

Robert Wood Johnson MEDICINE



Traumatic
Brain Injury
Leads to a

**3-D-Printed
Skull**



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LETTER FROM THE DEAN

Dear Friends,

I am excited to announce that our medical school has been awarded the Joint Commission's Ambulatory Health Care Accreditation. This accreditation is a testament to the high level of quality and safety we bring to our patients, and I am incredibly grateful to our faculty and staff who worked tirelessly to improve our processes. As you will discover in this issue of *Robert Wood Johnson Medicine*, our dedication to clinical care is reflected in the successful outcomes of patients in our feature stories.

When I first learned about Chris Cahill receiving a 3-D–printed skull, I was captivated by the compelling and unique story (“Traumatic Brain Injury Leads to a 3-D–Printed Skull,” *page 16*). Gaurav Gupta, MD, assistant professor of neurosurgery, and the division's commitment to innovation and delivery of excellent treatment during a complex case are admirable. This palpable demonstration of care is further exemplified in “Helping Joey's Life Get Back on an Even Keel” (*page 4*). Joey and his family spent years visiting physicians with no diagnosis, until he was referred to and treated by P. Ashley Wackym, MD, professor and chair of the newly formed Department of Otolaryngology–Head and Neck Surgery. Finally, after revolutionary surgery and treatment, Joey is able to enjoy being a kid again.

Our students continue to do great work inside and outside of the classroom. Two students and one alumna are accomplished writers with a fervor for language and storytelling, which they say complements their commitment to patients (“Three Women Need to Write Far More Than Can Fit on a Prescription Pad,” *page 9*). I think you will agree after reading the alumni profiles (*pages 42–48*) that our alumni are using their unique skill sets and interests to pursue exciting and diverse career paths.

I hope you are as proud as I am to be a part of Robert Wood Johnson Medical School and share in this historic moment in time.

Sincerely,



Sherine E. Gabriel, MD, MSc
Dean





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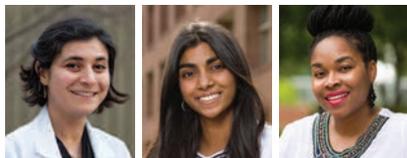
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By Jacqueline Cutler

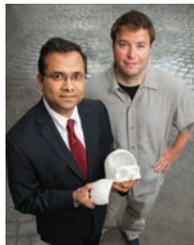


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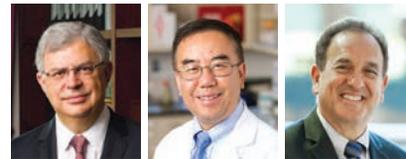
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By Lynda Rudolph

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Helping Joey's Life Get Back on an Even Keel

Ask

14-year-old Joey Zarello what his life was like before he had surgery. He'll tell you he felt like he was on one of those Buccaneer rides at the amusement park. "The room was constantly moving," he says. "It was like that every day of my life." At school, sometimes he had to hold on to a classmate to walk down the hall. He missed out on a lot. Field trips. Normal things kids do, like learning to ride a bike. And 30 days of school last year alone.

That was before Joey met P. Ashley Wackym, MD, professor and chair of the newly formed Department of Otolaryngology–Head and Neck Surgery at Robert Wood Johnson Medical School. The craniotomy Dr. Wackym performed in April—for third window syndrome—changed Joey's life.

Joey's Journey

For Joey, it all started in the first grade. He had trouble seeing the blackboard. Glasses didn't help. By the second grade, he could feel the room moving. Then the headaches began. That marked the start of a seven-year search for answers that took Joey and his parents—Gerry and Debbie Zarello—to neurologists from New Jersey to Philadelphia and back again. The first two specialists had conflicting opinions: one said he wasn't having seizures, the other said he was—as many as seven per hour. That led the

BY LYNDA RUDOLPH ■ PORTRAITS BY JOHN EMERSON

“Joey is totally back to normal and healthy,” says P. Ashley Wackym, MD, professor and chair of the newly formed Department of Otolaryngology–Head and Neck Surgery at Robert Wood Johnson Medical School, who performed a life-changing craniotomy on 14-year-old patient Joey Zarello.



Zarellos to Children’s Hospital of Philadelphia, where Joey was diagnosed with epilepsy and prescribed antiseizure drugs and antidepressants. But nothing worked.

By the time he was in the fourth grade, Joey was under the care of a renowned headache specialist. Debbie Zarello recalls the doctor’s recommendation. “She wanted to put him on pretty serious drugs. Some were old psychiatric medications with a ton of side effects,” she says. “We just didn’t want to go that route.” After spending a year to no avail with specialists at another hospital, they found Amor Mehta, MD, an Ocean County neurologist. Under Dr. Mehta’s care, Joey’s seizures stopped, but the migraines and vertigo didn’t. Dr. Mehta couldn’t get Joey out of his mind. He was determined to find an answer. A luncheon that he almost didn’t attend led him to one.

It was there that Dr. Mehta heard Dr. Wackym talk about the condition known as superior semicircular canal dehiscence—also called third window syndrome, so named because of an abnormal open-

Joey talks about how much this surgery has changed his life: “I’m thinking, it’s finally over. I’m looking back at all the headaches and vertigo. I’m thinking it was so annoying I would have this. After seven years of having this, I feel amazing. I feel like a new person.”

ing in the bone of the superior canal, immediately underneath the brain, that creates a third window in the inner ear. On his way home from the lecture, Dr. Mehta called Debbie Zarello, told her what he had learned, and gave her Dr. Wackym’s contact information, advising her to consult with him immediately. That was when the Zarellos finally learned what was ailing Joey.

Third Window

When sound comes to the eardrum, it transmits pressure to the inner ear, which is filled with fluid. Normally, there are two windows of the inner ear. “The third window causes an asymmetric stimulation of gravity receptors between the two inner ears,” Dr. Wackym says. “Patients talk about how loud sounds make them dizzy and sometimes even feel like the floor is falling out from under them. They can hear internal sounds, such as their voice resonating. Some can even hear their eyes and joints moving.”



The condition can also produce migraine headaches, increase light sensitivity, and affect cognitive function as well as spatial orientation. “Frequently, patients feel detached, feel like the walls are breathing and floors are moving, as if they’re walking on a trampoline or deck of a boat; they can even have out-of-body experiences,” Dr. Wackym says.

Third window syndrome can also produce anxiety and a sense of impending doom, which is why it’s not uncommon for these patients to be misdiagnosed with psychiatric problems. Some have seen as many as 40 doctors before finally getting to Dr. Wackym.

The causes of third window syndrome are varied. Some people can be born with thin bone that, during some traumatic event such as a car accident or sports injury, forms the third window. In some cases, the bone wears away over time. There may be a genetic component to the probability of developing third window, since Dr. Wackym has encountered five mother-

daughter pairs with the condition.

Repair of the third window depends on precisely where the hole is, as there are at least six separate places in the inner ear where it can occur. “But the basic concept is to go from three windows to two,” Dr. Wackym says. “If we can access the hole, during a craniotomy we plug it with the patient’s own tissue and repair any other defects that are there.” Some of the holes—or windows—are in places that can’t be accessed. In the cases where the location of the third window is in a place where surgery could cause additional hearing loss or facial paralysis—for example, between the cochlea and carotid artery or the cochlea and facial nerve—other surgical strategies are used. In these cases, Dr. Wackym closes a different window to change the biomechanical properties of the inner ear.

Helping Joey

There are certain obvious external signs of third window syndrome. “Patients typically look ashen; their faces look older. They have circles under their eyes,” Dr. Wackym says. Those were visible indications that Joey Zarello was suffering from the condition. To learn signs, during Joey’s consultation at Robert Wood Johnson Medical School, Dr. Wackym began by asking questions and letting him talk. “As is typical of these patients, Joey had trouble stringing words together,” Dr. Wackym says. During a structured interview and examination, he explained the balance issues, applied ear pressure, and watched eye movements. “When there is a hole in the inner ear, there are predictable responses,” Dr. Wackym says. With a special high-resolution temporal bone CT and other electrophysiological tests, many of which are available only here, the diagnosis was confirmed as superior semicircular canal dehiscence.

It was a relief to finally have an answer.

Dr. Wackym performed the craniotomy—making an opening in Joey’s skull, so he could surgically close the boy’s third window—on April 11 at The Bristol-Myers Squibb Children’s Hospital at Robert Wood Johnson University Hospital (RWJ). An incision was made in front of the ear and through the large, fan-shaped temporalis, or temporal muscle. Then an opening in the skull was made, and the brain was lifted to access the base of the skull. Using an endoscope, Dr. Wackym identified the third window and then plugged it with Joey’s own tissue. A covering was fabricated with bone cement, and everything was put back in place and his skull was repaired with titanium mesh and bone cement, which, over time, his living bone will integrate into.

Patients like Joey typically stay in the hospital two days. During the first three days of recovery, a different kind of vertigo is experienced. It takes approximately six weeks for the brain to adjust to the new mechanics of the inner ear. When the

adjustment takes place, patients start to regain their lives.

After surgery, it took some time for Joey to get his energy back, and then he began to notice that things were different. The vertigo stopped. Headaches became less frequent and less painful. Now he’s looking forward to learning to ride a bike and going on a roller coaster—things he couldn’t have dreamed of doing before the surgery. And this summer he worked at his first job, working on a boardwalk at the Jersey Shore.

Joey talks about how much this surgery has changed his life: “I’m thinking, it’s finally over. I’m looking back at all the headaches and vertigo. I’m thinking it was so annoying I would have this. After seven years of having this, I feel amazing. I feel like a new person.”

“Joey is totally back to normal and healthy,” Dr. Wackym says. Joey is the first child to have this operation at The Bristol-Myers Squibb Children’s Hospital at RWJ. In fact, this type of surgery was unavailable for anyone at the Robert Wood Johnson University Hospital or The Bristol Myers-Squibb Children’s Hospital prior to Dr. Wackym’s arrival. Dr. Wackym is among the top three surgeons in the country by volume for this procedure and patients regularly travel here for surgery from across the United States and occasionally from Europe.

Building a Department

An internationally renowned neurotologist, Dr. Wackym is one of the most experienced surgeons for superior semicircular canal dehiscence, cochlear implants, and skull base tumors in the United States. He was the first neurotologist in the world to perform Gamma Knife radiosurgery. He comes to the medical school from Legacy Health in Portland, Oregon, where for seven years he served as vice president of research and built a thriving clinical practice. Previously, Dr. Wackym served for more than a decade as the John C. Koss Professor and Chair, Department of Otolaryngology and Communication Sciences, at the Medical College of Wisconsin, Milwaukee.

Chair of the American Neurotology Society’s Stereotactic Radiosurgery Study Group, Dr. Wackym has been a senior and neurotology examiner for the American Board of Otolaryngology. He has published more than 150 peer-reviewed manuscripts and is senior editor of *Ballenger’s Otorhinolaryngology Head and Neck Surgery*—a book that was first published more than 100 years ago—as well as an editor of many other works in the field. He has also received more than two decades of research support from the National Institutes of Health (NIH) and other agencies and foundations.

As chair of the Department of Otolaryngology–Head and Neck Surgery, Dr. Wackym is bringing his expertise in ear and skull base tumor surgery to the medical school. Other proce-

“This is just about making the connections work so we can help people — like Joey — regain their lives,” says P. Ashley Wackym, MD.



dures in his skill set include auditory brainstem implants—which no one else in New Jersey is currently doing—and cochlear implants, both bilateral and for single-side deafness. The department Dr. Wackym is building includes, to date, two pediatric otolaryngologists and a facial plastic and reconstructive surgeon who is also board certified in sleep medicine, and he is currently recruiting a rhinologist and anterior skull base surgeon, a head and neck surgeon, and another pediatric otolaryngologist.

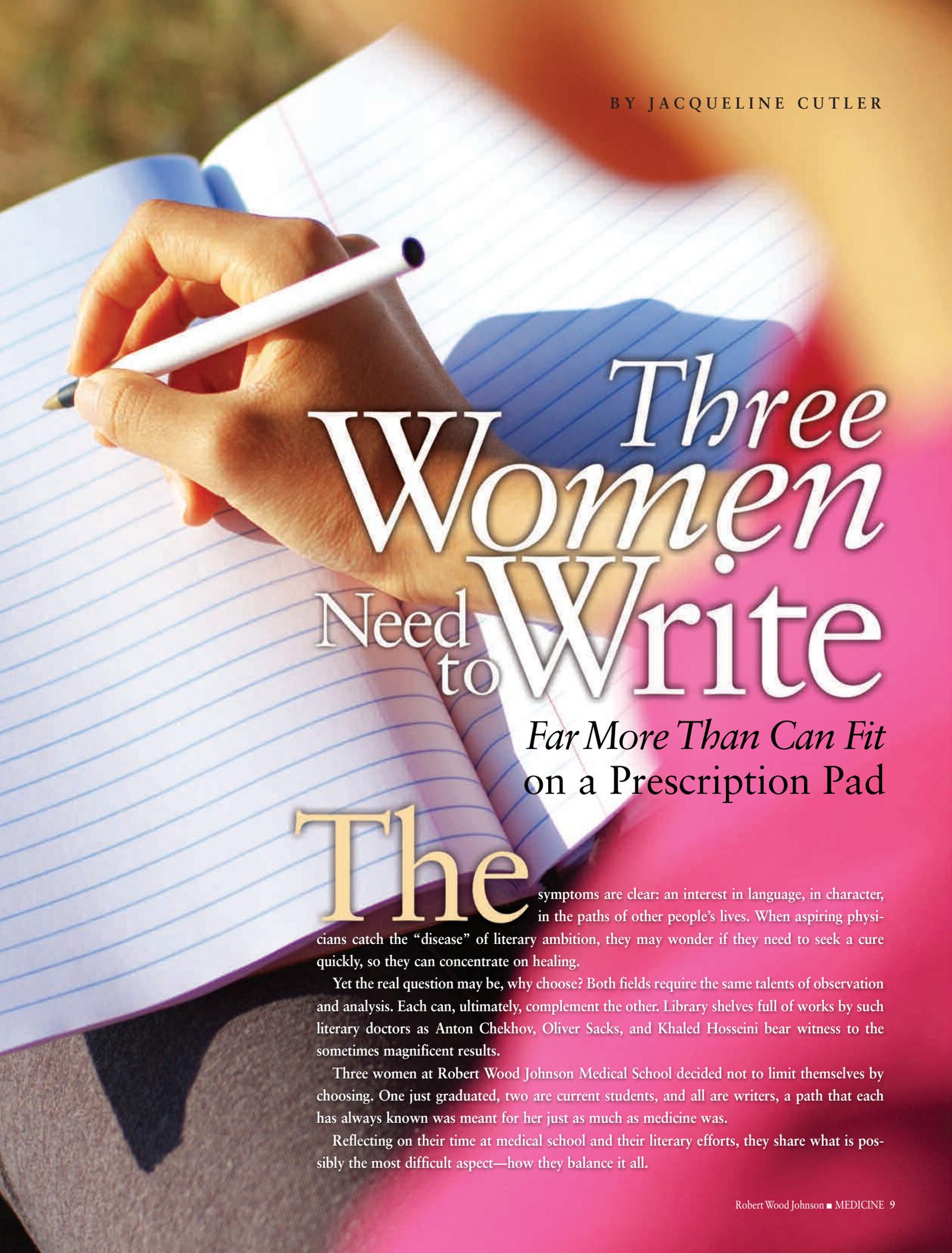
An Ambitious Future Plan

Dr. Wackym is impressed with leadership at the medical school, along with the vision of what the institution will become. “So many dots can be connected here, and that was one of the driving forces of my decision to come here,” he says. On the main Rutgers campus across the Raritan River, he observes, “there are so many auditory and olfactory neuroscientists that if attributed to our department, we would be ranked 12th in NIH research support nationally.” The goal to establish great clinical programs and recruit people into the eight schools of Rutgers Biomedical and Health Sciences resonates with those, like himself, who are interested in building a collaborative network that in turn can significantly advance clinical care.

He has already formed a working relationship with one of the world’s leading neuroscientists, Gary Aston-Jones, PhD, director of the Brain Health Institute (BHI) at Rutgers and the Murray and Charlotte Strongwater Endowed Chair in Neuroscience and Brain Health. Dr. Wackym is contributing his clinical knowledge and research expertise to the mission of the BHI, which is to research the causes of and treatments for brain and neural disorders. He is particularly interested in learning the mechanisms that produce the cognitive dysfunction that patients with third window syndrome have until their surgical repair. He says, “How many other disorders that produce cognitive dysfunction can be reversed with surgery? This offers a unique window into cognitive neuroscience—a disorder producing cognitive dysfunction and an opportunity for recovery.”

