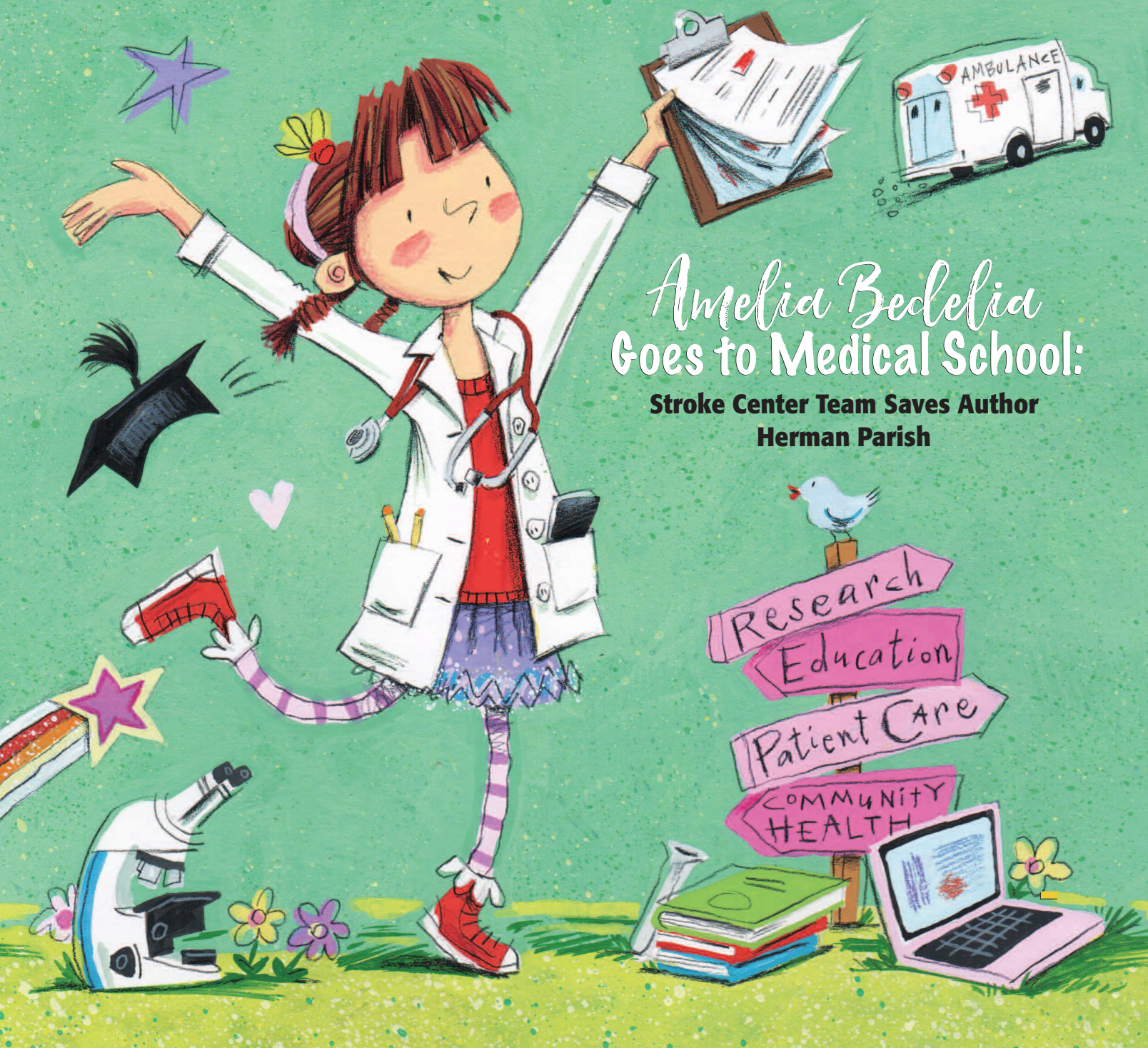
A PUBLICATION FOR ALUMNI & FRIENDS OF RUTGERS ROBERT WOOD JOHNSON MEDICAL SCHOOL

Celebrating **50** Years!

Robert Wood Johnson MEDICINE

SPRING ▪ 2016



Amelia Bedelia Goes to Medical School:

Stroke Center Team Saves Author Herman Parish

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LETTER FROM THE DEAN

Dear Colleague,

A major anniversary such as the 50th is truly a golden opportunity. We honor the events and people who shaped Robert Wood Johnson Medical School. More important, the celebration spurs us to look forward. Our new five-year strategic plan will guide innovation and advancement in each of our four mission areas—education, research, patient care, and community health. The topics featured in this issue of *Robert Wood Johnson Medicine* paint a remarkable portrait of our medical school at the half-century mark, ready to educate the next generation of physicians as future leaders.

"Robert Wood Johnson Medical School: Celebrating 50 Years" provides a timeline of each major milestone in our history, from the birth of a new medical school to the enormous opportunities brought about by our integration with Rutgers, The State University of New Jersey.

This issue profiles three giant figures in the school's history: Michael Lewis, PhD, university distinguished professor of pediatrics and psychiatry and director, Institute for the Study of Child Development; Avedis K. Khachadurian, MD, emeritus professor of medicine; and Roger Duvoisin, MD, former chair, Department of Neurology, and former executive director, William Dow Lovett Center for Neurogenetics. Dr. Lewis's work, focusing on a child's environment and personal characteristics, deepens our understanding of early emotional development. Dr. Khachadurian's studies on familial hypercholesterolemia were the foundation for breakthrough research on statins. Dr. Duvoisin's early studies on Parkinson's disease revealed its single-gene inheritance factor; later, he was part of the group that identified the mutation in the alpha-syneuclein gene found in families with Parkinson's disease.


JOHN EMERSON

The leading-edge care provided by our physicians, their teams, and our technological resources is the subject of "Stroke Center Team Saves *Amelia Bedelia* Author Herman Parish." In collaboration with Robert Wood Johnson University Hospital, we have developed a stroke center that is second to none.

In "Lifesaving Procedure Puts Somerset Man Back in the Driver's Seat," we learn about the knowledge and skills of our cardiac catheterization team. Cardiac electrophysiologist William J. Kostis, PhD, MD '07, performed an ablation that corrected the dual electrical abnormalities in the patient's heart and completely restored his active lifestyle.

The research profile of Huaye Zhang, PhD, assistant professor of neuroscience and cell biology, introduces a young scientist balancing her passion for elucidating how brain cells communicate and applying that knowledge to an understanding of related disorders and diseases, with her love of parenthood.

The highly popular "BootCamps," described in "Basic Training for Medical Students," use a specially programmed patient simulator to prepare students for the fields they will soon enter as residents.

I hope you will enjoy this issue of *Robert Wood Johnson Medicine* and the stories it tells, as we enter our second half century of excellence in medical education.

Sincerely,



Sherine E. Gabriel, MD, MSc
Dean



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Contact us for more information about naming Robert Wood Johnson Medical School as a beneficiary of your estate plan, retirement account, or other financial instrument. If you have already included Robert Wood Johnson Medical School in your will, trust, or estate plan, please let us know, as we would like to thank you and provide peace of mind that your gift will be used exactly as you intend.

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Spring 2016

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Robert Wood Johnson MEDICINE

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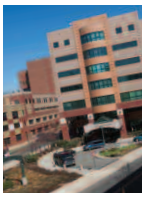
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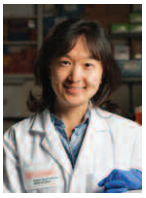
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Amelia Bedelia
Cleans Up

BY KATE O'NEILL

Stroke Center Team Saves *Amelia Bedelia* Author Herman Parish

The Thunderclap

In May of 2014, Herman Parish awoke early one morning with "the worst headache I ever had," he recalls. Still, he thought he'd get on with his plan for the day: to continue working on *Amelia Bedelia Cleans Up*. The book was slated to become the latest in the well-loved series created in 1963 by Mr. Parish's aunt, the late Peggy Parish.

Three generations have grown up with tales of Amelia Bedelia, a delightful, literal-minded housekeeper. In 1995, seven years after his aunt's death, Mr. Parish decided to continue the series, expanding it to reach a wider range of young readers with stories of Amelia growing up as an equally literal, comic, and charming child. He has added 39 stories from picture books to chapter books.

But that day's plan was not to be. When Mr. Parish stood up from bed, the headache exploded with unbearable pain. He collapsed, unconscious and not breathing. A "thunderclap" headache, one that ranks 11 on a scale of one to 10, is often the first symptom of a stroke or brain aneurysm. Luckily, Mr. Parish's wife, Rosemary, a trained nurse, was nearby. She heard him hit the floor and immediately called 911.

PORTRAITS BY JOHN EMERSON

ILLUSTRATIONS BY LYNNE AVRIL

Emergency medical technicians transported Mr. Parish to the emergency department at nearby University Medical Center of Princeton at Plainsboro. Often, when a cerebral artery ruptures, it hemorrhages blood into the brain, with devastating consequences—and indeed, a CT scan revealed "a brain full of blood," says Rosemary Parish. Her husband had suffered a life-threatening hemorrhagic stroke and required the most advanced care. Fortunately, the Comprehensive Stroke Center at Robert Wood Johnson University Hospital (RWJ) was only 20 minutes away.

"Dr. Gupta says I won the lottery—three times in a row. We beat the odds, surviving three crises—the aneurysm, the hydrocephalus, and the vasospasms—making a complete recovery," says Herman Parish, below with his wife, Rosemary.



After recovery, Herman Parish completed *Amelia Bedelia Cleans Up*, dedicating the book to his doctors, Gaurav Gupta, MD, assistant professor of neurosurgery, Robert Wood Johnson Medical School *(left in photo at right)*, and Sudipta Roychowdhury, MD, clinical assistant professor of radiology, Robert Wood Johnson Medical School, and director of interventional neuroradiology, Robert Wood Johnson University Hospital *(far right in photo at right)*.

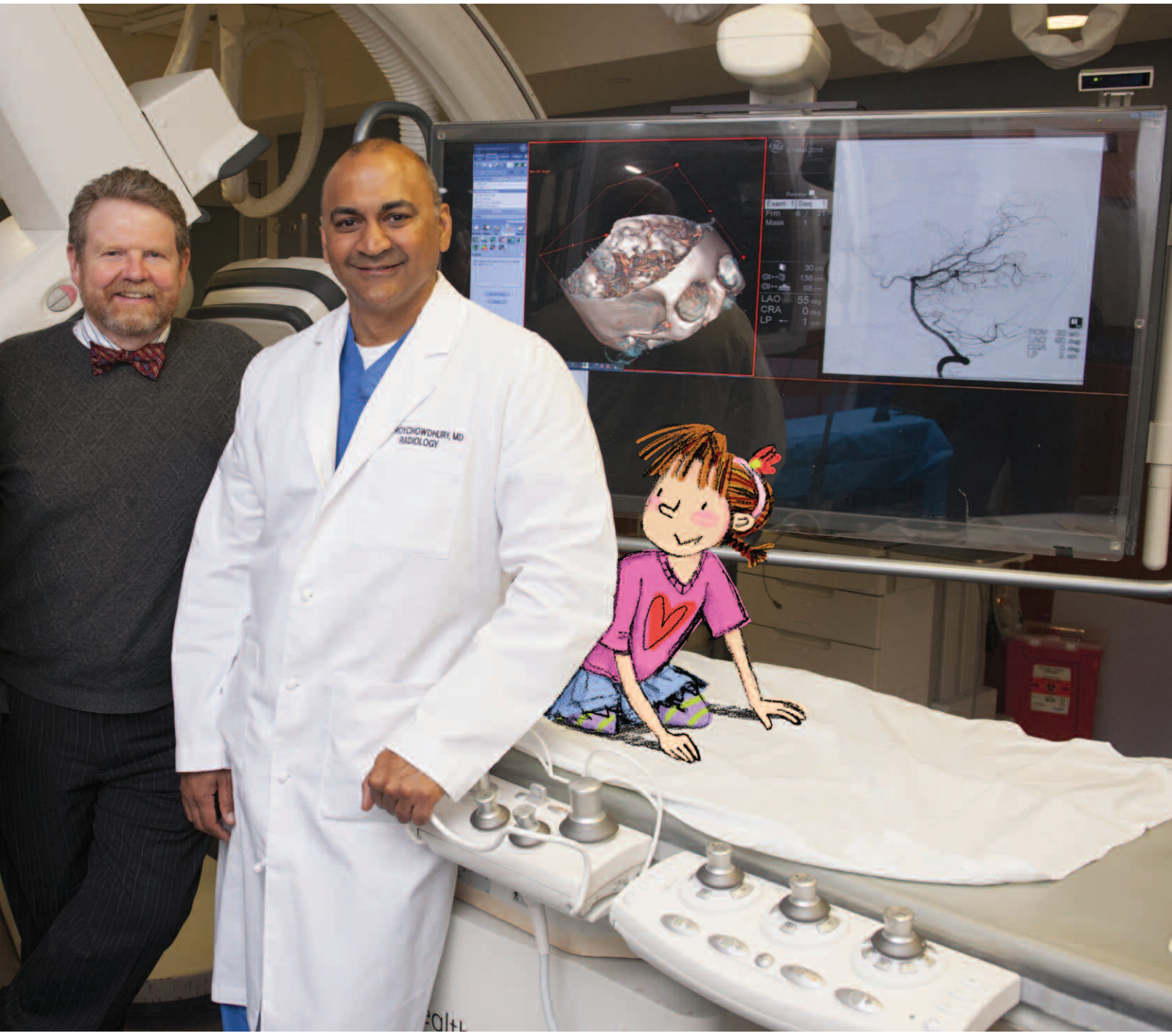


The Comprehensive RWJ Stroke Center: Extraordinary People Offering Exceptional Care

"A situation as complex as Herman's requires the resources, both human and technological, of a dedicated, multidisciplinary center like the one at RWJ," says neurosurgeon Gaurav Gupta, MD, assistant professor of neurosurgery, Robert Wood Johnson Medical School. Dr. Gupta is the director of cerebrovascular and endovascular neurosurgery and the New Jersey Brain Aneurysm and AVM Program, a partnership between the medical school and the hospital.

The Joint Commission–certified stroke center offers a comprehensive, multidisciplinary team led by two outstanding specialists in brain aneurysm treatment: Dr. Gupta and Sudipta Roychowdhury, MD, clinical assistant professor of radiology, Robert Wood Johnson Medical School, and director of interventional neuroradiology, Robert Wood Johnson University Hospital.

By the time the ambulance arrived at the Emergency Department, Mr. Parish was in a coma, and his brain was beginning to shut down. A sophisticated 3-D CT angiogram



revealed a catastrophic rupture of an aneurysm in the right vertebral artery. This is one of the four major blood vessels that feed the brain, and this type of aneurysm can be particularly dangerous and challenging to control.

Blood had leaked into the water system of the brain, clogging it and creating a condition called hydrocephalus. It put pressure on the brain that risked damaging the tissues, potentially leading to long-term neurological problems or death. To relieve the mounting pressure, the team inserted a tube into the brain, an external ventricular drain, to divert the cerebrospinal fluid.

Damage Control: Repairing the Dissection

Next, the team transferred Mr. Parish to the Stroke Center's state-of-the-art Neurointerventional Suite, one of the most advanced in the country. Through a small incision in the patient's groin, a catheter was inserted into the femoral artery. Guided by fluoroscopy—a real-time, moving image on a giant television screen—the team then threaded a series of slender catheters through the network of arteries that led into Mr. Parish's brain.

"Our arteries are like the interstate highway system," says Dr. Gupta. "All the blood vessels of the body are connected to each other. The femoral artery was like an entrance ramp, our route to I-95—the aorta—which we followed past the kidneys, liver, heart, and carotid artery, to the ruptured vertebral artery, in his brain."



