recently, he serves as a pharmacovigilance physician for a pharmaceutical firm in Princeton. In this role, he monitors adverse events (or side effects) related to drugs the firm produces.

Dr. Blanc's desire to make medicine his life's work developed at a young age. "I feel like if I had one singular thing I could attribute to wanting to become a physician, it was because my mother was studying premed when I was a child," he says. His parents, who immigrated to the United States from Haiti, knew the value of a good education and a professional career. "Often, success in developing countries is defined by having a degree in one of three disciplines: law, engineering, or medicine. These high expectations tend to remain with immigrants and their children upon arriving here," Dr. Blanc says.

The media part of the doctor's career happened as he was exploring his own interests through a variety of internships. It started with his desire to focus on health literacy. "The first summer while I was in medical school, I had an opportunity to do something interesting, and I applied to an internship at the Johns Hopkins Bloomberg School of Public Health," he says. "I was placed at the Center for Health Disparities Solutions. Based in part on this experience, I developed an interest in using media as a tool for addressing disparities."

Between his third and fourth years of medical school, he interned with Black Entertainment Television (BET) and WPVI in Philadelphia, where he learned how to put health stories together, as well as some fundamentals of television production. At WPVI, he got a chance to audition on camera; however, things didn't go as well as he had thought they would. "I bombed," Dr. Blanc says. "I learned how hard it is to read a teleprompter, and decided then that if given the opportunity, I would take classes to learn how to do this."

BY LYNDA RUDOLPH

PHOTOS COURTESY OF *THE DR. OZ SHOW*

"My message is, 'You don't have to conform to the mold of medicine,'" says Phillip Blanc, MD '09, MPH *(above, right)*, with Mehmet C. Oz, MD, FACS, after an appearance on *The Dr. Oz Show*.

When Dr. Blanc began his residency in New York City, he decided to take a class to learn on-camera TV hosting. "Then I went and filmed a video, and sent a link to producers," he recalls. The following year, he got a call from *The Dr. Oz Show*, which was looking for a doctor for a segment. "They wanted a fun, approachable ER doc," Dr. Blanc says. His episode involved talking about dollar store products that are lifesavers.

Dr. Blanc says that throughout his career, he's always felt he's been on the fringe of other disciplines. He believes he excels at writing and speaking, more so than math and the sciences. Along his journey, he's found a way to reconcile these natural abilities with being a physician. "It's how I have made sense out of who I am and what I can contribute," he says.

Early on in his career, Sanjay Gupta, MD, the American neurosurgeon and media personality, set the mold for Dr. Blanc. Using media as a platform, Dr. Blanc feels he can help move his own passion for health literacy forward. "Health literacy transfers to every condition," he says. "Whether you're talking about high rates of infant mor-

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Sydney Hyder, MD '17:
The First Goal Is Listening

The physician-patient relationship can come down to the fourth quarter.

Sydney Hyder, MD '17, viscerally understands this. A first-year resident at the Hospital of the University of Pennsylvania, she happily merges her caring about patients and love of football. Dr. Hyder, a die-hard Eagles fan, enjoys snippets of games with patients.

"It's a lot of fun," Dr. Hyder says. "I am usually working during the games, but I sneak into patients' rooms to watch. When I was on cardiology I would watch everyone's heart monitors, and heart rates would go up at certain times during the game."

Football is just another way for Dr. Hyder to get to know her patients. She works on the relationship between physician and patient and makes sure she listens.

It's not a new skill for her. Growing up in Moorestown, the daughter of two doctors—her father is an ophthalmologist, her mother a dentist—she worked in their offices and learned by observing her parents' relationship with their patients.

BY JACQUELINE CUTLER

Despite always knowing the importance of medicine, she toyed with the notion of other careers. "When I was growing up, at one point I wanted to be an archaeologist or a geneticist," Dr. Hyder says. However, she adds, "Deep inside, I always kind of knew I wanted to do medicine."

After majoring in biology and minoring in psychology at Haverford College, she picked Rutgers Robert Wood Johnson Medical School. "I loved the people," she recalls. "I remember going to meet students, and it was one of the few places everyone smiled. It was a very warm feeling. And being in New Jersey, close to my family and able to go back home to medical school, was really nice."

This was not an unrequited love. Dr. Hyder's professors recall an engaged, intellectually curious, and committed student.

"She demonstrated an impeccable work ethic and took complete ownership and pride in seeing to all aspects of her patients' medical care," says Sarang Kim, MD, associate professor of medicine and ambulatory medicine director.

