

New Jersey Medical School

University of Medicine and Dentistry of New Jersey

Volume 10 Number 2 Fall 2012

pulse



World-Class Neuroscience

From MS to Spine Injury

Plus...

Academics + Business

The Stress of War

When Bacteria Talk

Stella Elkabes, PhD

Message from the Dean

Every year during NJMS' Convocation, White Coat Ceremony and Gold Humanism Honor Society Induction, we celebrate the accomplishments of our students, each of whom has undertaken the herculean task of earning a medical degree.

These time-honored traditions also serve to recognize the achievements of our dedicated faculty members who work tirelessly to ensure that our graduates are well prepared as they embark on their careers in medicine.

In this issue of *Pulse* magazine, you'll read about some of our faculty members, including Marvin Schwalb, PhD, whose research team at the Institute for Genomic Medicine developed new DNA sequencing tests for diseases like cystic fibrosis and Onajovwe Fofah, MD, chief of pediatrics and neonatology at NJMS' teaching hospital, UMDNJ–The University Hospital. These accomplished individuals represent a fraction of the professors, associate professors and assistant professors from whom our students learn.

In fact, the lessons our faculty members teach allow our graduates to shine in their

respective fields. Take, for example, Roger Mitchell, Jr., MD, member of NJMS' Class of 2003, who serves as New Jersey's Northern Regional Medical Examiner and Torian Easterling, MD, who was featured on ABC Nightline for his work with "Helping Babies Breathe," an initiative that teaches neonatal resuscitation techniques to midwives in resource-limited areas. You can read about Drs. Mitchell and Easterling as well as other NJMS graduates on the pages that follow.

"A teacher affects eternity; he can never tell where his influence stops," American journalist, historian and novelist Henry Adams noted long ago. Our faculty members recognize this fact, which is why they take great pains to equip our students with the knowledge and skills they will carry with them for years to come. As we bid a bittersweet farewell to the



Class of 2012 and welcome members of the Class of 2016, we do so knowing that we, as educators, will continue to dedicate ourselves to the development and success of our students.

In health,

Robert L. Johnson, MD, FAAP '72

*The Sharon and Joseph L. Muscarelle Endowed Dean
UMDNJ–New Jersey Medical School*

pulse

VOLUME 10 NUMBER 2 FALL 2012

UNIVERSITY OF MEDICINE & DENTISTRY OF NEW JERSEY

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pulse

fall 2012

FYI

- 2 Notable, Quotable, News by the Numbers, Seen & Heard

A CLOSER LOOK

- 5 A Garden Grows...On Campus
6 A Month in Peru
7 Read All About It: UH Pharmacy News

NJMS PEOPLE: DO YOU KNOW?

- 8 Matthew Neiditch: When Bacteria Talk...He Listens
10 Torian Easterling: Bringing His Passions Back Home
11 Marvin Schwalb: A Leader in Genetics

FEATURES

- 12 **Cover Story World-Class Neuroscientist: Building a Life of Science and Meaning**

Stella Elkabes has journeyed from Istanbul to Israel and the U.S. but no quest is more important than putting patients' needs right in the lab.

- 16 **Academics + Business = Better Together**

Biomedical education requires more than just classroom and lab learning. Students need links to real life.

- 21 **Why I Love My Job...From Scientist to Venture Capitalist**

- 22 **Portraits of Patients: Born Too Soon**

The neonatal team at UH keeps babies alive against all odds. Just ask the mother of little Jason McKinney, Jr.

- 26 **To Understand Soldiers & Stress**

A remarkable NJMS study looks for advance warnings in the psychological, social and physiological makeup of soldiers.

ALUMNI FOCUS *News of Special Interest to NJMS and GSBS Graduates*

- 30 A Message from the Alumni President, Mark Your Calendar, and In Memoriam
31 Reunion Revelations
32 Mili Mandal, PhD'12: Balancing Family and Research
33 Sean Ciullo, MD'08: Not Your Ordinary Resident Supervisor
34 Roger A. Mitchell, Jr., MD'03: Medical Detective
37 Class Notes
A New Doctor's Must-Have Book

FOCUS ON PHILANTHROPY

- 38 Grant Winners: The Delirium Dilemma, Healthier Transitions, Ask Me 3, Summer High Science Stars



8



10



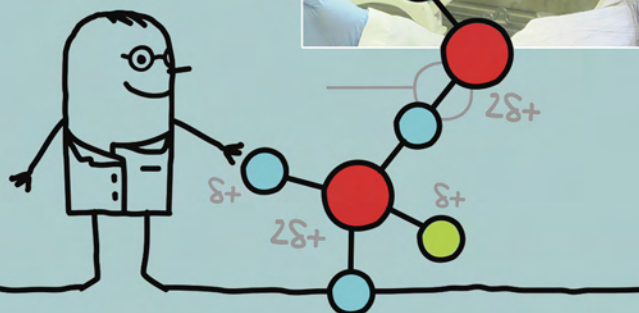
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26

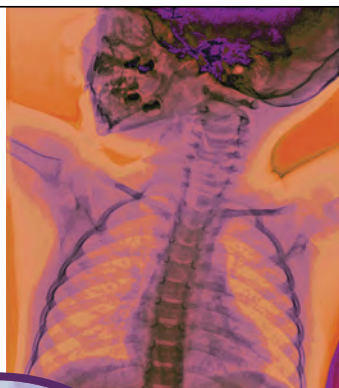


32



FYI

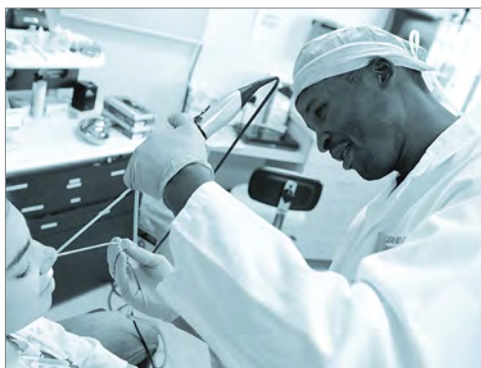
Notable



Too Many X-rays?

CBS News interviewed **Samara Friedman, MD**, clinical assistant professor of orthopaedics, on May 9 about why it is important to limit the number of diagnostic X-rays and scans that expose young patients to radiation.

HAITIAN HERO



Jean Anderson Eloy, MD, born in Haiti and vice chair of otolaryngology, head and neck surgery, as well as director of rhinology and sinus surgery at UH, is the recipient of the 2012 Physician of the Year Award from the New Jersey chapter of the Association of Haitian Physicians Abroad. He has been a regular volunteer since the 2010 earthquake.

GO MEDWINGS

The **Medwings** White team skated off with the trophy in the 2012 spring championship. There are enough students, residents and faculty from NJMS, GSBS and NJDS to play two teams, White and Blue, which compete at Montclair State University's Floyd Hall Arena. The new season is starting now. Go to: <http://www.facebook.com/groups/>.



Stop TB

Eileen Napolitano, deputy director of the NJMS Global Tuberculosis Institute, was elected to a two-year term as chair of Stop TB USA.

INVENTOR OF THE YEAR

The New Jersey Inventor's Hall of Fame Patent of the Year Award in the biomedical category will go to **Sergei Kotenko, PhD**, NJMS

Department of Biochemistry, at an awards ceremony on October 18. His discovery of powerful antivirals called interferon lambdas has made medical history.



Three Cheers

Charles J. Prestigiacomo, MD, FAANS, FACS, became the new chair of the Department of Neurological Surgery, making him the second person in the department's 15-year history to hold the position. With joint appointments in radiology, neurology and neuroscience, he won an Excellence in Teaching Award from the Foundation of UMDNJ in June. In July, as chief of service in neurosurgery at UH, he accepted the 2012 HealthGrades Neurosurgery Excellence Award™, which put the hospital in the top 10 percent of American hospitals for neurosurgery, and one of only three hospitals in the state to receive the award.

GET UP AND GO!

Marc Klapholz, MD, new chair of the Department of Medicine and UMDNJ President (Interim) **Denise Rodgers, MD**, inaugurated the Workplace Wellness Program's walking paths on the Newark campus. The .6 mile route led to UH where Chef Gregory Dukes served healthy lunches of cod and sautéed vegetables. The paths are part of UMDNJ's participation in the American Cancer Society's CEOs Against Cancer Initiative. To find a path near your building, go to: http://www.umdj.edu/hrweb/worksite_wellness_resources.htm





WHITE COATS

The afternoon was hot, humid and storm-threatening but nearly 1,000 attended the White Coat Ceremony and the Gold Humanism Honor Society Induction for incoming NJMS students held in the courtyard on Aug. 9 at 4 p.m. Dating back to 1993, the event stresses the role of humanism in healthcare, encouraging future doctors to truly care for their patients. Parents, family and friends laughed and clapped.

Autism Really Up? New CDC statistics indicate that autism spectrum disorders among 8-year-olds in New Jersey are significantly higher than in other states. **Walter Zahorodny, PhD**, assistant professor of pediatrics, who led the NJ research, believes the numbers are higher here because schools and health providers are better equipped to detect autism than elsewhere and that the numbers show no evidence that NJ kids are at a higher risk.

Pathology First... Initiating a special interest group in biophysical pathology while president of the American Society for Investigative Pathology, **Stanley Cohen, MD**, professor and former chair, pathology and laboratory medicine, has now become editor-in-chief of *Analytical Cellular Pathology*, the first scientific journal recognized as having its academic home at NJMS.

Skull-base Surgery... An article by **James K. Liu, MD**, assistant professor and director for the Center for Skull Base and Pituitary Surgery at the Neurological Institute of New Jersey, was published in the *Journal of Neurosurgery*, and selected as the topic for a Podcast interview.

NJMS News by the Numbers

35

Physicians are named "Top Doctors: New York Metro Area," in *New York Magazine's* 15th edition of *Castle Connolly Medical, Ltd's* annual guidebook.



\$225,000

An F.M. Kirby Foundation award goes to Ellen Townes-Anderson, PhD, professor of neurosciences, and associate professor, Institute of Ophthalmology and Visual Science, for her "Synaptic Interactions: Formation and Plasticity" research.



\$112,785

The Healthcare Foundation of NJ gives Marco Zarbin, MD, PhD, professor and chair of The Institute of Ophthalmology and Visual Science, an award to buy equipment.

173

Graduates receive medical degrees at the University's 42nd Annual Commencement Ceremony held May 23, at the IZOD Center in East Rutherford.



\$90,000

Department of Pediatrics wins a grant from The Nicholson Foundation, to work with families helping urban children become healthy, productive adults.

169

Fourth-year NJMS students match with residency programs at Yale, Johns Hopkins, University of Pennsylvania and New York Presbyterian/Columbia University. Of those, 54 are staying in NJ while 36 will attend UMDNJ programs.

\$500,000

From Celgene, a global biopharmaceutical company, for David Perlin, PhD, executive director and professor, Public Health Research Institute to use for faculty recruitment.



\$3.5 million

Five-year award given to Maria L. Soto-Greene, MD, NJMS vice dean, by the Health Resources and Services Administration for the Hispanic Center of Excellence.



"Growing up as a young Latina has shaped my life. I consider myself one of the fortunate ones. Meeting the right people at the right time at different crossroads of my life, which was not always this way. I know what it is to grow up in poverty, be uninsured, and the first to attend high school, college and eventually medical school."

MARIA L. SOTO-GREENE, MD, PROFESSOR AND VICE DEAN, WINNER OF THE "ACADEMIC LEADER OF THE YEAR" AWARD AT THE 12TH ANNUAL HEALTHCARE DIVERSITY AWARDS

"Dr. Sanjay Tyagi's work has had a profound impact on science and medicine. He co-invented molecular beacons in 1996, and it was adopted in clinical and research laboratories around the world becoming the basis of a vibrant new molecular diagnostics industry..."

GEORGE F. HEINRICH, MD, VICE CHAIR AND CEO, FOUNDATION OF UMDNJ, PRAISING SANJAY TYAGI, PHD, PRINCIPAL INVESTIGATOR, PHRI, AND NJMS PROFESSOR OF MEDICINE, WHEN HE RECEIVED THE NJMS AWARD FOR RESEARCH EXCELLENCE AT THE 2012 CONVOCATION

"The best kept secret of choosing a medical school...if you are a prospective medical student is to choose the place that will make you the best clinician. This is an area in which NJMS strives...I've been staff, student, and/or volunteer in multiple branches of the UMDNJ system for years and I will be attending NJMS this fall."