With so many scientists at Rutgers who are enthusiastic to have clinical partners, the process to move toward translational research in otolaryngology—head and neck surgery does not need to be established from scratch. “This is just about making the connections work so we can help people—like Joey—regain their lives,” says Dr. Wackym. **M**

For more information or to schedule an appointment with the Department of Otolaryngology, please contact Dr. P. Ashley Wackym at ashley.wackym@rutgers.edu



Three Women Need to Write

*Far More Than Can Fit
on a Prescription Pad*

The

symptoms are clear: an interest in language, in character, in the paths of other people's lives. When aspiring physicians catch the "disease" of literary ambition, they may wonder if they need to seek a cure quickly, so they can concentrate on healing.

Yet the real question may be, why choose? Both fields require the same talents of observation and analysis. Each can, ultimately, complement the other. Library shelves full of works by such literary doctors as Anton Chekhov, Oliver Sacks, and Khaled Hosseini bear witness to the sometimes magnificent results.

Three women at Robert Wood Johnson Medical School decided not to limit themselves by choosing. One just graduated, two are current students, and all are writers, a path that each has always known was meant for her just as much as medicine was.

Reflecting on their time at medical school and their literary efforts, they share what is possibly the most difficult aspect—how they balance it all.



“One of my goals is to find a community of like-minded people interested in writing as well as medicine,” says Zeynep Uzumcu, MD '17.

NICK ROMANENKO

Zeynep Uzumcu, MD '17, poet

Rutgers University is a family tradition for Zeynep Uzumcu, MD '17, who graduated from the medical school in the spring. First, her mother graduated from Rutgers Douglass Residential College, having returned to school after raising her children. The same year her mother graduated, Zeynep began at Douglass, and her sister just graduated from Douglass.

Initially, Dr. Uzumcu says she planned on becoming “one of my heroes, an English teacher.” She recalls writing her first poem in third grade, in a journal a teacher gave her. “I remember looking at clouds and wanting to write about them, and my third-grade teacher was very encouraging,” she says.

As her family moved successively from Turkey, where she was born, to Ohio, Washington, Saudi Arabia, and North Brunswick, Zeynep filled journal after journal, even while she was a double major in English and chemistry. Her decision to concentrate on medicine was because she wanted “to be a part of change in community well-being on a tangible level.” Still, when it was time for medical school, it wasn't a given that Zeynep would remain at Rutgers. She applied all over the East Coast.

“In the end, I made a decision about a school that reflected my philosophy,” she says. “I had met so many people passionate about their community, and there were projects being done here that were involved with the community on a very deep level.”

As much as she loved her classes, by her second year Zeynep

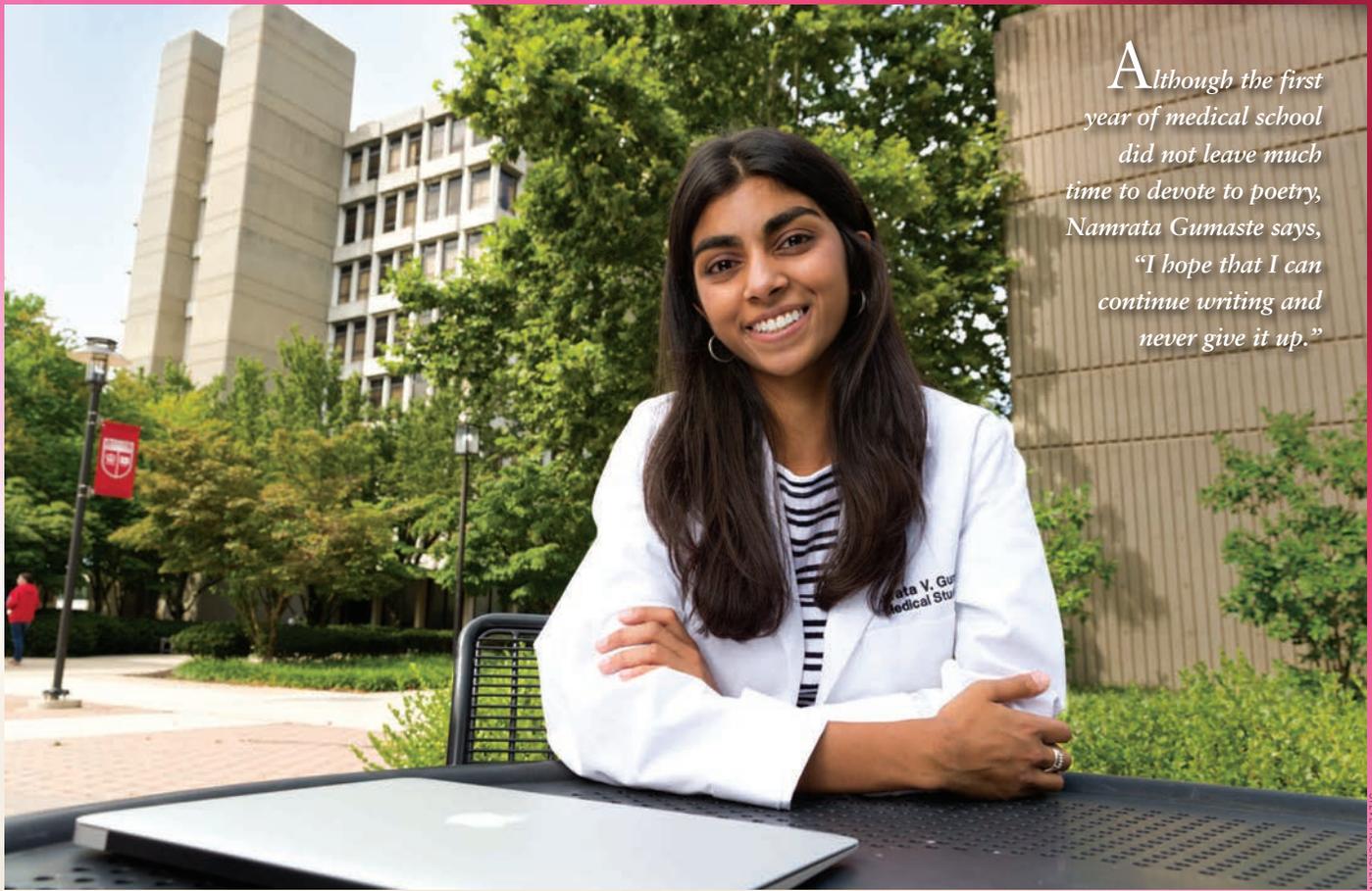
needed another outlet. She and some classmates created a publication, *Arbor Vitae*, “tree of life” in Latin (as well as a structure within the cerebellum). They wanted a publication “that reflected the voices of students and faculty on the subjects of medicine. We just wanted our community to have a place to express themselves,” she says.

Although they might seem disparate, Dr. Uzumcu, now a first-year resident, sees a connection between medicine and writing.

“The things you encounter in your life on a regular basis become the things that you write about,” she says. “In terms of how writing translates into medicine, the way I conceptualized it is being more careful about how I speak. It is a verbal transfer. Your patients come and tell you their stories and everything they have experienced up to that point in life. You, as a clinician, have to interpret what they told you in a way that remains true to your patients and communicate to them with information that is digestible and mindful.”

Dr. Uzumcu headed to a family practice residency at Thomas Jefferson University Hospital in Philadelphia after graduation. “The concept of the specialty was pluripotent, a complicated way of saying you could be dropped in the middle of anywhere and fulfill the basic health needs of the community,” she says.

Even with her new responsibilities, Dr. Uzumcu, whose poetry has been featured in the *Journal of the American Medical*



Although the first year of medical school did not leave much time to devote to poetry, Namrata Gumaste says, "I hope that I can continue writing and never give it up."

STEVE HOCSTETEN

Association, plans to keep writing. "It feels like it is a hard thing to motivate yourself to do," she admits. "One of my goals is to find a community of like-minded people interested in writing as well as medicine."

Namrata Gumaste, poet

Like Dr. Uzumcu, second-year student Namrata Gumaste wrote her first poem in third grade and has been writing since. Her undergraduate degree from Columbia University is in creative writing.

"I always had medicine on the horizon," Namrata says, adding that her mother is a primary care physician, her father is a gastroenterologist, and her sister, a Robert Wood Johnson Medical School 2015 alumna, is a dermatology resident. "So I have seen the gamut. I just didn't know if I wanted to do what they do."

She had considered becoming a physician or a writer as potential careers. "In college, I worked at a publishing house for the summer," Namrata recalls. "Even though I really liked reading and writing, I did not like it enough to do it for eight hours a day, and when I spent time in hospitals and volunteering, I liked doing that work for long periods of time. And I enjoy helping people and the science of it."

That realization hit: "Do science for a career and write in my own time."

For a couple of years, Namrata combined both, working in a New York University endocrinology lab, doing research on lipid metabolism. She recalls landing this job because the physician running the lab needed someone who understood science and could write.

"I had the essential scientific background," she says. "I could go through reports and make them ten times clearer. It was an interesting experience, and I had a great time working in the lab, too."

Namrata, who grew up in Cresskill, had listened to her sister rave about Robert Wood Johnson Medical School. She chose it, though, for a reason not many cite when picking a graduate school.

"I got a good feeling when I was here talking to the students," she says. "They were happy. I am not a very type A kind of person. I am not a very competitive person. I did not want to be in a school that felt like a pressure cooker. I felt at Robert Wood, everyone is very open and helpful. Everyone shares their study guides."

Like many poets, Namrata spends a long time refining short pieces. And her diligence paid off. She took first prize in the 2017 William Carlos Williams Poetry Competition for medical students.

Although the first year of medical school did not leave her

For me it is all about helping people,” says Grace Ibitamuno Obienu. “With writing, the idea for me is to make your reader feel something. For me being a doctor is the same motivation: how can I do something that at the end of the day I feel I made a difference?”



STEVE HOCKSTEIN

much time to devote to poetry, she says, “I hope that I can continue writing and never give it up.”

Grace Ibitamuno Obienu, novelist

Most of us are busy—and then there is second-year student Grace Ibitamuno Obienu’s level of busy. She decided to go to medical school two years ago while pregnant with her first child.

“I was a technical writer for a contract research organization,” she says. “For me it was supposed to be the best of both worlds, combining science and writing.” Yet it wasn’t enough. “I wanted to actually directly impact people.”

Grace enrolled in the demanding MD/PhD program at Rutgers. While rearing her toddler with her husband, and taking classes, she is writing a follow-up to her debut 2016 novel, *Not Yet Beautiful*, about a young survivor of years of sex trafficking. Her next book also follows her protagonist, Lola. “I feel like there is a lot more to her story, and I feel I need to do a little more to give her a proper ending,” she says.

“Being a writer, for me, was one of the more natural childhood dreams,” Grace says one evening after putting her son to bed. “From around 5 or 6, I can remember typing out stories on our family computer and imagining them one day becoming movies, without too much information on becoming a writer.

Becoming a doctor, that one came with more education, more information, more influence from the people around me, and it has become a second-wave kind of dream.”

Like Dr. Uzumcu, Grace’s family bridges another country and culture. She spent her first seven years in Wisconsin before her family returned home to Nigeria. She moved back to the States for her undergraduate degree at Marymount University in Virginia. When considering medical school, Grace knew, “I wanted the opportunity to do a nontraditional MD/PhD program, and not a lot of programs allow you to do that. And because Robert Wood is part of Rutgers, I was given that opportunity.”

Grace’s goal is to specialize in epidemiology, “something global, and health-related. That is the bigger picture,” she says. This summer, she was working on both of her passions, as she took classes in public health and continued writing. She sees a clear connection between the two disciplines.

“For me it is all about helping people,” Grace says. “I had the opportunity to teach a workshop at the medical school in fiction writing. With writing, the idea for me is to make your reader feel something. My first book, about human trafficking, was how do I shine a light on this issue? For me being a doctor is the same motivation: how can I do something that at the end of the day I feel I made a difference?” **M**



Sandra Hill,
Eric B. Chandler Health Center
Executive Director, Brings

Patience and Kindness

T O T H E J O B

BY JACQUELINE CUTLER • PORTRAITS BY JOHN EMERSON

It was the sort of oppressive summer day when the heat casts shimmery waves on the sidewalk. When people are sick and this hot, tempers can flare. Inside Robert Wood Johnson Medical School’s Eric B. Chandler Health Center, however, all remained cool and calm. It was busy, but not in the chaotic way overextended clinics in underserved neighborhoods can be.

There’s a very deliberate sense of order as staffers speak to patients in Spanish and English and greet all who enter, steering everyone to the correct section. Last year, 14,675 people received care in this nondescript brick building in New Brunswick.

Like any institution, the tone is set at the top. In this case, although she consistently downplays her influence, it comes from Executive Director Sandra Hill. As she walks past the 22 exam rooms, the dental suite, and waiting areas, Hill greets janitors, doctors, nurses, and staff by name. She doesn't need to squint at their name tags because Hill knows them all.

Gently yet firmly, Hill reprimands two children who mistake the waiting room for a playground. Noticing a woman standing at a window looking lost, she stops to help. Hill doesn't tell the woman who she is; instead, she simply finds someone to speak Spanish with the patient and then moves on.

"I always tell the staff: 'Treat people the way you want to be treated,'" Hill says. "And just because you are treating the most vulnerable or underserved doesn't mean less quality care. A lot of times, people think a federally qualified health clinic is 'Herd them in and herd them out.' That is not true! HRSA [the U.S. Health Resources and Services Administration] demands quality care, and we provide that here."

Considering how many people come through these doors, the staff is not huge. There are (in full-time equivalents) six family physicians, one internist, one obstetrician/gynecologist, two pediatricians, an HIV specialist, a part-time podiatrist, and two nurse practitioners. Also on staff are 14 nurses, nine medical technicians, six dentists, one dental hygienist, and seven dental assistants. One social worker, two HIV case managers, a nutritionist, a pharmacist, and a medical interpreter round out the medical caregivers.

Coincidentally, the clinic and Hill have both been working in public health for 30 years. The clinic's anniversary was in October. Hill arrived a decade ago, after putting in 20 years at the Veterans Administration (VA).

A life devoted to health care began when Hill volunteered as a candy striper at East Orange General Hospital. "I loved it, with a capital L," she says. "You name it, we had to do it—read magazines to patients, or serve patients if a patient needed to be fed."

As a student at East Orange High School, living with her parents—her mother was a home care nurse at the VA, and her father was a longshoreman—Hill considered becoming a pediatrician. From East Orange, she moved to Virginia, where, in her freshman year at Hampton University, she forged what would become lifelong friendships. These women have seen one another through everything.

"I did not make a mistake going to Hampton," Hill says.

She isn't the sort to flaunt her degrees. Although most people brag about their academic successes, Hill has to be cajoled to reveal that she earned a bachelor of science degree in biology and a master's degree in religious studies. She is a proud member of the Alpha Kappa Alpha Sorority as well as the Golden

Key International Honour Society.

Her abiding faith spurred an interest in other religions, resulting in the master's degree. Embracing other faiths completely, Hill—a Baptist—enrolled her son, now a risk operations manager in Miami, in a Catholic school, Saint Benedict's Preparatory School in Newark.

Combining her study of biology and lifelong interest in religion with 20 years in the trenches of medical administration makes Hill uniquely suited for this post. "My parents would always say, 'Prepare for where you want to be,'" she says. "After school, I applied for a job at the VA."

Hill worked in various administrative posts at the VA. Such experience in a federal agency known for its bureaucracy helps her in running Chandler. Where other clinics' executive directors have one boss, Chandler reports to the board and to the senior associate dean for community health at Robert Wood Johnson Medical School.

"Administrators in our environment are under-recognized for the complexity they help navigate initiatives through," says Eric G. Jahn, MD '88, associate professor of family medicine and community health; chief, division of community health; and senior associate dean for community health. "Rutgers is huge. There are lots of challenges in terms of getting our day-to-day tasks done. And her ability to be diligent and carry Chandler through, and help it thrive—that leadership is, to me, exceptional."

Like others who have been involved with the clinic for decades, Dr. Jahn praised what Hill has brought to Chandler, while acknowledging the work of her predecessors.

"Sandra built on a very strong foundation," Dr. Jahn says. "But really, to me, in what is a very complex administrative environment, she has motivated staff to have a very patient-centered facility. That includes staff and faculty."

That inclusivity stems from her outlook and lifelong faith. There's a genuine feeling that she is neither above nor below anyone who crosses her path and that she truly cares about people. "Because of my faith, there are certain principles that help me in doing my job," she says. "I want, when staff or patients see me, they see a person that is kind and compassionate, and that aligns with my faith. I envision after I leave here, I would like to do pastoral care."

Her empathy is apparent as she gives a tour of the clinic.

Nurse Michelle Hawkins-Nunn has worked there for 11 years, the last three as a registered nurse. She was inspired to move on from being an administrative coordinator "because I see the good work done here, and I want to help people. Once my youngest son was out of school, it was time for me to go back to school. I had a lot of encouragement," she says, looking toward Hill.



“I always tell the staff: ‘Treat people the way you want to be treated,’” says Sandra Hill, executive director of the Eric B. Chandler Health Center. “And just because you are treating the most vulnerable or underserved doesn’t mean less quality care.”

Beverly O’Shea, MSN, RNC, oversees 14 nurses. She loves working with families and has taken care of some of the current generation of mothers since they were children. O’Shea relates to the patients on a deeply personal level.