Jag Sunderram, MD, associate professor of medicine, also cites Dr. Hyder's dedication. "Sydney worked with me on a clinical research project," he says of a study on sleep apnea. "Sydney took the lead and made sure that project goals were being met."

Carol A. Terregino, MD '86, professor of medicine, senior associate dean for education, and associate dean for admissions, adds, "Sydney brings chutzpah and strength to any situation in which she is immersed, unafraid to approach a challenge, confident to speak her mind, and passionate to go the extra mile—all to be the best provider and advocate for her patients."

Among the ways Dr. Hyder advocated for patients was cofounding Women Connect. Her goal was to help the disenfranchised, women who don't know how to take charge of their health care, and steer them toward self-reliance. She helped execute workshops for women with addictions and encouraged them to ask questions of their doctors. The women need to know how to fend for themselves and for their children medically, and ask questions that might not have occurred to them without these workshops.

COURTESY OF SYDNEY HYDER, MD '17

Left top: Sydney Hyder, MD '17. ■ Right Top: Dr. Hyder and co-residents at the Hospital of the University of Pennsylvania. ■ Right Bottom: Dr. Hyder at graduation with her family. Left Bottom: Dr. Hyder in Vietnam.

"When I was growing up, at one point, I wanted to be an archeologist or a geneticist. Deep inside, I always knew I wanted to do medicine," says Sydney Hyder, MD '17.

For this volunteer work, Dr. Hyder received a Distinction in Service to the Community award from the medical school. And like most who volunteer, she notes that she learned along with the women she was helping.

"In the end, it helped me understand a different side of medicine," Dr. Hyder says. "Just because we give someone a medication doesn't mean they are going to go home and take it. Through this program, I learned to better understand these barriers and how to overcome them."

Dr. Hyder is doing her best to meet all different kinds of patients, even some of the four-legged variety. In the summer between her first and second years of medical school, she worked at a clinic in rural Tennessee and accompanied the local physician when he delivered a goat.

Although she enjoyed her time there, she was not ready to commit to rural medicine for the long term.

"Rural medicine is important, and I think our duty is help," she says. "However, there are ways to provide rural medicine that don't involve moving permanently. There are physicians who go for a week or a few days a month."

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Stephen Rosenberg, MD '13:

A Self-Help Book Gives Cancer Patients a Way to Become Self-Advocates

Stephen Rosenberg, MD '13, is currently serving as the chief resident in radiation oncology at the University of Wisconsin Hospital and Clinics. In that role, he uses novel ways to treat cancer patients. In the past year, he's also poured hours of thought and personal passion into writing. Released on Amazon last November, and the recent recipient of the Midwest Book Award in Health, *Cancer: What You Need to Know,* helps the patients he treats—and thousands of others—understand more about the disease they are fighting.

BY LYNDA RUDOLPH

The book, which is a beginner's guide to understanding and dealing with cancer—became a priority when he realized how much patients *don't* know.

"Not only is a cancer diagnosis fraught with terms, testing, and processes that can be confusing, you don't think logically when you're diagnosed with cancer," says Dr. Rosenberg. He felt there was a need for a straightforward guide to help patients understand, in plain language, more about the disease and what they are going to go through.

The topics range from essential cancer information to overcoming the 10 common mistakes patients make. One of those mistakes is sidestepping lifestyle changes after a cancer diagnosis. "People who are diagnosed with cancer often say, 'Why should I quit smoking? I have cancer already,'" Dr. Rosenberg says. "However, all the data support that these patients do better during and after cancer treatment if they quit." Other chapters educate patients about cancer cells, how the disease functions and grows, how cancer can find its way to other sites in the body, how family genetics and the environment play a role, and what certain scans and biopsies are intended to identify.

Dr. Rosenberg also offers advice to patients who may fear voicing concerns or asking questions—and encourages them to seek second opinions when they feel the need. In addition, there's a glossary and a resource list for patients looking for more information to guide their decision making.

His book is written at an eighth-grade level. "It was important to write the book in an approachable way," Dr. Rosenberg says. To do it, he imagined what it would be like to have a conversation with a patient. The format is also reader-friendly. The content is written in brief paragraphs, with chapters broken down into short subsections. There is also a great deal of white space throughout the book, so readers have room to take notes. "I spent a lot of time thinking about how to orient words on the page. I wanted to make the book easy to read, going from page

COURTESY OF STEPHEN ROSENBERG, MD '13

"Not only is a cancer diagnosis fraught with terms, testing, and processes that can be confusing, you don't think logically when you're diagnosed with cancer. . . . It was important to write the book in an approachable way," says Stephen Rosenberg, MD '13.

to page, so people aren't overwhelmed by too much text," he says.