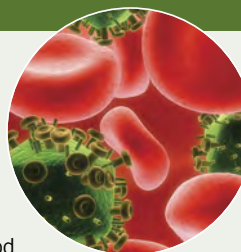
POSTED BY "IDRADS" ON THE STUDENT DOCTOR NETWORK'S 2012-2013 NJMS APPLICATION **THREAD**. THE SITE IS NON-PROFIT WITH THE EDUCATIONAL MISSION OF ASSISTING AND ENCOURAGING ALL STUDENTS THROUGH THE CHALLENGING AND COMPLICATED HEALTHCARE EDUCATION PROCESS.

Section compiled by Maryann Brinley and Carole Walker

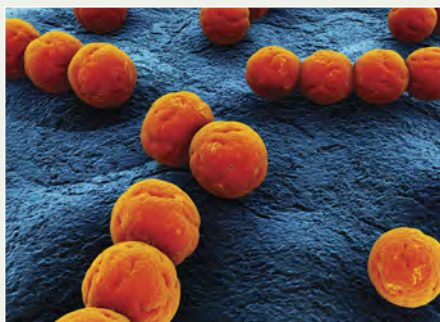
Make a note to check the UMDNJ website (www.umdj.edu) as well as **This Week at UMDNJ** for upcoming events.

APRIL

Robert C. Gallo MD, from the Institute of Human Virology at the University of Maryland, provided an inspiring address, "A Journey with Blood Cells and Viruses." In 1976, Gallo was on a team that discovered interleukin-2, setting the stage for culturing human T-cells. Later, he discovered HHV-6, HTLV-1 and 2, co-discovered HIV (HTLV-3), and devised the first blood test for HIV disease.



In "Whispers from the Throat: Are *Streptococci* Conspiring to Do Us Harm?" Michael Federle, PhD, from the University of Illinois at Chicago, told an audience that Group A *Streptococcus* are responsible for a wide variety of diseases including pharyngitis and toxic shock, but they are also commonly carried asymptotically in humans.



Lecture hall seats were filled to hear Aviad (Adi) Haramati, PhD, professor of physiology, biophysics and medicine at Georgetown University School of Medicine, talk about "Using Mind-Body Medicine Skills to Reduce Stress, Reverse Burnout, and Promote Professionalism." He has been rethinking how health professionals are trained with the support of an NIH grant to incorporate complementary, alternative and integrative medicine into medical curricula.

MAY

"The Genetics of Sleep and Circadian Rhythms in *Drosophila*," as presented by Michael W. Young, PhD, from Rockefeller University, kept students alert as he explained the implications for sleep, mood disorders and other dysfunctions related to the timing of gene activities that underlie visual functions, locomotion, metabolism, learning and memory.



JUNE

The "NanoZoomer Digital Imaging System" was the topic of a lunchtime seminar sponsored by the NJMS Research Office and Core Facilities and led by Gisela Canales of the Hamamatsu Corporation, a manufacturer of automatic, high-throughput scanning technology.

KEEP IN MIND

During the academic year, the Department of Microbiology and Molecular Genetics co-hosts two ongoing research seminar series in cooperation with PHRI. The Invited Speaker Seminar Series (Tuesdays at noon) features basic science presentations given by principal investigators from outside of the University, selected and invited by UMDNJ faculty to visit the campus for the day. The Intradepartmental Seminar Series (Wednesdays at noon) features presentations of current research projects by UMDNJ and PHRI graduate students, post-doctoral fellows, and faculty.

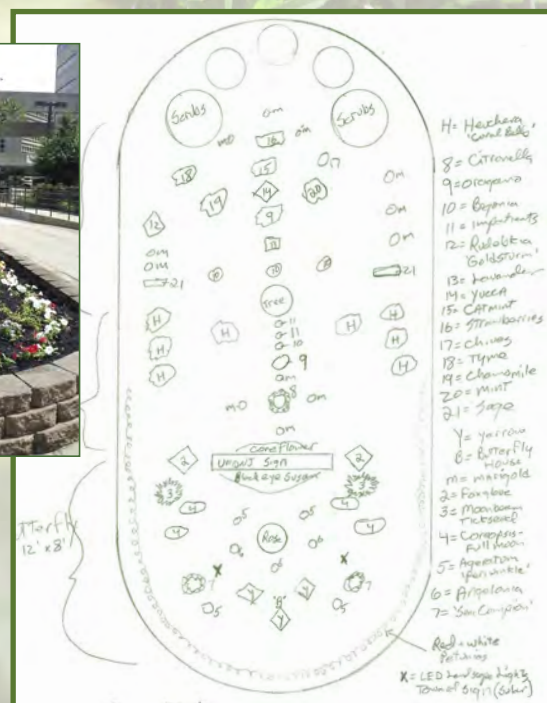
A CLOSER LOOK AT...

A Garden Grows... on Campus

Angelonia
Annual

The oval-shaped garden on campus facing Bergen Street had been in sadly dilapidated shape for years. But early last spring, observant passers-by noticed a change. Gone were the weeds. Flowers bloomed, herbs proliferated...there were even strawberries ripening on the vine. It was the handiwork of Karen A. Cataldo, RN, CNOR, CRCST, acting director of Central Sterile Processing, Value Analysis and Product Safety at UH, and her department.

While walking out to the food truck one morning, Cataldo, an avid gardener, noticed that the front flower bed was in bad shape. She and her department decided to refurbish it as a team-building project. Some staff helped turn over the dirt, others donated flowers, topsoil, fertilizer and plants. The staff planted the garden and they tend it regularly, bringing in coffee grounds, egg shells and tea bags to fertilize it. In front of the UMDNJ sign is a perennial butterfly garden, attracting a few hummingbirds as well. Behind the sign is a shady mix of perennials and annuals. At the far end is an herb garden containing medicinal and cooking herbs cultivated from Cataldo's home garden. The red and white petunias on the borders represent the University colors. The garden is an ongoing project. Employees are donating iris, daffodil and crocus bulbs that will bloom next spring. The perennials will bloom a few weeks after the bulbs die off—and provide flowers and color for summers to come. —MARY ANN LITTELL



In the garden, you'll find: yarrow, marigolds, floxglove, moonbeam tickseed, coreopsis – full moon, ageratum – periwinkle, angelonia, sea campion, citronella, oregano, begonias, impatiens, rudobkia – goldsturm, lavender, yucca, catmint, strawberries, chives, thyme, chamomile, mint and sage. Check Cataldo's map sketch above for the locations of each.

A Month in Peru



The medical staff at ABC Prodein (front row) up in the Andes Mountains of Peru and (back row): Thomas Eck, Brianna Fowls and Nelson Chiu.

How a rural South American clinic measures up against an inner-city American hospital.

BY MARYANN BRINLEY

Compare and contrast: UMDNJ–University Hospital (UH) in Newark and ABC Prodein in the Andes Mountains of Peru. This up-close and dramatic juxtaposition of life inside two very different medical centers was exactly what Nelson Chiu, MD'12, Brianna Fowls, MD'12 and Thomas Eck, MD'12 were able to do after spending the month of February in rural villages known as *campesinos*, tending to the health needs of the local population, known as the Quechuas. The big surprise, as Brianna Fowls reports, was “Overall, I can’t say that one system—inner city Newark versus rural Peruvian *campesino*—is superior to the other. They’re just different.”

Thanks to \$1,000 Alumni Association International Scholarships, the three new physicians worked alongside Catholic nuns, physicians and nurses who run ABC Prodein facilities in Acopia, Oropesa and Cuzco. The Casa Hogar del Campesino, for instance, a 40-bed facility in Cuzco, is locat-



ed in the ancient Incan capital in South America and left a long-lasting impression on Fowls. “Newark patients at UH and the Quechuas at Prodein both represent some of the poorest people in their countries, largely falling between the cracks for preventive care and showing up at hospitals with end-stage diseases,” she explains. ABC, by the way, stands for Asociacion Beneficio Cristiana and funding for all three medical centers comes mainly through donations from Spain and the U.S. “At home the primary health problems are those related to obesity: hypertension, diabetes, heart attacks, and strokes. There, I only saw one patient with diabetes and one with hypertension.” The Peruvians ended up at the hospital because of farming accidents including falls and animal-related injuries that had been insufficiently treated and led to spinal cord injuries and paralysis in many patients.

Fowls and her fellow students were more likely to check for gastrointestinal parasites than for uncontrolled diabetes during their four weeks tending to more than 260 patients. “A major difference between Prodein and UH was the number of lab and imaging tests ordered,” Fowls explains. In

Peru, resources are tight and lawsuits are uncommon. “The joke in the U.S. is that ABCs in the emergency room no longer stand for ‘Airway, Breathing, Circulation,’ but for ‘Admit, Begin CT scan.’ These tests and images cost thousands of dollars though they can provide additional information about what’s going on. Tests are rarely used to track a patient’s progress when they are hospitalized in Peru,” she says. Meanwhile, all medical services, including medications stocked at the clinic’s pharmacy, were free for patients.

“I saw how death and dying patients at UH and Prodein were handled so differently,” Fowls says. “A dying UH patient I had while on a surgery team was put on a ventilator and got daily blood tests for the month I was there. Her prognosis was grim and she was in so much pain, she had to be given medications to keep her in a coma-like state. She was kept alive there in the ICU, in excruciating pain, racking up thousands of dollars of hospital bills because her family wanted us to ‘do everything’ and couldn’t be convinced to put her on palliative care.” In Peru, Fowls encountered a patient in his 30s with stomach cancer whose prognosis was grim. “There was no option of an ICU or a ventilator. When his lungs stopped and he couldn’t eat enough to sustain himself, he would die. ‘Doing everything’ there meant giving him palliative care medications to ease his pain.”

In a report sent to the Alumni Association, Chiu wrote, “The medical needs of the underserved Quechua were truly great but it was inspiring to see the nuns and staff patiently dedicate their time and effort to every patient who entered the clinic or hospital doors. As participants, we were able to refine our clinical skills, particularly with recognizing tropical diseases and learning to manage illnesses with limited financial and logistical resources.” The bonus: “Our medical Spanish also greatly improved!” ●

A CLOSER LOOK AT...

Read All About It UH Pharmacy News

Did you know that UH has a pharmacy the size of a city block?...and a team of experts who can explain even the most complicated medications both in person and in print?

BY MARY ANN LITTELL

Imagine your corner drugstore—supersized 10 times ten. Staffed by 70 full-time employees, it's open 24/7/365, dispensing 900,000 prescriptions a year to a multicultural patient population. Stroll down the aisles and you'll see thousands of medications.

What resembles a thriving business—picture a mega-CVS or a Walgreen's the size of a city block—is actually the UH Pharmacy Department. A cool, airy space located deep in the recesses of the building's lower level, the pharmacy hums with activity as the hub of all medications distributed throughout the hospital. Its function is not just filling prescriptions. The pharmacy staff must also be up-to-date on the latest developments and trends in the drug world, including new products, adverse reactions, medication errors, FDA regulations and alerts, off-label uses, therapeutic controversies, research and more. They are responsible for sharing this news with the hospital staff—physicians, nurses, technicians and anyone involved in patient care.

To help get important information out to the UH community, the pharmacy devel-

oped a newsletter in 2005. *University Hospital Pharmacy News* is published quarterly; 1,000 printed copies are distributed throughout the hospital and it is also available online on the UH website and in *Click Picks*, UH's internal e-newsletter.

Putting out a publication on schedule that's interesting, informative and error-free is not an easy process. How did this group of pharmacists, none of whom has editorial experience, learn the publishing ropes? "We're self-taught," says pharmacy director Andre Emont, RPh, MS. "When we first launched *Pharmacy News* in 2005, it had a 'home-grown' look and the publication schedule was hit or miss. We decided we wanted to improve it and asked for input from the clinical pharmacy team."

An editorial board was established that included Emont, operations manager Victor Pardo, and clinical pharmacists Michael Chu, PharmD; Nishat Faruqui, PharmD;

Helen Horng, PharmD; and Polly Jen, PharmD. The team is proud of their publication, as is the UH leadership. "The UH pharmacy newsletter reflects the professionalism and skill set of our pharmacists and technicians in informing hospital staff about the latest trends in pharmacy," says UH Acting President James Gonzalez. "It's an impressive and well-edited newsletter that reaches and connects to employees at all levels."