“I grew up without health insurance,” she says in her small office. “I’m first-generation German American. I know what it is like to not speak the language.”

O’Shea was in high school when her father landed a job as a maintenance supervisor at Rutgers University, finally getting health insurance for the family. Before that, they saw a doctor only when they were sick. And to get the doctor to take care of them, her mother bartered: she cleaned a doctor’s office, and he ministered to her sick children.

So affordable health care is not hypothetical for O’Shea and her colleagues. They see patients regardless of ability to pay. And the numbers, from last year, are representative of poor neighborhoods: 94% of patients were below 200% of the federally

defined poverty level. In addition, 40.7% of the patient population was uninsured. Just over half, 50.6%, had Medicaid, 6.7% had Medicare, and only 2% had private insurance.

As staggering as those statistics are, they represent real people who have come to expect a certain standard from the clinic. Hill pauses in front of a certificate honoring the clinic for earning Level 3 patient-centered medical home recognition, a federal designation. The framed commendation graces a wall in the conference room, the same place where the staff wrapped Christmas presents they had collected for the community. Hill pulls up photos on her iPhone of the gift-wrapping frenzy. It’s the one time she allows a measure of pride—and that’s for how the staff worked together to ensure that patients had a good Christmas.

Hill is already planning staff activities for the holidays—as well as thinking about how she’d like a larger building and additional

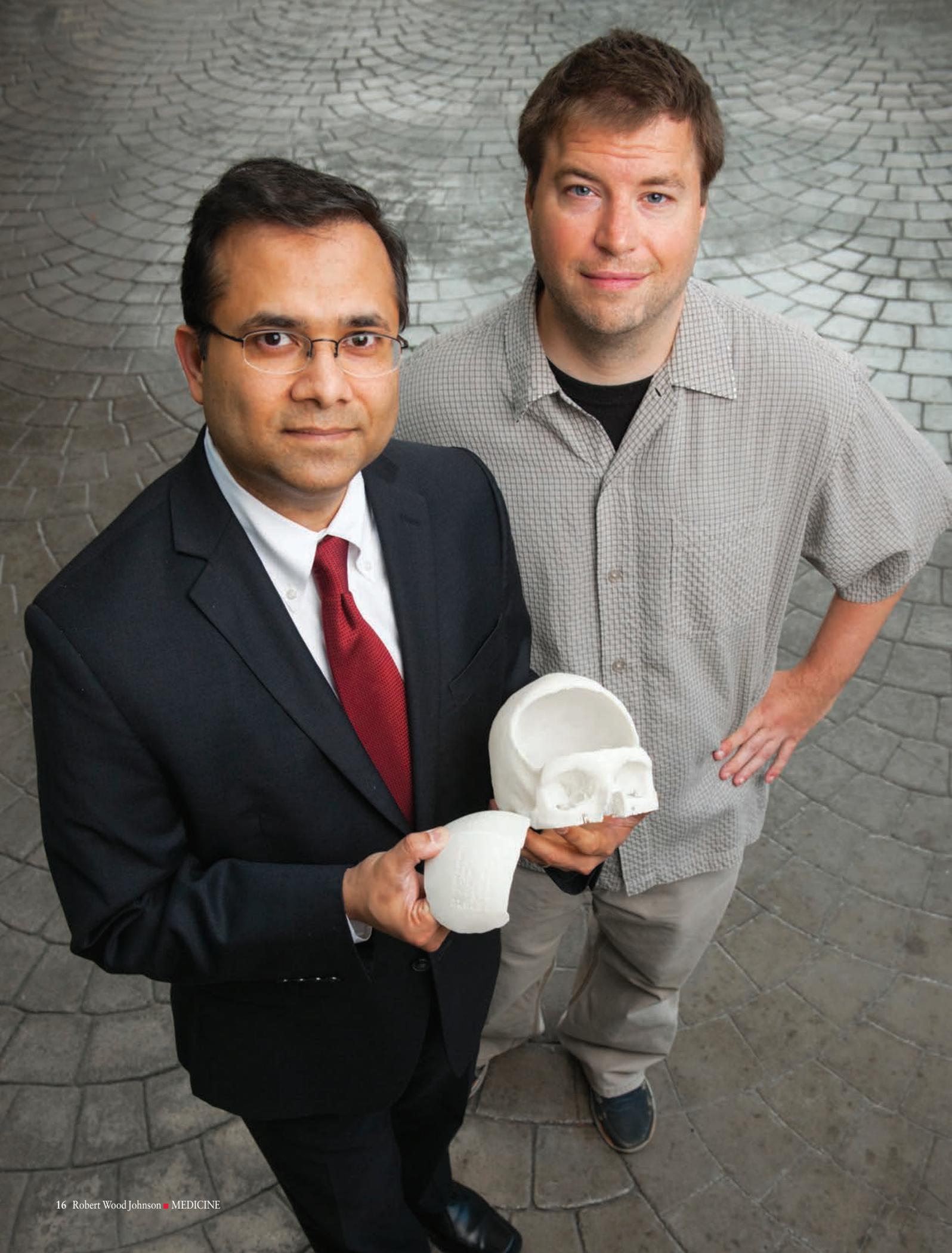
services. “It’s about getting the care they need,” she says of the community. “I want to increase patient access and to integrate mental health into primary care.”

During a long interview, Hill mentions a couple of times that one person doesn’t make a show happen. Unprompted, O’Shea mentions it too, saying perhaps that’s true, but she adds that one person “can make it that much better.” And what Hill has done, by leadership, is continue to champion those who have less and ensure that they are as entitled to health care as anyone else.

Not everyone who walks into the clinic was always in need. Hill recalls a patient who told her, “Last year, I had a husband, a job, a house, and health benefits. This year, I have nothing.”

If only those sobering words didn’t resonate.

“I am extremely worried that health care is uncertain,” Hill says, which is as far as she will jump into the politics of the subject. “Health care should not be a privilege. It is a human right.” **M**





Traumatic Brain Injury Leads to a **3-D-Printed Skull**

Gaurav Gupta, MD (facing page, left), performed emergency surgery on Chris Cahill (facing page, right) to relieve life-threatening brain swelling caused by head trauma. When part of Cahill's skull became unusable, Dr. Gupta decided that 3-D printing was the best solution to replace the missing bone.

The concept of 3-D printing is still, to many people, more likely to be imagined in a science fiction film than in reality. But with the rapid technological advances in the medical field, it's ushering in a new frontier in medicine—and with the expertise of surgical teams, including Gaurav Gupta, MD, assistant professor of neurosurgery and director, cerebrovascular and endovascular neurosurgery, this technology is changing patients' lives.

BY JILLIAN PRIOR
PORTRAITS BY JOHN EMERSON



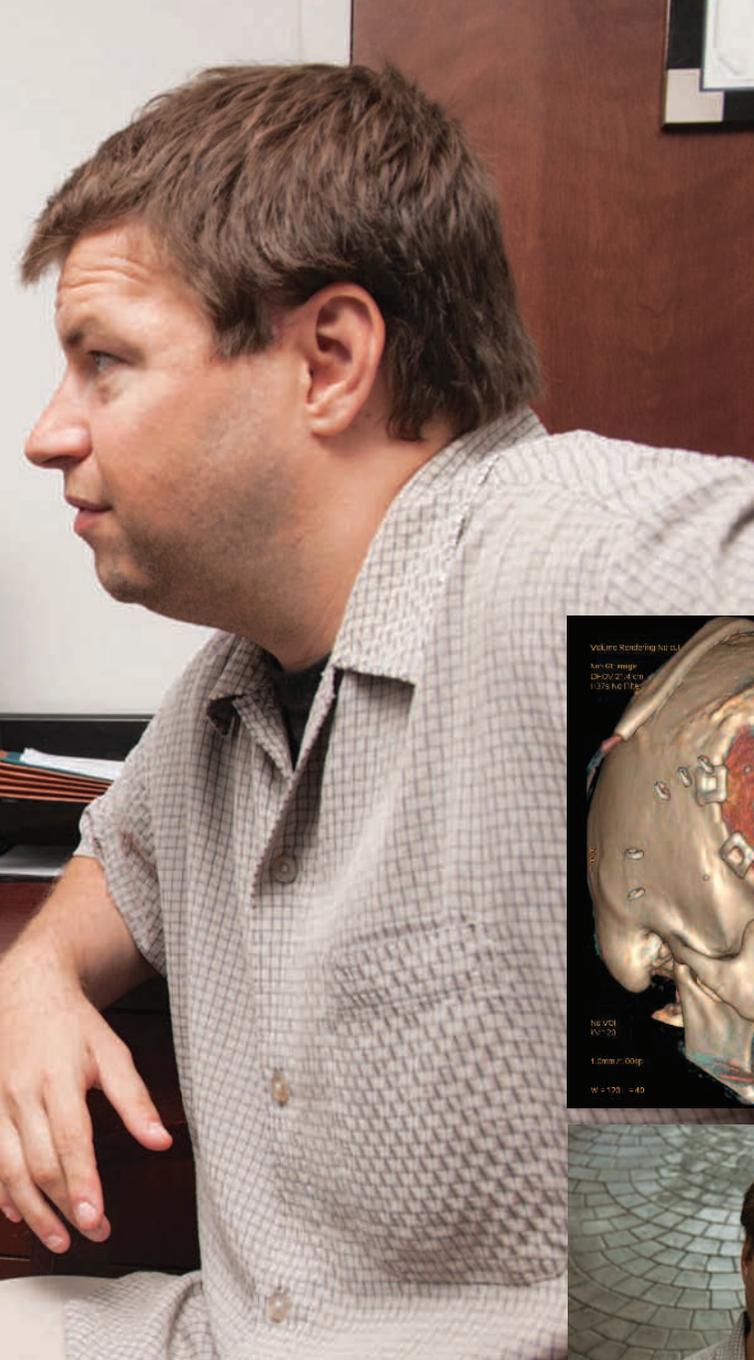
After two months in and out of consciousness, Chris Cahill, a resident of New Brunswick, woke up at Kessler Rehabilitation Center confused about where he was and what had happened to him. He was found unconscious from unknown trauma on a street in New Brunswick, resulting in severe injuries to his frontal lobe that caused brain swelling so dramatic it was life-threatening, explains Dr. Gupta. He performed emergency surgery to relieve the swelling, with the intent of replacing the skull afterward. However, the patient's skull was infected and therefore was unusable. At that point, Dr. Gupta decided the best solution to replace the missing skull bone was to use 3-D printing.

The 3-D printing process produces three-dimensional

objects from a two-dimensional digital file. It has become popular for medical devices because of its precision and accuracy. For Cahill, 3-D printing, based on his CT scan, was used to create a model of his skull and then a custom implant to replace the missing piece. "The model was used for practice," says Dr. Gupta. "Once the skull implant was printed, millimeter by millimeter, we matched the new implant to the skull model, ensuring a perfect fit."

Two separate implants were printed because the area of the skull was so large, and Dr. Gupta then bonded them together. Although he has used 3-D printing for brain surgery since 2012, this was the biggest implant and also the most complicated case he had seen. When Cahill learned that part of his skull would be replaced via 3-D printing, he

3-D-Printed Skull

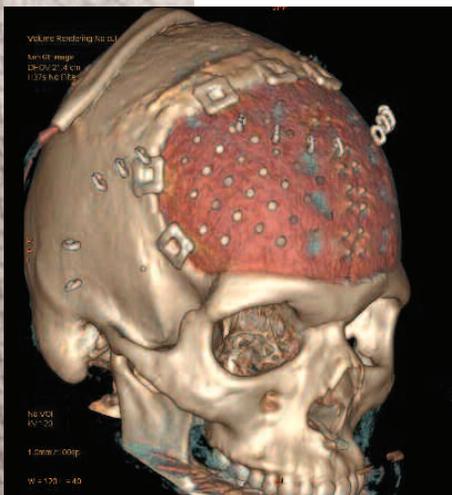


cant and irregular skull damage, as with Cahill. According to a spokesman for the company, these implants have a better anatomical fit, reduce operating time, and have more satisfying aesthetic results than traditional models. The implants are also resistant to impacts and fractures.

Before the surgery, Cahill needed to grow additional skin to cover the implant, because the skin around his frontal lobe had contracted. To ensure the best possible aesthetic result, Dr. Gupta enlisted the help of

Tushar Patel, MD, plastic and reconstructive surgeon and partner at the Plastic Surgery Center, to insert a skin expander, which enabled Cahill to have enough skin for surgery.

On March 28, Dr. Gupta and Dr. Patel inserted the skull implant during a four-hour surgery—shorter than a traditional procedure due to the pre-



Although Dr. Gupta has used 3-D printing for brain surgery since 2012, this was the biggest implant and also the most complicated case he had seen. When Cahill learned that part of his skull would be replaced via 3-D printing, he recalls, “I wondered, ‘Can they really do this?’ But Dr. Gupta saved my life once, and I trusted him completely.”

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Dr. Gupta collaborated with a medical device company, DePuy Synthes, to use 3-D printing to create a customized cranial skull implant for Cahill. The implant is made of polyetheretherketone (PEEK), a thermoplastic polymer that is chosen for its strength, stability, and biocompatibility. Prior to 3-D printing, surgeons used metal mesh to replace pieces of the skull, but it was not as strong or as precise. The model created by 3-D printing is an exact custom fit because it uses the patient’s CT scan. It is the best choice in cases of signifi-

cise custom fit of the implant, which allowed for fewer modifications during the process. The surgery went smoothly and Cahill recovered well, living on his own within four months of the surgery, with the help of Dr. Gupta. Because the incision is behind

the hairline, the scars cannot be seen.

“I was nervous about what I would look like after the surgery—I thought I would look like Frankenstein!” says Cahill. “I was happy I looked exactly the same and felt like myself again.” **M**



The mural
The Three Doctors,
created by artist Bala
Ukweli, to honor local
heroes and longtime
friends who grew up
in Newark: George
Jenkins, DMD (*left*),
Sampson Davis, MD '99
(*center*), and Rameck
Hunt, MD '99 (*right*).

PHOTO COURTESY OF WINDY WHITE

Larger Than

Newark Mural



Life • In

Honors Three Doctors

BY KATE O'NEILL

November 2016, a hundred onlookers cheered as Newark Arts unveiled *The Three Doctors*, the newest work in the city's Murals of Newark project.



PHOTOS COURTESY OF MINDY WHITE

With a West Ward pharmacy wall as its canvas, the sidewalk-to-roofline mural honors three local heroes and longtime friends, who grew up together

in Newark: Sampson Davis, MD '99, and Rameck Hunt, MD '99, both alumni of Robert Wood Johnson Medical School, and George Jenkins, DMD, a graduate of New Jersey Dental School (now the Rutgers School of Dental Medicine).

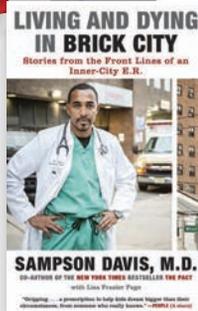
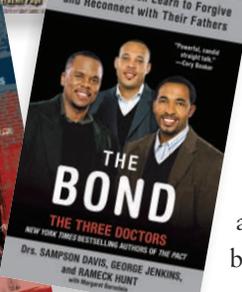
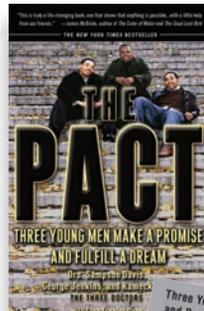
“These three doctors have rewritten the narrative about possibilities for youth from the urban core,” says Jeremy Johnson, executive director of Newark Arts, which seeks to transform the lives and spirits of the city’s residents and visitors through art. “It was so great to see them celebrated in the community.”

The mural, by artist BaJa Ukweli, was created by a Newark Arts partner agency, Yendor Productions, with support from the office of Mayor Ras J. Baraka. “Our kids need hope,” says Rodney Gilbert, founder and executive director of Yendor. “Every time young people walk by this mural on their way to school, it fills them with the hope of who they can become.”

Dr. Davis practices emergency medicine at Saint Michael’s Medical Center, in Newark, and other hospitals in New Jersey. Dr. Hunt, a clinical assistant professor of medicine at Robert Wood Johnson Medical School, is an internist at the University Medical Center of Princeton at Plainsboro, where he serves as medical director of the weight management program.

Dr. Jenkins completed an oral medicine fellowship at New

“Our kids need hope. Every time young people walk by this mural on their way to school, it fills them with the hope of who they can become,” says Rodney Gilbert (above, far left), founder and executive director of a Newark Arts partner agency, Yendor Productions, at the unveiling of the mural honoring Rameck Hunt, MD '99 (second from left), George Jenkins, DMD (second from right), and Sampson Davis, MD '99 (far right), with Newark Mayor Ras J. Baraka (center).



Jersey Dental School before joining the faculty at Columbia University College of Dental Medicine, where he is a clinical assistant professor. He completed the Executive Master of Health Administration program at Columbia University’s Mailman School of

Public Health and serves on multiple administrative committees at Columbia. “It’s a good opportunity to sway resources to the things that are most meaningful to my soul,” he says.