The content was inspired by his observations of similar patients with dissimilar outcomes. Some people who went through chemotherapy and surgery would flourish, but others didn't. That triggered conversations to understand what patients were doing to improve their outcomes and review the literature on those changes. Those conversations gave him newfound insights that informed his book—and how he practices medicine, guiding the ways he takes care of patients' physical health, emotional health, and much more.

His new book isn't all that's new with Dr. Rosenberg. His current research on MRI-guided radiation treatments uses novel ways to better visualize tumors and treat patients. "At the University of Wisconsin, we are using real-time MRI-guided treatment to adapt it, decreasing the radiation dose to normal organs and better target tumors," he explains. Incorporating MRI and adaptive radiation into treatment allows a more precise dose and preserves healthy tissue.

In July, Dr. Rosenberg will start on the faculty at H. Lee Moffitt Cancer Center and Research Institute in Tampa, Florida. While there, he will focus on taking care of patients with head, neck, or lung cancers. He will also be helping to build and further research MRI-guided radiotherapy at the Moffitt Cancer Center.

Until then, Dr. Rosenberg will continue to make copies of his book available to his own cancer patients—and any others who request one. He is currently taking all revenue from the book and using it to purchase and

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#MeToo?
The Changing Role of Women in Medicine

What do the ongoing #MeToo revelations tell us about the changing role of women in medicine?

This question spurred a lively discussion at a January meeting of the Rutgers Robert Wood Johnson Medical School Alumni Association board. Afterward, several female board members continued to explore the topic, recalling how their own roles had changed over the years. They agreed that personally offensive incidents, ranging from physical to verbal, from insensitive to inappropriate, while wrong, had ultimately made them stronger and more confident, both as individuals and as members of a team.

Lynn Helmer, MD '82, MBA *(left)*, started her career in internal medicine, then moved into administration as vice president of medical affairs/chief medical officer at Shore Memorial Hospital, in Somers Point. Today, Dr. Helmer, who holds a master's degree in business administration, is president of her own executive leadership consulting firm and enjoys regularly volunteering in a free clinic.

Married before starting medical school, she was pregnant three times by the end of her first year in practice, exposing her to memorable incidents of insensitivity. Dr. Helmer learned as a young physician that she was not welcome in the doctors' lounge, because the men used it as their locker room. "It impeded networking," she says, "but I ate lunch in my office with my staff, and that may have led to my comfort in independently developing a managerial role. Other women were always a tremendous source of help and support, as were some men."

Also at this stage of her career, her male partners gave her scant support when, during an examination, an elderly patient grabbed and forcibly kissed her. Some months later, contrary to her employers' assurances, she was assigned to care for this patient when he was hospitalized following a stroke. "The ambivalence I felt has stayed with me," she says. "I was concerned that my anger and frustration over the previous incident would negatively impact my clinical judgment and the empathy I would normally have felt for a patient with such severe deficits.

"In every situation, there's a two-sided power dynamic," says Dr. Helmer. "With experience, you learn you can't always change the situation, but you can change your response, using humor, redirection, or making clear that certain things are not okay."

For Deborah Saez-Lacy, MD '86 *(right)*, the first years of medical school coincided with the national movement to recruit more women to medicine, and the male-female ratio in her class reflected the success of the effort. Her specialty, obstetrics and gynecology, changed even more rapidly as women of all ages made it clear that they were more comfortable discussing their concerns with another woman.

At Ocean Medical Center, where Dr. Saez-Lacy still practices, she was only the second woman in OB/GYN when she started there in 1990. Today, 75 percent of her fellow specialists are

BY KATE O'NEILL

COURTESY OF LYNN HELMER, MD '82, MBA

STEVE HOCKSTEIN

"In every situation, there's a two-sided power dynamic. With experience, you learn you can't always change the situation, but you can change your response, using humor, redirection, or making clear that certain things are not okay," says Lynn Helmer, MD '82, MBA *(above left)*, with Lena Merjanian, MD '04 *(above center)*, and Deborah Saez-Lacy, MD '86.

women. "In clinical practice, women are making their mark," says Dr. Saez-Lacy, "but in community hospitals, where the old boy network prevails, it is still difficult for women to advance in positions of leadership."