Inserting a microcatheter into the original catheter, they delivered a stent to the ruptured artery in the hope of supporting it. "We didn't like the look of it, though," says Dr. Roychowdhury. "We were afraid it would rupture again, so we combined the stent with a coil (an ultrathin metal spiral), so the dissected artery was both supported and permanently blocked."

"Fortunately," says Dr. Gupta, "nature has designed us to have two each of many parts—right and left, front and back. Having both a right and left vertebral artery gave us the option of blocking off the damaged vertebral artery, while preserving the flow to the most important blood vessel of the brain, the basilar artery. That was essential."

Vasospasms: "The Third Hump"

Through the tube in the brain, they washed as much leaked blood as possible out of Mr. Parish's brain to reduce the risk of a potentially deadly condition called "cerebral vasospasm," constriction of the irritated arteries, which can lead to a second stroke.

Vasospasms did develop, however, four days after the surgery. To keep the arteries open, Dr. Gupta and Dr. Roychowdhury "sprayed" them with the drug Verapamil, accessing the brain through the external drain. Then, three days later, without warning, a major vessel, the critical basilar artery, began to spasm, defying the Verapamil.

Without alternative treatment, Mr. Parish would have survived only a few more hours, so the doctors took a radical step: they performed a balloon angioplasty (inflating a tiny balloon inside the constricted blood vessel), to open this major cerebral artery. "The surgery itself was life threatening, and only a handful of surgeons have done it," says Dr. Gupta. "But it worked: the artery was opened, and blood flow was restored. We'd made it over the 'third hump.'"

Altogether, Mr. Parish spent 17 days in the intensive care unit, where he overcame a "calamity a day," he says. Rosemary Parish devoted her waking hours to her husband. Her day started as doctors made early morning rounds, and she stayed with him until she had to go home to sleep. "Herman was receiving phenomenal care," she says. "Dr. Gupta seemed to be there around the clock, but I was determined not to be absent. I wanted to be there for both of our sakes, holding on to my firm vision for his recovery." Their three children gave their parents love and support throughout the ordeal.

Tricking Death and Saying Thanks

Fortunately, the worst was over. "Dr. Gupta says I won the lottery—three times in a row," says Mr. Parish. "We beat the odds, surviving three crises—the aneurysm, the hydrocephalus, and the vasospasms—making a complete recovery."

After regaining strength in a rehabilitation center, Mr. Parish returned home. He gradually returned to writing, resuming Amelia Bedelia's adventures where he'd left off. He completed *Amelia Bedelia Cleans Up*, dedicating it to Dr. Gupta and Dr. Roychowdhury, and later visited RWJ to present a signed copy of the book to each member of the large staff involved in his care. Finally, he resumed his visits to schools to talk to the children about writing and about Amelia Bedelia. "It was tough at first," he says, "but it soon felt like easing back into a comfortable suit of clothes."

From Mr. Parish's first day at RWJ, he wore a bracelet identifying him as "Brody Taylor," an alias proposed by the ICU team to protect his privacy. Almost no one at the hospital knew that a popular children's author was in their care. "We take patient privacy very seriously," says Dr. Gupta.

Months later, after returning home, Mr. Parish recaptioned a *New Yorker* cartoon and sent it to Dr. Gupta, along with a thank-you to the Stroke Center staff. In the cartoon, a bespectacled man responds to a knock at the front door, only to find "the grim reaper" waiting for him.

"Herman Parish?" responds the man, in the new caption. "Sorry. My name is Brody Taylor."

And Death left, empty-handed. M

Robert Wood Johnson Medical School: *Celebrating 50 Years*

Robert Wood Johnson Medical School is celebrating its 50th anniversary of the first class, 16 students strong, matriculated at what was then Rutgers Medical School. The school has enjoyed a fascinating journey from those origins, including its evolution from a two- to a four-year school, its renaming as Robert Wood Johnson Medical School in 1986, and the restoration of the Rutgers name, when it integrated with Rutgers, The State University of New Jersey.

BY KATE O'NEILL

Deans

of Robert Wood Johnson Medical School:

1962–'70:
DeWitt Stetten Jr., MD, PhD

1971–'75:
James W. Mackenzie, MD

1977–'78:
David J. Gocke, MD

1979–'87:
Richard C. Reynolds, MD

1988–'95:
Norman H. Edelman, MD

1995–2006:
Harold L. Paz, MD

2006–'14:
Peter S. Amenta, MD, PhD

2015–Present:
Sherine E. Gabriel, MD, MSc

ROBERT WOOD JOHNSON
MEDICAL SCHOOL
Celebrating 50 Years!

THE MILESTONES

1961:

The First Step: Planning for Rutgers Medical School, began with a $1 million grant from the Kellogg Foundation to Rutgers University for initiation of a two-year medical school.

1962:

Appointment of DeWitt Stetten Jr., MD, PhD: Mason Gross, president of Rutgers University, recruited the medical school's founding dean, DeWitt Stetten Jr., MD, PhD, from the National Institutes of Health (NIH), where Dr. Stetten served as associate director in charge of research and section chief. A biochemist and an internationally renowned physician-scientist, Dr. Stetten had a passion for excellence in medical education that shaped the faculty and students of Rutgers Medical School, along with its campus.



1963:

The Early Faculty: Dr. Stetten recruited a distinguished core faculty, establishing the departments of physiology, biochemistry, pathology, and pharmacology. All were housed in makeshift laboratories and offices in a converted U.S. Army depot at neighboring Camp Kilmer, adjacent to the Piscataway campus.



1966:

The First Class: The Class of 1968 matriculated at Rutgers Medical School, becoming candidates for a master of medical science degree. They would transfer to four-year schools to complete their doctor of medicine degrees.



1970:

Dedication of the First Building: Four years in the making, the eight-story Research Tower and adjoining Teaching Laboratories on the Piscataway campus allowed the medical school to enlarge its entering class to 32 students. • **College of Medicine and Dentistry of New Jersey (CMDNJ):** Governor William T. Cahill declared that community health care must have priority over research and the training of specialists. The state legislature passed a bill approving consolidation of Rutgers Medical School and New Jersey College of Medicine and Dentistry to form the College of Medicine and Dentistry of New Jersey, with the goal of delivering general practitioners to city clinics throughout the state.



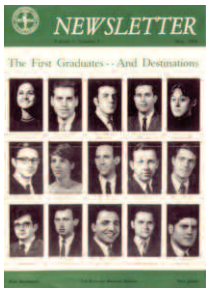


ROBERT WOOD JOHNSON MEDICAL SCHOOL

Celebrating **50** Years!

THE MILESTONES

1974:



The First Doctor of Medicine Degrees: The Class of 1974 received the first doctor of medicine degrees awarded by Rutgers Medical School.

1977:

Primary Teaching Affiliation: An agreement with Middlesex General Hospital (now Robert Wood Johnson University Hospital), in New Brunswick,



COURTESY OF ROBERT WOOD JOHNSON UNIVERSITY HOSPITAL

established Middlesex as the primary teaching hospital of Rutgers Medical School.

1980:

Establishment of the Camden Campus: The Board of Trustees of CMDNJ established the medical school's second clinical campus, in Camden. Cooper Hospital/University Medical Center (now Cooper University Hospital) became its principal teaching hospital. Students began clinical rotations on the Camden campus in August 1983.



KIM SOKOLOFF

1981:

CMDNJ Renamed UMDNJ: CMDNJ-Rutgers Medical School became UMDNJ-Rutgers Medical School when CMDNJ was renamed the University of Medicine and Dentistry of New Jersey (UMDNJ). Made up of eight different health-related schools, UMDNJ was the largest school of health sciences of its kind in the United States.

UMDNJ

1982:

Dedication of the Medical Education Building (MEB): The six-story MEB, adjacent—and connected—to Middlesex General Hospital, was the first Rutgers Medical School structure built in New Brunswick. The 100,000-square-foot structure contains teaching space for third- and fourth-year medical students and houses offices and training programs.

1985:

Establishment of the Center for Advanced Biotechnology and Medicine (CABM): The New Jersey Commission on Science and Technology created CABM as a center of excellence with a mission to advance knowledge in the life sciences for the improvement of human health. By charter, CABM was jointly administered by Rutgers University and UMDNJ-Rutgers Medical School. Located on the Piscataway campus, CABM's 100,000-square-foot building was completed in 1990. Founding director Aaron Shatkin, PhD, led CABM until his death in 2012.



NAT CLYMER



ROBERT WOOD JOHNSON
MEDICAL SCHOOL
Celebrating 50 Years!

THE MILESTONES

1986:

A New Name – Robert Wood Johnson Medical School: Stanley Bergen Jr., MD, president, UMDNJ, announced that Rutgers Medical School would be renamed in honor of Robert Wood Johnson, the New Jersey business leader who built the New Brunswick–based Johnson & Johnson into a worldwide corporation. At the same time, Middlesex General Hospital became Robert Wood Johnson University Hospital.



STEVE HOCKSTEIN

1987:

Opening of the Eric B. Chandler Health Center: Under the leadership of Richard Reynolds, MD, dean, a collaborative effort by three parties—Robert Wood Johnson Medical School, Robert Wood Johnson University Hospital, and the New Brunswick Board of Education—succeeded in establishing the Eric B. Chandler Health Center, providing centralized, ambulatory primary care to those in the community who need it most. Chandler, a federally qualified and funded community health center located in downtown New Brunswick, is jointly operated by Robert Wood Johnson Medical School and an active community board.



JOHN EMERSON

1988:

Dedication of the Environmental and Occupational Health Sciences Institute (EOHSI): Construction of EOHSI, on the Piscataway campus, was completed two years after it received initial backing by Thomas H. Kean, then governor, and the New Jersey Legislature. Its balanced administration made it a true collaboration between its two parent institutions, Rutgers University and UMDNJ. The NIH established the Center for Environmental Exposures and Disease at EOHSI as the first center of excellence in New Jersey to facilitate multidisciplinary research on health problems posed by environmental exposures.



STEVE HOCKSTEIN

1995:

The Clinical Academic Building (CAB) Opens: The 225,000-square-foot CAB is the principal location for patient care activities of the Robert Wood Johnson Medical Group, the multi-specialty group practice of the medical school. Located on the New Brunswick campus, the CAB provides space for outpatient activities, state-of-the-art research and service laboratories, academic offices, and support programs.



NAT GIVMER

JENNIFER FORBES


RUTGERS
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ROBERT WOOD JOHNSON
MEDICAL SCHOOL
Celebrating 50 Years!

THE MILESTONES

1997:

The Cancer Institute of New Jersey: The original 75,000-square-foot Cancer Institute facility houses adult and pediatric ambulatory services and research laboratories. Situated on the academic health campus in New Brunswick, the institute is designed and equipped to conduct world-class research and provide new treatments and clinical trials for patients who have been unsuccessful with conventional therapies or for whom there is no standard treatment. In 2004, a 150,000-square-foot addition tripled the facility's size, providing more space for research and clinical care.


DEBBIE VOGEL

2003:

Dedication of the Robert Wood Johnson Medical School Research Building: Scientists from five departments occupy 90,000 square feet of this 120,000-square-foot building on the Piscataway campus, which provides 27 state-of-the-art scientific laboratories. Linked laboratories and inviting common areas contribute to the building's collaborative environment, designed in form and function to hasten basic science discoveries from bench to bedside. The Research Building houses a core imaging suite, equipped with interdepartmental instruments and an up-to-date core nuclear magnetic resonance facility.


NAT CLYMER

2005:

The Child Health Institute of New Jersey (CHINJ): CHINJ is a comprehensive biomedical research center, located on the New Brunswick campus. The newest of the medical school's research institutes, CHINJ houses academic offices of the Department of Pediatrics, as well as an 11,000-square-foot clinical area where more than 20,000 patients are seen annually.


ROY GROETHING

2013:

Restructuring Act Integrates the Medical School with Rutgers: Following the 2012 enactment of the New Jersey Medical and Health Sciences Education Restructuring Act, Robert Wood Johnson Medical School and most UMDNJ centers were transferred to Rutgers University. Robert Wood Johnson Medical School became part of Rutgers Biomedical and Health Sciences, a new division at Rutgers University that unites 14 of the State's health-related schools and programs under a single umbrella.

2015:

Appointment of Sherine E. Gabriel, MD, MSc: Dr. Gabriel, a noted epidemiologist and medical educator, took office on July 28 as the first woman to serve as dean of Robert Wood Johnson Medical School. Prior to this appointment, she served as the first woman dean of Mayo Medical School at the Mayo Clinic. M


JOHN EMERSON

ROY GROETHING


ROBERT WOOD JOHNSON
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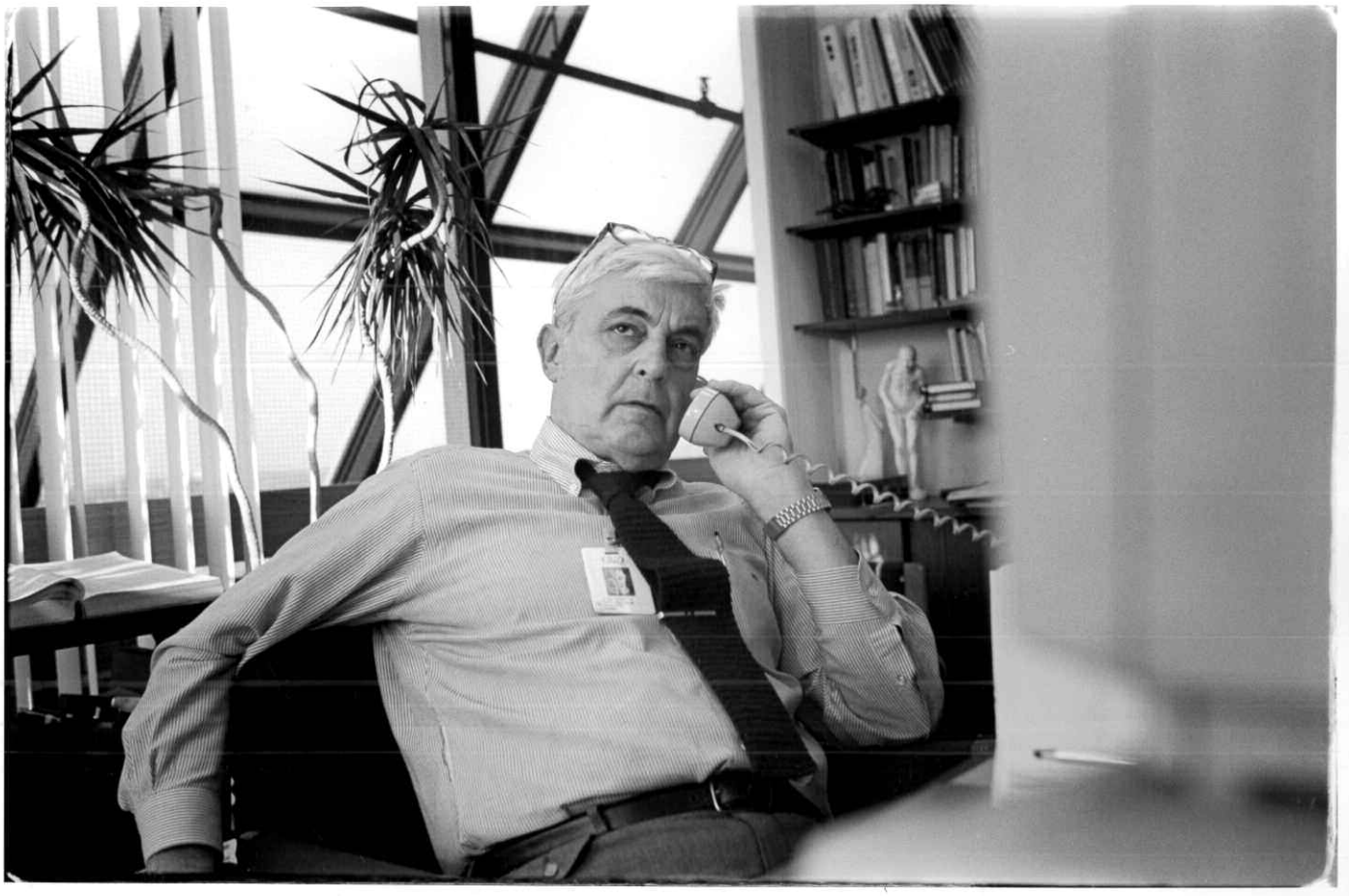
Roger Duvoisin, MD:

A Village in Italy and a Relentless Scientific Curiosity Revolutionize Research into Parkinson's Disease

When Roger Duvoisin was serving as a young corpsman on a hospital ship in 1945, he didn't know that his career would become enmeshed in research that would forever change how the world looks at Parkinson's disease. It was long before he would go to medical school. And years before H. Houston Merritt, MD, would recruit him to be the first fellow of the Parkinson's Disease Foundation at Columbia University. It wasn't until the 1990s that Roger Duvoisin, MD—by then professor and chair, Department of Neurology, and director of the William Dow Lovett Center for Neurogenetics—ignited a genetic breakthrough in Parkinson's disease that revolutionized scientific thought and medical history. And he did it here. At Robert Wood Johnson Medical School.