Anyone in the department who is interested in contributing to the newsletter may generate ideas and write articles. "We encourage that," says Emont. "It's good for the staff, both personally and professionally." Most of the technical articles come from the clinical pharmacy staff. Students from the Ernest Mario School of Pharmacy at Rutgers who rotate through the pharmacy are required to submit articles as part of their

Continued on page 9

Members of the UH pharmacy team: (left to right): Polly Jen, PharmD, Michael Chu, PharmD, Helen Horng, PharmD, Andre Emont, director, Victor Pardo, manager, Nina Boles-Attia, supervisor, and Nishat Faruqui, PharmD.



MATTHEW NEIDITCH

When Bacteria Talk... He Listens

He's won more than a million dollars in research funding to find out how bacteria in groups communicate with one another.

BY TY BALDWIN

"I was a geek from the time I was a little kid," says Matthew Neiditch, PhD, an assistant professor in the NJMS Department of Microbiology and Molecular Genetics. He laughs and adds, "I guess I kind of wear it as a badge of honor. Even in grade school, I enjoyed playing sports, and I still do, but my favorite thing was always doing science."

Given that Neiditch and his lab are now in the final year of a four-year, \$1.56 million grant from the NIH, one could say that his childhood passion has paid off. The NIH grant was awarded to study the structural biology of bacterial quorum sensing signal transduction—a topic that sounds complicated (and is), but Neiditch does a good job

of explaining. "At low density," he says, "bacteria act as individuals, but at high density they communicate with each other and so can function as a group. We call this process 'quorum sensing.' One way to think of it is that we're studying cell-to-cell communication."

Neiditch, who grew up in Fair Lawn, is quick to credit his parents for his success. "My father was a chemical engineer, and there's no doubt I get my scientific bent from him. But when it comes to writing grants, that's from my mother. She was an English teacher. When Strunk & White fail me, she's always there." He adds that excellent science teachers in middle and high school (in particular an AP Chemistry teacher named Mr. Oliver), and two books that he read while an undergraduate at Rutgers, helped to put him on his current path. "*The Coming Plague*, by Laurie Garrett, and *The Hot Zone*, by Richard Preston—those books really piqued my interest in epidemiology and microbiology. But I wasn't sure where I wanted to focus, whether it was bacteriology, or virology, or immunology."

Fortunately, the Department of Immunology and Microbiology at the Baylor College of Medicine in Houston, where Neiditch did his graduate work, combined all three. After completing his PhD in 2002, he returned to New Jersey to Princeton, for a post-doc, and it was there, in the lab of Fred Hughson (in collaboration with the lab of Bonnie Bassler) that he began to study quorum sensing using X-ray crystallography—a process by which the diffracted light of an X-ray is used to construct a three-dimensional picture of atomic structures. Neiditch's post-doc ended in 2007 and he joined the NJMS faculty that same year.

"The work we're doing in our lab at NJMS is very different from what I did at Princeton," Neiditch explains. "We're studying Gram-positive bacteria and how they communicate using secreting oligopeptides." (Hans Christian Gram, he explains, invented a test used to divide the bacteria into different groups based on physical properties of



Matthew Neiditch

their cell wall. Our work focuses on bacteria surrounded by a thick layer of peptidoglycan.) “The oligopeptides are signals that interact with receptors in the cell. The oligopeptides turn the receptors on or off. We’re studying that activity.”

One thing that separates Neiditch’s lab from other groups doing this work is that his studies at NJMS are at the atomic level. “We’re examining how this communication works, atom by atom,” he says. “That requires studying the proteins, and these are thousands of times smaller than the cells themselves. X-rays are light with wavelength short enough to let us resolve the atoms within proteins.”

“If we could develop an antibiotic...
to interrupt their communications...
then that drug could fool the bacteria
into not becoming pathogenic.”



The difficulty (or one of them, anyway) is that X-rays can’t be refocused using a lens. “The ability to manufacture a lens that refocuses X-ray light bouncing off of an object doesn’t exist, which is one reason we cannot view proteins using traditional light microscopy,” Neiditch explains. “At UMDNJ we have a laboratory X-ray source with a fixed wavelength, so we can analyze our protein crystals in-house to a limited extent.” Then, a couple of times a year, Neiditch will drive these crystals out to the National Synchrotron Light Source, at the Brookhaven National Laboratory, where he

studies them in more depth. “At the synchrotron we can change the wavelength of the X-rays, which is important for a number of the crystallographic techniques we use, and the synchrotron light is narrow and intense, and their detectors are fancy (fast and sensitive).”

Neiditch’s lab devotes approximately 50 percent of its time to basic research and 50 percent to applications. Work, he says, that holds promise in the field of antibiotic development. “In a lot of cases, bacterial virulence is regulated by quorum sensing. If we could develop an antibiotic to block the receptors so that the bacteria don’t know they’ve reached a high-enough density—interrupt their communications, if you will—then that drug could fool the bacteria into not becoming pathogenic. It could give your immune system time to respond.” Neiditch also recently submitted patent applications for “taking the receptors that we work with and using them in an applied way. They’re very amenable to binding other proteins, so we’d like to use these as tools in much the same way that antibodies are currently used in diagnostic and therapeutic settings.”

Neiditch says he’s grateful for all the support he receives from his colleagues at NJMS, but particularly for that of David Dubnau, PhD, “a world-class geneticist. He has his lab, and I have mine, but our people collaborate and we share equipment. David’s just incredibly generous. He takes the time to read my grants even when he has a grant due himself. He’s in his 70s, and I’m in my 30s, so it’s like he has a whole other me-life-time of experience.” Neiditch adds, “One of the most rewarding things about my job is not only do I get to work with a man like Dr. Dubnau, but I also get to work with people much younger than myself. Some of my best ideas come from my grad students, post-docs, and research technicians. The work that’s done in my lab...it’s not done by me, so my job is to hire the best people I can find and make sure they have the resources to do their work. It’s a real team effort.” ●

Read All About It

Continued from page 7

rotation. The front page of the newsletter covers all the important additions and deletions to the hospital’s formulary, a drug list of prescription medications approved by the Pharmacy and Therapeutics Committee and the Medical Executive Committee based on patients’ needs, therapeutic efficacy and cost-effectiveness. These formulary medications are then available for use by patients. “Our subject matter is technical, but the writing must be easily understood by the hospital staff,” says Chu. “We’re required to dispense drug information, so having this newsletter helps satisfy the regulatory agencies.”

The newsletter also features human interest news, including ‘Employee of the Quarter’ and profiles of new colleagues. When staff pharmacist Merlin Punnoose, RPh, PharmD, traveled to Haiti on a medical mission, she helped the clinic improve its pharmacy. When she returned, she wrote an article and supplied photos for the newsletter.

The graphic design and layouts are done by the company contracted to print the newsletter. Each issue takes three months to produce: the first two months are spent generating ideas and writing articles, the last month is for review and proofreading. Proofreading did not come naturally to this group, but they have learned to be meticulous copy editors. “All of us share the responsibility of proofreading, and we all pick up errors,” says Jen. By strictly adhering to the three-month cycle, the pharmacy staff is able to avoid the pitfall that plagues many newsletters and magazines: missing a promised publication date.

Emont says the newsletter raises awareness about the pharmacy and its behind-the-scenes contributions and promotes the profession. He cites other advantages as well: “It’s great PR for the department and it humanizes the pharmacy and recognizes our outstanding staff. It also boosts morale and promotes camaraderie.” ●

TORIAN EASTERLING

Bringing His Passion Back Home

"Newark is part of who I am," says this new assistant professor.

BY LISA JACOBS

Sometimes, you have to travel to understand where you come from. Torian Easterling, MD'07, was born and educated in Newark and East Orange, but it took travels to Haiti, Ghana, and Liberia for him to fully understand the obstacles to public health delivery in impoverished and resource-poor environments, and the skills needed to overcome these obstacles. Easterling is using those skills to train future physicians at NJMS, as a new assistant professor in the Department of Family Medicine and the Department of Preventive Medicine and Community Health.

Easterling can't remember why he first wanted to be a doctor: a desire that started at age 9 and never wavered. It was fed by his passion for community service and his love of science. It was also a goal he inherited from his mother, a science major who dreamed of medical school but has spent more than 20 years preparing others for careers in the pharmaceutical/chemical industries. "I have her love for science and service, and for finding truth," Easterling explains. "She always said, 'The sky is the limit and you can surely become a doctor if that is your desire.'"

After graduating from a prep school in Newark, he went to Morehouse College, which he chose because it sends more black men to medical school than any other col-



Torian Easterling

lege in the country. College-level science was a "wake-up call" for him: the academics were rigorous. He was determined to excel, to win enough academic scholarships to cover his tuition so he wouldn't be a financial burden and most of all: to make it to medical school. He bonded with students from similar backgrounds with like-minded goals and created a support network that still stands strong. He applied for research positions on campus and at the National Institutes of Health. "Each year, I kept affirming that this is what I wanted to do."

When it came time to choose a medical school, Easterling set his sights on returning to Newark. "I wanted to give back to the community that pushed me. I knew the history and legacy of Newark, and thought I could do outreach here that I couldn't do elsewhere." When he left Newark for college, he had discovered his deep feelings for the city and its community. "Whenever I spoke about it I would feel this passion to defend it. I realized that I wanted to give Newark a voice. I wanted to speak on behalf of Newark. I came out of this environment. Newark is a part of who I am."

Easterling reminisces fondly about his

time at NJMS. "It was the best," he says, "It gave me my voice as a black male physician." He began coordinating community health fairs throughout the city that brought him into close contact with residents. "Going out into the community and engaging with folks, I learned about the people who lived in Newark, their hopes and their dreams, and their dreams for their children."

At NJMS, Easterling discovered his passion for travel. "I started my first summer after medical school when I spent a month in Ghana, and it just took off from there," he explains. He went to Haiti to assist with disaster relief and completed a medical elective in Ghana. But it was his trip to New Orleans, after Hurricane Katrina, that most affected his thinking. "New Orleans was more third world than some parts of Ghana and that was mind-boggling to me." Because of the personnel shortage there, he was given great autonomy in seeing patients, counseling the distressed and prioritizing needs in that disaster environment. "My training up until then had been so locked into the history and physical. It forced me to understand that you have to be flexible and let the patient speak about what is going on and

what is important. I gained a deeper understanding of what it meant to be a 'provider.'"

Easterling has brought his lessons from travelling back to Newark. "Poverty is similar in so many places. From Newark to Africa to Haiti, I've observed many similarities. Travel has allowed me to hone in on how to address the psychosocial issues along with the medical issues." He developed a community medical history questionnaire to look at sanitation, clean water, and common comorbidities to get a better picture of how individual health is linked to environment.

His time abroad made him realize that he wanted to focus on global health as a pri-

mary care physician. During a family medicine residency at Jamaica Hospital in Queens, NY, he helped develop a global health program. Easterling recently completed his general preventive medicine residency program at Mt. Sinai, while simultaneously finishing a Masters in Public Health.

His most recent travels were to Liberia with the HEARTT (Health Education and Relief Through Teaching) Foundation, where he was providing clinical relief to the only board-certified pediatrician in the country. The work was challenging: five patients died mostly from preventable causes due to a lack of resources and trained per-

sonnel. In Liberia, he participated in the "Helping Babies Breathe" program that teaches midwives and nurses to recognize respiratory distress in newborns. Approved by the American Academy of Pediatrics and the World Health Organization, it was featured on ABC Nightline.

This fall he received the 2012 "Emerging Leader" award from the Family Medicine Education Consortium. Easterling is happy to be back at NJMS teaching and advising students on pursuing global health work to expand their careers, or just their perspectives. "I could not have asked for a better job. This is my dream job." ●

MARVIN SCHWALB

A Leader in Genetics

When Marvin N. Schwalb, PhD, joined the NJMS faculty more than 40 years ago, he never imagined being the director of an Institute of Genomic Medicine (IGM).

"You couldn't have had this concept 40 years ago, before the birth of the Human Genome Project. It changed our entire

understanding of what DNA entails within human genes," Schwalb says. "The progress of the Human Genome Project is profoundly changing the practice of medicine, making it difficult for health care providers to keep up with the latest information."

IGM, formerly the NJMS Center for Human and Molecular Genetics, was established in 1990. Schwalb, who holds faculty appointments in pediatrics as well as microbiology and molecular genetics, explains, "We bridge the gap between the latest developments in genetics and clinical practice by providing information and clinical services in pediatrics, obstetrics, oncology, cardiology, hematology, surgery, internal medicine, ophthalmology, mental health and family practice."