Her only memory of any form of harassment features a resident during her plastic surgery rotation. Displaying a pair of breast implants to the class, he suggested that Dr. Saez-Lacy might like to try them. "It wasn't because he was a man, though. He was just a bad apple," she says. "It was a two-week rotation, and I minimized contact with him. It was a good lesson in how to handle people like that."

Lena Merjanian, MD '04 *(center)*, an assistant professor of obstetrics, gynecology, and reproductive sciences at Robert Wood Johnson Medical School, says, "Some may think that in the professional medical setting, sexual harassment can't happen, but it does, compounded by a hierarchical training system." In various settings, female doctors encounter remarks that make them feel they have to prove themselves, she says. The comments might come from other professionals, supervisors, or patients, challenging a woman's sense of herself as a physician. Comments like "You're so young and so pretty. You can't be a doctor!" are all too common.

The Patient Centered Medicine course, introduced into the medical school curriculum in 2006, has reinforced the role of professionalism and compassion in medicine, says Dr. Merjanian. It focuses on proper techniques of interacting and communicating with patients. In addition, during the OB/GYN clerkship, video and simulated patients help teach medical students how to approach sensitive gynecologic and sexual history-taking and pelvic examination techniques with empathy and comfort.

"In addition, women physicians know what it's like to go through medical training while trying to have a family life outside the hospital," adds Dr. Merjanian. "They understand the challenges, and they support each other." M

Michele DiLauro, BSN, MD '98:
Dedication to Addiction Medicine and Recovery

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when I use 'addiction math' to estimate the cost of their drug use—which can easily reach $80,000 a year," she says. "Treatment—and teaching—only work if you break things down for people and explain what they need to do, not because 'I told you so,' but because they become comfortable with it." M

Phillip Blanc, MD '09, MPH:
Pursuing Opportunities Outside the Medical Mold

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tality or cardiac conditions, a lot of it comes back to health literacy—about how your audience can become change agents in that situation. It depends on how palatable you can make change in order for the general population to buy it. For people to make a behavior change, they have to first understand the gravity of the situation."

Dr. Blanc has taken his health literacy message to local churches and communities as well, serving in a health ministry in Harlem, that helps congregants through a blood-pressure-monitoring program. There, he administered blood-pressure tests and counseled people on nutrition and medications. "Part of that role was understanding what types of challenges these people were facing, and not talking over their heads," Dr. Blanc says. His unique gift is his ability to communicate to the public about their health in a way that they'll understand.

Dr. Blanc's personal experiences also affect his work. After recently becoming a father, he had the idea to develop an online series with his daughter, Cara. Called "Dr. Clueless' Neighborhood!," the concept was born from his own journey as a parent, particularly inspired by moments when he felt "clueless." Last year, the process of shopping the concept around to networks began. But Dr. Blanc points out that nowadays, you don't have to rely on a network for support—you can start your own YouTube channel.

It's just one more way Dr. Blanc is proving that broad strokes in health literacy communication can become a viable way to make change possible in communities. M

Stephen Rosenberg, MD '13:
A Self-Help Book Gives Cancer Patients a Way to Become Self-Advocates

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distribute more copies to patients and their caregivers, free of charge, at cancer clinics. His goal is to make it easier for cancer patients to understand and to be better equipped to overcome the disease they face.

If you would like to help support this project, you can purchase Dr. Rosenberg's book online at Amazon or Barnes and Noble. M

Sydney Hyder, MD '17:
The First Goal Is Listening

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For now, Dr. Hyder is thinking more about rescuing a dog, following her beloved Super Bowl champions, and visiting museums during her limited free time. Excited about the possibilities ahead, she considers what sort of physicians the world needs, and what kind of doctor she wants to evolve into.

"The kind of doctor we need is the kind who is comfortable taking that extra time," Dr. Hyder says. "Medicine is becoming so much more focused on getting in and getting out and checking the boxes. Sometimes we need to take a step back—explaining a medication to patients so they can be more compliant and change the long-term outcome of their health care."

In her first year of residency, Dr. Hyder isn't positive where she wants to land. "As of right now, I enjoy pulmonary critical care and I spend a lot of time in the oncology unit, so that is in the back of my mind," she says.

Acknowledging the special challenges of tending to the terminally ill, Dr. Hyder says, "I tend to appreciate the sicker ones, the pure interest in the physiology and the actual medicine, and it is much more interesting pathology. When people are sick, you get close with patients and have very serious conversations. I enjoy a discussion with the patient about his or her goals and making sure my patients' wishes are respected." M

CLASS NOTES

What's New? Your fellow alumni want to know!