BY LYNDA RUDOLPH





Working at Columbia with Dr. Merritt, the preeminent academic neurologist of the day, influenced Dr. Duvoisin to what would fast become a passion for knowledge about Parkinson's disease. While there, Dr. Duvoisin contributed to the discovery of the role that vitamin B6 plays in reversing the benefits of L-dopa therapy. He also became intrigued by observations of three patients, each of whom had an identical twin who was unaffected by the disease. This suggested that Parkinson's is not inherited. Dr. Duvoisin continued to pursue additional studies of twins with Parkinson's when, as full professor, he moved to Mount Sinai School of Medicine in 1973.

Many Unanswered Questions about Parkinson's

As of then, there was no consensus about the cause of Parkinson's disease. Some felt it was the result of a variety of viruses. Others believed it was caused by environmental toxins. One theory proposed that Parkinson's was an epidemic and would disappear eventually.

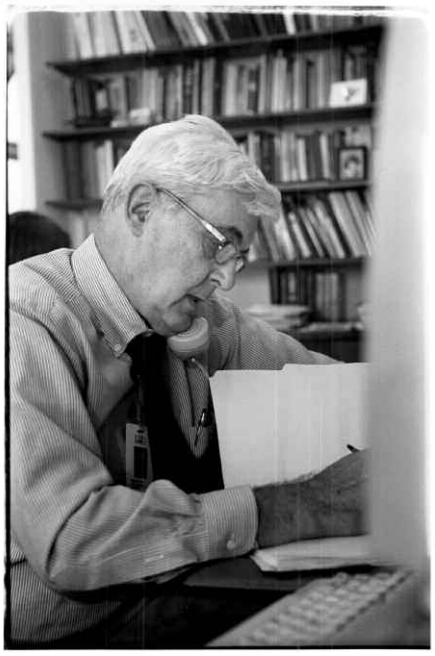
When Dr. Duvoisin was approached by the National Institutes of Health (NIH) to join with Roswell Eldridge, MD, on an additional twin study, his insatiable curiosity and need for answers fueled the partnership. He and Dr. Eldridge collected and studied 65 pairs of identical twins, each with a single affected individual. The results, however, were inconclusive. The answer to the great riddle that was Parkinson's was as elusive as ever. But Dr. Duvoisin was not deterred. Although genetics was not Dr. Duvoisin's field of study, he had publicly lobbied the belief that Parkinson's disease was not inherited. Nevertheless, when he began to see more patients who had other family members with the disease, he realized that he needed to continue pursuing the possibility of a genetic involvement.

By the time he was appointed chair, Department of Neurology, at Rutgers Medical School in 1979, Dr. Duvoisin was on a mission with a single focus. In 1990, he hired Alice Lazzarini, PhD, clinical assistant professor of neurology, to become part of the newly endowed William Dow Lovett Center for Neurogenetics team. She remembers clearly the challenge Dr. Duvoisin posed to her: "Alice, I want you to prove that Parkinson's disease is genetic." Lawrence Golbe, MD, professor of neurology, was Dr. Duvoisin's junior colleague. Together, the team set an agenda.

Finding a Genetic Connection

The way forward was to work with families and to do DNA analysis. And that is precisely what Dr. Duvoisin and his team did. Dr. Lazzarini published a family study from the medical files of hundreds of Dr. Duvoisin's patients. A significant opportunity presented itself when Dr. Golbe had serendipitous encounters with two Parkinson's patients whose families included multiple members with the disease. Both families came from a small village in southern Italy, Contursi, in the province of Salerno. The hunt for answers was on.

Dr. Golbe recruited a collaborator, Giuseppe Di Iorio, MD, a neurologist at the nearby University of Naples. Together, they found that 61 of the town's descendants had developed Parkinson's disease. They traced the ancestry of all 61 to a couple who had lived in the late 1600s. This rare family demonstrated a classic single-gene inheritance pattern. Men and women were equally affected, children of affected persons had a 50 percent chance of carrying the mutated gene, and almost every person with the gene developed the disease. Known as the Contursi Kindred study, it provided enough data—through this one extended family—to use to find a causative gene.



The next step was to locate and identify that gene. Both Dr. Golbe and Dr. Lazzarini made trips to Contursi to collect blood samples for DNA analysis back in New Jersey. Dr. Duvoisin's team had already confirmed—through examinations of autopsy materials from two deceased family members—that this atypical family did demonstrate typical Parkinson's pathology. This was the first demonstration of typical Parkinson's autopsy pathology in patients with hereditary Parkinson's.

"Earlier in his career, Dr. Duvoisin was known to advocate for environmental causes of the disease. Then, once evidence demonstrated otherwise, he announced publicly that he had changed his mind and now believed it was genetic. That had a really big influence on the whole field," says Dr. Golbe. "Very few people agreed with him."

The Protein Discovery

Dr. Duvoisin and his group formed a collaboration with the NIH's Robert Nussbaum, MD—a clinical geneticist with advanced training in molecular biology—and his colleague Mihaelis Polymeropoulos, MD. They found the locus of the gene mutation on chromosome 4—at the address 4q21. Checking for genes located in the same area against GenBank—the repository of millions of gene sequences—they found a candidate gene that had been described by two California scientists. The gene was called SNCA, which coded for a protein called alpha-synuclein.

In June 1997, Dr. Nussbaum, Dr. Polymeropoulos, and Dr. Duvoisin's team submitted their paper, "Mutation in the Alpha-Syneuclein Gene Identified in Families with Parkinson's Disease," to the journal *Science*. In it, they identified the first of many mutations, in the alpha-synuclein gene, that cause Parkinson's disease.

Soon after the findings were published, other scientists searched for abnormal alpha-syneuclein in brain tissue from people with nonfamilial Parkinson's disease. They showed that it's the main component of the protein aggregates called Lewy bodies, which create a toxic effect inside the brain cells of people with Parkinson's. Since then, other mutations in the same gene, SNCA, have been found to increase the risk of Parkinson's even in its more common nonfamilial form.

"Our discovery changed the face of Parkinson's research forever," says Dr. Lazzarini. "It is considered to be the single most promising scientific opportunity in the search for the cure for Parkinson's disease."

Now approaching 90 years of age, Roger Duvoisin lives in North Carolina. He and Dr. Lazzarini—who, in the ultimate twist of fate, has been diagnosed with Parkinson's disease herself—still keep in touch. "He wants us to write a book to commemorate the anniversary of James Parkinson's 1817 description of 'the Shaking Palsy,'" she says.

The American Parkinson Disease Association has named a research scholar award for Dr. Duvoisin. Today, the search continues for ways to apply his team's discovery to neuroprotective therapies, and early clinical trials have begun that engage in various approaches to target alpha-synuclein, including the use of antibodies.

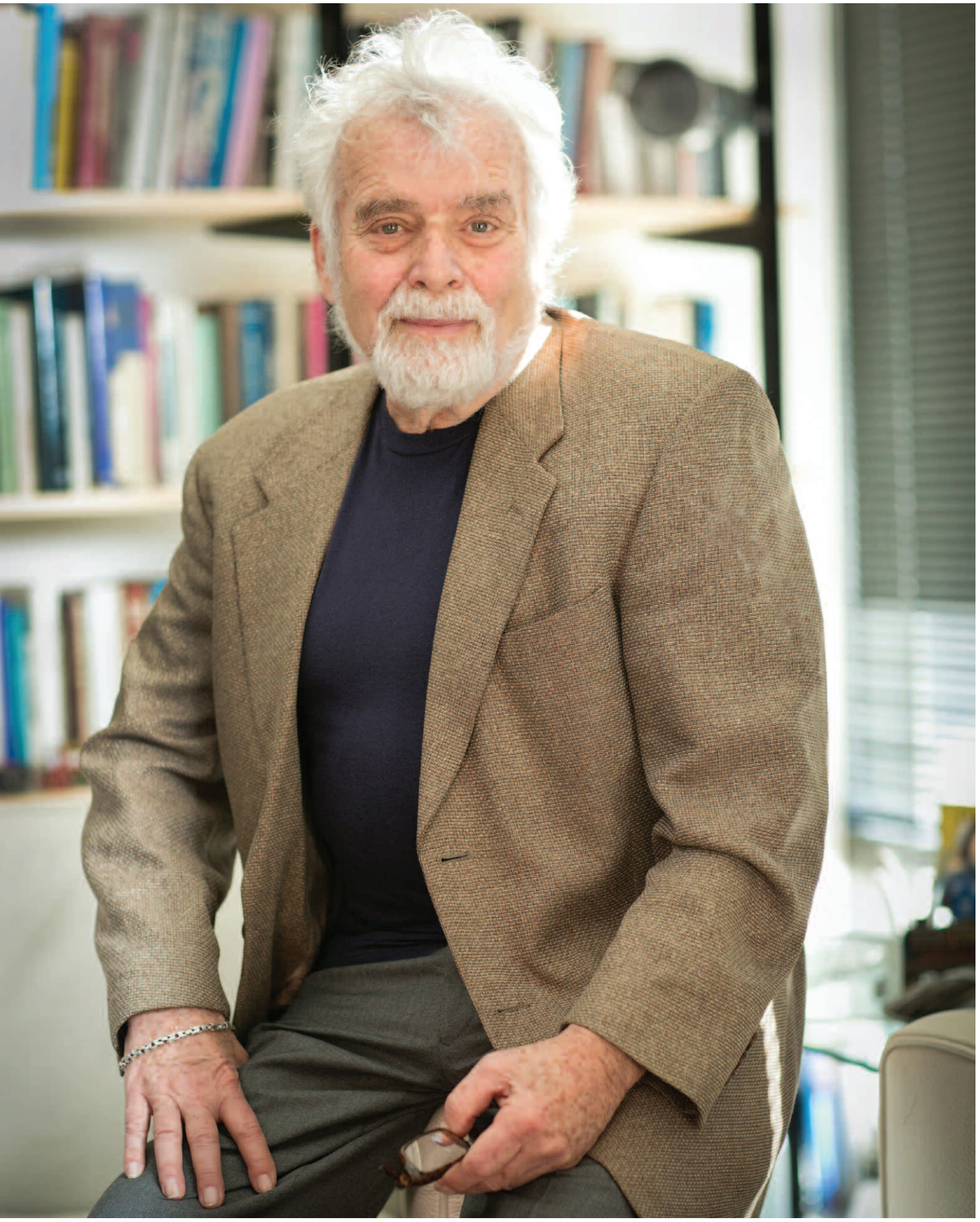
Unquestionably, the role that Dr. Duvoisin played in the discovery of alpha-synuclein has hastened the promise of a successful treatment for this devastating disorder. M

Michael Lewis, PhD:
A Career Dedicated to Human Development

His legacy is nothing short of extraordinary. It includes a list of accomplishments that would be astounding for a dozen people. Michael Lewis, PhD, has mentored 85 postdoctoral fellows, graduate students, and junior faculty members. He has secured more than $60 million in grant support. He has authored nearly 600 publications—including more than 35 books. And he has given more than 1,000 presentations, lectures, and interviews, everywhere from Berkeley and Seattle to Italy, Israel, and China. The honors he has acquired from prestigious professional and academic organizations are too numerous to mention; his work in the developmental sciences is among the top 1 percent of the most referenced today.

BY LYNDA RUDOLPH

PORTRAITS BY KIM SOKOLOFF



To say that Dr. Lewis has had a storied career would be an understatement. He is a university distinguished professor of pediatrics and psychiatry at Robert Wood Johnson Medical School and director of the Institute for the Study of Child Development. He is also a professor of psychology, education, biomedical engineering, and social work at Rutgers, The State University of New Jersey, and serves on the executive committee of the university's Cognitive Science Center. And those are just a few of Dr. Lewis's many academic appointments and interests.

Born in New York City, Dr. Lewis has roots in St. Petersburg, Russia, but his ancestry goes back further to Amsterdam. The family then moved across Europe as fur traders and immigrated to the United States in the 1800s. His father was an engineering student at Cornell University in 1913. After the death of his mother—leaving him orphaned at age 18—his experiences became the impetus for one of his books, *Altering Fate: Why the Past Does Not Predict the Future*. "When I got to college, I was alone and struggling to figure out how the world works," says Dr. Lewis. "Umpteen years later, I'm still trying to figure out how I ended up where I did."

He believes much of his early career has unfolded purely by chance. "Some things are just accidental," he says. "All of a sudden you discover a phenomenon that transforms your work. Serendipity is important. Look at the biographies of successful academics—they were involved in many different problems." Dr. Lewis began his career in electrical engineering. He had a professional mentor who introduced him to demography, in looking at mental disease and migration patterns. Dr. Lewis then switched from engineering to demography and epidemiology. That, in turn, led him to psychology. While he has always been interested in research, he was also attracted to psychopathology. "My degree in 1962 from the University of Pennsylvania is in both clinical and academic psychology," he says.

Studying Consequences of the Environment on Children's Development

The lack of information about child development got his attention. In the late 1950s and early 1960s, very little was known about newborn babies and children. His earliest work involved psychophysiology, in a set of studies that examined the effects of environment on children's development—right down to gauging its impact on respiration, blood pressure, and heart rate changes. "At the same time, I was interested in how the environment affected the child, and I edited a book called *The Effect of the Infant on Its Caregiver*, which changed the word used from caretaker to caregiver and helped develop the field of maternal attachment," says Dr. Lewis. "I am a believer if the environment changes, your interest changes."