The institute's interdisciplinary health and biomedical experts conduct research, invent diagnostic tests and blend personalized medicine with clinical practice. Resources include diagnostic lab testing, clinical care, genetic counseling and outreach services for New Jersey hospitals as well as initiatives in education, research and technology development. "We are committed to ensuring that all researchers, clinicians and state residents have access to our resources," Schwalb says. "We provide services to university researchers as well as to diagnostic, pharmaceutical and biotechnology companies."

IGM recently developed DNA sequencing tests to improve quality and decrease the cost of diagnosing cancer and hereditary diseases, including cystic fibrosis and mitochondrial disorders. The new Cystic Fibrosis (CF) Carrier and Diagnosis Test uses a mechanism developed by San Francisco-based Ion Torrent for carrier screening and diagnosis. The microchip can test the entire gene for mutations. IGM now offers this for hospitals as well as obstetrician-gynecologists. "We believe this new technology will drastically improve our ability to analyze genetic disorders," says Schwalb. "Traditional CF sequencing testing costs thousands of dollars making the test unavailable for carrier screening. This new test costs less than \$200. Most importantly, the genetic carrier test improves the diagnosis rate to 98 percent which is particularly valuable for minorities because current carrier screening methods only detect approximately 65% of mutations in these populations."

Schwalb adds, "We are proud of the fact that IGM is a world leader in the advancement of genetic diagnosis. Locally, IGM is the largest provider of clinical genetic services in New Jersey. In the state, there is nothing that compares to this advancement and this is just the beginning." —KAYLYN DINES

To make an appointment, call 973-972-3300.
For information: <http://njms.umdj.edu/genesweb2>.



WORLD-CLASS NEUROSCIENTIST

Building a Life of Science — and Meaning

From Istanbul to Israel and the U.S., Stella Elkabes' journey has taken her millions of miles but no adventure is more important than her current quest: to put patients' needs right in the lab.

BY EVE JACOBS

What does it mean to be a citizen of the world?

Just ask Stella Elkabes, NJMS associate professor of neurosurgery. Gracious, charming, comfortable conversing about a wide array of both scientific and nonscientific topics, alive with curiosity about life in all its guises, and fluent in six languages—Turkish, French, Spanish, Italian, Hebrew and English—this native of Istanbul in no way resembles our traditional image of a basic laboratory researcher. To date, she has logged a mind-boggling number of miles in her life's journey.

Her family is spread across the world—from Turkey to London to Italy to Essex County, NJ—but distance has been no impediment to this globe-trotter, whose close ties translate into yearly visits with those in her family circle. The two predominant themes in her life—establishing a career in research and experiencing different cultures—have not only proved “simpatico,” but have nourished each other in unexpected ways.





Stella Elkabes

Elkabes “global” journey began when she enrolled in a French high school in her native city, where she became immersed in French language and culture. Fluency in French was followed by studies in English, which she correctly surmised would be essential to her upcoming career. Elkabes matriculated at Robert College (now Boğaziçi University), founded in Istanbul in 1863 by two Americans whose intent was to offer an “American-style” education. (The school is credited with the instruction of two prime ministers, and many cabinet-level ministers, ambassadors, and leaders in medicine, law, business and the arts.) Elkabes graduated from there with a bachelor’s degree in chemistry and an overwhelming desire to pursue further education—preferably abroad.

She chose Israel’s renowned Weizmann Institute of Science in Rehovot, where she “went for a Master’s degree and stayed for a PhD.” Unlike many women of her generation, Elkabes calls herself “lucky to have parents who were so progressive,” encouraging their daughters to pursue their careers, wherever that would take them.

It was at the Weizmann Institute that Elkabes made a pivotal turn in her career, switching her focus from chemistry to neuroendocrinology in order to “study science that has applicability to disease conditions.” Although the change made her entry into graduate studies tough, she recognized a deep personal need to make a difference in people’s lives.

Elkabes remembers her feelings of “culture shock” when she landed in a country where she knew no one, and despite her interest in languages, spoke not a word of Hebrew. “It took awhile to adjust,” she says, “and also to learn the language.” While lectures at the Institute were given in English, the young graduate student attended evening classes twice weekly to learn Hebrew. She wanted to be able to engage more fully in the life of the country where she would end up staying for seven years and where she made many close friends. “We still talk

twice a month,” she says, smiling, “even 25 years later.”

Her doctoral research on the hypothalamic pituitary axis set the stage for her next big step. “It became apparent to me,” she explains, “that I needed further training.” This time, Elkabes decided to cross the Atlantic and head for the U.S., believing that its wealth of scientific opportunities would make it an exciting place to seek out additional training. “It is also a country of freedom, a melting pot. That was very appealing to me,” she says.

Her two years at the National Institutes of Health (NIH), completing a post-doctoral fellowship in neurobiology, were “wonderful” and positioned her to join the lab of neuroscientist Ira B. Black, MD, then chief of the Laboratory of Developmental Neurology and the Nathan Cummings Professor of Neurology at Cornell University Medical College. When Black left Cornell for UMDNJ–Robert Wood Johnson Medical School in 1990, Elkabes moved across the Hudson too. Before his death, Black achieved international renown for his studies of the development of the nervous system and the underlying molecular mechanisms of brain function and cognition.

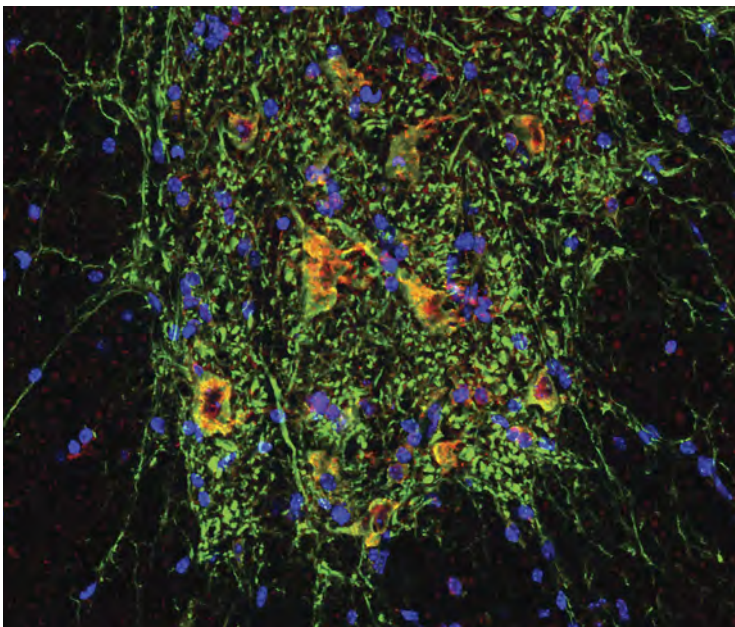
During her seven years in Black’s lab, Elkabes began researching microglia, which she explains are “immune effector cells of the brain, about which there was very little known at the time.” Activation of microglia is one of the early features of almost all inflammatory diseases of the central nervous system, including Alzheimer’s, Parkinson’s, stroke, spinal cord injury, encephalitis and multiple sclerosis.

“These cells can be very harmful,” explains the scientist, “but they can also be beneficial. They contribute to the onset of these diseases, but they are important to the repair process as well. This is certainly true for MS.”

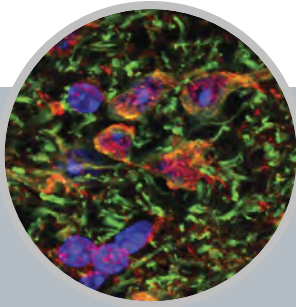
Intrigued by her first steps into MS research, Elkabes contacted Stuart Cook, MD, an internationally recognized expert in the field and a professor of neurology and neurosciences at NJMS. She had reached the point where she felt ready to establish her own lab and she wanted to do that on UMDNJ’s Newark campus where there was a core group of established MS researchers in the field.

That dream became a reality when the Elkabes lab was founded in the NJMS Department of Neurology and Neurosciences in August 1999. Since that time, her pursuit of answers about the destructive path of MS has yielded insights into neuro-immune interactions and the “cross-talk between neurons and glia in animal models of spinal cord injury and multiple sclerosis.” Primary funding for her work has come from the NIH and the New Jersey Commission on Spinal Cord Injury.

Her team has worked on animal models to understand how microglia contribute to MS, and how to protect neurons by interfering with the cascade of inflammatory processes that the disease sets



The lab’s researchers are currently focusing on toll-like receptor ligands, important in the immune system’s fight against infection. Elkabes describes this image from her lab as “Toll-like receptor 9 expression in dorsal horn neurons of the spinal cord. (Red: Toll-like receptor 9; green: MAP-2 and blue: DAPI).”



Her work on MS opened the doors to her current research pursuit. “What happens in the central nervous system in multiple sclerosis is similar in many ways to what happens in spinal cord injury,” explains Stella Elkabes.



off. “In 1999, MS was thought to be strictly a disease of demyelination [the loss of the myelin sheath insulating the nerves],” she says. “But we found a new mechanism of neuronal degeneration and neuronal death.”

It was her work on MS that opened the doors to her current research pursuit. “What happens in the central nervous system in multiple sclerosis is similar in many ways to what happens in spinal cord injury,” she explains, “although the etiology is different.”

In 2006, Elkabes contacted Robert Heary, MD, NJMS professor of neurosurgery and director of the Spine Center of New Jersey at NJMS, to explore the possibility of collaboration. “I saw something so appealing in him,” she relates. “Not only is he an outstanding neurosurgeon with a passion for what he does, but he has great positive energy and empathy for people. I admire that.”

She also met Tim Reynolds, co-founder of Jane Street Capital, who shares Heary’s passion to find a cure for spinal cord injuries. After Reynolds suffered a devastating spinal cord injury in a car accident in 2000, and later, in 2003, when his ability to function was threatened by a syrinx (a rare, fluid-filled cavity) that had formed in his spinal cord, Heary performed the surgeries that kept Reynolds going, although he is wheelchair-bound. Since 2006, the Reynolds family has donated more than \$8 million to the Foundation of UMDNJ to establish and support the Reynolds Family Spine Laboratory at NJMS, where the close integration of basic and translational research promises to move scientific discoveries more quickly into the realm of reality for spinal cord injured patients.

“Mr. Reynolds is so inspiring,” comments Elkabes. “He’s so strong

mentally and physically, yet so modest, and lives such a full life. After meeting him, I began to see things differently. I understood that our job is to allow everyone to expand their abilities, rather than to define their limitations.”

Elkabes envisioned a role for herself helping to expand the abilities of those with spinal cord injuries. Initially serving as a consultant to the Spine Laboratory, she gradually became more involved, and, in 2010, became the lab’s research co-director with Heary, and joined the Department of Neurological Surgery.

“I realized the results would be better if our two teams collaborated,” she explains. “We complement each other’s knowledge. The current lab’s primary focus is spinal cord injury, but we continue to work on MS.” The 12 team members (not counting Heary and Elkabes) are so highly motivated, she says.

The lab’s researchers are currently focusing on toll-like receptor ligands, important in the immune system’s fight against infection. “They are also found in the central nervous system,” explains Elkabes, “but little is known about their role there beyond fighting infection.”

She believes the team is onto something. “Toll-like receptor 9 [TLR9], about which nothing is known in spinal cord injury, leads to beneficial outcomes when inhibited in a mouse model of spinal cord contusion,” she says. “The beneficial qualities of the TLR9 inhibitory ligand include reduction of inflammation and pain, and improved bladder function.”