The doctors have coauthored three books about their lives. Two were *New York Times* best sellers: *The Pact* (2002) and *We Beat the Street* (2005), a revised edition of *The Pact* designed for children and young adults. *The Bond* (2007) is the story of the trio’s finding and coming to understand their fathers after many years of separation. Cowritten with journalist Margaret Bernstein, it, too, was a success. In addition, Dr. Davis wrote the highly successful *Living and Dying in Brick City: Stories from the Front Lines of an Inner-City E.R.* (2013), which offers

his perspective on the U.S. health care crisis from the point of view of an inner-city emergency medicine physician.

The Pact

Early on at University High School in Newark, the three young men discovered that they were kindred spirits. “We liked to study and learn like the serious students,” says Dr. Jenkins.

“But our social skills made us more like the kids that didn’t take their work seriously. We were caught in the middle of a significant division: you could get beaten up for making the honor roll.”

Near the end of their junior year, the three friends caught a lucky break. Cutting class to shoot baskets in the school gym, they were spotted by a teacher who sent them to listen to a presentation by a recruiter from Seton Hall University. “I felt like the recruiter was describing me,” says Dr. Hunt.

After the recruitment session, George Jenkins was the first to propose “a pact.” The three friends had previously talked about going to college, but with a little nudging, he got the others to join him in swearing to graduate from high school and college and then complete medical school. Knowing that three together would be stronger than one alone, they promised to serve as one another’s mentors, providing advice, support, and the motivation to succeed. By the end of senior year, all were headed for the Pre-Medical/Pre-Dental Plus Program at Seton Hall University—with Rameck Hunt turning down admission at Howard University to stay close to his friends.

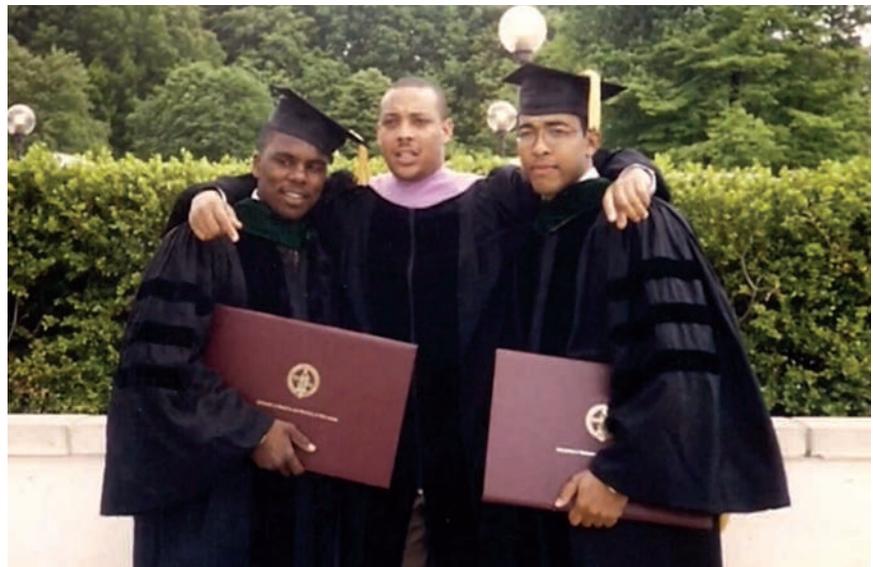
Dr. Jenkins credits two adults in his life with inspiring the pact. The first was a third-grade teacher, who spent her own money to take the class to see plays. She built in them a love for Shakespeare and gave the children a dream. She promised that their environment would be only temporary if they used their education to succeed in a profession. “Without her, I might not have recognized that the world had more to offer than what I knew,” he says.

The second inspiration was a young resident at the then UMDNJ Affordable Dental Care Clinic in Newark, where the boy’s mother sent him to correct his “crooked teeth,” Dr. Jenkins says. “Every time I’d see him, he’d tell me how smart I was. He always gave me books to take home and read. ‘If you use these books,’ he’d say, ‘you can succeed.’ Then, at the next appointment, he’d quiz me about teeth and bones.”

Throughout their years of medical and dental school, the

three friends got together every week, says Dr. Jenkins, even when he was in Newark and Dr. Hunt and Dr. Davis were doing clinical rotations on the medical school’s Camden campus. With differently timed courses, they could exchange textbooks and provide mutual academic support. They rallied one another through any issue that might derail the pact: not only academic challenges, but also family and girlfriend problems, or economic and financial concerns.

“Medical school was tough, but it’s meant to be,” says Dr. Davis—and, from their pact, they’d learned to ask for help when they needed it. Dr. Davis says he honed his study strategies in his first year of medical school. He formed a tight bond with his dissection team in gross anatomy and stayed close to the group throughout the four years of medical school. When



George Jenkins (above, center) was the first to propose “a pact.” The three friends had previously talked about going to college, but with a little nudging, he got the others to join him in swearing to graduate from high school and college and then complete medical school.

George Jenkins needed to wear a tie for a dental school ceremony, he found an older student to teach him how to tie it.

“The medical school did a lot to emphasize diversity as a strength,” says Dr. Hunt. He often turned to minority counselor Betty Oglesby for guidance. “Dr. [David] Seiden was the smartest guy, a true instructor, and Dr. [Pamela] Champe connected with all the students. There were a lot of open doors, and you could knock on any one of them, any time.”

Throughout dental school, George Jenkins lived in the apartment where he’d grown up. “Same street. Same block. Same sirens and gunshots ringing in my ears while I was studying,” he says. “I kept myself motivated, and I made it, but it was never lost on me that my experiences need to be mined, turned into something.”

The Three Doctors Foundation

Nine years after their graduation from University High School, the three doctors graduated together again, at the same commencement, from what was then the University of Medicine and Dentistry of New Jersey. They had fulfilled their pact, but their allegiance to one another was about to give rise to a new dream. One year later in April 2000, with \$1,000 earned at speaking engagements, they cofounded the Three Doctors Foundation.

“One year out of medical school, we were probably the poorest philanthropists in history,” says Dr. Davis with a laugh. They considered starting community clinics or fund-



MICHAEL DEBERG

ing scholarships. Instead, they decided to create a not-for-profit organization that would infuse the principles of their pact into the community. Within the framework of the foundation, they could build programs that would help disadvantaged youth value their own worth and academic potential, set a high bar for their future, develop a strategy, and work with mentors to meet or surpass their goals.

Their books, motivational speaking, and the Three Doctors Foundation carry a powerful message. “It transcends financial, racial, and social lines,” says Dr. Davis. “We’ve received mail from impoverished kids in Mississippi and wealthy kids from Short Hills.” But primarily, they have focused on youth growing up in the urban core, facing the same challenges they faced: absent fathers, poverty, arrests in their teens, and a street- and peer-centered value system that discouraged—at best—professional ambitions.

This past May, at the ImPACT Gala, the foundation celebrated its 17th anniversary, honoring people, corporations, and community service groups that reinforce its goals. Notably, the organization is entirely staffed by volunteers, including Windy White, who has served as its executive



COURTESY OF WINDY WHITE

The three doctors created a not-for-profit organization that would infuse the principles of their pact into the community. ■ Left: The Three Doctors Foundation annual Healthy Mind Body Charity Walkathon, cosponsored by Seton Hall University, includes a 10-lap walk and a day of family activities. ■ Above: The three doctors celebrated the 17th anniversary of their foundation, with foundation executive director Windy White, at the ImPACT Gala in May.

director from the start. Outreach programs throughout the year reflect the principles of the three doctors’ original pact. The Positive Peer Pressure Challenge recognizes and rewards outstanding young people who, as individuals or in small groups, organized an activity focused on health, leadership, education, or mentoring. Past winners have been recognized for organizing study groups, antidrug activities, and walkathons.

The foundation’s annual Healthy Mind Body Charity Walkathon, cosponsored and hosted by Seton Hall University, includes a 10-lap walk, as well as a full day of family activities. Mentor Day annually pairs students with a career professional. At roundtable discussions, students learn from professionals including engineers, physicians and nurses, architects, journalists, and small-business entrepreneurs. “You can’t be inspired by what you can’t see,” says Dr. Davis.

“We’re having the time of our lives,” says Dr. Jenkins. “We invite kids from the neighborhood and across the tristate area to come visit the college campus. They need to see that it’s not the way other kids told them: ‘You can’t keep up. You won’t fit in. You’d have to change once you get there. You can’t afford it. You’ll end up back here anyway.’ We take the fear away and push them along, the way we pushed each other.” **M**



Breaking New Ground in Disaster Preparedness:

Student-Faculty Collaboration Leads to Seminal Publication

During the spring semester in 2014, as an outbreak of Ebola virus disease in West Africa filled the news, the first-year class at Robert Wood Johnson Medical School attended a talk on biological threats, bioterrorism, and disaster preparedness. The presentation would significantly influence and expand the educational involvement of seven of the students.

The talk is given annually by Clifton R. Lacy, MD '79, distinguished professor of professional practice, Rutgers School of Communication and Information; clinical professor of medicine, Robert Wood

Johnson Medical School; and director, Institute for Emergency Preparedness and Homeland Security, Rutgers University. Every year, at the conclusion of his presentation, Dr. Lacy invites students in the audience to contact him if they are interested in engaging in a project related to emergency preparedness and disaster response. As usual, Dr. Lacy's suggestion brought a group of students to the front of the room to meet him and arrange a follow-up meeting to discuss their interest in working on a project to improve disaster response. The group included Rima Patel, MD '17; Kapil Wattamwar, MD '17; Jaya Kanduri, MD '17; Megan Nahass, MD '16;

BY KATE O'NEILL

Justin Oh '18; Parth Shukla, MD '17; and Jennifer Yoon '18.

“Dr. Lacy’s presentation was fascinating and relevant to current events,” recalls Dr. Patel. “When we approached him, he was open and welcoming, and we hoped he would take us on as a mentor.”

Dr. Lacy and his colleagues at Rutgers had been studying first responders’ “willingness to work” (WTW)—that is, to adhere to roles and responsibilities in the face of various forms of hazards, threats, and disasters.

After extensive discussion with Dr. Lacy, the students formed a research team to pursue an innovative project evaluating preclinical medical, nursing, and pharmacy health care students’ willingness to work during different kinds of infectious disease outbreaks. A comprehensive review of the literature revealed that their research would break new ground.

Although all the students on the team had significant participation in the research, Dr. Patel and Dr. Wattamwar took the lead in shepherding the project to conclusion.

Publication in the Scientific Literature: A Goal from the Start

Over the next two years, under Dr. Lacy’s mentorship, the students’ interest evolved from an idea to an in-depth research project to a published paper.

The team made journal publication their ultimate goal. They hoped that their findings and conclusions, shared with the wide audience of readers in the fields of disaster medicine and emergency preparedness, could improve future capabilities to respond to infectious disease outbreaks and other disasters.

They chose to submit the article to *Disaster Medicine and Public Health Preparedness*, published by the U.K.-based Cambridge Journals.

“We selected this journal for its breadth of readership and its impact,” says Dr. Wattamwar. “It is widely read internationally by researchers, educators, and practitioners in the area of preparedness and response.”

Last spring, the team learned that the journal had accepted their article for publication. On June 19, “Health Care Student Knowledge and Willingness to Work in Infectious Disease Outbreaks” was published online, with Dr. Patel and Dr. Wattamwar as lead authors, Dr. Lacy as senior author, and the five additional researchers as coauthors.



STEVE HOCHSTEIN

“A unique feature of this research was that, unlike many projects in which students are given a subsidiary role, the student team, with appropriate faculty supervision, developed the concept, performed the project, analyzed the results, and wrote and submitted the paper,” says Dr. Lacy. “From start to finish, this was *their* project.”

Designing and Implementing the Research

The study centered on the WTW of preclinical students at three schools of Rutgers Biomedical and Health Sciences: Robert Wood Johnson Medical School, Rutgers School of Nursing, and Ernest Mario School of Pharmacy.

In the face of a disaster, health care students may be called on for duties and responsibilities when the need for responders exceeds the supply. Equally important, understanding the determinants of WTW in students during their formative educational years may significantly affect the future response workforce.

Because the study involved human subjects, Rutgers



Jaya Kanduri, MD '17



Megan Nahass, MD '16



Justin Oh '18



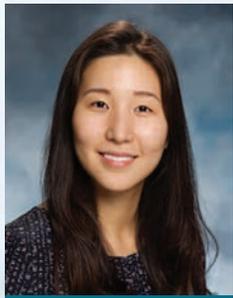
Rima Patel, MD '17



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“A unique feature of this research was that, unlike many projects in which students are given a subsidiary role, in this project, with appropriate faculty supervision, the student team developed the concept, performed the project, analyzed the results, and wrote and submitted the paper,” says Clifton R. Lacy, MD '79 (facing page). “From start to finish, this was *their* project.”

Institutional Review Board (IRB) approval was required prior to the start of the project. The student team developed the research protocol and prepared the necessary documentation for IRB review.

The study was designed to evaluate WTW in the face of outbreaks of infectious diseases with contact transmission—Ebola virus disease (EVD)—versus respiratory transmission—Middle East Respiratory Syndrome (MERS).

Students' WTW was evaluated by a questionnaire distributed to 671 students at the three schools. Students were given adequate time to complete the inventory at the beginning of class, producing an outstanding 92 percent response rate.

WTW was measured as the highest hypothetical mortality rate of an infectious disease transmitted by contact or respiratory routes for which the student would still be willing to adhere to work roles and responsibilities. In addition, the questionnaire elicited the reasons behind the reported WTW, such as personal safety and risk to family, assessed the respon-

dents' knowledge of EVD and MERS, and identified their prior experience as a first responder.

Analyzing the Data and Characterizing the Findings

The student research team analyzed the sample as a whole and by individual health care field—medicine, nursing, and pharmacy. Overall, students were less fearful for their health and more willing to work during infectious disease outbreaks with contact transmission than during disease outbreaks transmitted via the respiratory route.

Medical students expressed the greatest WTW, followed by nursing students and then pharmacy students. Medical students were the most fearful for their health and also the most knowledgeable about infectious diseases. Prior disaster training was associated with greater WTW across the entire group of questionnaire respondents.

Willingness increased with relevant disease-related knowledge and prior training, along with the assurance that there would be appropriate personal protective equipment to keep them safe from infection. It is important to note that, of the three schools, only the medical school provided curriculum content, albeit minimal, in disaster preparedness and response.

Important Conclusions

This study was the first published in the scientific literature to directly compare WTW among students of medicine, nursing, and pharmacy. The results suggest that, if an infectious disease outbreak—contact- or respiratory-transmitted—were to occur, medical, nursing, and pharmacy students would be willing to work in situations of highly lethal illness. This willingness is dependent on the extent of their knowledge of the disease and the availability of personal protective equipment.

A small minority of health care schools incorporate disaster preparedness and response into their curricula. The authors hope that publication of the results of this study will serve as motivation nationally to incorporate more disaster education into health care curricula. “Rima and Kapil and their student research team colleagues are to be congratulated for taking this project from concept to completion,” says Dr. Lacy, “and for finding and disseminating results that may influence health care education across the country and, ultimately, our nation's preparedness to respond to disasters.”

Two of the students will graduate in May, while the others are now immersed in their postgraduate training. Meanwhile, new teams of health care students are already working with Dr. Lacy on novel projects to advance disaster preparedness and response. **M**

NANCY WALWORTH, PhD

The Lure of Pure *Discovery*: Career Options for Women in STEM

“**Science** always attracted me, because I love discovering new things,” says Nancy Walworth, PhD, professor and interim chair, Department of Pharmacology. Dr. Walworth is one of an increasing number of women drawn to and finding opportunities in the formerly male-dominated fields of science, technology, engineering, and mathematics (STEM).

As an undergraduate at the Massachusetts Institute of Technology, she found that a fascination with cell biology replaced her initial interest in biomedical engineering. “It may take years, but small observations often find their place in big puzzles,” says Dr. Walworth. As a doctoral student at Yale University, she became intrigued with the use of mutant yeast to study basic cellular pathways. She still uses this approach to pursue related cell cycle research, begun as a postdoctoral fellow at Cold Spring Harbor Laboratory.

During her fellowship, Dr. Walworth identified the Chk1 protein kinase. The finding was a turning point in elucidating mechanisms by which cell cycles are checked in response to DNA damage. Fortuitously, the finding came at a time when her field was becoming promising for the development of possible targeted treatment for cancer.

BY KATE O’NEILL • PORTRAITS BY JOHN EMERSON



An Exciting Time for Science— and Women in STEM

In 1994, after a year of research at the Netherlands Cancer Institute in Amsterdam, Dr. Walworth joined the Robert Wood Johnson Medical School faculty, recruited by Leroy Liu, PhD, then professor and chair, Department of Pharmacology. It was an excellent fit. “Dr. Liu was really excited about science, and the school was an exciting place,” she says. “[There were] lots of new ideas in a very supportive environment, where you could grow and succeed, with mentors whose advice and leadership styles balanced each other.”