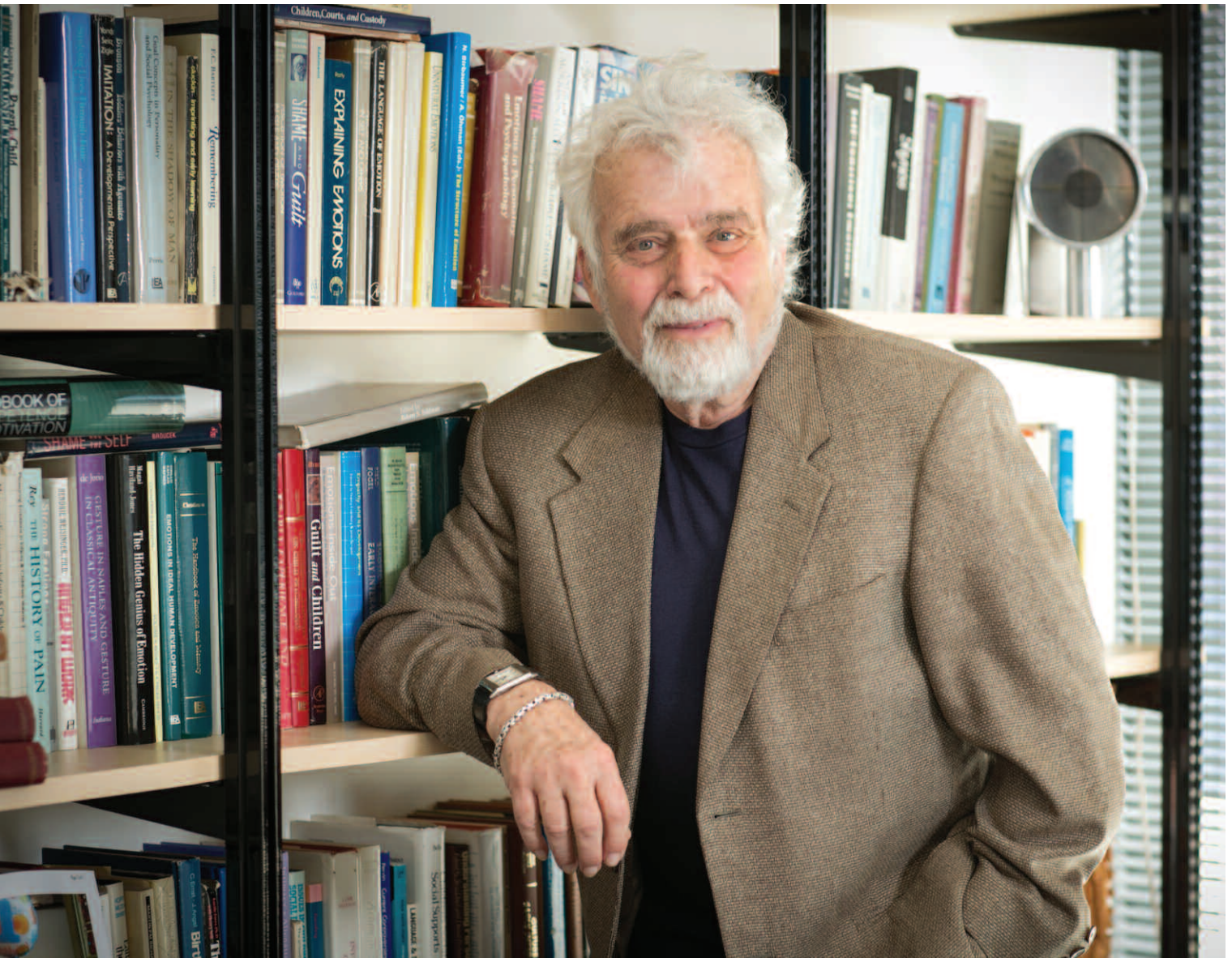
And that became the 50-year theme of his work. "To understand development, you have to understand how the environment gets under your skin," he says. He formulated models based on the idea that development is always a complex interaction between characteristics of the child and of the environment. "We simply can't understand both normal and pathological development without appreciating the role of the environment," Dr. Lewis emphasizes. Those models are now called epigenetic models.

The epigenetic model explains how genetic expression is dependent upon the environment, in both normal and deviant development. For example, Dr. Lewis led a 20-year longitudinal study to learn the effects of cocaine exposure on development. "We looked at the central role of the nature of the child's environment and the risk load of it," he says. "When a fetus has been exposed to cocaine, it means the mother and others are using cocaine. Thus the environment of the child, independent of exposure, is important to consider if you want to understand the child's development."

Finding New Ways to Identify Autism

One of the most important breakthrough areas of research focuses on emotional development—understanding and trying to measure emotions in young children as they develop, with an emphasis on the "moral emotions" or "self-emotions" and their origin. Shame, guilt, pride, and embarrassment have been the subjects of several of Dr. Lewis's books. His most recent work, *The Rise of Consciousness and the Development of Emotional Life*, won the William James Book Award. It describes a theory of emotional development that includes the rise of self-consciousness. "That leads us to study the development of the brain," says Dr. Lewis. "Our imaging study work led us into pathology and took us into the study of autism, where we learned autistic children don't develop a sense of themselves."

In 1979, Dr. Lewis developed a technique that helped identify children with autism based on their response to mirrors. At 15 to 24 months, a normally developed child recognizes himself or herself in a mirror and uses the terms "me" and "mine." Brain maturation is related to the emergence of personal pronouns and mirror recognition. Autistic children don't show such self-recognition behavior at that



stage in their development. Half of them never show it, and those who are higher functioning don't begin to show it until they are 4 or 5 years old. "This mirror technique has been adopted by the autism community," says Dr. Lewis.

More Exploration—More Work to Do

Dr. Lewis published a paper about intersensory integration in 1972. It's a phenomenon that most people understand by comparing it to a sound track that isn't in sync with the lip movements in a movie. "That recognition of the lip movement being out of sync with the video track is the concept," says Dr. Lewis. Babies who are between the ages of 4 and 8 months can recognize not only the sounds of language but also the lip movements that go with them. Recently, Dr. Lewis and his team received a grant to study intersensory integration as a means to identify children at risk for being autistic.

Dr. Lewis believes we can answer the important questions about abnormal pathology by looking at normal behavior. "Studying normal development and the mechanisms that apply to clinical issues help us understand abnormal development," he says. "We must extend what we learn from normal children to help us understand dysfunctional development."

A career of 52 years would be enough for most people. But Dr. Lewis shows no signs of slowing down.

"We have developed a practicum course for psychology and social work students from other schools within the Rutgers community, embedding them into pediatric clinics and hospitals," he says.

As Dr. Lewis continues to mentor, teach, write, lecture, research, and develop new programs, his leadership and insight will continue to help children and their families face the future with promise. M

Avedis Khachadurian, MD:

A Physician-Scientist Whose Investigations Led to the Understanding of Familial Hypercholesterolemias—and Statins

Born in Aleppo, Syria. Educated in Armenian and French schools. Working first as an accountant. Later tending patients for free. The physician-scientist who identified the pathogenesis of familial hypercholesterolemias, Avedis K. Khachadurian, MD, has always believed in taking a different path.

"I remember the first time I met Dr. Khachadurian, when I was a candidate for assistant professor," says Louis Amorosa, MD, interim chief, division of endocrinology, metabolism and nutrition. He expected to be interviewed at the medical school in Piscataway. Instead, Dr. Khachadurian invited Dr. Amorosa to his house in Princeton. "On a Saturday afternoon, we had a lovely meeting. His wife made coffee and served Mediterranean desserts," recalls Dr. Amorosa. "He interviewed me, we talked, and in the spring, he invited me to the hospital for grand rounds. After that, I received a job offer—and I had never even set foot in the medical school."

BY LYNDA RUDOLPH

PORTRAIT BY JOHN EMERSON



Dr. Khachadurian, emeritus professor of medicine, who established the division of endocrinology, metabolism and nutrition at Rutgers Medical School in 1973, has had a career filled with life-defining moments.

Beginnings in Beirut

Medicine wasn't his first career choice. At age 16, Dr. Khachadurian began working as an accountant in Aleppo after his father had a stroke; he had to earn enough to support his family. "It was a very important job," says Dr. Khachadurian. "The government had nationalized all wheat production, and I was actually controlling the distribution." When he went back to school at 18, it wasn't until the last moment that he made the decision to choose medicine to study. "Biochemistry was a new science. It was just starting to influence medicine. People were beginning to describe pathways," says Dr. Khachadurian. "Medicine was less sophisticated then." He adds, "Lebanon and Syria had a lot of intermarriage, cousins marrying cousins, that created inborn errors of metabolism." The lure of biochemistry's role in understanding those errors reeled him in.

He served his residency at American University of Beirut. "Then I went to Harvard for two years, studying biochemistry and diabetes, and later returned to Beirut, where I had a joint appointment in biochemistry and medicine," says Dr. Khachadurian. He was teaching and working in a clinic, seeing mostly diabetics and patients with other metabolic disorders.

One day, he was sent a 16-year-old girl whose cholesterol was between 700 and 800. The condition was causing life-threatening atherosclerosis in young adulthood. A professor suggested to Dr. Khachadurian that he study such cases. That moment signaled the beginning of Dr. Khachadurian's odyssey to investigate familial hypercholesterolemias (FH).

He reviewed the literature. At the time, there was no agreement about how the disease was inherited. Once people knew about the work he was doing, he began to get more patients. "In 1964, I published about ten families, all showing this form of FH where children had cholesterol in the 700 range when both parents were around 350—a significant deviation from the normal population's range, which was around 170," he says. The evidence was clear-cut: if a mother and father both had the heterozygous mutation, one-fourth of their children would have the homozygous form of the disease. Dr. Khachadurian had demonstrated that there was a metabolic defect present in patients with FH.

The study, entitled "The Inheritance of Essential Familial Hypercholesterolemia," was published in 1964 in the *American Journal of Medicine*.

Journeying to the United States and Rutgers Medical School

Dr. Khachadurian was recruited by Northwestern University in Chicago. After spending a year there on sabbatical, he was invited to become a professor of pediatrics and director of a clinical research center. Meanwhile, political unrest in Beirut was taking hold. The Northwestern offer was one he couldn't refuse.

It was at Northwestern that Dr. Khachadurian used fibroblasts to detect metabolic disorders. In 1965, he biopsied the skin of one patient; after returning to Beirut, he studied many more—including liver biopsies in patients that showed the same defect. Michael S. Brown, MD, and Joseph L. Goldstein, MD, later used this work as the foundation for studies that led to the development of statins—for which they received Nobel Prize recognition.

Dr. Khachadurian was recruited by many medical schools. Hadley Conn, MD—who was then the chair of the Department of Medicine at Rutgers Medical School—lobbied for him to come to the school. Dr. Conn knew of Dr. Khachadurian since he had spent a year at the American University of Beirut as a visiting professor of medicine.

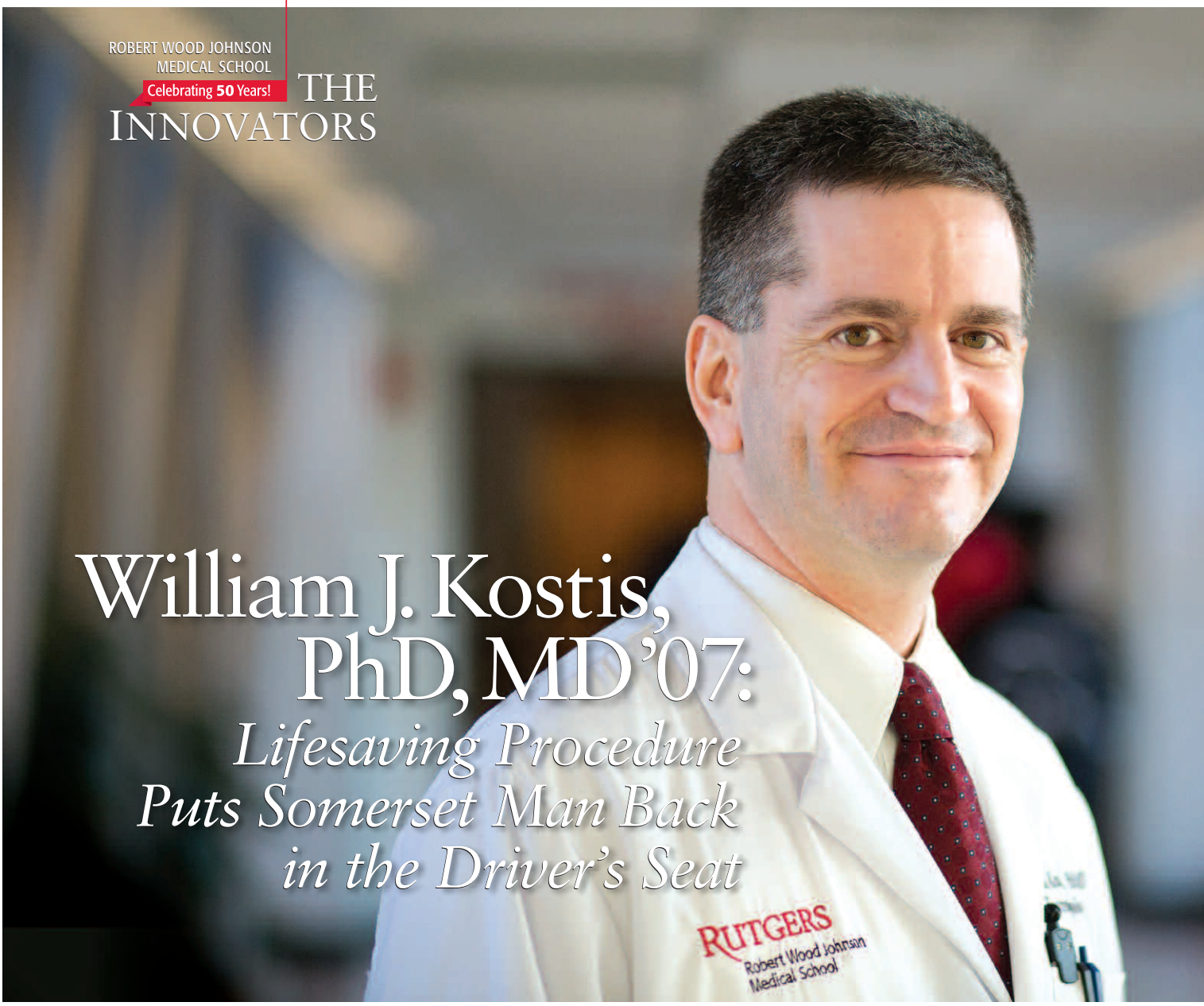
An Honored Scientist

Several investigators feel that Dr. Khachadurian deserved a piece of the Nobel Prize. He humbly disagrees, believing that as scientists, "we all stand on each other's shoulders."

But Dr. Khachadurian has significant awards of his own. In 2012, the National Lipid Association honored him with a Distinguished Achievement Award in recognition of his scientific contributions. At Robert Wood Johnson Medical School, the division of endocrinology, metabolism and nutrition has named its research laboratories the Avedis and Laura Khachadurian Laboratory of Metabolic Research. And in 2015, the Familial Hypercholesterolemia Foundation Global Summit recognized him for his seminal contribution to metabolic research.

Dr. Khachadurian believes he owes a great deal to the support he had at Rutgers Medical School. "I couldn't have done the things I did alone," he says. "Looking at antioxidants, the 40-plus publications on cholesterol, and collaborations with anatomy, biochemistry, and pharmacy—these things happened because I saw a lot of my colleagues in the dining room. We were like a family in my division. To this day, we are so close to each other."

According to Dr. Amorosa, Dr. Khachadurian's need for answers hasn't abated: "At 90 years of age, he still asks the smartest questions in the room." M



William J. Kostis, PhD, MD'07:

Lifesaving Procedure Puts Somerset Man Back in the Driver's Seat

BY
BETH-ANN KERBER

PORTRAIT BY
JOHN O'BOYLE

At 31, Somerset resident Shawn Fohs was the picture of good health: fit, with no chronic health conditions, and a reputation of never getting sick. He walked a few miles a day as a result of his job in Manhattan as a cybersecurity consultant for EY and tried to fit in a little time after hours to work out at the gym each week. And a 2-year-old daughter and one who was just months old kept his home life active as well.