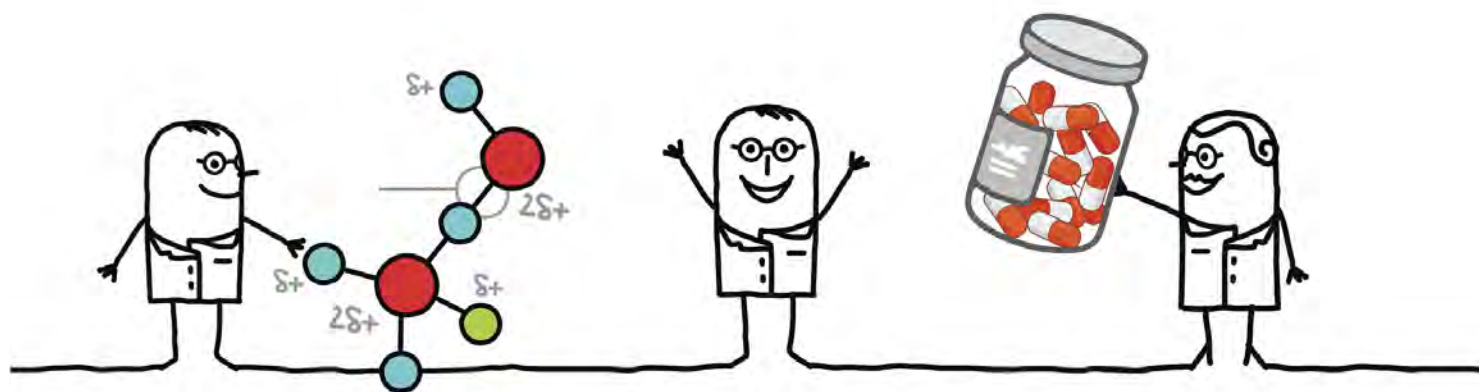
While some toll-like receptor 9 ligands are being tested as therapies in humans with cancer and autoimmune disorders, Elkabes says, “We’re not ready for that yet. We’re trying to understand the mechanisms underlying the effects of the TLR9 ligands better, and how to enhance the beneficial effects of inflammation and reduce the detrimental ones.” The team is also starting studies on axonal regeneration for motor recovery.

There’s a buzz of excitement about the research in the Reynolds Family Spine Laboratory; but Elkabes’ enthusiasm for helping to educate the next generation of scientists has also kicked up a notch. Meeting Tim Reynolds, she says, has underscored, for her, the value of increased communication among medical experts, basic scientists, rehab teams and those living with a particular problem.

“This communication is essential to better science outcomes,” she explains. “When young scientists meet people with a particular condition, they can orient their research to the priorities of those with the condition, rather than deciding on their own priorities. If pain is a major issue, then that’s what we should be working on.”

While employing the most sophisticated and up-to-date methodologies in her scientific pursuits, Elkabes’ work in the Reynolds Family Spine Laboratory is fueled by the traditional values that have guided her life. “Despite the current emphasis on modernization in research, and the very rapid advances in technology, we need to preserve our values of reaching out and helping each other,” says the researcher. “Above all, young scientists need to understand the human condition better and learn the importance of perseverance and compassion.” ●

Academics Business =



Biomedical education requires more than just classroom and lab learning. To succeed in the real world, students need links to real life.

By Jill Spotz

When Holly Hilton earned her PhD in genetics from Rutgers in 1996, she mentioned to one of her professors that she wanted to work for a pharmaceutical company. An adjunct professor at GSBS–NJMS, Hilton recalls, “His reaction, after taking a deep breath, was: ‘You are crossing over to the dark side.’” In her day job as a research expert at Hoffmann-La Roche, Hilton determines what makes a good drug target and can laugh about how little exposure her teachers had to the experience of working within the bio-tech or pharmaceutical industry.

“It was a black hole to them. Those who left for industry never came back.” Back then, students like Hilton had very little interaction with the real world of making medicines. The fear was that industry would be a corrupting influence on biomedical education and there would be conflicts of interest. Academia was the purer and only career path to take. This complete separation of

Better Together

industry and academia left students like Hilton with missing pieces in their education.

This was a sad state of affairs, especially in a state known as the “Medicine Chest of the Nation,” and home to some of the greatest scientists in the world, including Albert Einstein and Thomas Edison. More than half of the 20 largest pharmaceutical companies are still here but even more impressive are the 1,800 smaller players in the pharma industry headquartered in New Jersey. Even Hoboken has a pharmaceutical company. What’s more, the name of the game for success in this industry is collaboration, so the ongoing cooperation between university research communities and companies is now seen as essential for both sides in this marriage of business and academic biomedical research. According to an Institute of Medicine report, “Basic discoveries often come from the laboratories of university and government scientists; but

their development into actual products available to clinicians and patients usually depends on the technical, production, and financial resources of pharmaceutical, medical device or biotechnology companies.” In the best of all possible worlds, academia and industry are more likely to be successful when operating side by side.

Nicholas M. Ponzio, PhD, professor and vice chair, Department of Pathology and Laboratory Medicine, GSBS–NJMS, recognized this importance of collaboration between industry and academia. “Ten years ago, students enrolled in the school’s PhD and Master’s programs were receiving an excellent education but lacked exposure to the pharmaceutical and biotechnology fields—areas where they might eventually work. They were interacting with their mentor in an academic environment and that was the only world they were able to see,” Ponzio explains. “We wanted to give them hands-on, applied knowledge that only industry experts can offer.”

To make this happen, Ponzio began working with Steven Ritland, PhD, executive director, project leadership, at Celgene Corporation in Summit, a company that develops innovative oral therapies to address the source of diseases like cancer and inflammatory disorders. Together, Ponzio and Ritland developed a course called “The Business of Science: Molecules to Medicine,” to bridge the gap between work and school and to offer students connections to future careers. “The biggest disservice you can give someone is to put them onto a career track they aren’t going to love,” Ritland explains. “We try to give students a realistic preview of what a day in the life of someone working in bio-tech or pharma looks like. The worlds of academic research and industry are so intertwined now. In fact, when you work in industry as I do, you are always encouraged to keep a foot in the academic world. If you are a clinician, for instance, you continue to see patients one or two days-a-week in a clinic. If you were trained in science, as I

was, you keep that foot in academic research somehow.” For Ritland, this has meant putting himself on the Newark campus regularly for the past decade. “This has been an absolute pleasure and so inspiring working on the course and interacting with students.”

In its 10th year, “The Business of Medicine” is not a traditional lecture course. Students work in teams to identify a molecule for drug development and then, virtually speaking, take it all the way through discovery into pre-clinical testing, patenting, FDA approval, product launching and marketing. Competition among the teams is tough and the ability to work well in a group is just as important as intellectual ability. “In the real world, most individuals do not work alone,” explains Ponzio. “Students initially groan because they don’t want to work in groups but when they start their careers, it will most likely be as a member of a team.” Ritland adds, “It’s always rough watching the teams evolve from their first presentation to the second. Reliably,

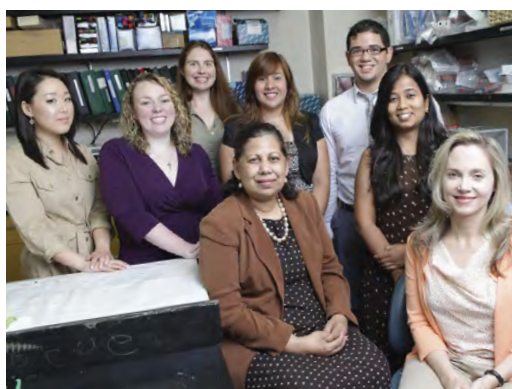
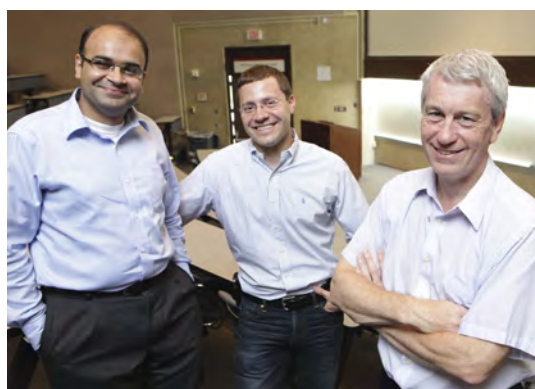
before the teams gel, there is a lot of ‘forming and storming’ under the competitive pressure. There is stage fright, too, but we make a point of letting the students know that this is a safe environment and they aren’t going to get thrown under the proverbial bus.”

Enrollment is capped at 25 and teams of four or five students each are coached to choose their virtual drug. “We pick the teams and help them select their projects,” Ritland explains. “There are no repeat drugs so we steer them away from any projects that may have been done before but allow them academic latitude about what disease they want to work on and what targets

(Top): Teaching together in a course called “The Business of Science: Molecules to Medicine,” are: Nicholas Ponzio, Shanon Hunt, Steve Ritland and Holly Hilton.

(Bottom left): “Principles of Toxicology I and II” is taught by two industry experts, Ramez Labib (far left) and Thomas Visalli (center). Both are graduates of GSBS, says Senior Associate Dean Andrew Thomas.

(Bottom right): A course called “Stem Cell Biology,” developed by Pranela Rameshwar, PhD, (front, center) 12 years ago, relies on experts in the pharmaceutical world to bring topics to life. Pictured here, back row: Jacqueline Park, MS, Bernadette Bibber, MS, Sarah Bliss, PhD, Vivian Rodriguez-Cruz (summer undergrad student), Jessian Munoz, MD-PhD, and Garima Sinha, MS. In the front row, Rameshwar and Kathryn Packman.



to choose.” Though this course is very popular and routinely oversubscribed, Ponzio and Ritland realized early on that larger class sizes and bigger teams hindered the learning process.

After the projects are chosen, the experts—guest lecturers as well as regular visiting adjunct professors including Ritland and Hilton—come to class to discuss their particular expertise in drug development and to give students input into their projects. The adjuncts represent top pharmaceutical companies and co-teach with Ponzio. In addition to Ritland and Hilton, GSBS Adjunct Professor Shanon Hunt, MS, global project manager of oncology translational medicine at Novartis, provides students with hands-on guidance to meet the same scientific, regulatory and business standards that researchers must meet on the job. “We provide the students with components of the same applications required of regulatory agencies,” Hunt explains. Students must complete portions of the Investigational New Drug Application (IND) and the New Drug Application (NDA), both of which are required for a drug to be brought to market. Hunt also coaches students through the business aspect of drug development. “In the end this is a value proposition for companies,” she explains. “I ask the students, ‘If we invest a billion dollars to develop this drug, will we recover more than a billion after it is brought to market?’”

Each three-hour session is split between a lecture and time for the projects. Eventually, every team will be presenting to ‘management’ and may even have to ask for additional funding to move their drug development process forward. The course runs just 15 weeks for three credits and “can feel like a sprint for students,” Ritland admits. “There are hot spots when the burden of work can get pretty heavy but we warn students about it on day one. In the end it is remarkable to see their success. Students end up with a better understanding of the industry and some find it stimulating, saying, ‘Hey, I can deal with this industry kind of teamwork,’ while others admit, ‘Nope, not for me.’”

Hilton, whose career has kept her involved in the early stages of drug development, is a great resource for helping students determine their virtual target. “Let’s say I have a hypothesis and I think a gene is important in cancer. If I modulate that gene down would the desired outcome occur?” she asks. Later, in the discovery phase she will even help students determine if their drug will work on patients. Her level of applied knowledge is invaluable. Throughout the process, the professors also throw up roadblocks. “We may say, ‘You have too much toxicity,’ or ‘Your drug is not potent enough,’” Hilton explains. Students learn to work through some of the same issues they might encounter in industry but at an accelerated pace. “The beauty of this class is that students overcome problems but it doesn’t take five to ten years as it might in reality,” she says. “It would have been extremely beneficial to me if I had this experience when I was in school.”