Dr. Walworth was attracted to the school, in part, by the unusually large proportion of senior women faculty; many were to become respected mentors and friends. “They were very clear about the importance of making connections with other women leaders at the medical school,” she says, recalling the support of Norma Saks, EdD, professor of psychiatry, assistant dean for educational programs, and director, Cognitive Skills Program; Margaret Brostrom, PhD, professor of pharmacology (now retired); and Barbara Brodsky, PhD, professor of biochemistry (now retired).

Today, two-thirds of the medical school’s senior, associate, and vice deans are women, twice the national average, as reported by the Association of American Medical Colleges in 2014. Only 16 percent of the nation’s medical school deans are women, and they include Sherine E. Gabriel, MD, MSc, dean, appointed in 2016.

“I don’t know that the medical school consciously decided to increase the presence of women on the faculty, but there’s no question that we are building departments and excelling in administrative roles,” says Dr. Walworth. This should encourage younger women, she adds, especially graduate and post-graduate students questioning their ability to commit to a career in academia.

A Deep and Wide Dedication to Science

Dr. Walworth’s mentors warned her not to get overly involved in administrative responsibilities or spread herself too thin—something women tend to do, she says. “I guess that advice didn’t stick,” she adds with a laugh.

In 2011, when Dr. Liu went on sabbatical, Dr. Walworth was appointed acting chair; the following year, she was named



interim chair. “It’s been challenging, but a great opportunity,” says Dr. Walworth, who has strived to create new opportunities for scientists, while encouraging and nurturing a vibrant and collaborative scientific community. “There are a lot of good ways to contribute to science, and they all help you avoid burnout,” says Dr. Walworth. “They include being a mentor to colleagues and students and helping young scientists find environments where they’ll succeed.”

In 2008, she was named a fellow of the American Association for the Advancement of Science, which she describes as “a vital and much-needed voice for science.” Currently, she chairs a National Institutes of Health (NIH) Special Emphasis Panel, where she reviews pre- and postdoctoral fellowships. She has served on the editorial boards of the *Journal of Biological Chemistry* and *Science Signaling*, and she was an active contributor to the Stuart D. Cook, MD, Master Educators’ Guild. Dr. Walworth has received two Excellence in

Teaching awards for her contributions to graduate education: from the UMDNJ Foundation in 2010, and from the New Jersey Health Foundation in 2014.

For eight years, Dr. Walworth chaired the second-year course directors committee. In addition, she was closely involved with the medical school's Curriculum 2010 study, which helped reframe the first- and second-year curriculum as a multidisciplinary, systems-based approach. Led by Siobhan Corbett, MD '87, associate professor of surgery and chair, Curriculum Committee, the task force included Carol A. Terregino, MD '86, associate professor of medicine and now senior associate dean for education; and Laura Willett, MD, now professor of medicine and an education leader in the Department of Medicine.

Dr. Walworth serves as co-director of Rutgers Graduate Programs in Molecular Biosciences and is widely respected and appreciated for her work at that level. "Nancy is super competent. She cares about community on many levels and sees to it that our graduate students are mentored well," says James Millonig, PhD, associate professor of neuroscience and cell biology, senior associate dean at Rutgers School of Graduate Studies, assistant dean for medical scientist training at Robert

Wood Johnson Medical School, and director of the joint MD/PhD program at the medical school and Princeton University.

"Nancy has served on an unbelievable number of PhD advisory committees," says Cheryl F. Dreyfus, PhD, professor and chair, Department of Neuroscience and Cell Biology. "She has a great ability to take in lots of data, evaluate a situation, and make thoughtful suggestions that help our graduate students decide their next move."

Dr. Dreyfus, who joined the faculty in 1990, was appointed interim chair in 2006, succeeding

the late Ira Black, MD, professor and chair, Department of Neuroscience and Cell Biology. Three years ago, she was appointed chair, making her the second woman to chair a basic science department at the medical school.

Dr. Dreyfus serves on the Appointments and Promotions Committee with Dr. Walworth and says, "People listen to Nancy—she's calm, considerate, and insightful. She under-

stands better than anyone not only the criteria for individual appointments and promotions but also how the committee's decisions fit into the evolution of the school."

Career Alternatives for Women in STEM

“Women have always been good at science and math, but traditionally, they were not encouraged to enter scientific careers,” says Dr. Walworth. Instead, her

mother and other girls of that generation who excelled in these areas were often steered toward nursing or teaching. Just one generation later, however, the number of women entering medical school and biological PhD programs is approximately equal to the number of men.

"Perceptions of science have changed. It's no longer pictured as an isolating career, with one scientist alone at the bench," says Dr. Walworth. "Labs are social and collaborative, an environment that appeals to many women. Successful research depends on a team with good, interactive communication skills and people who can multitask, think in broad terms, and periodically change direction."

"Women and minorities tend to be more community-based," says Dr. Millonig. "In my experience, women are better than men at listening to other points of view. It's not only healthy but also critically important to have that approach in a school that values science."

He adds, "Still, in academia, at each successive level, women are dropping out as they face the challenge of balancing career and family."

"Academic careers can be flexible, but faculty who hold full-time, tenure-track positions must give their career constant attention," says Dr. Walworth. "If you step back, you won't be able to keep up in your field. For women with children, professional success and the ability to have a full family life depend on having a good support network, at work and at home."

Fortunately, career choices have grown enormously, offering PhD candidates and medical students new options in fields such as technology transfer, writing for the communication divisions of drug companies, or working with the U.S. Food and Drug Administration.

"In the MD/PhD program, we discuss these questions freely," says Dr. Millonig. "What's the best time to start a family? How can you attain flexibility for your career and family?" And we include the men in the discussions; it's important for them to understand the issues too."

Dr. Millonig and Martin Yarmush, MD, PhD, Paul and Mary Monroe Chair and Distinguished Professor of Biomedical

“Perceptions of science have changed. It's no longer pictured as an isolating career, with one scientist alone at the bench," says Nancy Walworth, PhD (left). "Labs are social and collaborative, an environment that appeals to many women. Successful research depends on a team with good, interactive communication skills and people who can multitask, think in broad terms, and periodically change direction."

Engineering at Rutgers, serve as directors of Rutgers' Interdisciplinary Job Opportunities for Biomedical Scientists (iJOBS) program, implemented through a \$1,937,000 grant from the NIH. The program, which is open to all PhD and postdoctoral candidates in the life sciences at Rutgers, has been especially popular among women. Its three executive directors include Janet Alder, PhD, associate professor of neuroscience and cell biology and assistant dean for graduate academic and student affairs, Rutgers School of Graduate Studies.

Because their training follows an academic model, students in the life sciences might presume that they are destined for a career in academia, says Dr. Millonig. iJOBS, however, provides broad exposure to options in nonacademic fields, offering a mix of formal academic instruction and workshops, shadowing opportunities, and mentoring by professionals from outside academia.

Women Building STEM-Related Careers

Dr. Walworth has mentored 18 graduate and postgraduate students or fellows, including many women. She mentions three who exemplify the versatility of careers in STEM.



COURTESY OF CHERISE BERNARD, PHD

Cherise Bernard, PhD

While earning her doctoral degree in cellular and molecular pharmacology in Dr. Walworth's lab, Dr. Bernard completed the Rutgers Mini-MBA: BioPharma Innovation program and interned in Rutgers' Office of Research Commercialization, learning about scientific licensing, marketing, and entrepreneurship.

Dr. Bernard went on to apply her scientific training to innovation and program development at other research-intensive universities, first at the Rockefeller University and then at the Icahn School of Medicine at Mount Sinai. In her most recent reinvention, Dr. Bernard works for Elsevier, a health analytics company and publisher of science and health research. Initially in the United States, and now globally, her team meets with institutional leadership to develop strategies to "fill in their gaps," she says, citing as examples helping scientists early in their careers to collaborate better, reach solutions faster, and make their research more visible.

Dr. Bernard also volunteers for "1000 Girls, 1000 Futures," a New York Academy of Sciences initiative that pairs teenage girls from around the world who are interested in STEM with outstanding women scientists who serve as their mentors.

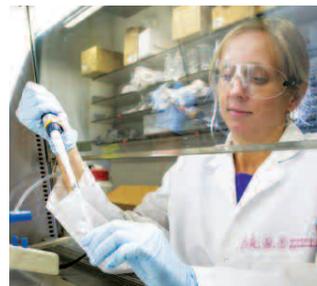
"Innovation requires strength and resilience, but also nurturing, and women are very good at that," she says. Professionally and as a volunteer, she feels Dr. Walworth's influence more than any other. "She is compassionate, nurturing, and always available. This is how I operate with colleagues, and I learned it from her."

Barbara Dul, PhD

Dr. Dul completed her doctoral work in Dr. Walworth's lab, using fission yeast to explicate the role of chromatin in response to DNA damage to cells. As an American Cancer Society fellow, she did postdoctoral work in the laboratory of James Broach, then professor of molecular biology at Princeton, and later joined the laboratory of Thomas Muir, PhD, Van Zandt Williams, Jr., Class of 1965, Professor and chair, Department of Chemistry, as a senior researcher.

In addition to continuing her research, Dr. Dul serves as Dr. Muir's laboratory manager, supervising a team of 25, while enjoying a flexible schedule that allows her to spend more time with her children.

"At several pivotal points, Nancy was my adviser on science and on life," she says of Dr. Walworth. "She could explain the most difficult scientific topics as easily she talked about life outside the lab. She helped me see every aspect of a question, all the pros and cons, and let me decide what was best."



COURTESY OF BARBARA DUL, PHD

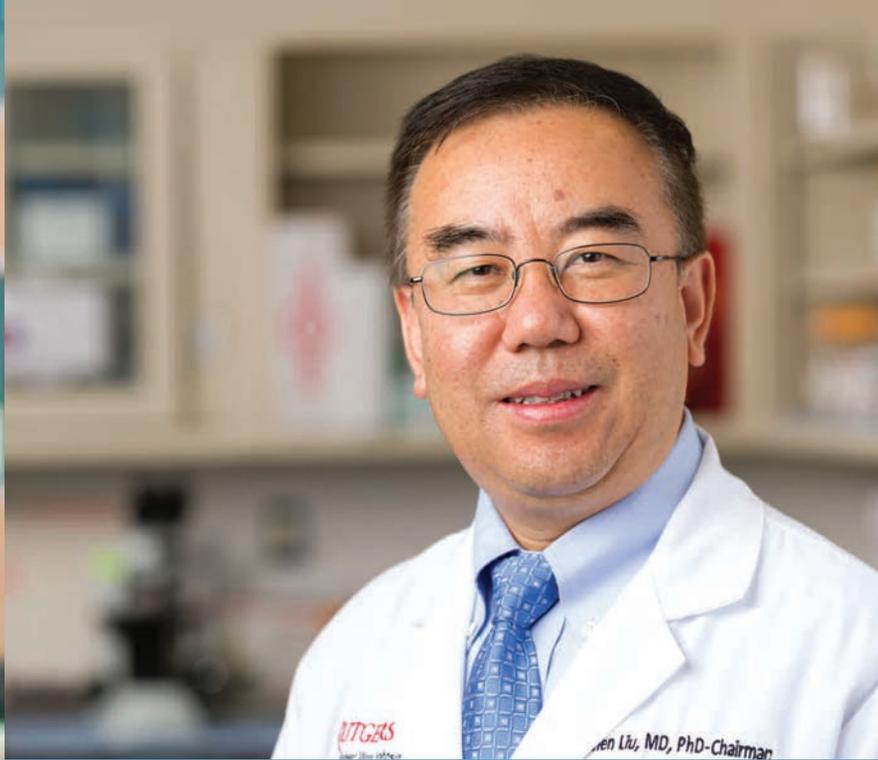


STEVE HOCKSTEIN

Anuja George, PhD

As Dr. Walworth's administrative responsibilities increased, she recruited a scientist to manage the lab. In addition, she changed the makeup of the lab team to include a balance of graduate students and undergraduates, the latter working under the guidance of Dr. George, the lab's senior scientist since 2012.

Dr. George earned her doctorate in genetic engineering and biotechnology in her native India—where the government encourages women's education by subsidizing fees for girls in all government-supported schools. She then spent six years at the NIH in the fast-paced lab of Gordon Hager, PhD, studying endocrine receptors. Dr. George enthuses over being a scientist in America. "It's the best!" she says, adding that she loves her work: "mentoring, and learning from the undergraduates—and keeping the yeast cells alive." **M**



Dual Chairs with a Singular Vision

■ BY LYNDA RUDOLPH

“Ultimately, this is about connecting people, services, and missions in a cost-effective manner. Broadening opportunities for trainees, developing different types of thinking that ultimately benefits patients—all of which are advantages,” says **Subayl Dhib-Jalbut, MD**, professor and chair, Departments of Neurology, Robert Wood Johnson Medical School and New Jersey Medical School (right), with fellow dual chairs **Chen Liu, MD, PhD**, professor and chair, Departments of Pathology and Laboratory Medicine, Robert Wood Johnson Medical School and New Jersey Medical School (above right), and **Bruce Haffty, MD, MS**, professor and chair, Departments of Radiation Oncology, Robert Wood Johnson Medical School and New Jersey Medical School (above left).





JOHN EMERSON

Two jobs. Two organizations. Two locations. Multiple challenges. Playing dual roles as department chairs at both Rutgers medical schools can be daunting. Three Robert Wood Johnson Medical School professors are doing just that and proving there are also benefits to the dual chairs. Above all, they're sensing a synergy in purpose that is igniting ideas and creating a more inclusive environment for faculty, students, clinicians, and the communities they serve.

Suhayl Dhib-Jalbut, MD

Suhayl Dhib-Jalbut, MD, professor and chair, Departments of Neurology, Robert Wood Johnson Medical School and New Jersey Medical School (*above*), sees advantages from several perspectives. On the clinical side, the strengths of one school can now be used to satisfy needs in the other. For example, deep brain stimulation for Parkinson's disease at Robert Wood Johnson Medical School helped to enhance the program at New Jersey Medical School. The long-standing muscular dystrophy clinic at New Jersey Medical School now has a presence at Robert Wood Johnson Medical School—Muscular Dystrophy Association certification was granted for both campuses.

More recently, when the stroke and multiple sclerosis (MS)

clinical programs at New Jersey Medical School needed coverage, faculty from the other medical school stepped in. "Collaboration is happening more and more every month," says Dr. Dhib-Jalbut.

On the education side, increased collaboration between the two schools also has resulted in a combined stroke fellowship and reciprocated elective time for residents at each location where a particular clinical experience is stronger. In the area of research, there is more meeting of the minds on different specific disease conditions such as MS, Alzheimer's disease, and epilepsy. The biggest benefit may be in clinical trial enrollment when a specific population of patients is required.

“When you have two practice locations to draw from within that subspecialty, it’s more feasible to recruit patients for those trials,” Dr. Dhib-Jalbut explains.

With two medical schools within Rutgers, another advantage is recruitment and retention of faculty. In one instance, they were able to retain a faculty member within Rutgers who had decided to relocate, by offering him the opportunity to work at the sister school.

There are some drawbacks. “Distance between the two medical schools is not trivial,” says Dr. Dhib-Jalbut. For him personally, that means several hours of commuting a week. Another issue is coordinating meetings and avoiding scheduling conflicts—but the deans have helped to minimize such conflicts.

“Whether dual chairs will work for large-size departments remains to be seen,” Dr. Dhib-Jalbut says. “But dual division directors is more realistic, in my view.”