But on August 2, an undiagnosed heart condition nearly cost Fohs his life.

He awoke early that morning with his heart beating irregularly—a feeling he had never experienced before.

"I didn't know what was going on," he recalls. "I decided I would try to take a shower and relax for a few minutes to see if that helped. Fifteen minutes went by and I still didn't feel right, so I told my wife I was going to drive to the hospital and get checked out."

Grabbing his car keys for the two-mile drive to the hospital, Fohs made it as far as his front door before collapsing. His wife, Amanda, found him unresponsive on the floor, in cardiac arrest, and called 911. When the emergency medical service arrived, they performed CPR, shocked him with a defibrillator, and transported him to the Emergency Department at Robert Wood Johnson University Hospital (RWJ).



JAIME MEILE PHOTOGRAPHY

It was there that Fohs's EKG revealed a "pre-excitation" pattern, often called a Wolff-Parkinson-White (WPW) pattern. This suggests that an individual has an extra electrical connection between the upper and lower chambers of the heart, says William J. Kostis, PhD, MD '07, a cardiac electrophysiologist and assistant professor of medicine at Robert Wood Johnson Medical School.

"This extra connection, or accessory pathway, may lead to abnormal heart rhythms and, in turn, to symptoms in patients with the so-called WPW syndrome," Dr. Kostis explains.

The WPW pattern is relatively uncommon, with only a couple of people per thousand having it, and the syndrome is even less common, he says.

In Fohs's case, he had an additional abnormal heart rhythm, paroxysmal atrial fibrillation (AF), in which the upper chambers of the heart have rapid, disorganized electrical activity.

And while AF alone can mean an increased risk for stroke and a decline in the heart's ability to effectively move blood through the body, it can have especially dire results in people like Fohs who have an accessory pathway, Dr. Kostis says.

"If these individuals go into AF, the electrical signals may conduct rapidly through that accessory pathway, which can subsequently cause ventricular fibrillation [VF]," he explains. "In VF, the ventricles quiver in an uncoordinated pattern instead of contracting properly, which means blood is not being pumped from the heart. It's a life-threatening condition that typically results in sudden cardiac death."

When testing revealed evidence that this had occurred with Fohs, RWJ specialists started him on medication to stabilize the condition and immediately took steps to prepare to rectify the issue. Within a few days, he was in RWJ's Cardiac Catheterization Laboratory, where Dr. Kostis performed a catheter ablation.

In this procedure, a series of thin, flexible tubes—known as catheters—is inserted into blood vessels and guided to the heart. Three-dimensional mapping techniques are used to find the precise location of the accessory pathway. A special machine then delivers energy—in this case, radiofrequency energy—through one of the catheters. This targeted energy creates a small scar in the heart tissue where the extra pathway is located, thus destroying it, explains Dr. Kostis.

After recovering overnight in the hospital, Fohs was monitored for a few weeks using an ambulatory monitor to help ensure that the procedure had been successful and that there were no other signs the extra pathway had returned, Dr. Kostis says.

"All in all, although it's an uncommon condition to have, we were able to get the problem solved," he adds.

Fohs is pleased with the result, noting that he returned quickly to his normal activities and has been doing well.

"After the procedure, I was sore for a few days, but it wasn't anything significant. No real pain," he says. "Overall it was a positive experience, and all of the doctors went out of their way to explain what had happened and the procedure that would be performed."

Regaining his active lifestyle has been important for this young father and former racing enthusiast. Although he's

JOHN O'BOYLE VISUALS



"Although the Wolff-Parkinson-White syndrome is an uncommon condition to have, we were able to get the problem solved," says William J. Kostis, PhD, MD '07, a cardiac electrophysiologist and assistant professor of medicine at Robert Wood Johnson Medical School (right), with his patient, Shawn Fohs.

retired from the track since having children, Fohs was a go-kart racer from the age of 12 who amassed more than 100 first-place finishes over the next nine years. He also raced bicycle motocross (BMX) throughout the Northeast and ITB (Improved Touring B) cars at all major road tracks in the region, including Watkins Glen International, Lime Rock Park, and Pocono Raceway. To someone used to being in the driver's seat, the prospect of having something occur that is beyond one's control can be a bit disconcerting.

"Prior to this happening, I'd had no other issues, no prior symptoms," says Fohs. "It was a very unique situation that I was in. I've come to acknowledge that there wasn't anything I could have done to prevent what happened. It's something that could happen to anyone."

In fact, says Dr. Kostis, many people with a WPW pattern never experience any symptoms. In those who do, symptoms can include rapid heart palpitations, lightheadedness, dizziness, shortness of breath, and chest discomfort.

Because WPW patterns are one of the well-known factors for elevated risk of cardiac arrest, anyone who is known to have such a pattern should still be seen by a cardiologist, even if asymptomatic, Dr. Kostis advises. It is a good idea for individuals who have an arrhythmia or an arrhythmia-associated EKG pattern to be evaluated, he adds.

"Unfortunately, it can be difficult to figure out how worrisome it will be without going in to investigate," says Dr. Kostis.

In people with WPW syndrome, a typical approach would be to perform an electrophysiological study with catheter ablation, he says, since the procedure is relatively low risk, with good long-term results.

Now that Fohs has undergone treatment, he is happy to be back in the driver's seat once again, with his wife and daughters, thanks to the great care he received. M

Huaye Zhang, PhD:

A Scientist with a Passion for Neuroscience—and Motherhood

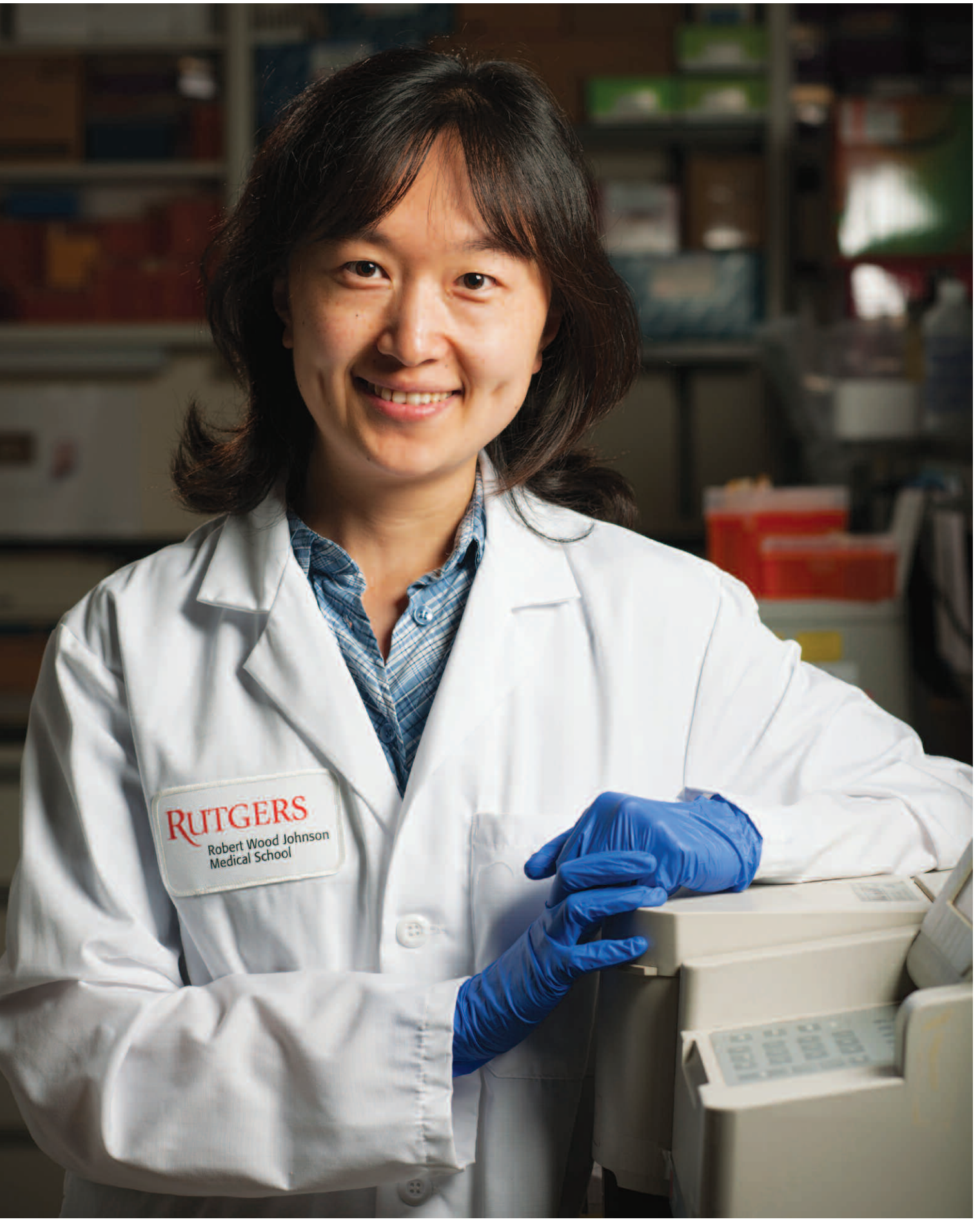
She has a 7-year-old son, a 3-year-old daughter, and a thriving career in science. No one ever told Huaye Zhang, PhD, assistant professor of neuroscience and cell biology, that it wasn't possible. "Honestly, growing up in China, I never thought that being a woman was an issue. It never occurred to me to be a potential problem," says Dr. Zhang. Her ability to balance family life and her career has earned her role-model status at Robert Wood Johnson Medical School.

Dr. Zhang admits this isn't about being perfect. In fact, it's about accepting that you can't be.

Students often talk with her when they're at the age of starting a family, worried that it can't be done, ready to give up on advancing their careers. "I tell them, 'You can do it,'" Dr. Zhang says. Her theory is that you can have two loves, as long as you realize that not everything is going to go perfectly. "Honestly, taking children out of the equation, I would possibly have published more papers and gotten more grants funded. Taking science out of the equation, I could have been a better mom, spending more time with the children. But when I ask myself if I would give up either one, I say no," she says.

BY LYNDA RUDOLPH

PORTRAITS BY JOHN EMERSON


RUTGERS
Robert Wood Johnson
Medical School

The balancing act she has become famous for is something she learned from her parents. Both are scientists and professors. They influenced Dr. Zhang's natural curiosity as she tinkered with ingredients in a homemade chemistry lab—an early memory of growing up that sticks with her as a precursor of what was to come. Fast-forward to her time as a graduate student at the University of Virginia, where she worked in cell biology after being inspired by professors who were doing cancer research. Then, for her PhD, she studied cell migration, which is a process important for cancer metastasis.



Dr. Zhang actually intended to stick to studying cellular mechanisms relative to cancer. But fate intervened in the form of an invitation to work on neurons—in particular, the communication between them. She began to create her own unique career path as a result, using what she learned in basic cell biology and applying it to neuroscience, examining signaling mechanisms in synapse formation.

Today, Dr. Zhang's work is focused on dendritic spines–small, actin-rich protrusions that receive most of the excitatory synaptic inputs in the brain. The number, size, and shape of the spines change in response to a variety of factors, including synaptic activity and aging—linking them to neurological disorders and injuries such as Alzheimer's disease and traumatic brain injury (TBI). "We've been focusing on a group of proteins called Par polarity proteins (Par)," says Dr. Zhang. "We found in Alzheimer's the loss of one of the Par proteins increased the formation of β-amyloid peptides, which make up the plaques that Alzheimer's patients accumulate in their brains." The ultimate goal is to determine the molecular mechanism by which these plaques form so a strategy can be developed to reduce them.

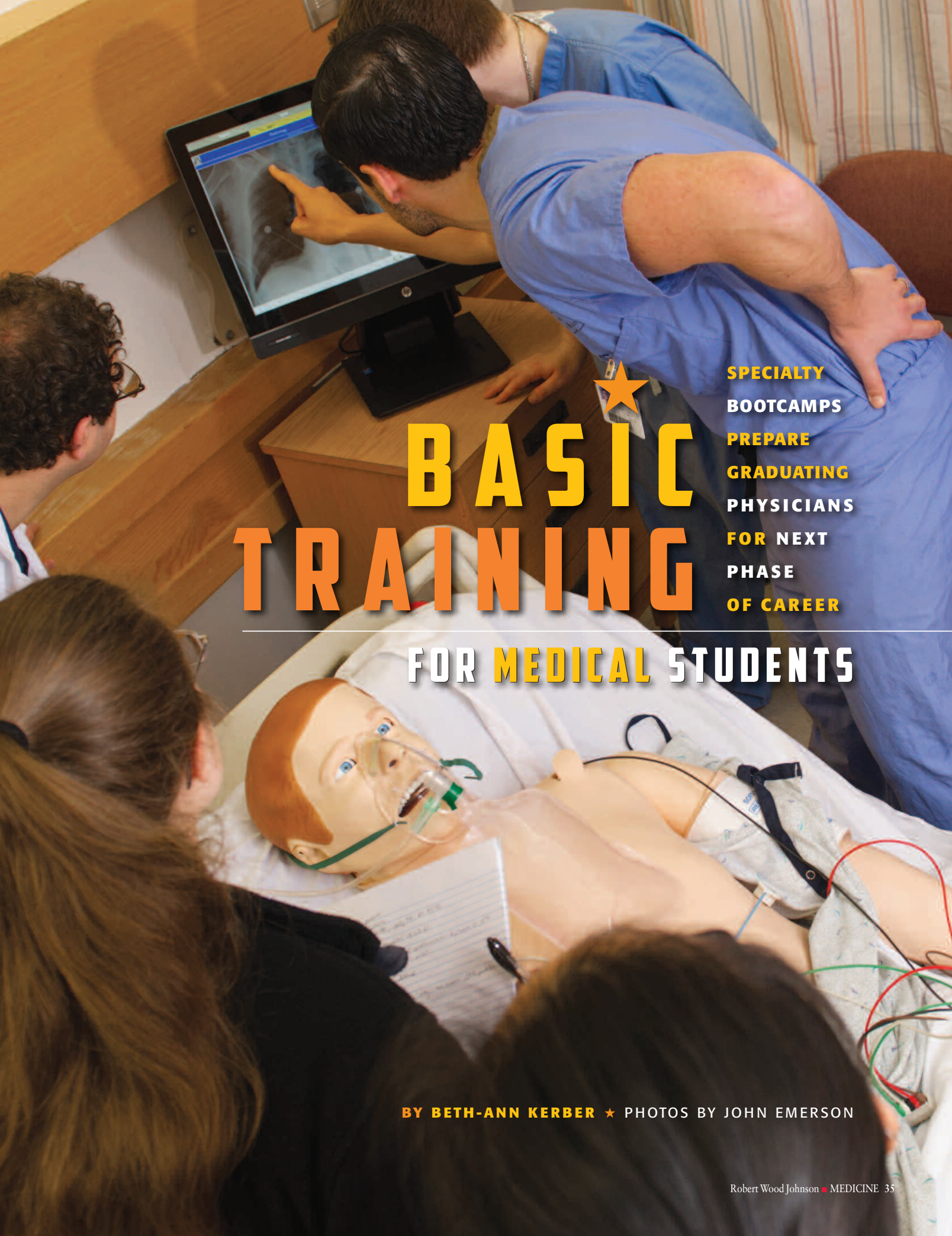
For TBI, her lab is working on a different Par protein, which she and her colleagues found regulates inflammation of the brain. In people who suffer with TBI, there's typically a prolonged inflammation that kills brain cells and their connections, inhibiting the recovery of brain function. "We're trying to figure out mechanisms that trigger the chronic inflammation," explains Dr. Zhang. "We've found in genetically modified mice that have reduced expression of this protein, there is much worse inflammation than regular mice. We are working to develop strategies to stimulate the activity of this protein and reduce inflammation."