Please send your professional and personal news and photos to: **Jillian Prior, MPA**, *manager of alumni affairs*, at **jillian.prior@rwjms.rutgers.edu**. In addition to updates we receive from alumni, we use public news information and stories to share in our Class Notes section.

1972

Michael G. Marenchic lives in Lancaster, Pa., and practices emergency medicine.

1976

Lloyd Arthur McPherson passed away Nov. 28, 2017. He was a devoted husband of 38 years to Arlene McPherson and a loving provider to his three sons. Dr. McPherson worked in some of the busiest emergency rooms in the New York–New Jersey region, including as emergency room director at Bayley Seton Hospital in Staten Island before it closed. In the last two decades, he traveled across the country working in hospitals on Native American reservations. Dr. McPherson received numerous honors in his professional career, including the esteemed Charles R. Drew Award. He was cited in the Congressional Record and by local legislators for his role in saving a 3-year-old Staten Island girl from drowning. He cared for hundreds of thousands of patients in five decades. Dr. McPherson was an active member of the National Medical Association, the Knights of Columbus, and the Alpha Phi Alpha fraternity.

1979

Dennis D. Doblar is the owner of Cherokee Pain Management in Alabama and practices anesthesia at Southside Pain Specialists. He was recently appointed a member of the *New England Journal of Medicine* Catalyst Program.

1981

Alan Knapp is an ophthalmologist at Cataract and Refractive Surgery in Englewood, Fla.

1983

Jeffrey N. Bruce is the Edgar M. Housepian Professor of Neurological Surgery at Columbia University's College of Physicians and Surgeons, where he serves as director, Bartoli Brain Tumor Research Laboratory; codirector, Brain Tumor Center; program director for neuro-oncology, Herbert Irving Comprehensive Cancer Center; and vice chair of academic affairs.

1984

Peter Gottlieb, endocrinologist, was welcomed as one of "the Leading Physicians of the World" by the International Association of HealthCare Professionals.

1985

David Price is the senior vice president at the American Board of Medical Specialties Research and Education Foundation. Dr. Price is also the executive director of the ABMS Multispecialty Portfolio Approval Program and a professor of family medicine at the University of Colorado School of Medicine.

1988

Julie Asch is the program director of the Intermountain Blood and Marrow Transplant Program at the Latter Day Saints Hospital in Salt Lake City.

1989

Robert D. Barraco is the chief academic officer at the Lehigh Valley Health Network and the associate dean for educational affairs at USF Morsani College of Medicine–Lehigh Valley in Pennsylvania.

Bill Hayes has retired from his private clinical practice of interventional cardiology in Mobile, Ala., during which time he also earned his master's degree in business administration. He was hired in 2016 as a medical director for the publicly traded health care company CPSI, and in June 2017 he was promoted to chief medical officer.

Kelly M. McMasters is the editor-in-chief of *Annals of Surgical Oncology*. He is the Ben A. Reid, Sr., MD, Professor and chair, Hiram C. Polk, Jr., MD, Department of Surgery at the University of Louisville School of Medicine, where he also serves as director of the Multidisciplinary Melanoma Clinic and associate director of the James Graham Brown Cancer Center.

1990

Eugenie Brunner, who practices facial plastic surgery in central New Jersey, is an eight-year Castle Connolly "Top Doctor" recipient. In 2017, she received four additional accolades, including as one of "America's Most Honored Professionals."

1991

Bryan Massoud is a spine surgeon and founder of Oasis Orthopedic and Spine Integrated Services in Glen Rock.

Raymond Visconti practices primary care at the Valley Hospital in Ridgewood.

1995

Albert S. DeNittis is the chief of radiation oncology at Lankenau Medical Center, clinical professor at Lankenau Institute for Medical Research in Wynnewood, Pa., and director of radiation oncology at Brodesseur Cancer Center in New Jersey. He is also the principal investigator and in charge of a grant awarded by the National Institutes of Health for its National Cancer Oncology Research Program at Main Line Health.

1997

Thomas K. O'Brien has been with Westpark Pediatrics in New Jersey since 2001.

G. Stanley Okoye is a LASEK refractive surgeon in Florida.

1999

Daniel Stewart is a child and adolescent psychiatrist at Icahn School of Medicine at Mount Sinai in New York.