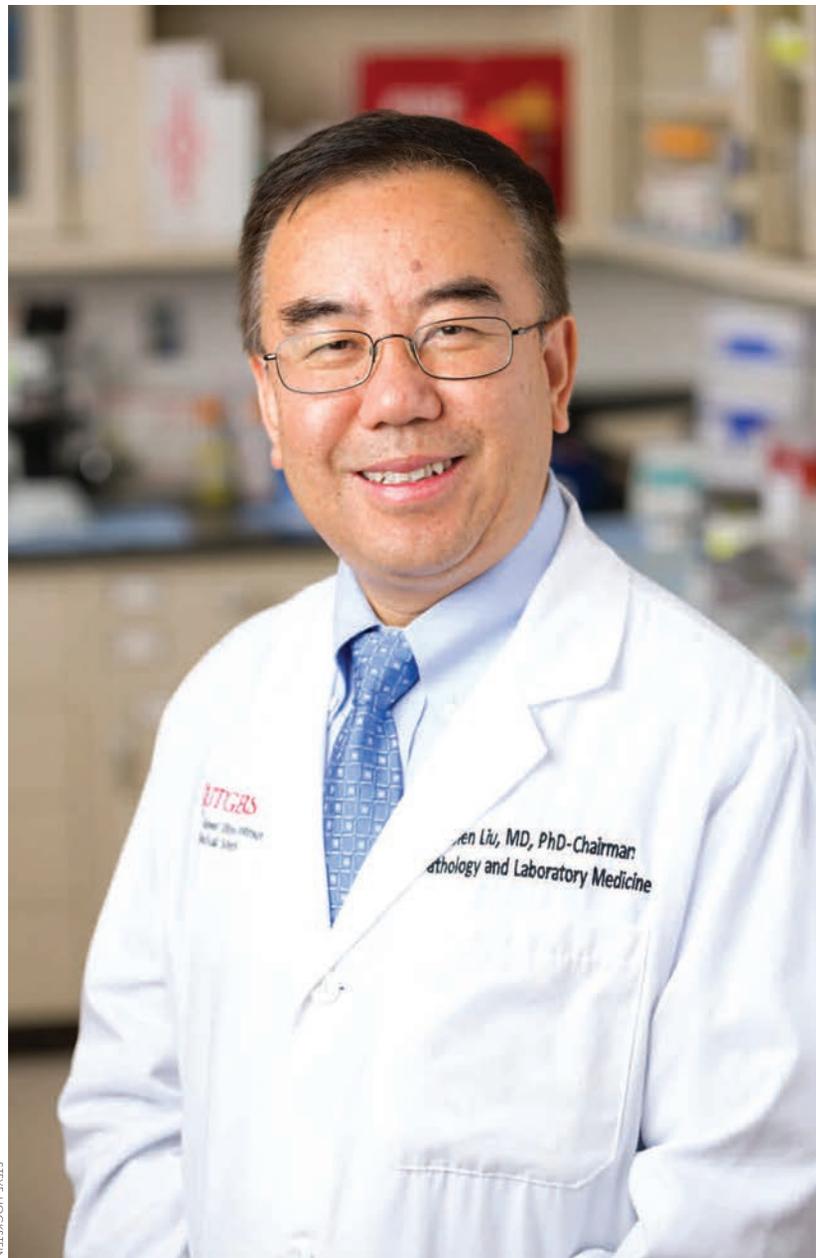
In the future, Dr. Dhib-Jalbut sees the joint chair as an opportunity to develop service lines that offer cutting-edge patient care and clinical research across the state. “Ultimately, this is about connecting people, services, and missions in a cost-effective manner,” he says. “Broadening opportunities for trainees, developing different types of thinking that ultimately benefits patients—all of which are advantages.”

In the end, the success of a dual chair/director structure will depend on faculty and leadership jointly committed to the idea, backed by investment and resources that incentivize collaborative initiatives. Whether the whole will be greater than the sum of its parts will eventually be measured by quantitative outcomes relevant to the Rutgers Biomedical and Health Sciences mission.

Chen Liu, MD, PhD

Chen Liu, MD, PhD, professor and chair, Departments of Pathology and Laboratory Medicine, Robert Wood Johnson Medical School and New Jersey Medical School (*right*), knows, as we all do, that change is inevitable. And in health care, change is often rapid and unpredictable. “We have to convince everyone to embrace change and be proactively thinking about how to build a better system in this new paradigm,” says Dr. Liu. He believes that the dual chair role he plays can be good for the students he teaches, the patients he serves, and the profession as a whole.

Like Dr. Dhib-Jalbut, Dr. Liu sees the opportunity to use the strengths and weaknesses of both schools to complement each other. The schools each have a long history and respected legacy. They have their own way of doing things, along with different cultures, missions, and even patient populations. “Merging all of those differences—and getting everyone on the same page—



STEVE HOOKSTEIN

is where there is tremendous potential,” he says.

The possibilities are ready and waiting to become reality. Goals include creating more efficiencies in the clinical service delivery system and providing better opportunities for education and research. Dr. Liu admits they will take some time. But they will eventually become advantages for both institutions.

There is a greater potential, in Dr. Liu’s eyes, for what he calls systemic chairs. “Every health system is looking for efficiencies, facing the same dynamic to keep growing,” he says. Helping to grow a program into a bigger one benefits both schools. So do sharing expertise, standardizing processes, reducing duplications, reducing the waste of resources, and, in general, unifying leadership. “We can do more than individual departments can do working this way,” Dr. Liu says optimistically.

Bruce Haffty, MD, MS

The dual chair role for Bruce Haffty, MD, MS, professor and chair, Departments of Radiation Oncology, Robert Wood Johnson Medical School and New Jersey Medical School, and chief of staff, Rutgers Cancer Institute of New Jersey (*below*), was created strictly because of need. “One of the priorities at Robert Wood Johnson Medical School was



to develop a residency program for radiation oncology,” Dr. Haffty says. When he arrived in 2005, there was very little research, minimal education, and no training in that discipline. “To start a residency program, you have to make sure all residents have all training they need in appropriate sites—for example, GYN, breast, head and neck, and brain,” he adds. Where Robert Wood Johnson Medical School was lacking—in head and neck cancer—New Jersey Medical

School was strong. So it made sense to develop a way for residents to go there for training. That was the reason a relationship started between the two campuses.

Shortly after that, the two radiation oncologists at New Jersey Medical School expressed an interest in merging the departments. With just two physicians at the Newark campus, and with Robert Wood Johnson Medical School increasing its presence in radiation oncology, they suggested creating one big department that encompassed both schools. Dr. Haffty approached Peter S. Amenta, MD, PhD, then dean of Robert Wood Johnson Medical School, who supported the idea, and in 2009, the joint department was formed—with Dr. Haffty as its chair.

The interspersing of staff and students happened organically. Now medical students from either school can go to both facilities to experience the unique case mix at each. The Newark campus tends to have more advanced-stage cancers and patients with socioeconomic issues compared to the New Brunswick campus. At both facilities, students learning physics get hands-on experience with a broad spectrum of equipment. And in research, as Dr. Dhib-Jalbut mentions, clinical trials can be more robust because of the patient population both facilities serve.

“There are pros and cons, particularly when it comes to efficiency,” says Dr. Haffty. When recruiting physicians, Dr. Haffty prefers them to practice in both locations. But living where it’s convenient can be a challenge. He’s been successful growing staff at both medical schools as well as at the Rutgers Cancer Institute of New Jersey. When Dr. Haffty became chair, there were five physicians, two physicists, and no basic science faculty. Currently there are 14 clinical faculty, 12 physicists who are faculty, and five basic science faculty.

Overall, Dr. Haffty believes that the dual role he plays—and the merging of the two departments—was a smart move. “This was very doable for us since the department is relatively small. We’re much better being one big department in two places,” he says. “It really, really works for us.”

Is the Dual Chair Strategy a Trend?

The dual chairs agree that sharing resources, faculty, and students not only creates efficiencies, it also broadens the educational and clinical experience. This isn’t always feasible. Not every medical school has another within a reasonable geographic distance to have this type of collaborative relationship.

One thing is clear: teaching, working, or learning in an environment with so much patient diversity and clinical exposure can be enlightening for everyone involved. **M**

R W J M S NEWS

Welcome, Class of 2021!

Dean Sherine E. Gabriel, MD, MSc, welcomed 170 new medical students as part of the Class of 2021 at Robert Wood Johnson Medical School's annual White Coat Ceremony.

will be worn throughout the four years of medical education. At the conclusion of the ceremony, the



PHOTOS BY: STEVE HOCKSTEIN

“As you don your white coat for the very first time, please understand that the coat represents the respect that you have for yourself, for others, and for the profession of medicine.” — *Dean Sherine E. Gabriel, MD, MSc*

The ceremony culminates the weeklong orientation and signifies the students' entrance into the medical profession.

Surrounded by family and friends, and assisted by a faculty member, each student was helped into his or her white coat, which

students recited the Hippocratic Oath, beginning their journey to becoming physicians.

“As you don your white coat for the very first time, please understand that the coat represents the respect that you have for yourself, for others, and for the profession of medicine,” said Dean Gabriel. “I ask you to remember that each and every time you place it on your shoulders—five, 10, or even 50 years from today.”

The keynote address was given by **Ephrem O. Olweny, MD**, assistant professor of surgery, who specializes in endourology and minimally invasive surgery. ■

Medical School Receives Joint Commission Accreditation



Robert Wood Johnson Medical School is proud to announce that The Joint Commission (TJC) granted our organization accredited status for Ambulatory Health Care. TJC is a prestigious organization that accredits nearly 21,000 health care organizations in the United States, in recognition of the high-quality, safe care they provide to patients. The journey that the medical school undertook to obtain Joint Commission Ambulatory Accreditation was transformational and benchmarked its clinical practice to nationally recognized standards.

The medical school is proud to be recognized as a leader in clinical care, providing palpable evidence of the high-quality health care of its clinical practice—a major accomplishment as it seeks to transform health care in New Jersey and put *Patients First!* ■

Dr. Sally Radovick Named Chair of Pediatrics

Sally Radovick, MD, professor of pediatrics and senior associate dean for clinical and translational research, was named chair, Department of Pediatrics, effective June 1, 2017.

Dr. Radovick joined Robert Wood Johnson Medical School in 2015, and she was also named a chancellor scholar at Rutgers Biomedical and Health Sciences. During her tenure, Dr.

Radovick formed collaborative research groups consisting of faculty members across a spectrum of expertise to facilitate successful investigator-initiated and training grant submissions and to mentor junior colleagues.

Under Dr. Radovick's leadership, clinical trials increased by more than 50 percent and investigator-initiated protocols more than doubled. In addition, she led the development of a metabolomics core as a cooperative venture by the medical school, Rutgers Cancer Institute of New Jersey, and Princeton University. Dr. Radovick has been instrumental in the creation of the new state-of-the-art adult Clinical Research Center facility located in Robert

Wood Johnson University Hospital. In addition, she supported the successful submission of the Accreditation Council for Graduation Medical Education fellowship training program in pediatric endocrinology for the medical school in March 2016.

An expert in pediatric growth and development disorders, Dr. Radovick focuses her research program on steroids that control sexual maturity and reproduction, as well as on neurotransmitters and growth factors. Her laboratory has elucidated some of the factors that control gonadotropin-releasing hormone (GnRH) gene expression and the intracellular signaling pathways within the GnRH neuron and has demonstrated that the GnRH gene is the target of growth factor and nuclear hormone signaling pathways, which link nutrition and growth with pubertal development and reproduction. ■



Sally Radovick, MD

Grant Supports Study of Genetic Causes for Mental Illness

The "Paisa" population, native to a region in northwestern Colombia, has far greater rates of suicide than average. A consortium of investigators that includes **Javier I.**

Escobar, MD, professor of psychiatry and family medicine and associate dean for global health, who grew up in this region and will serve as a key link between the U.S. and Colombian researchers, was recently awarded a \$5.5 million research grant by the National Institute of Mental Health (NIMH) to study the relationship between genetics and behavioral

disorders in the Paisa population. Dr. Escobar believes that a better understanding of the origins of mental illness will lead to enhanced and more personalized treatment for patients around the globe.

The Paisa population is considered a "genetic isolate" because the people have been living in the same area for generations, have a high frequency of marrying within the extended family, and show unique genetic characteristics, all of which facilitate studies. Large genetic studies like this are limited in the United States, which rarely has specific

populations remaining in the same location over long periods of time, thus helping to determine which factors are environmental or genetic.

The grant, titled "Colombia-US Cross Disorder Collaboration in Psychiatric Genetics," will study 8,000 members of the Paisa population who suffer from severe mental disorders, with a group of 2,000

Paisa individuals without mental illness used for comparison. Researchers will work with physicians at the hospital in Manizales to assess symptoms, traits, and markers of severe mental disorders, which will then be traced to specific genetic markers.

"Mental illness diagnoses are too broad for effective treatment," says Dr. Escobar. "Our study will help determine symptoms that are more predictable and measurable, and may relate to a certain genetic influence. This eventually may lead to a better way to classify patients with mental disorders and adapt treatments there in Colombia, and throughout the world." This grant is the largest RO1 award given by the NIMH this year. ■



Javier I. Escobar, MD

Medical School One of the First to Enroll Patients in Blood Safety Study

The medical school's adult and pediatric Clinical Research Centers (CRCs) are participating in a new study that looks at the safety and efficacy of pathogen-reduced blood components. The school became one of the first two in the country to enroll a patient in the Mirasol Platelets in Plasma (MIPLATE) clinical trial.

The trial is designed to

evaluate the clinical effectiveness of Mirasol-treated apheresis platelets in plasma versus standard apheresis platelets in plasma, in support of a premarket approval application for the Mirasol Pathogen Reduction Technology System. The three-and-a-half-year, multi-center, controlled, randomized study involves patients who have hypoproliferative thrombocytopenia—a condition char-



JOHN EMERSON

Jeffrey L. Carson, MD



NICK ROMANENKO

Richard A. Drachtman, MD

acterized by low platelet count in individuals with compromised bone marrow due to hematologic malignancies or treatments such as chemotherapy. **Jeffrey L. Carson, MD**, Richard C. Reynolds professor of medi-

cine and provost, New Brunswick, at Rutgers Biomedical and Health Sciences, is the principal investigator at the adult CRC; **Richard A. Drachtman, MD**, section chief of pediatric hematology/oncology and a resident member of Rutgers Cancer Institute of New Jersey, is the principal investigator for the pediatrics study. ■

Medical School Appointment

Leonard Y. Lee, MD '92, Appointed Senior Associate Dean for Clinical Affairs

Leonard Y. Lee, MD '92, professor and interim chair, Department of Surgery, and James W. Mackenzie MD Endowed Chair in Surgery, has been selected as the senior associate dean for clinical affairs for Robert Wood Johnson Medical School. Dr. Lee will also serve as vice president of clinical affairs of Rutgers Health Group (RHG). Dr. Lee will oversee all operations of the school's clinical practice in coordination with Rutgers Health.

Dr. Lee joined the faculty in 2012 as chief of the division of cardiothoracic surgery, a position he has continued to maintain after his appointment as interim chair three years ago. During his

tenure, cardiac surgery volume has grown nearly 50 percent, with significant improvements in quality metrics, including decreases in mortality rates, strokes, renal failure, length of stay, and readmission rates. In addition, the most recent Society of Thoracic Surgeons data revealed that the cardiothoracic surgery program has achieved a three-star rating (the highest-quality measure awarded by the society) in all areas reported—aortic valve replacement (AVR), coronary artery bypass grafting (CABG), and AVR/CABG, a distinction held by no other



JOHN EMERSON

Leonard Y. Lee, MD '92

program in the state.

Under his leadership, division care has been standardized and a new cohesiveness and transparency throughout the division and department overall have yielded a true sense of team-driven health care, with improved financial success each year and increased productivity, expanded clinical services, minimal faculty attrition, and exceptional care.

Dr. Lee has maintained productivity in research, education, and clinical responsibilities, with nearly 200 published articles and abstracts, an RO1 and AHA grant currently in prepara-

tion for submission, and continued high reviews as a mentor and educator.

Dr. Lee completed residency training in general surgery at St. Vincent's Hospital in New York, where he served as chief resident. He performed a research fellowship at New York–Presbyterian Hospital/Weill Cornell Medical Center that focused on gene therapy research for the treatment of cardiovascular diseases, culminating in a National Heart, Lung, and Blood Institute–sponsored human trial. His clinical cardiothoracic fellowship was at New York–Presbyterian Hospital/Weill Cornell Medical Center and at Memorial Sloan Kettering Cancer Center. ■

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 Robert Wood Johnson Medical School faculty:

- **Wenwei Hu, PhD**, associate professor of radiation oncology, a five-year, \$1,816,530 grant for “The Role of Chronic Stress in Regulation of Mutant P53 and Tumorigenesis.”
- **Steven K. Libutti, MD**, professor of surgery, director, Rutgers Cancer Institute of New Jersey, and vice chancellor for cancer programs, Rutgers Biomedical and Health Sciences, a one-year, \$2,651,316 supplement for the P30 Cancer Center Support Grant.
- **M. Maral Mouradian, MD**, William Dow Lovett Professor of Neurology, and Russell E. Nicholls, PhD, assistant professor of pathology and cell biology, Columbia University, a five-year, \$1,908,819 multi-PI grant for “PP2A Dysregulation in the Pathogenesis of Alpha-Synucleinopathies.”
- **Mladen-Roko Rasin, MD, PhD**, associate professor of neuroscience and cell biology, a five-year, \$1,695,163 competitive renewal for “The Role of First Neocortical RNA-Operon in Specification of Neocortical Projection Neurons.”

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

- **Nina Cooperman, PsyD**, associate professor of psychiatry, a five-year, \$3,200,000 grant from the New Jersey Department of Human Services, Division of Mental Health and Addiction Services, for “Opioid Overdose Prevention Network Community Services and Training.”