Dr. Zhang's work with dendritic spines may lead to understanding basic mechanisms of how brain cells communicate with one another, which can be applied to many diseases. "There are so many different brain disorders and neurodegenerative diseases for which we don't have good treatments," she says. "I think it makes me feel better to be involved in work that I hope will help people."

In terms of balancing work and life, Dr. Zhang feels she has learned to adapt. "I try to be, at work, as efficient as I can and to come up with strategies to manage my time well and figure out what works best for me."

Cheryl Dreyfus, PhD, professor and chair, Department of Neuroscience and Cell Biology, feels that Dr. Zhang is setting the stage for others to follow.

"She is committed to becoming a scientist and is going to work hard to do that," says Dr. Dreyfus. "She's committed to being a mother and a wife, and she's going to work hard to do that. She's going to succeed." M



BASIC TRAINING

FOR MEDICAL STUDENTS

SPECIALTY BOOTCAMPS PREPARE GRADUATING PHYSICIANS FOR NEXT PHASE OF CAREER

BY BETH-ANN KERBER ★ PHOTOS BY JOHN EMERSON

"When was the last dose of epi?"

A small group of fourth-year Robert Wood Johnson Medical School students is gathered around "Stan," who in just minutes has gone from outlining his symptoms to being nonresponsive, with a heart rate and blood pressure at dangerously low levels. With no time to consult textbooks or medical literature, the team needs to act now.

Kaila Queen, MD '15, who was diligently recording every aspect of the patient encounter, quickly consults her notes and double-checks the timer on her phone. "Three minutes."

"One milligram epi, IV push," one of the members of the team calls out as he places a vial of saline, standing in for the required epinephrine, on the table next to the patient's bed, adding to the previous medication the team already called for in the treatment of their now-critical, simulated patient.

After advanced cardiac life support, a few expert consults and test results, and the dispensing of additional medication, the patient's vital signs are now returning to normal, the underlying cause of the problem uncovered. A voice comes over the intercom into the simulation room: "OK, we'll close the case here."

As the students file out of the Adult SIM room for a debriefing session to analyze the specifics of the case, what was done well, and what needs improvement, the simulation patient, a wireless mannequin named iStan, is restored to its presets, the medication chart and other equipment in the room are reset, and another group of students prepares to enter for the next case of the morning.





Above: *Rosalie Yan, '16, listens for the SIM patient's heartbeat, while fellow classmates (left to right) Christopher Massa, Joseph Berman, Neil Newman, Breton Roussel, and Kathleen Cappaccione check the monitors to determine progress.* ■ **Left:** *Instructors Dana Herrigel, MD, and Colleen Donovan, MD, view the case from the rear of the simulation room.*

The simulated exercises are the culmination of an intensive, two-week "BootCamp" required for all fourth-year students at the medical school. Every student takes part in one of several BootCamps, each designed around a particular specialty.

Just as basic training in the military is designed to provide new service members with the fundamental tools needed for them to perform their roles during the remainder of their tour of duty, Robert Wood Johnson Medical School's BootCamps are helping its medical students focus on the skills that prospective physicians will need in their careers as doctors. The program reviews pertinent basic science topics, common clinical scenarios, essential resident skills, and up-to-date evidence-based medicine. It uses didactic sessions and workshops, as well as the simulated exercises, to ease the transition from medical school to residency.

"It's a unique time for the students who are about to graduate. They are excited about starting their residency training, but a little nervous as well. The BootCamps are designed to help them prepare and make them feel a little more comfortable," says Elizabeth Goodman, MD, assistant professor of pediatrics, who piloted the BootCamp curriculum in pediatrics four years ago and remains the director of the Pediatric BootCamp. "We try to tie in all the experiences from the four years of medical school: the basic science aspects that were learned in the first two years, with the clin-



Below: *Internal Medicine Chief Resident Andrew Parziale, MD, (far left) looks on as fourth-year students (left to right) Laura Barry, Michael Nalepa III, and Megan Nahass examine their patient.*



2016 BootCamp Directors:

Emergency Medicine	Meigra M. Chin, MD
Family Medicine and Community Health	Marissa J. Stabile, DO
Internal Medicine	Dana J. Herrigel, MD
Ob/Gyn	Meir Olcha, MD
Pediatrics	Elizabeth Goodman, MD
Psychiatry	Anthony Tobia, MD
Surgery	Theodore E. Eisenstat, MD

ical in the last two years. It gives them a little leg up for the start of their internship."

Ultimately, the BootCamps help students develop basic organizational and communication skills, better understand physiology, review common diagnostic and therapeutic scenarios, enhance the use of evidence-based medicine, and improve their clinical abilities.

An Academic Leader

The BootCamp program became a requirement for all fourth-year Robert Wood Johnson Medical School students in 2014. The BootCamp concept was a result of a task force report of the M3/M4 curriculum, led by Archana Pradhan, MD, MPH, assistant dean for curriculum.

When the program was originally piloted by pediatrics, the medical school was at the forefront of this trend, Dr. Goodman says, and it continues to push the envelope by adapting the initiative to other specialties. Now, in addition to pediatrics, BootCamps in the areas of emergency medicine, family medicine, internal medicine, obstetrics and gynecology, psychiatry, and surgery prepare students for what to expect in their chosen fields. It is this approach that makes Robert Wood Johnson Medical School's program different, Dr. Goodman says.

"Our BootCamp is set apart because we're specialty-specific; most are not," she explains. "It takes more planning, but it gives more benefit to the students."

For example, writing prescriptions can be a particular concern in pediatrics, because calculating dosages is so different from doing so for adults; as a result, instructors spend time covering that topic in the Pediatric BootCamp, Dr. Goodman says. The experiences and topics covered vary for each specialty.

Overall, students complete the course feeling more proficient in many skills and tasks, she says. Those basic skills

may include writing discharge orders, putting in IV lines, suturing, and splinting. The program also reviews the Association of American Medical College's list of EPAs (entrustable professional activities)—core skills such as taking informed consent, assigning priorities for differential diagnoses, and recommending tests or prescriptions, each of which medical students are expected to be able to perform on their first day of residency.

Bridging the Gap…

Although the specifics of each simulated case are under strict wraps, the lessons from the exercises certainly don't stay in the teaching lab. The bene-fits of these experiences are mentioned repeatedly in evaluations of the BootCamps, with students recommending further expansion of the initiative and even calling it "the best preparation for internship year I have had."

"Listening to a lecture is not going to prepare you as well as experiencing something hands-on," says Inaya Ahmed, MD '15, who participated in the BootCamps before graduating last May. "It's a good reminder of all your training before the start of your internship. You can come across a situation where you can say, 'Oh, I've seen that before, and here is what we need to do.'"

Myroslav Figura, MD '15, who served as a team leader in one of the SIM sessions last year, agrees. "It's really useful, especially to have hands-on experience during a code. Real-life codes are very stressful. Having hands-on simulation helps you stay clearheaded to make better decisions during an actual experience, which could make a real difference for the patient."

The more hands-on the better, since it allows students to visualize the situation more clearly, and the small group sizes are also a benefit, says Colleen Donovan, MD, assistant professor of emergency medicine and simulation director, Robert Wood Johnson Medical School.

Guensley Delva, MD '15, said he was happy to see Robert Wood Johnson Medical School incorporating the simulation exercise experience: "Normally, medical school coursework relies on didactic and lecture-based training. Simulated exercises allow you to be more engaged and draw from that experience when you're in a clinical environment."

And that's precisely what their instructors are hoping.

"Simulated exercises are extremely helpful in figuring out how to make pathways between what you know and when you have to perform," Dr. Donovan explains. "For a test, you can know the material stone cold, but when the patient is in front of you and you have minutes to act, it's something else entirely. This experience is really good for bridging the gap between the lecture hall and having to use these skills in real time."





Below: *Colleen Donovan, MD, assistant professor of emergency medicine and simulation director, watches the scene unfold, taking notes for a debrief to follow.*

Planning the Cases

Dr. Donovan became involved with the BootCamp SIMs more than two years ago, in part because she remembered going through similar situations dur-ing her residency and wanted to help prepare the medical school's graduating students for those types of situations.

The simulated exercises draw from situations that residents are likely to encounter, or ones with very high acuity—"a case where you can't waste a lot of time," Dr. Donovan says. Each case requires a painstaking 15 hours to develop and program. And, much like the television staple *Law and Order's* "ripped from the headlines" approach, they are based on real-life scenarios, she says.

From the pediatrics perspective, a number of clinical situ-







Joseph Berman (above) and Rosalie Yan (below) check the vital signs of their patient. ■ *Top, Right: Joseph Berman, Neil Newman, Rosalie Yan, Christopher Massa and Kathleen Cappaccione study test results to get to the heart of their patient's problem.*



Above, Left: Chief Resident Andrew Parziale, MD, shares test results on a laptop with the student team—(left to right) Sandeep Tummalla, Laura Barry, and Megan Nahass—while Colleen Donovan, MD, prepares for the next phase of the simulation.

ations may be particularly anxiety-producing for students: having to resuscitate a newborn in the delivery room, mitigate the symptoms of a youth's asthma attack in the emergency department, or perform a foreign-body aspiration on a child, for example. These and other types of pediatrics cases requiring emergency management have been the subject of simulated exercises for the course, Dr. Goodman says.

The BootCamps program has grown with enhancements made each year, she adds. In 2015, for example, the medical school integrated information aimed at helping students with Step 3 of the U.S. Medical Licensing Examination, which is typically taken during the internship year. Students break out into small groups and review cases, analyzing the pathophysiology and management of those cases. The BootCamps exercises are designed to be like the types of cases they will see in the Step 3 exam, Dr. Goodman explains. In addition, last year's students were surveyed about their experience for feedback on additional enhancements that can be incorporated into the program for the Class of 2016 and beyond.

The work of all of the BootCamp directors has culminated in interesting assessments for key internship activities such as transitions of patient care, patient safety, quality improvement, and using the best evidence. Because of the creative work of our faculty, Robert Wood Johnson Medical School has been invited to participate in the ***AAMC Core Entrustable Professional Activities for Entering Residents Learner Community on Entrustment***, says Carol A. Terregino, MD, senior associate dean for education. M

Simulating the Patient Experience

Through the combined resources of Robert Wood Johnson Medical School, Robert Wood Johnson University Hospital, and Rutgers School of Nursing, students at the medical school have access to simulation mannequins of adults and infants, including Laerdal mannequins and iStan, a wireless patient simulator from CAE Healthcare that has internal robotics mimicking human cardiovascular, respiratory, and neurological symptoms. It breathes, blinks, has a pulse, and responds to various treatments. When students perform cardiopulmonary resuscitation, for example, its sensors allow for physiological feedback reflecting whether the correct hand placement, depth, and rate of compressions have been used.

Back in the control room, test results and simulated medical records are on hand for a variety of tests students may call for in each particular case.

In addition to observing the actions of the medical students' team during the SIM, faculty have the opportunity to demonstrate their acting chops, taking turns as consulting specialists, family members, and even the voice of the patient—whatever is needed for the particular case.

It all lends a sense of realism to the simulated clinical experiences that facilitates the transformation of textbook readings and classroom lectures to real-life skills. M

By Kate O'Neill

NEWS

Career Night is 29 and counting!

The 29th Annual Career Night was a huge success. The Great Hall was filled with dedicated alumni ready, willing and able to counsel and advise the Robert Wood Johnson Medical School student body. Enjoying an informal dinner together and gathered around tables, mentors and mentees exchanged important questions and answers that can often prove to be invaluable. Advice was handed down across the generations, strengthening the bond between the Robert Wood Johnson Medical School alumni and alumni in the making.

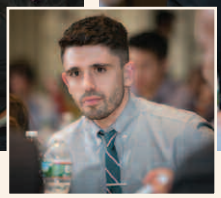














1: *Past and present Alumni Association leadership members (left to right) Len Jokubaitis, MD '81; Deborah Saez-Lacy, MD '86; Geza Kiss, MD '95; Steven Krawet, MD '89; Hank Lubin, MD '83; Roberta Ribner; Eduardo Fernandez, MD '89; Sonia Garcia Laumbach, MD '99, President of the Alumni Association; Lois DeRitter, MD '82; Paul Weber, MD '87; Elena Frid, MD '06; and Joseph Costabile, MD '86; congratulate Roberta Ribner on her career as the Robert Wood Johnson Medical School Alumni Coordinator. Roberta retired on April 1, 2016, after 29 years of service.*

2: *Students listen intently as alumni mentors provide insight about a career in medicine.*

3: *Joseph Costabile, MD '86, leads the discussion about careers in surgery.*

4: *Perry Ritota, MD '89, offers advice about careers in plastic and reconstructive surgery.*

5: *Steven Krawet, MD, '89, a career night regular, offers his advice to students.*

PHOTOS BY: KIM SOKOLOFF











6: *Michael Rosenberg, MMS '74, MD, enjoys talking about the practice of neurology.*

7: *The Great Hall was filled with students and alumni.*

8: *Sonia Garcia Laumbach, MD '99, discusses the future with students.*

9: *Paul Jenkins, MD '86, and Gary Buck, MD, '93, explain career choices in anesthesiology.*

Research News

By Kate O'Neill

Research Grants

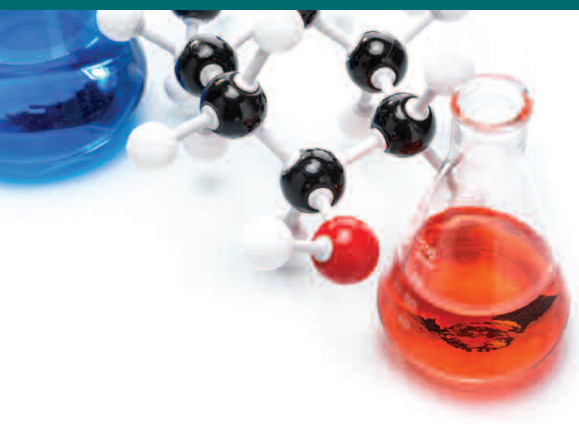
The National Institutes of Health (NIH) awarded grants of $1 million or more to the following members of the Robert Wood Johnson Medical School faculty:

- **Lisa Denzin, PhD**, associate professor of pediatrics, coinvestigator on "A New Retroviral Restriction Factor," a five-year subcontract totaling $1,543,322.
- **Joseph Dougherty, PhD**, professor of pharmacology, a three-year, $1,174,957 R33 grant from the NIH's Targeting Persistent HIV Reservoirs (TAPHIR) program to study "Specific Activation of Latent HIV-1 by Inhibiting E3 Ubiquitin Ligase Activity."
- **Zhiping Pang, PhD**, assistant professor of neuroscience and cell biology, a five-year, $1,755,384 R01 grant for "Deciphering the Neural Basis of Alcohol Use Disorders Using Human and Mouse Neurons."

In addition, Robert Wood Johnson Medical School faculty members received grants of $1 million or more from other funding sources:

- **Benjamin Crabtree, PhD**, professor of family medicine and community health, and a team led by investigators at Oregon Health & Science University, a $13.4 million federal grant from the Agency for Healthcare Research and Quality for "EvidenceNOW—Advancing Heart Health in Primary Care." Robert Wood Johnson Medical School received a $2.6 million portion of the award.
- **Roseanne Dobkin, PhD**, associate professor of psychiatry, a $1,193,434 grant from the Michael J. Fox Foundation for Parkinson's Research for "Improving Access to Depression Care in Parkinson's Disease: A Telehealth Approach."