2000

Peiyun Chu is a neurologist at Neurological Specialties of Long Island. She is also board certified in sleep medicine and is certified in acupuncture treatment.

2001

Nicholas Avallone, orthopedic care physician at St. Luke's University Health Network in Lehigh Valley, Pa., was named an outstanding New Jersey physician for 2017 by Castle Connolly.

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CLASS NOTES

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2001

Shayma Master Kazmi is an oncologist and hematologist-oncologist at Cancer Treatment Centers of America in Philadelphia.

Nadia Pierre is an obstetrics and gynecology physician who practices in Loxahatchee, Fla.

2002

Claudine M. De Dan has been a physician in the Mullica Hill area for more than 10 years and was voted a "Top Doctor" by *South Jersey Magazine* in 2009.

Rasean Hodge, who is a certified cannabis expert specializing in pain management, owns a family practice, Premier Chronic Pain Care, in Atlanta.

2004

Soumit Basu is the northeast regional director of hematology/oncology for the Geisinger Health System and clinical codirector of the Center for Bone Marrow Transplantation at Geisinger Medical Center in Danville, Pa. In his role as regional director, he oversees the cancer programs at Geisinger Community Medical Center in Scranton and Geisinger Wyoming Valley Medical Center in Wilkes-Barre.

2005

Ruby E. Kim specializes in physical medicine and rehabilitation and pain management. She is affiliated with Holy Name Medical Center, Englewood Hospital and Medical Center, and Jersey City Medical Center.

WellSpan Midlife Health and Wellness in York, Pa., is helmed by ***Melanie Ochalski***. She is a certified physician with the North American Menopause Society, a national nonprofit and accreditation service that promotes women's midlife health access.

Pawel Ochalski joined WellSpan Neurosurgery in York County, Pa.

2006

Keith D. Baldwin is an orthopedist at the Penn Musculoskeletal Center and is affiliated with Penn Presbyterian Medical Center, the Hospital of the University of Pennsylvania, and the Children's Hospital of Philadelphia. He was named a 2017 "Top Doctor" in Philadelphia.

Carmella Fernandez joined Seaside Surgery Center in Naples, Fla., as an orthopedic upper extremity surgeon.

Maria Lamothe is an endocrinologist at Hunterdon Healthcare Center for Endocrine Health in Clinton and Bridgewater.

2008

Joseph Nezgoda is an ophthalmologist specializing in macular degeneration and diabetic eye disease, and he owns a practice in vitreoretinal surgery, both in Florida.

2009

Clint D. Cappiello is on the faculty at the Children's Hospital and the director of surgical education at Johns Hopkins University.

Laura Nollah is a medical oncologist/hematologist at Pikeville Medical Center in Kentucky.

George Patounakis serves as medical director and lead physician for Reproductive Medicine Associates of Florida. He is also an assistant professor of obstetrics and gynecology with the University of Central Florida College of Medicine.

2010

Lauren Kovacs is an obstetrician and gynecologist, treating patients in the greater West Orange area. She is affiliated with Saint Barnabas Medical Center in Livingston.

Michael Prasto joined the emergency services line specializing in emergency medicine at Doylestown Health in Pennsylvania.

2011

Daniel Marchalik is in the Department of Urology at MedStar Washington Hospital Center in Washington, D.C.

Caroline "Mimi" Shim practices pediatrics in Santa Monica, where she lives with her husband and three daughters.

2012

Nilay Sethi is a hematology/oncology fellow at the Dana-Farber Cancer Institute in Boston.

2013

Turya Nair joined the University of Texas Southwestern Medical Center faculty as an assistant professor practicing family medicine.

2014

Jennifer LaPorta practices family medicine at CareMount Medical's Mount Kisco, N.Y., office and has privileges at Northern Westchester Hospital.

Jacob Nettleton finished his residency in June 2017 at the University of Washington in Seattle and currently works in Malawi as part of

the Global Health Service Partnership. Based in a district hospital, he is a visiting lecturer in the family medicine department and teaches medical students.

2015

Adjoa Akua Boateng and Terry Evans Jr. were married Nov. 12, 2017, at the Nobu Eden Roc Resort in Miami Beach. Dr. Boateng is a third-year resident in anesthesiology at Yale New Haven Hospital.

2016

Saurabh Sinha published a poem in *JAMA, the Journal of the American Medical Association*, titled "Neurulation."

2017

Kiersten Frenchu is an internal medicine resident at Brown University.

M

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