Ponzio isn’t alone in his mission to link his classroom to outside industry. Pranela Rameshwar, PhD, a professor in the department of medicine, began teaching “Stem Cell Biology” 12 years ago. This course covers a wide range of topics in cell biology from development to biomedical engineering and Rameshwar depends upon adjunct

professors at GSBS and NJMS like Kathryn E. Packman, PhD, a leader of Roche’s tumor biology group, to bring topics to life. “I can provide the extensive overview of stem cells but Packman can explain how to apply that knowledge in the development of drugs,” says Rameshwar. In fact, Roche has several molecules in this area of research and “It has always been a strong interest of mine,” says Packman, who currently lectures on cancer stem cells and has also lec-

The course runs just 15 weeks for three credits

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Ritland admits. “There are hot spots when the

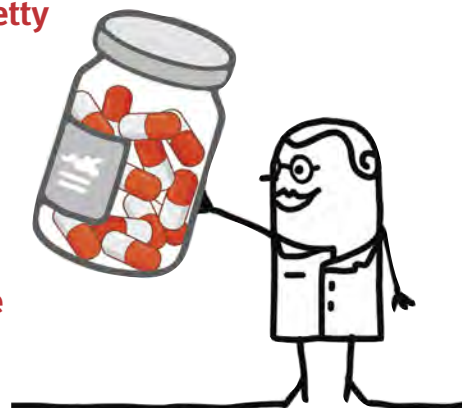
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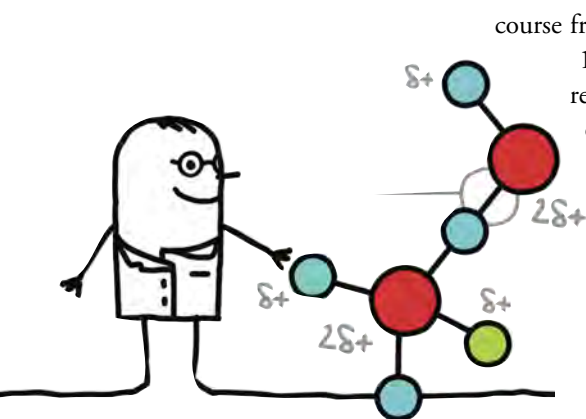
In the end it is remarkable

to see their success.”



tured for “The Business of Science.” In class, “we discuss how they can impact the future of cancer therapy.” Meanwhile, back when Packman was pursuing her doctorate at the University of Notre Dame, she never had this kind of opportunity. “There was no one to ask what it would have been like to work in industry,” she says. “It would have been beneficial to learn how future drugs were developed and how to parlay what I was studying into an industrial career.”

What Thomas Visalli, PhD, DABT, GSBS class of 2004, brings to the graduate level course “Principles of Toxicology I and II,” is his applied experience in the pharmaceutical industry. After several years as a toxicology project leader at Roche, he is now at Eisai Pharmaceuticals as associate director of regulatory affairs. In the evening, Visalli transfers this practical knowledge to students in pursuit of a medical or dental degree or a Master’s in Biomedical Sciences. He teaches the toxicology course along with fellow GSBS class of 2002 graduate Ramez Labib, PhD, MBA, DABT, a senior manager of toxicology at Avon Products, Inc. The two developed this two-part



course from the ground up nearly

10 years ago and it currently attracts 70 to 80 students per semester. Labib,

a toxicologist in the personal care products area, ensures that his company's products are safe for the consumer. "Relying on the adage, 'The dose makes the poison,' we

run tests on 3D tissue models to determine the level of toxicity of future products,"

Labib explains. "Toxicology is an applied science so we are able to bring direct experience into the classroom, giving students examples of how they can apply their knowledge in a future career."

When Visalli thinks back to his graduate experience 10 years ago, this classically trained toxicologist and adjunct professor fondly mentions Sylvia Christakos, PhD, NJMS Department of Biochemistry and Molecular Biology. She is "a phenomenal educator who would receive applause at the end of her lectures. She taught me that the best way to lecture is to tell the students what you are going to tell them, then tell them, and finally, review what you told them," he explains. In this three-step process a good educator will introduce the topic, discuss the topic and recap. Experiences such as these prepared Visalli to enter the workforce and he noted that connections with industry experts are critical as well.

His toxicology partner, Labib, earned both his PhD as well as his undergraduate degree at UMDNJ, having majored in clinical lab sciences at the School of Health Related Professions where he had many opportunities to interact with industry. "My undergraduate experience planted the seed in my head that this was the way to teach," he explains.

Ask all these busy adjunct professors why they teach and there is a common thread among their answers: to remain connected and up-to-date in the academic world and to see through the eyes of students. Visalli says, "Teaching helps us stay current with the research literature as well as with the research being conducted within universities. It is important to keep your finger on the pulse of these hot topics in university labs."

Bringing industry experts into the classroom also gives students very special professional connections, priceless in today's tough job market. Andrew Thomas, PhD, senior associate dean, GSBS, professor and chair of the NJMS Department of Pharmacology and Physiology, couldn't agree more. "Through our interactions with industry experts we occasionally connect students to companies for internships," he explains. "And for those students interested in a future career in pharmaceuticals, we have longstanding relationships with experts who can assist with career counseling and guidance." ●

Reza Razavi



WHY I LOVE MY JOB

From Scientist to Venture Capitalist

By Maryann Brinley

Reza Razavi's current job title is a mouthful. A graduate of the GSBS-NJMS doctoral program in Interdisciplinary Biomedical Sciences, Razavi is the director of New Ventures and Strategic Initiatives for Foundation Venture Capital Group (FVCG), LLC, an affiliate of New Jersey Health Foundation. In his capacity at FVCG he liaisons with the UMDNJ Office of Technology and Business Development (OTBD) to find innovative technologies that may be ready for building start-up companies and to lead them to commercialization. If that official description sounds a bit overwhelming, try thinking of Razavi as a talent show judge working closely with OTBD identifying the winning contestants. His life isn't quite *American Idol*-like, but no working day is ever the same for this enthusiastic imaginer who spends his time trolling laboratories, reading research studies and meeting scientists working on the cutting edges of biomedical research at UMDNJ.

"My current position with FVCG is fantastic. I am looking at so many different things. One day, it may be a medical device. The next day it could be a diagnostic and the next day, a therapeutic. You can't ask for more as a scientist. I am reading and learning about all sorts of cutting-edge research that I didn't know about before." With a research background in cancer biology, genetically engineered models and stem cells as well as years of experience within the bio-pharmaceutical industry at Novartis and Purdue Pharma, this business development specialist declares, "It's exciting and challenging!" He began working at FVCG in 2011.

A career inside the pharmaceutical industry or even a more traditional path in academic medicine would have required Razavi to "become a guru of one particular disease or specialty." As it is now, he's out and about

on all the UMDNJ campuses working with Vince Smeraglia, executive director of OTBD, speaking to faculty about their work, "finding out what they are doing and seeing if we can make a business out of it. I help the company to develop a business pitch, not a scientific pitch, and bring them before the FVCG committee that decides whether or not to provide initial seed funding for the start-up." Since 2007, FVCG has invested in eight companies based on the research talents of UMDNJ experts. And at the moment, Razavi is excited about two really promising prospects at NJMS: a novel treatment for TB and a new approach to wound healing. "In addition to facilitating a financial investment in a new company, I act as interim management at first, helping the teams develop their businesses and moving them forward. Once they have enough funding and people, we step back and let them grow," he explains.

A Montclair State graduate in biochemistry and molecular biology, Razavi has always loved science and medicine. He started as a microbiology lab technician even before he had completed his undergraduate degree. "I was recruited by a faculty member in the NJMS Department of Obstetrics and Gynecology to do cancer biology, so I started working on my Master's degree part-time here at the same time." After graduation, he went to work in industry and might have skipped the PhD route if he hadn't noticed that you definitely need a doctorate if you want to succeed in the bio-tech/pharmaceutical world. "Even when I got to the business development department in Pharma, I noticed that a lot of people in industry also had MBAs, so I was considering pursuing an MBA," he recalls, "but the PhD was really critical to have behind your name. If you were sitting around a negotiating table and there was a PhD there somewhere, at some point absolutely everyone would look to this individual and ask, 'What do you think?' So," Razavi laughs, "I took the hard route and returned to GSBS-NJMS to complete my PhD eventually going full-time to finish as quickly as possible, which I did in 2009."

Near the end when he was writing his thesis, Gwen Mahon, PhD, assistant dean for research then, told him that the University needed help negotiating contracts and asked

if he had ever done that when he was working in the pharmaceutical industry. His "Yes" answer landed him a part-time job with Patricia Dalton, Esq., director of Legal Management, and from there, his career in UMDNJ business development blossomed. After graduation he worked for the University's OTBD and then Rutgers' Office of Technology Commercialization. He also designed and teaches a course for students on all aspects of animal models that could mimic human diseases, which had not been emphasized in the GSBS-NJMS curriculum. "You can't write a grant or a paper or take a molecule to medicine and clinic without having animal data first." When Razavi mentioned this to the associate dean of GSBS in Newark, B.J. Wagner, PhD, her response was, "You are so right." He laughs because her next words were, "Since you have experience in these models, why don't you teach it?"

Razavi explains that when he was employed at UMDNJ's Office of Legal Management and OTBD, he helped the University to collaborate with industry on many levels, through grants, research agreements and service arrangements. Some UMDNJ labs, at the NJMS-Public Health Research Institute for instance, had developed assays (investigative procedures for assessing or measuring) that can't be done anywhere else in the world. "A company will pay for this specific service," Razavi explains. There are even start-up biomedical businesses that prefer to be right on campus and are renting space on UMDNJ campuses, including Newark. He recently introduced a start-up company to the University that is interested in using the clinical research expertise and facilities at NJMS to conduct tests of their new product, a nutraceutical (a food product that provides health or medical benefits).

"I find what I am doing now through FVCG just fascinating. The University has so many interesting and varied research projects, talents and state-of-the-art facilities, with lots of avenues for developing and expanding programs."

To contact Razavi for more information about start-ups, email: rrazavi@njhf.org.

BORN TOO SOON

*The neonatal team at UH keeps babies alive against all odds.
Just ask the mother of little Jason McKinney, Jr.*

By Mary Ann Littell

Yesica Solivan has had more than her share of adversity. We're not talking about your garden-variety misfortune—a tough divorce or the loss of a job—but catastrophe that's off the Richter scale, the kind that can crush the human spirit.

In 1984, at the age of 4, Solivan was diagnosed with osteosarcoma, a serious bone cancer predominantly affecting children and young adults. She had surgery to remove the tumor, which was located on her right leg, followed by intensive radiation and chemotherapy. Unfortunately, the cancer returned. Five years later, doctors had no choice but to amputate her leg at the hip.

The loss of her leg did not crush Solivan at all. Loaded with inner strength, she's matter-of-fact, almost tough, in dealing with her disability. "When something like this happens you just get through it," she says. "Having one leg was the new normal. I learned to adjust."

She grew up, had a family—and that's when adversity really set in. Now 32, Solivan is the mother of five children ranging in age from 1 to 15. Four of her children were born prematurely, all by Caesarean section.



The first three 'preemies' had some health issues as newborns, but came around quickly with minimal medical intervention. The youngest, Jason McKinney, Jr., was not so fortunate.

To look at Jason, Jr., today, plump and sturdy at one year, you'd never guess how he struggled to survive. His eyes are solemn: perhaps a reflection of all he's been through. Born at 24 weeks, weighing slightly under a pound and a half, he spent his first months in an incubator in UH's Neonatal Intensive Care Unit (NICU). His heart pumped weakly; his underdeveloped lungs could not function and he had bleeding on the brain. "It was an emotional roller coaster," Solivan says.

Flipping open her cellphone, she displays hundreds of photos of tiny Jason, Jr., in the NICU, swathed in bandages, a large blindfold shielding his eyes, tubes running everywhere. In one photo, Jason, Jr., clutches his father's hand, and it is larger than he is.

"I took pictures of him every day," she recalls. "You can see he progressed, but slowly. I was used to the ups and downs of preemies, but no one had ever told me one of my babies might not live through the



Onajovwe Fofah with Jason McKinney, Jr.
Opposite page: Jason, Jr., at 24 weeks old, clutching his father's hand.

night. Through it all, I always had faith that he'd be okay. I trusted Dr. Fofah and the nursing team."

Onajowwe Fofah, MD, chief of neonatology at UH, specializes in caring for preterm babies like Jason, Jr. "We pride ourselves in providing the highest level of care for all newborns, regardless of gestational age," he says. "Babies born at 24 weeks have about a 60 percent chance of survival. Of those who survive, 76 percent have moderate to severe neurodevelopmental impairment."

The causes of preterm births can be genetic, biological, or a combination of these and other factors such as poor prenatal care. Many mothers of preterm babies have had little or no prenatal care; some are drug users. "Unfortunately, we don't see many of these women until they come to the hospital to deliver their babies prematurely," adds Fofah.

Smiling and upbeat, he's clearly a man who relishes his work making miracles happen. A native of Nigeria, he came to the U.S. in 1991 and did a residency in pediatrics at UH, followed by a fellowship in neonatology at Albert Einstein College of Medicine. "From the first day of my residency I wanted to be a neonatologist," he says. After completing his fellowship, he practiced in northern Illinois for several years, then returned to UH in 2005, caring for patients like Jason, Jr.