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Research News

By Kate O'Neill

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- The N.J. Department of Health, division of HIV, STD & TB Services, awarded the Department of Pathology & Laboratory Medicine a 10th renewal grant for Rapid HIV Test Support Statewide, The project, "NJDOH AIDS16CTN017," was initially funded at $2,194,481; a modification in January added an additional $172,480. **Eugene Martin, PhD**, professor of pathology and laboratory medicine, is the principal investigator.
- **Gratian Salaru, PhD**, assistant professor of pathology and laboratory medicine, a three-year, $2,474,076 competing continuation grant from the New Jersey Department of Human Services for "HIV Rapid Testing MOA."
- **Deborah Spitalnik, PhD**, professor of pediatrics and executive director, Elizabeth M. Boggs Center on Developmental Disabilities, a three-year, $4,401741 competing continuation grant from the New Jersey Department of Education for the Elizabeth Boggs Center.
- In addition, **Dr. Spitalnik** received a one-year, $1,991,574 competing continuation grant from the State of New Jersey for "The Elizabeth M. Boggs Center on Developmental Disabilities, Technical Assistance, Training & Information Dissemination in Developmental Disabilities."

Published Research

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

- **Karan R. Chhabra '16**, was first author of "Hospital Networks and Value-Based Payment: Fertile Ground for Regionalizing High-Risk Surgery," published in the *Journal of the American Medical Association* October 6, 2015:314(13): 1335–1336.
- **Bruce G. Haffty, MD**, professor and chair, Department of Radiation Oncology, was first author of "Radiation of the Internal Mammary Nodes: Is There a Benefit?," published in the *Journal of Clinical Oncology* February 1, 2016:34(4): 297–299.
- **Sung Kim, MD**, associate professor of radiation oncology, was the author of "Head and Neck Radiation Oncology: Is Busier Better?," e-published ahead of print in the *Journal of Clinical Oncology* January 4, 2016.
- **Grace Lu-Yao, PhD, MPH**, professor of medicine, was first author of "Fifteen-Year Outcomes Following Conservative Management among Men Aged 65 Years or Older with Localized Prostate Cancer," published in *European Urology* November 2015:68(5):805–811.
- **Christine Minerowicz, MD '07**, a former resident in the Department of Pathology and Laboratory Medicine, was first author of "Calcifying Fibrous Pseudotumor of the Pleura," published in the *American Journal of Respiratory and Critical Care Medicine* December 1, 2015:192(11):e57–58. **John E. Langenfeld, MD**, associate professor of surgery, was senior author.
- **Vikas Nanda, PhD**, associate professor of biochemistry and molecular biology and resident member, Center for Advanced Biotechnology and Medicine, was the author of "Protein Design: Getting to the Bottom of the TIM Barrel," published in *Nature Chemical Biology* December 17, 2015:12(1):2–3.
- **Jared M. Radbel, MD**, a second-year fellow in the Department of Medicine, was first author of "Long-Term Anticoagulation for Unprovoked Pulmonary Embolism, Monitoring Sleep with an App, and Interventional Bronchoscopy for Airway Obstruction," published in the *American Journal of Respiratory and Critical Care Medicine* February 1, 2016:193(3):330–332. **Sabiha Hussain, MD '95**, assistant professor of medicine, was senior author of the article.
- **Jeffrey A. Rosenfeld, PhD**, assistant professor of pathology and laboratory medicine, was a coauthor of "Genome Assembly and Geospatial Phylogenomics of the Bed Bug *Cimex lectularius*," published in *Nature Communications* February 2, 2016:7:10164.
- **Kristen R. Spencer, DO, MPH**, a second-year fellow in the hematology/oncology program, was first author of "The Importance of Including Patients with Comorbidities in Clinical Trials," published in *Lancet Oncology* January 17, 2016:(1):17–18. **Janice M. Mehnert, MD '01**, associate professor of medicine and director of developmental therapeutics, was second author.

LETTER FROM THE ALUMNI ASSOCIATION PRESIDENT

Dear Alumni and Friends:

Happy Spring! It is my pleasure to welcome you to the Spring 2016 issue of *Robert Wood Johnson Medicine*!

On March 8 we celebrated our 28th Annual Career Night. It was another successful event, with more than 100 first- and second-year medical students and 28 alumni representing 18 specialties in attendance. I saw and heard lots of networking and stories shared between medical students and alumni. Feedback from students was overwhelmingly positive. If you have not been part of our Annual Career Night event, please come next year. This year's Career Night was even more memorable because during the evening, the Alumni Association acknowledged and gave thanks to Ms. Roberta Ribner, alumni affairs coordinator, who recently retired. The Alumni Association was sad to say goodbye to Ms. Ribner, who organized career nights since 1988, but we wish her only the best in her retirement.

The Sixth Annual Scholarship Gala took place on Saturday evening, April 9, 2016, at The Heldrich in New Brunswick. We celebrated the anniversaries of the following classes: 45th (1971), 40th (1976), 35th (1981), 30th (1986), 25th (1991), 20th (1996), 15th (2001), 10th (2006), and fifth (2011). Kathryn L. Holloway, MD '84, received the Distinguished Alumni Award, while Judith K. Amorosa, MD, and Louis F. Amorosa, MD, received Honorary Alumni awards. It was a fun-filled evening of reconnecting with old classmates, meeting new friends, and enjoying some great food and music. Overall the Alumni Association, along with faculty and friends, helped raise more than $200,000 toward student scholarships, bringing the total raised during the past six years of the event to more than $1 million. Thank you all who attended and contributed toward the Gala.



STEVE HOCKSTEIN

I want to remind you all that the Alumni Association is a great way for you to stay connected with our school, one another, and our students. We welcome all alumni, and I invite you to contact me if you are interested in learning more about the association. Your education at Robert Wood Johnson Medical School has provided you with great opportunities. The mission of the association is to provide opportunities for you to share your professional and personal growth and achievements with our alumni family. Please share with us your career, practice, and family updates for our "Class Notes" section of the magazine. I am particularly interested in hearing from alumni on how the association can better serve your needs. Please join us on Facebook. It is my hope that we can continue to grow our alumni base, strive for excellence, and accomplish great things together this year. Please stay in touch!

Sincerely,

Sonia Garcia Laumbach, MD '99
President, Robert Wood Johnson Medical School Alumni Association
sgarcia@rwjms.rutgers.edu

P.S. Please visit our website at http://support.rutgers.edu/RWJMSAlumni to contribute to the Alumni Annual Fund, or you may also mail your gift in the enclosed envelope.

Richard Szumel, MD '89, and Sophia (Sonia) Kotliar, MD '89:

A Shared Interest in Pathology Leads to Divergent Careers

Richard Szumel, MD '89, started his medical education at Rutgers Medical School, in the Class of 1988. After the "tough grind" of the first year, he says, he took a break to do something completely different. As a project manager for the Van Heusen shirt company, he oversaw the opening of retail outlets from the East Coast to Chicago, transforming each site from an empty shell to a customer-ready store. In the process, he acquired business, leadership, and management skills. But more important, the year off meant that he returned as a member of the Class of 1989, in which his classmates included Sophia Kotliar, MD '89, known as Sonia.

Richard and Sonia became good friends, began dating the following year, and married in May 1989, three days before graduation. Both had chosen to specialize in pathology, and they continued their education together, first in residencies at Northwestern Memorial Hospital, in Chicago, and then in fellowship training at the University of Texas MD Anderson Cancer Center, in Houston. A shared wish to be near their families in New Jersey brought them back east, following similar, then distinct, professional paths. Today they work in separate community hospitals, an hour apart, pursuing further challenges in their careers.

BY KATE O'NEILL

Richard Szumel, MD '89, Selected to Lead Union Hospital

On January 1, Dr. Szumel started his new position as CEO and president of Union Hospital, in Elkton, Maryland, his professional home for the past 18 years. "Home" is a word that Dr. Szumel uses often when describing Union Hospital. Inpatients, he says, feel "at home" at Union: they are likely to know the physicians, nurses, and staff members, some of whom have served there for many years and are their neighbors in surrounding Cecil County. The mission and work of the community hospital—small, independent, and nonprofit—suit him perfectly, adds Dr. Szumel: "I wouldn't want to work anyplace else."

Matriculating at Rutgers Medical School in 1984 was a true homecoming for Dr. Szumel, who grew up in Piscataway. A graduate of Muhlenberg College, he enjoyed the medical school's small classes and the opportunity to know the faculty. His adviser was Robert L. Trelstad, MD, who would later serve as professor and



COURTESY OF RICHARD SZUMEL, MD '89

chair of the Department of Pathology and Laboratory Medicine. "Dr. Trelstad had a holistic influence on me," says Dr. Szumel. "I recall sitting in his office in my second year, discussing one of the many books he lent me, not on pathology but on philosophy and the importance of doing what's truly right for the patient. He taught me that pathology shouldn't be a career spent secluded in a basement laboratory."

Board-certified in both pathology and cytopathology, Dr. Szumel initially planned a career in academic medicine, and for a year he conducted research at the Johns Hopkins Hospital's Bayview campus. He soon realized, however, that to pursue research would mean always being sandwiched between multiple levels of administration, with minimal patient contact. "I wanted to influence patient's lives on an individual level," he says. When he was offered a position as a staff pathologist at Union, he happily accepted it. "I reported to the CEO and was responsible to my colleagues, their patients, and families. I routinely met in person with physicians to discuss my findings and the treatment plan, and I frequently sat down with patients and their families to help explain the diagnosis and answer their questions. That's when I knew I was having an impact on health care in my community."

Union Hospital physicians may be either full-time employees or members of practices that work as independent contractors. Dr. Szumel, who opened his own pathology practice 16 years ago, has been both. Since then, he has become increasingly involved in administrative roles at the hospital; he served on a number of hospital and board committees and was continually involved in the hospital's strategic plan development. As president of the medical staff, he served on the hospital's board of directors and has been involved with Maryland's all-payer, hospital rate regulation system—unique among the 50 states.

Last fall, Dr. Szumel, then the medical director of the hospital laboratories,

—Continued on page 46

Richard Szumel, MD '89, and Sophia (Sonia) Kotliar, MD '89: A Shared Interest in Pathology Leads to Divergent Careers

—*Continued from page 45*

served on the search committee to find a successor to Kenneth Lewis, MD, JD, the hospital's retiring CEO and president. The committee interviewed and deliberated for months, focusing on the future of Union's mission and culture as a community hospital. Near the end of the process, to Dr. Szumel's surprise, the committee offered him the position. "You know what works here and what doesn't," he recalls their telling him. "They knew I was fiercely independent in protecting the hospital's identity, but I already had my dream job and wondered whether I had all of the competencies necessary to serve as CEO."

Dr. Szumel was still weighing the decision when, with one word, Dr. Lewis persuaded him that he had the most important qualification for the position: "integrity."

> "Dr. Szumel's empathy has earned him the trust of the entire staff. . . . He loves this place, and it loves him back."
>
> *—Kenneth Lewis, MD, JD*
> *CEO and President, Union Hospital (Retired)*

"Rich shares the vision for our hospital and has the ability and experience to make it happen. He has a patient-centric approach. He knows that as an independent hospital, we can deliver better value-based, cost-effective health care, through collaboration and regionalization," says Dr. Lewis. "His empathy has earned him the trust of the entire staff; people want to follow him. He loves this place, and it loves him back." M

Sonia Kotliar, MD '89: Balancing an Ancient Science with a Modern Discipline

Like many medical students, Sonia Kotliar grew up wanting to become a doctor but entered medical school unsure of her career path. In a third-year rotation, however, she discovered pathology. "I loved sitting around the microscope with Dr. Trelstad and my classmates discussing the day's cases," she says.

Dr. Kotliar, who had majored in biology at Rutgers University, found the spark she wanted: pathology would be her career choice. She considered other fields, but none felt like a perfect fit for a woman who wanted both a full-time career and space for outside interests, including a family. "For women in medicine, choosing and successfully following a career path was and is extremely difficult," she says.

Pathology, an ancient science, provided modern tools that promised Dr. Kotliar a role improving care for patients with cancer. The issue was close to her heart: both her mother and brother had been diagnosed with cancer while she was in college, and she had gotten her first up-close view of the health care system accompanying them to appointments.

A graduate of a large high school in Toms River and a Rutgers College class of 2,000 students, Dr. Kotliar loved the camaraderie of faculty, staff, and fellow students at the medical school. In 1985, Rutgers Medical School was still comparatively small, but students were exposed to a broad range of perspectives. "As difficult as medical school can be, a great group made it a great experience," she says. "My mother died during the first semester of my first year, and I felt immense support from the students and the administration. It forged strong bonds that continued during clinical rotations, when we traveled to so many hospitals that we called ourselves the 'Road Scholars.' Unfortunately, residencies and careers have made it hard to keep up with those old friends."

In her internship and residency at Northwestern, Dr. Kotliar received excellent training in anatomic and clinical pathology and moved on to a fellowship in cytopathology at MD Anderson. Now a member of a specialty practice employed at Bayhealth Medical Center, in Dover, Delaware, she has worked in regional health care settings, community hospitals, and outpatient settings. In addition to frequent interactions with physicians to determine a diagnosis and treatment plan, she particularly enjoys tumor board discussions—a collegial form of continuing education. "With so many new types of testing and therapies like targeted medicine, which uses the tumor profile to design treatment, the world of cancer treatment has changed dramatically," she says.

Dr. Kotliar became involved in the new, fast-evolving field of clinical informatics while serving as a laboratory medical director at St. Francis Hospital, in Wilmington, Delaware. In 2013, she was asked to serve on Bayhealth's clinical informatics team, which brings together medical, IT,



COURTESY OF SONIA KOTLIAR, MD '89

and support staff. As the medical center prepares to roll out its enterprise-wide electronic medical records system, she devotes a large portion of her time to working with the team to map and adopt work-flow process changes across departments and organizational lines to meet the various quality-focused standards.

"As health care evolves from hospital-centered to stepped-down care, health information systems optimally provide the means of engaging patients and coordinating care across the health care continuum," Dr. Kotliar says. "With the overarching goal of improved, quality care, clinical informatics interconnects technology with all forms of medical and health information in the manner most useful to time-strapped clinicians.

"For every reason, from better patient care to greater efficiency, to the need to meet the reporting standards of the HITECH [Health Information Technology for Economic and Clinical Health] Act of 2009, we're getting our physicians up to speed, and our patients engaged," she adds. "Connecting people to solve a problem: it's challenging, but it's time well spent." M

Katherine Teets Grimm, MMS '69, MD:

Preventive Medicine Inspires a Career in General Pediatrics and Child Advocacy

If, as the adage says, it takes a village to raise a child, then it is easy to imagine many of the hands in that village belonging to Katherine Teets Grimm, MMS '69, MD.

For almost 30 years, Dr. Grimm has lived and practiced general pediatrics on Roosevelt Island, a part of the borough of Manhattan that has a small-town feeling, she says, and an interesting multinational population: "Many of our parents work at the United Nations. Others are the intellectual elite of their countries, completing their training at Cornell and Sloan Kettering." Dr. Grimm, who sees children from birth through adolescence, makes a home visit to each newborn in her practice. "It's unusual, but it's part of the engagement process," she says. "I like to get a feel for the baby's environment and the family. Somehow, in their home, it's easier to ask and answer questions and discuss healthy practices, like safe sleep."

Dr. Grimm is sub-board-certified in pediatric allergy and immunology as well as child abuse pediatrics. She is a well-known, longtime advocate for children who have suffered neglect or abuse. In this role, she has given hundreds of physically and psychologically damaged children a better chance at becoming healthy adults. She regularly teaches and mentors medical students and pediatric residents on child abuse and neglect; she also lectures to lawyers, social workers, and other professionals on the manifestations of abuse.