Published Research

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

- **Saqib Baig, MD**, a fellow in the division of pulmonary and critical care medicine, was first author of “The Long-Term Oxygen Trial, Asthma-Chronic Obstructive Pulmonary Disease Overlap Syndrome, and Collaborative Management of Sleep Disorders,” published in the *American Journal of Respiratory and Critical Care Medicine* May 15, 2017:195(10):1394–1396. **Sabiha Hussain, MD '95**, assistant professor of medicine, was senior author.
- **Theresa C. Barrett**, an MD/PhD candidate who recently completed her doctoral work in the laboratory of Mark Brynildsen, PhD, associate professor of chemical and biological engineering, Princeton University, was first author of “Biased Inheritance Protects Older Bacteria from Harm,” published in *Science* April 21, 2017:356 (6335):247–248.
- **Allison Cabinian, MD**, a fellow in the laboratory of **Fredric Wondisford, MD**, professor and chair, Department of Medicine, and chancellor’s scholar, was first author of “Gut Symbiotic Microbes Imprint Intestinal Immune Cells with the Innate Receptor SLAMF4 Which Contributes to Gut Immune Protection against Enteric Pathogens,” published by *Gut* <https://www.ncbi.nlm.nih.gov/pubmed/28341747> March 24, 2017. (Epub ahead of print.) **Amale Laouar, PhD**, assistant professor of surgery, was senior author of the article.
- **Monica Chow, MD '13**, a resident in the Department of Surgery, was first author of “The Role of Bile Acids in Nonalcoholic Fatty Liver Disease and Nonalcoholic Steatohepatitis,” published in *Molecular Aspects of Medicine* August 2017:(56): 34–44. (Epub ahead of print May 5, 2017.)
- **Michael J. MacKenzie, PhD**, associate professor of social work, Rutgers University, clinical associate professor of pediatrics, Robert Wood Johnson Medical School, and chancellor’s scholar for Child Well-being, was first author of “Separating Families at the Border: Consequences for Children’s Health and Well-Being,” published in the *New England Journal of Medicine* June 15, 2017:376(24):2314–2315.
- **Maria K. Mateyak, PhD**, instructor of biochemistry and molecular biology, was first author of “Breaking the Silos of Protein Synthesis,” published in *Trends in Biochemical Sciences* June 2017. (Epub ahead of print.) **Terri Goss Kinzy, PhD**, professor of biochemistry and molecular biology and pediatrics and vice president for research administration, was senior author of the article.
- **Ekaterina Nizovtseva, PhD**, a postdoctoral researcher in the Department of Biochemistry and Molecular Biology, was first author of “Nucleosome-Free DNA Regions Differentially Affect Distant Communication in Chromatin,” published in *Nucleic Acids Research* April 7, 2017:45(6):3059–3067.



LETTER FROM THE
ALUMNI ASSOCIATION
PRESIDENT

Dear Alumni and Friends:

This year has been remarkable for the Robert Wood Johnson Medical School Alumni Association. We hosted one of the largest Career Nights in our 29-year history, introduced a new mentorship program, participated in alumni social events, grew our alumni board, and raised vital funds for student scholarships. I am honored to have served as president during this exciting time.

I invite you to be part of the new **alumni-student mentorship program**. As you know, it can be challenging to navigate the different career paths in medicine. A database has been created in which alumni can identify the ways that they would like to help current students—shadowing, researching, speaking at lectures, or providing resources for residencies and away rotations. If you are interested in being involved, I encourage you to visit rwjms.rutgers.edu/alumni/mentorship.html. This is an incredible opportunity to share your experiences with current students.

The **30th Annual Career Night** will be hosted on **March 6, 2018**, in the Great Hall on the Piscataway campus. I hope you will join us and meet our current students, represent your specialty, and network with fellow alumni. Our students are eager to learn about different types of career paths and journeys in medicine.

Next year will be historic for alumni, as 2018 is the 50th anniversary of our first graduating class. We will celebrate the **Class of 1968** and other anniversary classes, including the 45th: 1973, 40th: 1978, 35th: 1983, 30th: 1988, 25th: 1993, 20th: 1998, 15th: 2003, 10th: 2008, and 5th: 2013, at the **8th Annual Scholarship Gala**, on Saturday evening, April 7, 2018, at The Heldrich in New Brunswick. Congratulations to our alumni celebrating this important milestone. The gala raises funds for student scholarships, as does the Alumni Annual Fund. I would like to thank you for your generous contributions in the past and invite you to support the Annual Fund again this year. Please support students by mailing in a donation using the enclosed envelope, or contributing online at support.rutgers.edu/RWJMSAlumni.

The Alumni Association is a great way to keep in contact or reconnect with fellow classmates, build relationships with our students, and stay informed about events and programs at our school. If you are interested in learning more about serving on the alumni board, contact me at pfw6@rwjms.rutgers.edu or **Jillian Prior**, manager of alumni affairs, at jillian.prior@rwjms.rutgers.edu. Be sure to follow us on Facebook and Instagram ([@rwjms](https://www.instagram.com/rwjms)), and email your personal and professional updates to Jillian. We look forward to another successful year supporting Robert Wood Johnson Medical School as it continues its pursuit of excellence.

Sincerely,



Paul F. Weber, MD '87, RPh, MBA

President, Robert Wood Johnson Medical School Alumni Association



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

Elena Frid, MD '06: Working to Solve the Puzzle That Is Lyme Disease

A man who has spent five of the last 12 months in a psychiatric ward walks into the office of Elena Frid, MD '06. He is just one of the hundreds of patients searching for answers to unexplained physical symptoms. They're hoping to finally find someone who can help them discover what's really happening in their bodies.

Dr. Frid, a neurologist and clinical neurophysiologist who specializes in complex Lyme disease, is developing a national reputation for her ability to find answers when there appear to be none. Children and adults with complex cases of Lyme disease can have multiple uncontrolled headaches, dizziness, brain fog, memory problems, seizures, nerve pain, insomnia, fatigue, concentration issues, mood disorders, anxiety, and other neuropsychiatric, neurodegenerative, and neurodevelopmental issues.

"Those patients often fall through the cracks many times—exhibiting subtle physical symptoms," Dr. Frid says. "Testing can show some vague

blood abnormalities—that's the first indication." Complex neurological manifestations of Lyme disease are often masked behind other illnesses, including attention deficit hyperactivity disorder, Alzheimer's, Parkinson's disease, irritable bowel syndrome, fibromyalgia, and chronic fatigue syndrome, among others.

Dr. Frid became interested in neurology because it's one of the few fields of medicine that still heavily relies on diagnostic acumen. "Taking a patient's history, then pairing it with what you've learned from a physical exam—it's like a puzzle," Dr. Frid says.

After graduating from Robert Wood Johnson Medical School, Dr. Frid completed her internship, residency,

and fellowship at North Shore–Long Island Jewish Health System. Currently, she is the medical director of her own practice in New York, where she specializes in Lyme disease and other complex, infections-induced autoimmune disorders, as well as intractable headaches, chronic fatigue syndrome, fibromyalgia, pediatric acute-onset neuropsychiatric syndrome, and associated diseases.

Her special interest in Lyme disease was piqued shortly after Dr. Frid completed her fellowship. After just a month of practicing medicine in New York, she began to notice anomalies—patients who didn't fit into specific diagnostic criteria. "Some of these patients had seen a number of physicians, consulted with big-name institutions, and left with no diagnosis," Dr. Frid says. She began to see the signs—bloodwork and other clinical indicators—that didn't fit and extended beyond a pure psychiatric or a specific neurological diagnosis.

A passion was ignited to find answers, and it has become her life's work.

Lyme disease, according to Dr. Frid, is much more than the result of

BY LYND A RUDOLPH



COURTESY OF HENNA FRID, MD '06

a tick bite. “Lyme disease is used for lack of a better term,” she explains. “It’s really a collection of infections that results in an inflammation that becomes an autoimmune phenomenon for many patients.” Although antibiotics cure some cases of Lyme disease, many patients continue to suffer.

It’s important to know the signs. An onset of the disease begins with low-grade fever, fatigue, chills, headaches,

and joint pain. A rash can occur, but not always. People can also develop neurological symptoms that go undiagnosed for weeks or months, such as debilitating headaches, facial weakness, numbness or weakness in arms and legs, muscle aches and twitches, difficulty moving, dizziness, and nerve pain.

Dr. Frid recommends that people who work or play outdoors recognize the threat of Lyme disease and dress appropriately: wear long-sleeve shirts,

socks, light-colored clothing, and closed-toe shoes. In fact, Dr. Frid created a product to protect her own kids, DrFrid kidswear, a lightweight, soft, odorless, breathable jacket and pants pretreated with insect repellent technology appropriate to be worn either over or under other clothing.

You should also be aware of the protocol if you spot a tick on your body—but know that up to 50 percent of people never detect a tick bite prior to the onset of their symptoms. The current literature says that for someone to be prone to Lyme disease, a tick has to be attached to an individual for 48 to 72 hours—but that is incorrect, according to Dr. Frid. She suggests that those who have detected a tick bite should begin a proper course of treatment without waiting for specific symptoms like a bull’s-eye rash.

Studying and listening to her patients is what has enabled Dr. Frid to learn so much about the disease. That knowledge—and her ongoing pursuit of an understanding of Lyme disease—has earned her an invitation to lecture at events held by the International Lyme and Associated Diseases

—Continued on page 50

Charlene Flash, MD '06: A Goal to Put Herself Out Of Work

Growing up, Charlene Flash, MD '06, realized her parents had no patience for what were perceived of as frivolous careers.

“My family is from the Caribbean,” the physician says during her morning drive in Pearland, Texas. “In Caribbean first-generation families, you can be a lawyer, a doctor, or an engineer.”

Born in Brooklyn and reared in Stamford, Connecticut, Dr. Flash recalls, “Some parents would give their kids \$1 for every A. And my parents would look at me and say, ‘Why should we pay you for what you are supposed to be doing? Wait, what is that? Bs—what are Bs?’ My father went to the University of the West Indies. He did his law degree in the U.S. The only schools they had heard of were Yale and Harvard and Duke. I had never heard of anywhere else.”

Clearly their expectations paid off. As an undergraduate in chemistry at Yale University, Dr. Flash visited an AIDS hospice, Bread & Roses, and a lifelong mission began. Now assistant medical director of HIV Prevention

BY JACQUELINE CUTLER

Services for Harris Health System in Houston, Dr. Flash is also an assistant professor of medicine in the section of infectious diseases at Baylor College of Medicine.

“I was always a bright-eyed and bushy-tailed dreamer,” she says. “I wanted to do something with AIDS or cancer, and after working with the AIDS hospice director, I knew that is what I wanted to do.”

When it came time for medical school, the recently married Dr. Flash wanted to remain on the East Coast. Once she established residence in New Jersey, the in-state tuition at Robert Wood Johnson Medical School was a plus.

The main attraction, though, was that “they had a robust clinical education, they had research, and they had a commitment to working in underserved communities and working with the homeless. That commitment was very important to me,” she says.

In 2006, she earned both an MD from the medical school and a master

of public health degree in quantitative health care assessment from what is now the Rutgers School of Public Health.

Even among a very smart and committed student body, she was “a shining star,” says Patricia Whitley-Williams, MD, professor and former chair, Department of Pediatrics; and chief, division of allergy, immunology, and infectious diseases.

“She had a level of professionalism and maturity about her,” Dr. Whitley-Williams says. “She worked with our pediatric infectious disease division on a project that looked at how many pregnant women were being screened for HIV, part of a nationwide initiative to identify pregnant women who were positive, and which would allow them to receive HIV treatment and prevent transmission from mother to child.”

“She was one of the most motivated medical students I have mentored,” says Sunanda Gaur, MD, professor of pediatrics and director, Robert Wood Johnson AIDS Program. “As a third- and fourth-year medical student, she worked with me on a project related to rapid HIV testing among women in labor, which was eventually published. I remember her as being very



COURTESY OF CHARLENE FLASH, MD, '06

professional, well poised, bright, hard-working, and organized. She already had a child at that point, and I was quite impressed at her ability to balance her home and medical life.”

At the medical school, Dr. Flash and some of her classmates started the Homeless and Indigent Population Health Outreach Project (HIPHOP) to help the poorest residents in New Brunswick. During her residency in internal medicine and pediatrics at Brown University and a fellowship in adult infectious diseases at Harvard University, Dr. Flash found that her time at Robert Wood Johnson Medical School served her well.

“I can remember going to my residency alongside people who had gone to more well-known medical schools

but feeling incredibly well prepared,” she says. “Even now, I still talk about Robert Wood Johnson. We had a ‘sex week’ curriculum, where you talk about sexually transmitted infections and sexual gender minorities; that kind of training created the foundation for what I am doing now.

“Most doctors aren’t even comfortable taking a sexual history, and at Robert Wood we had an entire week,” she adds. “The experiences with HIPHOP and Elijah’s Soup Kitchen, where we would recruit them to come in from around the corner, that idea of bringing care to where people are, and the power of touch—all of that I got at Robert Wood. It was fantastic.”

Her determination to speak openly with patients led Dr. Flash to start an

HIV prevention program in 2012, shortly after moving to Texas. “You have to have something more to give patients than, ‘You should have used a condom,’ and ‘come back in three months,’” she says. Dr. Flash works to ensure patients’ health by prescribing pre-exposure prophylaxis (PrEP), and she views her current situation as an opportunity: “There are very few places in the U.S. where you can provide primary care to large numbers of people with HIV.”

Between working with underserved communities, overseeing medical students making rounds, and speaking at international conferences for physicians specializing in AIDS, what does Dr. Flash do to relax or for hobbies?

—Continued on page 50

Dr. Klein, Mayor Klein: Both Are All in a Day's Work

“**W**hen you're a physician, you're altruistic. You're always looking to do some good for people.” Shawn Klein, MD '99, believes in putting that ethic to work to benefit his community.

Spending most of his day practicing ophthalmology as a cornea and cataract specialist, Dr. Klein felt there was more he could do. So he decided to run for the township council of Livingston, New Jersey, in 2015. Dr. Klein won the election and was unanimously elected mayor by the council members in January 2017 because of the hard work and dedication he had exhibited as a council member.

He decided to throw his hat in the ring because he believes there's a greater good that is served in this kind of role—and because he truly loves the town he grew up in. “You're limited by the number of people you can see in a day as a physician,” Dr. Klein says. “When you get involved in public policy, taking on the work of running a small town, you can touch more people.”

Born in Livingston and graduated

BY LYND A RUDOLPH

from the local high school in 1991, he went on to the University of Pennsylvania and then to Robert Wood Johnson Medical School. His ophthalmic training took him to other points in New Jersey as well as to New York and Chicago. Marriage and parenthood changed things. Dr. Klein and his wife, Cindy, decided to come back to Livingston to raise their children, Jack and Leo. The move also put them closer to family: Dr. Klein's parents, his twin sister, and her family also reside in Livingston. Dr. Klein practices medicine with his father, who is also an ophthalmologist.

Dr. Klein sees a trend in people returning to the area. “Six of my seven closest friends have come back to Livingston,” he says, adding what he believes to be reasons for the town's popularity: “It's a wonderful place—great schools and proximity to New York.” A town of about 30,000 people in southwestern Essex County,

Livingston was named for the first governor of the state, William Livingston. The town's school system has been nationally recognized, and the community has a reputation for volunteerism that has helped it maintain a reputation for giving back.

Livingston has benefited from Dr. Klein's involvement for several years. He served on the Vision 20/20 Committee, which was established with the goal of creating a strategy for the Township of Livingston to improve the quality of life for the community, its residents, and businesses. Dr. Klein was responsible for implementing plans for a shuttle to New York City and holding electronic recycling events. He's a big believer in communities becoming sustainable—particularly ensuring climate security through reduced dependence on fossil fuels. Each year, the town profits from the sale of solar energy while it uses alternative sources. Conserving water is another ecological concern that he's added to his agenda as mayor.

Dr. Klein also helped shepherd in a new facility: a FieldTurf complex featuring a revolutionary type of turf that reportedly provides a safer surface for young athletes than earlier



COURTESY OF SHAWN KLEIN, MD '99

artificial surfaces. In addition, the mayor is hoping to develop an app that anyone in the community can use to access and input information on a smartphone—everything from reporting a pothole that needs repair to getting the latest garbage pickup dates. His motivation isn't just to keep the town updated—it's to keep it a special place.

Dr. Klein's clinical practice has in no way suffered because of his public

“You're limited by the number of people you can see in a day as a physician. When you get involved in public policy, taking on the work of running a small town, you can touch more people.”

— Shawn Klein, MD '99

policy work. He points out that his role as mayor is not a full-time position, since a township manager runs the day-to-day operations under the supervision of the township council. “I love ophthalmology,” he says, adding that he considers it to be a very exciting field—one that's technologically advanced. “There are so many improvements in surgical techniques that are exciting—for example, laser cataract surgery,” says Dr. Klein. “With multifocal implants, near and far vision improvement is now possible.”

He believes that people go into medicine because of their innate intellectual curiosity and because they get joy from learning new things. This can apply to public service as well. “In this public world, once you have your arms around it, you see there's something else to jump into and learn about,” he says. He also suggests that eye surgery is all about problem solving—a skill he also puts to use as mayor.