When Solivan began her prenatal care at UH in May 2011, her pregnancy was well underway. Her prenatal care had been limited because of problems with her health insurance following a recent relocation from Brooklyn to East Orange. Solivan told the UH physicians about her difficulty in carrying babies to term. To try and prolong her pregnancy the physicians performed cervical cerclage, placing stitches in the cervix to keep it closed. A weak or incompetent cervix can be

the cause of premature delivery. She was also given steroids that would help prevent respiratory distress in her newborn.

Despite these measures, Jason, Jr., was born just a few months later, on August 5. Fortunately, Solivan had come to the right place to have her baby. UH, one of only 15 regional neonatal intensive care units in the state, has an outstanding record in caring for preterm infants. Approximately 70 babies are born here each year weighing less than three pounds, or 1,500 grams (the unit of weight most commonly used to measure preterm babies). With a strong team of neonatologists, nurses and other highly skilled staff, UH's NICU offers the latest technology and high quality care for newborn infants born there or transported from other area facilities not equipped to offer such care.

"Preterm babies face a tough road," says Fofah, assistant professor of pediatrics at NJMS. "Many of their biological systems are not developed enough to function normally. They are jaundiced and they have low blood pressure. They are prone to intraventricular bleeding—bleeding into the brain. Many also have respiratory distress syndrome (RSD), a serious disorder affecting more boys than girls."

The steroids Jason, Jr., received before birth helped him avoid severe respiratory failure. "Antenatal steroids are the single most important therapy to improve survival, other than keeping the mother pregnant," Fofah explains. Jason, Jr., was placed on a high-frequency ventilator only recently approved for use in newborns, but he still struggled to breathe and the oxygen levels in his blood were low. Fofah asked Solivan's permission to administer inhaled nitric oxide therapy. It aids breathing in newborns but is not approved for babies whose gestational age is less than 8 months. "Do whatever it takes," Solivan insisted. She came to UH every day to sit with Jason, Jr., frequently accompanied by his father, Jason McKinney, Sr. Sometimes she spent the night by her baby's side.

Fofah told the parents that if Jason, Jr., made it, the chance of complications later in life was almost guaranteed. "Another mother might have thrown in the towel, but not her," says the physician. "She's very assertive and told us to do whatever we could to save him. Because of her own medical history, she understands what it takes to survive."

Most of the preterm babies born at UH do well with a combination of excellent care and outstanding nursing leadership. "We have 40 nurses here with 20 years of experience or more and high-risk certification," says Gloria Igwe, RN, DNP, nurse manager of the neonatal intensive and intermediate care nurseries at UH. Igwe also comes from Nigeria, but she and Fofah



(Left to right): Onajowwe Fofah with Jason, Jr., Jason, Sr., mother Yesica Solivan and Gloria Igwe

When Progesterone Saves Lives

Newark resident Tamara Gold* greeted the news of her second pregnancy with a combination of joy and trepidation. She and her partner, Evan Hooper,* had lost their first child, a boy, in March 2011 at 22 weeks. The baby was born at a local community hospital lacking the expertise to care for preterm babies. His parents were told that nothing could be done to save him. Furthermore, he was too small to transport to a hospital with a NICU. "Losing our son was devastating," says Hooper sadly.

Their second baby was due in August 2012, and now they feared going through this experience all over again. On an early prenatal visit (at the same hospital where their first child was born) the couple learned that Gold was almost certain to deliver another preterm baby. Her obstetrician mentioned measures that could be taken, including progesterone therapy to prolong the pregnancy. A nurse took the anxious couple aside and urged them to go to the high-risk neonatal clinic at UH. "If this happens again, you want to be at a hospital that has much better ways of helping a baby that small," she said.

"We'd never heard of progesterone therapy, but it sounded like a great idea," says Hooper. He did exhaustive research online to learn about progesterone and prematurity, and they decided to follow the nurse's advice.

Progesterone, a hormone that stimulates and regulates various functions in the body, plays a key role in maintaining pregnancy. New research finds that it is also highly effective in preventing preterm



births. The March of Dimes recently launched a program to reduce preterm births for African-American women, who are more than one and a half times as likely to have a preterm baby compared to white

women. UH is a participant and received grant funding to help underserved mothers carry their babies to term.

At UH, Gold had a cervical cerclage procedure and received progesterone injections and other interventions. Her pregnancy was uneventful until late May, when she began having contractions. She went to the UH Emergency Department, where she was found to be dehydrated, which can cause the uterine muscles to contract. She was given intravenous fluids and also magnesium to slow the contractions.

From that point on the couple was on high alert, wary of any sign that labor was imminent. Despite a few other false alarms, Gold was able to maintain her pregnancy for 30 weeks before giving birth to a tiny but healthy baby girl on June 20, 2012. Babies born at 30 weeks are still preterm, but have an excellent chance for survival, particularly if they are born at a hospital with high-quality neonatal care.

"What a great example this is of the power of progesterone to prolong pregnancy," says Fofah. "It's the main reason why this mother now has a beautiful, healthy baby girl."

**Names have been changed to protect privacy.*

have more in common than just their homeland. They understand on a deeply personal level the perils of prematurity. Igwe is the mother of twins born at 34 weeks; Fofah is the father of a preterm baby born at 27 weeks in Chicago. Today, their children are thriving.

The expertise of the UH NICU team is well-known in the neonatal world. The staff recently celebrated an important milestone of patient safety: zero central line-associated blood infections (CLABIs) since June 2011. CLABIs occur when bacteria enter the bloodstream through the intravascular catheters used to deliver medication, blood, and nutrition to patients, and result in about 30,000 deaths a year in the U.S. alone. In June, NICU staff members traveled to an international medical conference in Texas to share their successful strategies for reducing infection. When new research describing multiple risk factors for sudden infant death syndrome (SIDS) was recently published in the journal *Pediatrics*, Fofah was quoted as an expert, advising physicians on ways to counsel new parents about minimizing their babies' risk of SIDS.

This expertise helped Jason, Jr., avoid serious infections. Over time he stabilized and began to turn the corner. He remained on ventilation and was given medicines to support his underdeveloped heart. Gradually he put on weight and eventually was able to suck from a

bottle. At that point a new problem developed: a severe case of gastroesophageal reflux disease, or GERD, that would cause him to stop breathing following his feedings. "This was very frightening," says Solivan. This problem, common in newborns and even more prevalent in preterm babies, typically resolves with maturation. The family endured a few more weeks of anxiety until the GERD abated.

Just after Thanksgiving—right around the time of his due date—this tiny baby was finally able to go home. Today, he's a thriving, chunky, 27-pound baby who is doing everything his peers do. "He flies around the house in his walker," says his dad. "We can't keep up with him!"

Babies born in the NICU continue to be followed in a high-risk clinic at UH in collaboration with other specialists, including pediatric neurologists, child development specialists, speech, physical and occupational therapists, nutritionists, social workers and behavioral specialists. If any defects are noticed, the babies receive intensive therapy. Jason, Jr., will be followed here until he's 7 years-old.

"By every physical measure, this baby should not have survived," says Fofah. "Jason, Jr., pulled through with the help of modern therapies and the input of his tenacious mom, who would not give up on him. He's truly a miracle baby." ●



TO UNDERSTAND

SOLDIERS & STRESS

By Jennifer Salvato Doktorski



An American army sergeant goes off base in Afghanistan in the middle of the night and is now on trial for killing civilians, including children. Could anything have predicted how a married father of two would end up like this? What went wrong? Was it the four tours of duty? The head injury on a previous mission? Stress from back home? Or was there something always dangerously there in his psychological, social or physiological makeup? Here's how one remarkable NJMS study looks for advance warnings.



The goal of the groundbreaking study was ambitious from the start. A small team of NJMS-based researchers set out to answer some big questions. Is there a way to predict how war will affect soldiers before they deploy to a combat zone? Can this kind of prediction lead to prevention of problems later on? And what are the indications or “predictors” for who will be the most resilient and who won’t?

“Very few studies have been able to assess these post-deployment outcomes before the event occurs,” says former NJMS Assistant Professor Karen Quigley, PhD, who headed the investigation when it began in 2005 at the Veterans Administration (VA) Hospital in East Orange in cooperation with the U.S. Department of Defense. But that’s exactly what Quigley’s team set out to do in this remarkable longitudinal perspective study. Lisa M. McAndrew, PhD, who is now leading the NJMS research, says that the goal was to identify the “predictors” that can determine who is at the greatest risk of suffering physiological and psychosocial symptoms as a direct result of the stress of war. A clinical health psychologist and scientist at the New Jersey War Related Illness and Injury Study Center (WRIISC), Department of Veterans Affairs, she joined the WRIISC and the Healthy Resilience after Operational and Environmental Stressors (HEROES) study in 2008.

Lisa M. McAndrew



The research team worked with the military at Fort Dix, NJ, and Camp Shelby, MS, and spent six years interviewing 767 National Guard and Army Reserve troops under conditions that were sometimes fraught with interesting challenges. A lovebug infestation (small flying insects in the *plecia nearctica* family) required the daily removal of thousands of bug carcasses at one research facility and Hazmat had to be called in to clean up broken mercury thermometers at another.

Yet, it was important for the researchers to learn as much as possible about the individuals before they headed into the stress of a war zone. As a scientist, Quigley's primary interests have been rooted in how emotions and stress affect a person's cardiovascular function, symptoms and other health behaviors as well as how individual differences in reactions to stress or personality factors can affect these relationships between emotions, physiology and symptoms. So, in the pre-deployment encounters, investigators spent a full hour and a half probing. Did the soldiers experience any prior traumas? What kind of social support networks did they have? How would they describe their health?

During those first sessions, the team also put subjects into stressful situations. "I can say this tongue-in-cheek because what we would do wasn't half as stressful as war," Quigley explains. They would have par-

ticipants do difficult mental math, for instance, like asking them to subtract from 5,674 by 7s out-loud. Or they would have them role play a stressful confrontational episode. Or put their hands in very cold water for two minutes. "We measured arousal and reactivity, looking at cortisol (the stress hormone) levels and cardiovascular changes, to see who might be more at risk later," Quigley recalls.

Harder still was the sometimes sad and disturbing news the Army National Guard and Reservists shared with the interviewers. One soldier had to return home when a family member attempted suicide. And another's wife asked for a divorce while he was away.

However, all the effort would be well worth it if prediction could lead to prevention.

"The difficulty of the setting and various minor setbacks were minimal compared to the amazing satisfaction we all felt in getting to know more about the individuals in our sample at a personal level," Quigley says. "All of us felt truly honored to meet and learn something about these very dedicated military men and women, and to see their commitment to defending our country."

All the soldiers in the HEROES study deployed to combat zones in Afghanistan and Iraq. Data was gathered at four stages: in that first pre-deployment face-to-face encounter; immediately upon their

return from the war zone; three months afterward; and then one year later. After the soldiers shipped out, researchers relied on surveys to gather data in the follow-up phases. The repeat contacts were important because, as Quigley explains, “It is critical to have people report what they experience as close in time to the event as possible if we are going to understand what is truly an early predictor.”

For their study, they relied on a definition of “resilience” from the work of George A. Bonnano, PhD, Department of Counseling and Clinical Psychology at Teachers’ College, Columbia University. “He defines resilience essentially as occurring when a healthy, normally functioning person is exposed to a potentially traumatic event, but has only minimal or short-term disruption to their mental or physical functioning,” Quigley explains. “Exposure to war serves as an unfortunate, but especially potent natural experiment where healthy individuals are exposed to a major life stressor—and with exposure greater for some than others.”

Though the last American convoy left Iraq at the end of 2011 and the U.S. presence in Afghanistan is winding down, for some soldiers, the physiological and psychosocial effects of war persist or have yet to surface. Post-traumatic stress disorder (PTSD) and a host of non-specific physical symptoms, including back pain, arm, leg or joint pain, chest pain, headaches, stomach pain, trouble sleeping, dizziness, shortness of breath, and gastrointestinal symptoms are just some of the conditions described to the NJMS team by participants in the study.

“I was impressed by how many physical symptoms these soldiers were reporting when they came home,” McAndrew says. Keep in mind that these were medically unexplained symptoms or “non-specific” and not necessarily connected to a particular disorder. “For our study, an important goal was to determine who had such non-specific physical symptoms and how long” had they occurred. What may be significant, Quigley says, is that “it appears that the increase in physical symptoms (compared to before their deployment), on average, occurred immediately after deployment.”