Dr. Grimm has dedicated a significant portion of her professional life to these children, conducting examinations, providing treatment, and testifying on their behalf. Her belief in families remains strong, however. "As much as we do not want to miss the diagnosis of child abuse, we also do not want to overdiagnose," she says. "I have seen families suffer greatly whose children had unexplained physical injuries and were removed from the home, when in fact there was no abuse but an underlying medical etiology."

BY KATE O'NEILL

The Rutgers Years

Dr. Grimm was in her senior year at Muhlenberg College, in Allentown, Pennsylvania, when her mother suggested that she consider Rutgers Medical School, a new institution, full of promise, located in her home state. It was a good match. Dr. Grimm earned her master of medical science degree at the medical school and then completed her medical degree at Mount Sinai School of Medicine. Her enjoyment in working with children, combined with her interest in preventive medicine, led her to choose a career in pediatrics. She went on to the Johns Hopkins School of Medicine for her internship and residency, went back to Mount Sinai for a year in ambulatory pediatrics, and returned to Johns Hopkins as chief resident of the hospital's Outpatient Department, also serving on the faculty there for two years.

In those larger settings, Dr. Grimm realized her deep appreciation for the opportunities she had enjoyed at Rutgers. "Of course, I didn't want to admit it at the time," she says with a laugh, "but my mother was right. At Rutgers, I did microbiology research—working in the converted buildings at



COURTESY OF KATHERINE TEETS GRIMM, MMS '69, MD

Camp Kilmer—and my name was included on a published article, coauthored by Dr. [Walter] Schlesinger, Dr. [Harriet] Rouse, and Dr. [William] Strohl. They were amazing!

"Even as first-year students, we had strong training in the behavioral sciences, seeing patients at the psychiatric hospital," she adds. "All this took place under the leadership and vision of the school's founders and the first dean, Dr. [DeWitt] Stetten [Jr., MD, PhD]."

—Continued on page 50

For more than a decade, women have made up over 50 percent of each class at Robert Wood Johnson Medical School. In the Class of 1969, however, Dr. Grimm and Sandra Moss, MMS '69, MD—close friends for almost 50 years—were the only women in their class of 16 students. "What is interesting is that the medical school received a congratulatory letter at that time from the Women's Medical Association applauding Rutgers Medical School for its high percentage of female students," says Dr. Grimm.

Katherine Teets Grimm, MMS '69, MD

—*Continued from page 49*

An Evolving Career in Pediatrics

Childhood asthma is a longtime concern of Dr. Grimm, who suffered from the disease from the age of 18 months. Her family, residents of Plainfield, even moved to Colorado for several years when she was a child, hoping that the change in climate would provide relief to her. With this longtime interest, Dr. Grimm was pleased during her faculty years at Johns Hopkins to serve as director of the hospital's Pediatric Asthma Program and clinical director of the Pediatric Allergy Clinic. She also served as director of the Harriet Lane Continuing Care Center, a child-focused community clinic that provides health care services to the East Baltimore neighborhoods surrounding the medical school.

While on the faculty at Johns Hopkins, Dr. Grimm was invited to return to Mount Sinai as director of pediatric acute care (the Pediatric Emergency Room) at the hospital while serving on the faculty of the Department of Pediatrics at the school of medicine. Over the next 20 years, she would hold a wide variety of leadership positions at Mount Sinai, including vice chair of the Department of Pediatrics and director of the division of ambulatory pediatrics. In addition, she served as director of the hospital's Pediatric School-Based Health Centers, which bring accessible primary care and social services to children in East Harlem.

As director of the Pediatric ER, Dr. Grimm inherited responsibility for the Child Advocacy Center of Manhattan, now called New York Center for Children. Her specialization in child abuse took further root and expanded as she saw and learned from the distressing number of cases she saw in the ER. In 1989, Dr. Grimm became medical director of Mount Sinai's Sexual Assault and Violence Intervention Program, and, she has been director emeritus since 1997. An expert in the diagnosis of abuse, she learned that, generally, the presentation of abuse is subtle, often with behavioral problems. "It's only rarely the sort of horrible things you read about in the newspapers," she says.

"People sometimes wonder why a physician would specialize in child abuse pediatrics," says Dr. Grimm. "Unfortunately, child abuse is much more common than we would like to think, and it cuts across all sectors of society. Most children who are abused and/or neglected do not have permanent physical scars, but they have emotional scars that they carry with them into adulthood unless there is intervention. My goal is to facilitate prevention and early intervention so that these children may become healthy adults in every respect." M

CLASS NOTES

What's New?

Please send your professional and personal news for **Class Notes** to:
Editor, *Robert Wood Johnson Medicine*
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http://rwjms.rutgers.edu/alumni

1989

Robert Barraco, chief academic officer, Lehigh Valley Health Network, and associate dean for educational affairs, USF Morsani College of Medicine–Lehigh Valley, writes: "I am responsible for helping create a new paradigm for medical education called the SELECT program, which includes a graduate certificate in leadership, health systems, and values-based, patient-centered care. The goal is to give students the knowledge, skills, and behaviors to transform the nature of health care."

1992

Dermatologist *Alan Glass* recently opened a new office in midtown Manhattan.

1995

Plastic surgeon *Steven Vath* practices at the Center for Cosmetic Surgery in Denver.

1996

Neurosurgeon *Richard Meagher* practices at the Laser Spine Institute in Philadelphia.

1997

Daniel Leslie is a bariatric surgeon who specializes in weight-loss surgery. He practices at CentraCare Weight Management in St. Cloud, Minn.

1998

Leonel Toledo is clinical assistant professor of pediatrics, Perelman School of Medicine at the University of Pennsylvania, division of general pediatrics and sedation service.

1999

Lori A. "Loria" Pollack focuses on the evaluation and enhancement of the National Program of Cancer Registries in CDC's Division of Cancer Prevention and Control (DCPC). Dr. Pollack leads the cancer surveillance data visualization initiative and advises on a multistate registry project to support cancer data for comparative effectiveness and patient-centered outcome research. She also focuses on ensuring the quality of cancer surveillance data, including the transition and implementation to a more detailed approach to cancer staging. Prior to this position, Dr. Pollack served for nine years in DCPC's Epidemiology and Applied Research Branch, primarily characterizing the issue of cancer survivorship and leading national efforts related to quality of life and care after cancer treatment.

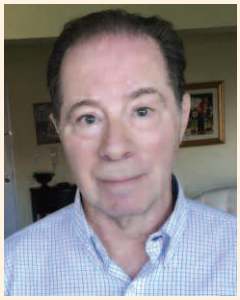
2001

Melanie Prusakowski is assistant dean for admissions at Virginia Tech Carilion School of Medicine in Roanoke, Va. She also serves as director of pediatric emergency education for the Carilion Clinic.

Former Residents

Adam Hyatt practices at Orthopedic Associates of Lancaster in Pennsylvania. Following his residency, he completed a fellowship at the Rothman Institute of Thomas Jefferson University in Philadelphia. M

Class Notes: The Class of MMS '69



COURTESY OF ARNOLD BODNER, MMS '69, MD

Arnold Bodner, MD, has become the class historian for the Class of MMS '69, carefully and fondly researching members of his class. The following is a wonderful collection of Class Notes that he personally researched and submitted to the editor of Robert Wood Johnson Medicine. We thank him for the great collection of Class Notes below, in his own words.

The Class of MMS '69 was the second class at Rutgers Medical School: 14 of us graduated, after 2 dropped out from the original 16. Every one of us transferred to another medical school for the third and fourth years. We all got our MD degrees from another school, including Mount Sinai for half of my class and Albert Einstein in my case.

First, I would like to acknowledge two members of the *Class of 1968*, *Rhoda Goldwasser* and the late *Larry Sirott*, who were very welcoming to me, which made it much easier to adjust to life in Piscataway after I moved from college in New York City.

Rutgers Medical School was a tiny presence in the University Heights campus at that time; no one I met at the main Rutgers University campus then even knew there was a medical school across the river in Piscataway.

The first person from our class whom I contacted was *Sandra (Sandy) Moss*. She has been incredibly supportive and helpful in my efforts to contact other class members.

Sandy Moss graduated from Mount Sinai School of Medicine, did residencies in internal medicine and a fellowship in nephrology, and practiced until 2000.

Her second career is as a medical historian. She has been president of the Medical History Society of New Jersey, president of the American Osler Society, and the author of many articles, as well as a lecturer on the history of medicine; she has written two books, *The Country Practitioner: Ellis P. Townsend's Brave Little Medical Journal* and *Edgar Holden, M.D., of Newark, New Jersey: Provincial Physician on a National Stage*.

She is married to Robert A. Moss, emeritus professor of chemistry, Rutgers University. Sandy has two sons: Kenneth, a professor of history at Johns Hopkins University, and Daniel, a professor of English at Southern Methodist University.

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CLASS NOTES

Class Notes: The Class of MMS '69

—Continued from page 51

Katherine Teets Grimm (my old lab partner at Rutgers Medical School) is actually my hero. She has been working at Mount Sinai School of Medicine pretty much since she finished her pediatric residency at Johns Hopkins School of Medicine. She has been in charge of the Pediatric ER, has been director of the New York Center for Children as a child abuse pediatrician, teaches residents pediatrics at Mount Sinai, and also has a private pediatric practice on Roosevelt Island in New York.

Kathie has two grown children and two grandchildren. *(Please see Alumni Profile of Katherine Teets Grimm on page 48.)*

Bert Van Beever was the oldest member of our class. He had been in the U.S. Navy and used to regale us with stories of being at sea; we hung out in his apartment watching TV. He was also our class photographer. Bert can be found in Ft. Myers, Fla., where he practices urology.

Lenny Hellman was already an attorney when he entered Rutgers Medical School. He also graduated from Mount Sinai and did a medical residency in internal medicine at Dartmouth. He spent his career in the U.S. Public Health Service in Denver. In 1978, he set up a hospital-based geriatric clinic that was one of the first of its kind; he retired in 1997. He has been married for 52 years to Susie and has two daughters. He winters in Arizona and plays golf on an almost professional level.

Robert Cappa, one of my roommates at Rutgers Medical School, also graduated from Mount Sinai. He was active in protests against the Vietnam War—and also served in the military. (This is possible, because I did the same thing.) Rob did a family practice residency and settled in Oley, Pa. Now retired, he is active in local politics, is happily married, and still has a rapier wit.

Stephen Sachs graduated from the University of Pennsylvania and is a neurologist practicing in Elizabeth.

Richard Greenwald is a gastroenterologist in Highland Beach, Fla.

Frank Pease is a surgeon, practicing in Kansas (I believe).

As for me, after graduating from Albert Einstein College of Medicine, I became a pediatrician with a special interest in public health, working for, among other things, the U.S. Peace Corps in South Korea and Nepal.

While I was in Nepal, I pulled a leech out of the nose of a Peace Corps volunteer in my office in Kathmandu; this has been memorialized in a chapter about me in the book *Travelers' Tales Nepal: True Stories of Life on the Road* and also on the cable channel Animal Planet as an episode of the series *Weird, True & Freaky* titled "Removed from the Body" (seriously).

When I returned to the United States, I practiced pediatrics, then did a residency in anesthesiology. For the past 30 years, I have been an anesthesiologist, working for the past 10 years at an ambulatory care center in Millburn. My wife, Rosemary, and I live in South Orange, and our son lives in a suburb of Dallas.

Obituaries:

Jeffrey Blake was a pediatrician in Arlington, Va. He was one of the founding members of Children's Medical Associates of Northern Virginia, and he also started a free clinic for children in Washington, D.C. He passed away in 1997.

Paul V. Hellman practiced internal medicine in Boston and passed away in October 2008.

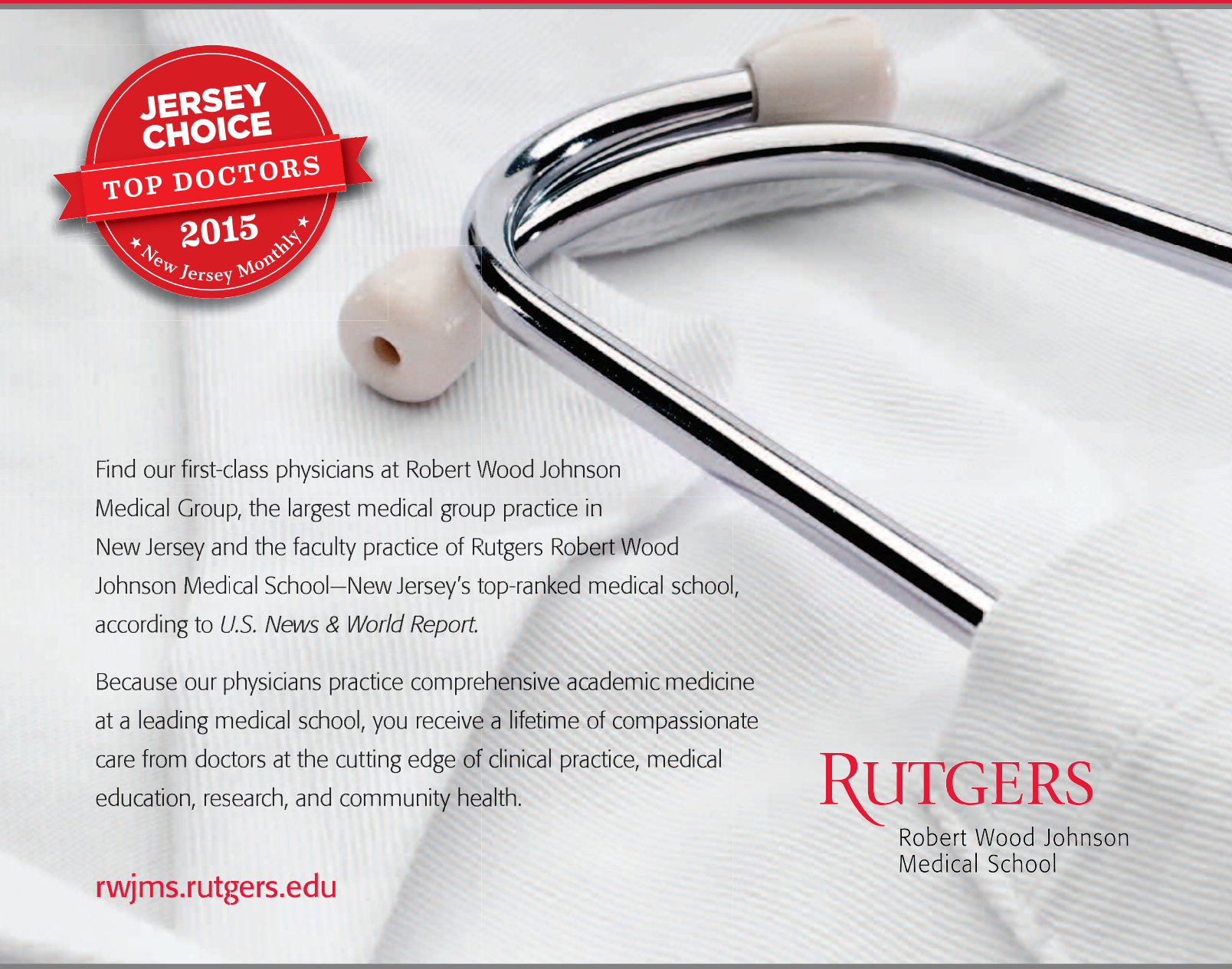
Alan Compton was a psychiatrist in the U.S. Army and later in the Veterans Administration. He retired from psychiatric practice six years ago and passed away in 2014.

Paul Fiore was an infectious disease expert in Fredericksburg, Va., and passed away in 2012.

M

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