But in the end, his decision to embrace both a clinical profession and a public life comes down to one thing: “The good you do for people is the reason behind both.” **M**

Mahalia Desruisseaux, MD '00: "A Rare Combination"

Researching Cerebral Malaria

Met *Plasmodium falciparum*. This one-celled protozoan parasite is responsible for cerebral malaria (CM), a devastating disease that takes the life of a young child every 30 seconds. Children who survive are likely to face long-term neurocognitive problems, including epilepsy, learning disabilities, and behavioral deficits.

Now meet Mahalia Desruisseaux, MD '00, associate professor of medicine and pathology at Albert Einstein College of Medicine. Dr. Desruisseaux joined the Einstein faculty in 2007, following a clinical fellowship there, in which she studied infectious diseases and developed her interest in CM.

She has pursued that interest with marked success, using a mouse model to elucidate the pathogenesis of the disease. The Desruisseaux lab has focused on inflammation of the endothelium—the cells that line the inside of blood vessels—triggered by infection with the *P. falciparum* parasite. The lab hopes a clear understanding of this process will open the door to pathways in the ner-

vous system that may be targeted for treatment of the neurological sequelae of CM.

Dr. Desruisseaux's studies have led to important discoveries. For example, using the mouse model, her group was the first to describe an increase in endothelin, a peptide that causes constriction of blood vessels and can trigger inflammation.

Investigating the phenotype—or function—of proteins involved in CM, the lab demonstrated abnormal regulation of the tau protein, also thought to be a culprit in the formation of nerve tangles in neurodegenerative diseases such as Alzheimer's disease. "We demonstrated that when we could interrupt the actions that cause abnormalities in this protein, we could prevent mortality and neurological defi-

cits in CM-infected mice," says Dr. Desruisseaux.

A new partnership is helping to advance her research. Several years ago, Tamiwe Tomoka, MD, a pathologist from the University of Malawi College of Medicine, visited Einstein. Dr. Tomoka worked in Dr. Desruisseaux's lab for two months, learning about the pathophysiology of CM, using the mouse model. They discussed the value to the lab of research under way in Malawi—a small nation in southeastern Africa—and then, in 2015, under a grant from the Global Health Center at Einstein, Dr. Desruisseaux traveled to Malawi to work with Dr. Tomoka and other collaborators. A year later, the center funded her return trip to Malawi to continue the collaboration.

Compassionate Patient Care

Patient care remains an important part of Dr. Desruisseaux's work. In addition to pursuing her research at Einstein College of Medicine, she works in the Infectious Disease Service at Montefiore Medical Center's Weiler Hospital. As a hospitalist in the admissions unit, she helps handle the emergency department overflow, care for patients, and teach Infectious Disease

BY KATE O'NEILL



COURTESY OF MAHALIA DESRUISSEAUX, MD '00

Service fellows. “Nothing beats working in the ER,” she says. “As an infectious disease consultant who oftentimes is called in cases of sepsis, I am often one of the first people a patient sees.”

Virginia Gonzalez, MD, a hospitalist who often works in admissions with Dr. Desruisseaux says, “She is an incredible physician. Her knowledge base and warm approach with patients and staff make her a blessing to have around.

“She seems to effortlessly balance her various positions, achieving great success in each aspect of her life. She is a loving mother, highly sought-after physician, and top researcher in the

field of infectious disease. I am fortunate to have her as a colleague.”

In Malawi, Dr. Desruisseaux received permission from the College of Medicine to volunteer in a hypertension clinic. “I fell in love with the country. The people are so lovely and so nice, and it was fulfilling for me; I felt like I made a difference,” she says. “Here, we take our diagnostic tools for granted—like MRIs and nuclear medicine—and forget the art of taking a patient’s history. There, it was back to basics, relying on the clinical skills we first learned in medical school.”

“Patients and staff enjoyed her,” says Dr. Tomoka, “and we were im-

pressed with how she adjusted to the conditions in a low-income setting. Mahalia is a rare combination.”

These were not Dr. Desruisseaux’s first experiences in international health. In January 2010, she learned of the deadly earthquake in Haiti, with estimates of as many as 300,000 or more lives lost and 1.5 million people displaced. Her childhood home, where she spent the first 12 years of her life, was destroyed. An aunt was killed, as well as a cousin and his young son.

Dr. Desruisseaux contacted Airline Ambassadors International, offering her knowledge as a physician fluent in Creole. “I felt so sick and helpless watching the 24/7 news coverage,” she says. “After not having been back to Haiti for 24 years, I felt a strong urge to return and be part of a medical relief effort.”

The following day, she left for Haiti, where she spent a week based at a hospital in Port-au-Prince, treating patients of all ages who were suffering from broken bones, wound infections, or dehydration. After returning to New York, she helped organize medical students to gather medical supplies and nonperishable food for the people of Haiti.

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Elena Frid, MD '06: Working to Solve the Puzzle That Is Lyme Disease

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Society and work with organizations such as Global Lyme Alliance and Project Lyme.

She is also committed to educating physicians and the public about the dangers of Lyme disease. To help accomplish that, she's been featured as an expert in media outlets, including *Marie Claire*, *Harper's Bazaar*, and *Cosmopolitan* magazines, Fox 5, and the ABC television network, and she has a far-reaching presence on social media: Instagram (@drelenafrid), Twitter (@ElenaFridMD), Facebook (@drelenafrid), and her own Youtube channel (Lyme Talk with Dr. Frid).

Her overarching goal is to make more people aware of Lyme disease, including the fact that testing can be inaccurate. In particular, she wants people to realize that a negative Lyme test can create a false sense of security. If the physician suspects the disease or has a patient who isn't responding to mainstream medical treatment, the

patient should be assessed based on history and retested frequently or referred to a specialist. "A sudden onset of symptoms that appear to indicate a psychiatric disorder or an accumulation of symptoms over a short period of time are signs," says Dr. Frid. "Time is of the essence—the longer you wait, the longer and more complex the treatment becomes."

She's bringing those important details to Robert Wood Johnson Medical School—working with medical students to make them aware of the nature of this disease. Dr. Frid also serves as vice president of the Alumni Association board.

The real gratification comes when treatments begin to have an effect.

"When I see patients getting their lives back, I realize the importance of the work we're doing," she says. "That's the benefit and joy that come from getting it right." **M**

Charlene Flash, MD '06: A Goal to Put Herself Out of Work

—Continued from page 45

"I have three children," she says, explaining the fiction of free time. "A 12-year-old girl, 8-year-old boy, and a little girl who will be 1."

The high expectations her parents instilled continue to pay dividends; Dr. Flash still aims high. She pauses, considering if she should put her professional goal out there.

"I feel as though every time I think of something, God gives it to me," she says at first.

"I have always said I wanted to be the surgeon general," Dr. Flash then confides. "I wanted to develop HIV treatment programs that are multidisciplinary, that serve families and not just individuals, and impact communities. These protective agents are going to change the face of HIV. Is it crazy to say I want to end AIDS? It will put me out of business—but I want there to be no HIV." **M**

Mahalia Desruisseaux, MD '00: "A Rare Combination"

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Weeks before, while working in a provisional field hospital in Haiti, Dr. Desruisseaux had examined a 15-year-old patient with extreme shortness of breath and a debilitating cough. After taking the girl's history, she learned that the condition had persisted since the child was 7 years old. Dr. Desruisseaux ordered an X-ray, which showed an enlarged heart and atrial septal defect—a hole between the upper chambers of the heart—that required advanced surgery not available in Haiti. Without an operation, the girl would live only a few more years.

Before leaving Haiti, Dr. Desruisseaux wrote to two physicians at Montefiore: Daphne T. Hsu, MD, professor of pediatrics and chief, division of pediatric cardiology, and Samuel Weinstein, MD, who was then director of pediatric cardiothoracic surgery. "Desperate to help her," she described the girl and her condition. Upon her return, she continued to build the case for surgery and, through the Gift of Life Foundation, raised funds for the child's journey to New York.

On the first anniversary of the earthquake, surgeons at Montefiore performed a three-hour, open-heart procedure, which successfully repaired the defect. A day later, their young patient was released and was soon on her way home, after announcing her new dream: to become a doctor.

"Why do you want to be a doctor?" asked Dr. Desruisseaux.

"Because of you," the girl replied shyly. "Because you encourage me." **M**

C L A S S NOTES

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

Please send your professional and personal news and photos to: **Jillian Prior**, 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.

1 9 8 0

Charles Campbell Jr. retired from the United States Air Force in 2010. He is currently a medical director for Lockheed Martin in Marietta, Ga.

1 9 8 3

Mark A. Demitrack joined Axovant Sciences as vice president. Most recently, he was vice president and chief medical officer at Neuronetics.

Joseph Koziol, a neurosurgeon, is the director of adult neurosurgery at Newark Beth Israel Medical Center, an affiliate of RWJBarnabas Health.

1 9 8 5

David A. Halsey, an orthopedic surgeon at Martha's Vineyard Hospital, was named a fellow of the American Academy of Orthopaedic Surgeons board of directors.

Perry J. Weinstock is the deputy chief of medicine for quality assurance, head of the division of cardiology, and professor of medicine at Cooper Heart Institute in Voorhees Township.

1 9 9 0

Thomas J. Giordano is finishing his 23rd year as a faculty member in the Department of Pathology at the University of Michigan in Ann Arbor. He is the Henry Clay Bryant Endowed Professor of Pathology and director of the division of molecular and genomic pathology. He also directed the Tissue and Molecular Pathology Shared Resource for the university's Comprehensive Cancer Center, and he is involved in the Cancer Genome Atlas project of the National Cancer Institute and the National Human Genome Research Institute.

Peter Sayre is a professor of clinical medicine at the University of California, San Francisco, where he completed his hematology-oncology fellowship years earlier. He splits his time between serving as chief medical officer for an

academic clinical trials network studying immune tolerance and being a clinician educator in malignant hematology. He is married and has two children in a Chinese-language-immersion elementary school. He is also a Little League baseball coach.

Mark P. Trolice is the director of Fertility CARE (Center of Assisted Reproduction and Endocrinology) and clinical associate professor in the Department of Obstetrics and Gynecology at the University of Florida in Gainesville and the University of Central Florida in Orlando.

1 9 9 1

Donna Bennett is an obstetrician and gynecologist at Tenna Women's Care in Dyersburg, Tenn.

Vera Meier-Bennett opened her own pediatrics practice, Pediatric MultiCare West, in Lakeside, Ariz., and specializes in breast-feeding medicine. She lives in the White Mountains with her four children.

1 9 9 3

Geoffrey Hsieh is the director of the division of urogynecology and female pelvic-floor disorders at the Women's Cancer Center of Nevada in Las Vegas.

Todd Liu, board certified in obstetrics and gynecology, practices at Southern Ocean Medical Center in Manahawkin.

Thomas Yu practices at the Medical Radiology Group at Community Medical Center in Toms River.

1 9 9 4

Catherine "Cate" Shanahan joined Newtown Primary Care and Health Specialists in Newtown, Conn.

1 9 9 5

Dominick Eboli was named the director of the Bristol-Myers Squibb Trauma Center at Capital Health Regional Medical Center in Trenton. He previously served as the trauma center's associate director, since 2006.

1 9 9 6

Dennis Cunningham was named chief medical officer at McLaren Macomb, an acute-care hospital in Mount Clemens, Mich.

John Friend is the chief medical officer at Collectar Biosciences in Madison, Wis.

Brian Heppard recently joined the medical team at St. Ann's Community in Rochester, N.Y. He provides outpatient care for seniors in assisted and independent living through Pillar Medical Associates. He also provides care for residents of St. Ann's Home.

Donald Locasto is in his 16th year on the faculty at the University of Cincinnati. During that time, he has also created an emergency medical services division and served as medical director for the Cincinnati Fire Department.



1 9 9 7

Charles Evans and **Ileana Ortiz-Evans** celebrated their 20th wedding anniversary on June 7. July 1 marked the 10-year anniversary of Dr. Charles Evans's practice, New Beginnings Pediatrics, in Phillipsburg.

1 9 9 8

Daniel E. Walzman is a neurologist and neurosurgeon at North Jersey Brain & Spine Center in Oradell.

Kevin Willis is a staff radiologist at the Medical Radiology Group at Community Medical Center in Toms River. His special interests include body and pelvic MRIs.

2 0 0 0

Didier Demesmin, an interventional pain medicine specialist, is the founder and medical director of the University Pain Medicine Center in Somerset, with other offices in Monroe, Union, Manhattan, and Brooklyn. He is affiliated with Saint Peter's University Hospital, where he is director of pain medicine, and with Robert Wood Johnson University Hospital, JFK Medical Center, and Somerset Medical Center.

Sally Mravcak is an assistant professor of family and community medicine at Robert Wood Johnson Medical School.

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C L A S S NOTES

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William J. Polvino was appointed chief executive officer at Bridge Medicines, a pioneering drug discovery company focused on advancing promising early technologies from concept to clinic, in New York.

2001

Robert Kamieniecki practices diagnostic radiology at Imaging Consultants of Essex, in Livingston and Belleville.

2002

Elizabeth Chan, cardiologist, practices at the Polyclinic Madison Center in Seattle.

Anthony Festa is an orthopedic surgeon at the New Jersey Orthopaedic Institute. He is also an associate clinical professor of orthopedic surgery at the Seton Hall University School of Health and Medical Sciences, where he serves as the assistant director of the orthopedic surgery residency program, assistant director of the sports medicine division, and director of the Shoulder and Elbow Service.

Rasean Hodge practices at the Premiere Chronic Pain Care located in downtown Atlanta.

Anthony Mackaronis, obstetrician and gynecologist, was welcomed into the International Association of HealthCare Professionals with his upcoming publication in *The Leading Physicians of the World*. He practices at Delaware County Memorial Hospital in Drexel Hill, Pa.

David Wild is a cardiologist at Cardiovascular Specialists of North Jersey, in Teaneck.

2003

Sarah Rosen practices at Garden State Obstetrical & Gynecological Associates in Voorhees. She lives in Cherry Hill with her husband and two children.

2004

Matthew Grossman is an attending physician at the Clifton-based Gastroenterology Associates of New Jersey.

2005

Melissa Burgos, a family physician at Hunterdon Family Medicine at Phillips-Barber in Lambertville, is the president of the Down

Syndrome Association of Central New Jersey, whose mission is to “provide support to families from the time they receive the diagnosis and throughout their lifetimes.”

Payam Torrei practices neuroradiology and diagnostic radiology at the University Radiology Group in East Brunswick.

2006

James Chang practices pain management and physical medicine and rehabilitation in Jersey City.

2007

Ajay Hira practices diagnostic radiology at the University Radiology Group in East Brunswick.

2008

Aaron Bellows is a gastroenterologist at Princeton Gastroenterology Associates.

Joseph Nezgoda was elected vice president of advocacy at the Florida Society of Ophthalmology. He is a retina specialist at the Florida Eye Microsurgical Institute.

2012

Gianna Casini, who is board certified in anesthesiology, is practicing pain medicine at Parkview Hospital. She lives in Fort Wayne, Ind., with her husband and two children.

David Gendelberg completed an orthopedic surgery residency at Penn State Health Milton S. Hershey Medical Center. In August, he started a one-year fellowship in spinal surgery at Harborview Medical Center, in Seattle.

Victoria Lent joined Helen Hayes Hospital, a physical rehabilitation facility in West Haverstraw, N.Y., as director of spinal cord injury rehabilitation.

Harrison Linder, anesthesiologist, joined the Center for Interventional Pain Medicine at Mercy Medical Center in Baltimore.

2013

Caitlin Schonewolf is a radiation oncology resident at Penn Medicine in Philadelphia.

Erica Tabakin was elected and served as chief resident of emergency medicine in the University of Pennsylvania Residency Program

during the 2016–2017 fiscal year. She was subsequently hired as an assistant professor to join the Penn faculty.

2014

Swati Antala completed a residency in pediatrics at Yale School of Medicine and was chosen to stay on as a chief resident.

Kandy Bahadur is a chief resident of pediatrics at Robert Wood Johnson University Hospital.

Timothy Michael Dempsey began a pulmonary/critical care fellowship at the Mayo Clinic in Rochester, Minn., in July.

Tina Goodwin is a chief resident of pediatrics at Children’s Hospital of the King’s Daughters in Norfolk, Va.

Michelle Udine is a chief resident of pediatrics at the University of Alabama–Birmingham School of Medicine.

Brian Wexler was elected and will serve as chief resident of emergency medicine in the University of Pennsylvania Residency Program during the 2017–2018 fiscal year.



2015 &

2016

Pooja Kakar (2016) and **Lokesh Shah** (2015) were married this year.

Ralph Parker Fader IV, a second-year psychiatry resident at Mount Sinai Hospital in New York, married Mark Gregory Barber on May 28 in New York.

2016 & 2017

Joseph Choi (2017) and **Jihae Sophia Park** (2016) were married on June 10 in New Jersey. Dr. Park is a urology resident at the University of Rochester, and Dr. Choi is a resident in orthopedic surgery at Seton Hall University. **Alyda Stabile** (Class of 2016), **Heather Giles** (Class of 2016), **Peter Dellatore** (Class of 2017), and **Steven Calamita** (Class of 2017) were part of the wedding party.





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