Quigley has since moved from East Orange to a VA hospital in Bedford, MA, but remains very much involved with the study and says that the HEROES project is so large that the data and their conclusions will appear in a series of articles, the first of which is due to be published soon. And McAndrew explains that the initial analysis has already produced two notable, though not surprising, findings: one, soldiers with the most support both at home and within their units in Afghanistan or Iraq fared the best; and two, on the whole, the soldiers involved were very resilient. The research team also found that participants with the best post-deployment physical function were younger in age, had better unit cohesion and greater systolic blood pressure reactivity to those pre-deployment stressors.

“The focus is often on those soldiers who are having trouble, on PTSD and on brain injuries. There hasn’t been as much attention given to physical disorders,” McAndrew explains. “Most of the soldiers in this study were doing quite well physically. That is extremely

encouraging.” The researchers were also able to predict those who would be impacted the least psychologically. Not surprisingly, the team found that simply put: people need people in all walks of life. “Soldiers who had more social support at home, in their civilian life, and within their unit reported better mental health after deployment,” McAndrew says. “The results are not unlike what we’ve seen in civilian populations. Social support is an incredibly important factor so I was encouraged to see something modifiable like this. There is something we can do about it.”

Although the purpose of the study was not to identify predictors for PTSD, the team found that 15 to 20 percent of the soldiers in the study did experience PTSD symptoms after returning home, a percentage that is similar to what other studies have found. “PTSD is very important, but it is not the only factor after deployment.”

“I’m interested in developing interventions to improve the function of veterans to boost resiliency,” Quigley says. “I hope that this work will help us move closer to determining who may be susceptible



Post-traumatic stress disorder and a host of non-specific physical symptoms, including back pain, arm, leg or joint pain, chest pain, headaches, stomach pain, trouble sleeping, dizziness, shortness of breath, and gastrointestinal symptoms are just some of the conditions described to the NJMS team by participants in the study.

to a variety of post-deployment problems, including physical symptoms like chronic pain as well as psycho-social symptoms and PTSD. We could provide supports in the form of enhanced training or improved social support before individuals leave for long and dangerous combat deployments.” McAndrew would like to use existing treatments that can be easily disseminated and used by psychologists or nurses to improve the function of returning veterans.

It’s been two years since the soldiers involved in the HEROES study went into battle zones, and while some have gone back additional times, others have returned to civilian life. “We plan to contact them to see how they’re doing and to understand predictors of function after deployment better,” McAndrew says. She would also like to see more students and post-graduate fellows become involved in the research. In addition to McAndrew and Quigley, Elizabeth D’Andrea, PhD, Karen Raphael, PhD, and Chin-Lin Tseng, DrPH, are part of the research team. “This was the initial wave, the first analysis,” McAndrew adds. “With a study of this magnitude we do the planned analyses first. There may also be questions we haven’t thought of asking yet that can be answered with this data.” ●



ROBIN S. SCHROEDER, MD'86
ALUMNI ASSOCIATION PRESIDENT

Dear colleagues,

Much has changed since my last letter. The governor's task force has made recommendations about the future of UMDNJ which have now been accepted. Next summer (July 2013), our parent institution will become Rutgers University. We know that a lot of time and effort will be expended to make this administrative change, but I encourage everyone to remain focused on one of our critical missions at NJMS: the education of medical students.

I have gone through some personal changes as well. After almost 16 years, I have moved from my position at NJMS. When Dean Johnson announced that I was "going west," many thought that meant I was headed for California. But for those of us who have spent our entire lives in New Jersey, going across the Delaware River to Pennsylvania is "going west"! I am now with the Department of Family Medicine at the Lehigh Valley Health Network working with a number of exciting, innovative programs. The need for personal and professional change has taken me west but my heart will always be back in New Jersey.

We are going to see some much-needed

change in our Medical Science Building, as well. In response to a school-wide student survey conducted last fall by the students and the Alumni Association (AA), the Dean's Office has begun renovations on Alumni Lecture Hall One (B556) and the AA will begin a project this fall to upgrade Alumni Lecture Hall Two (B552). The renovations will include better air conditioning control, technological upgrades, lighting and other cosmetic improvements. These halls are seen by prospective students visiting for the first time and, according to feedback received through the Office of Admissions, they do not make a positive impression at the present time. Additionally, these spaces are used extensively by current students, alumni and faculty because they are among the largest gathering areas in the school. This project comes in advance of a critically important licensing committee accreditation visit by the Liaison Committee on Medical

**"Take a Seat" by naming a chair
in the newly refurbished lecture
hall...with a gift of \$1,000.**

Education (LCME) in spring 2013. To help fund all this renovation, the AA is offering alumni the opportunity to "Take a Seat" by "naming" a chair in the newly refurbished Lecture Hall One. Proceeds from the fundraising effort will be used to enhance Alumni Lecture Hall Two. Seats can be donated with a gift of \$1,000 each and donors will be recognized on a special plaque at the rear of the lecture hall. Whether you sat up front, near the back like me, or were on the self-study plan at home, please join me in support of this very tangible donation opportunity! I have taken my seat...now it is your turn.

Change can produce anxiety, but it is also a time of tremendous opportunity. The AA is embracing each potential opportunity as a possibility to grow our mission at NJMS for the students and alumni! ●

MARK YOUR CALENDAR

October 12

Deadline for applications for **NJMS Research Core Facilities Matching Funds Small Grants Program**, part of the Dean's Biomedical Research Support Program. Go to: http://njms.umdj.edu/research/orsp/matching_fund_program.cfm

November 1

Alumni Association Annual Scholarship Awards Dinner • 6 p.m., Grand Foyer, MSB

In Memoriam...

The Alumni Association and the NJMS community extend deepest sympathies to the families and friends of:

Erich Hirschberg, PhD, professor emeritus, Department of Biochemistry and Molecular Biology, and former NJMS associate dean of research, in March 2012. Born in Germany in 1921, he was a cancer researcher who spent 22 years at UMDNJ.

A. Brian Little, MD, former faculty member, NJMS Department of Obstetrics, Gynecology and Women's Health, on April 14, 2012. He joined NJMS as a clinical professor in 1994 and spent 17 years as an advisor to students, residents, fellows and faculty.

George Perez, MD'81, former faculty member, Department of Medicine, on June 14, 2012. An HIV-AIDS specialist and researcher from the very beginning of the outbreak in Newark in the late 1980s, he worked at Saint Michael's Medical Center, and was much loved by patients and family.

Lonnie Wright, NJMS director, recruitment and academic enrichment programs, on March 23, 2012. A professional athlete, born and raised in Newark, he is remembered for more than 30 years of mentoring NJMS students.

Steven Zalcman, MD, research director of NJMS Department of Psychiatry, suddenly on December 25, 2011. An accomplished scientist, chief of the National Institute of Mental Health's Clinical Neuroscience Branch, he was memorialized at a lecture and luncheon for colleagues on March 21, 2012.

Reunion Revelations

BY MARYANN BRINLEY

Even months afterward, the chance meeting at the Alumni Reunion weekend in April still makes both of them shake their heads in awe. “It was an amazing encounter,” says Julian De Lia, MD’72, FACOG, FACS. And Cynthia McChesney, a director of development at the Foundation of UMDNJ, recalls, “This real ‘I-have-chills-this-is-such-a-coincidence-feeling’ happened on Friday as we were walking through the medical school.”

It was during the tour, McChesney explains, and she was enjoying the time spent getting to know alumni who had come back to campus. These kinds of get-togethers are just great for this, she says. “I’m chatty and friendly, and I happened to be walking alongside Dr. Julian De Lia who said he was from Wisconsin. I told him that I was from the Midwest, had been born in Illinois but had family in Wisconsin.” Then, De Lia proceeded to tell her that he practiced at a hospital in Milwaukee, St. Joseph’s Regional Medical Center, where he was an ob-gyn. McChesney’s emotional antenna started to bristle.

“That’s amazing,” McChesney said to him. “Perhaps you know my sister-in-law who gave birth there. It was more than 10 years ago but she has a dramatic story and you may remember it.” De Lia asked, “What’s the story?”

Her name is Eliz Greene. She was confined to bed rest at St. Joseph’s because while carrying fraternal twins, she had gone into labor at only 28 weeks the previous month. “She was a dance teacher and in great shape so the hospitalization was not an emergency, just a precaution,” McChesney explains. It was on a Sunday morning in November when she began to feel tingling in her fin-



gers while taking a shower. “She called for the nurse and then collapsed, unconscious. She had coded. Her heart had stopped.” McChesney heard this much of the story from her brother, Clay, who called her in a panic as Eliz was being rushed into emergency surgery.

Standing there in the hallway of the Medical Science Building last April, De Lia could hardly believe his ears. “I was there,” he told McChesney, “the first one in her room at St. Joseph’s that morning. I had just discharged one of my patients and thought she might be having an eclamptic seizure. All of a sudden, the crash cart arrived and the medical emergency people and the anesthesiologist and everyone was desperately trying to resuscitate her. Her heart had stopped. The room got so crowded,” De Lia told McChesney, “that I left to go sit at the nurses’ station. About a half hour later, I saw the newborn intensive care physician speaking to her husband about the twins and I remember thinking to myself, ‘This can’t be good.’ I was really feeling sick to my stomach.”

Cynthia McChesney met NJMS alum Julian De Lia (insert photo) for the first time at the reunion weekend in May and discovered they shared a piece of her family’s history. “It was amazing,” she says.

Eliz Greene, with no history of cardiac problems, experienced a spontaneous dissection of the artery and required an immediate triple bypass cardiac surgery. The babies were quickly delivered by Cesarean section first and then the surgery to her heart took four to five hours. The belief is that the same hormones which loosen everything up for birth can also soften the arteries of the heart and cause an inner layer to block the passage of blood. “I was told that I was the only person ever to survive what happened to me,” says Greene, who is now a national spokesperson for the American Heart Association and author of two books on heart healthy living as well as a popular blog: embraceyourheart.com/blog. In her work and travels since then, she’s identified

Continued on page 36

MILI MANDAL, PHD, GSBS–NJMS '12

Balancing Family and Research

This new graduate, wife and mother has it all...with a “little” help from the grandparents.

BY GREGORY BEAN

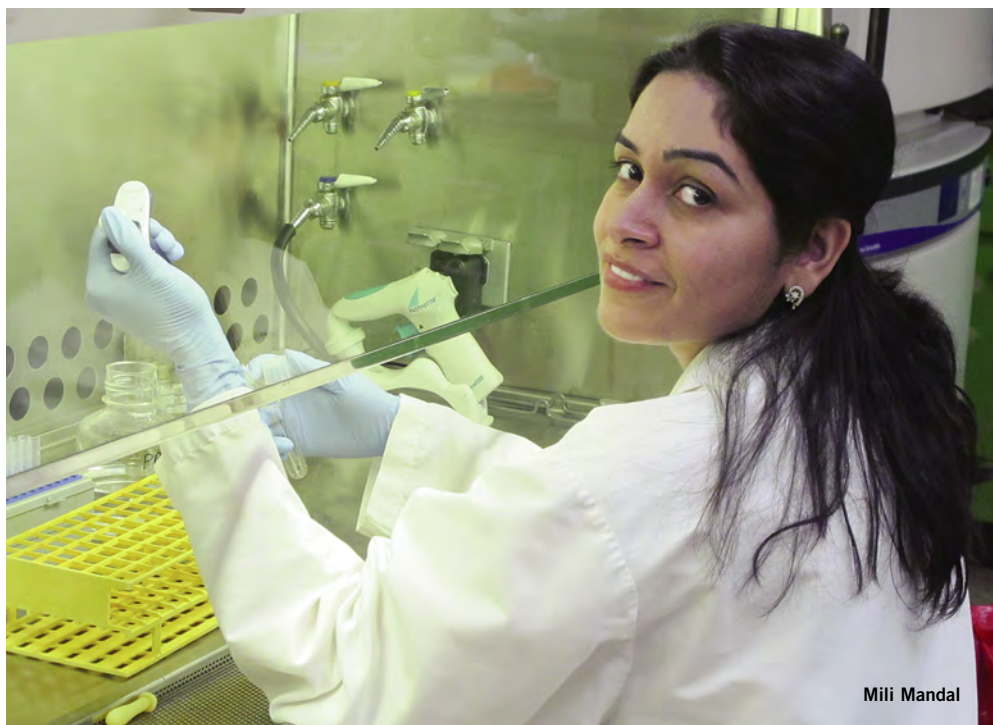
It would have been fun to be a fly on the wall when Mili Mandal—a 2012 graduate of the GSBS–NJMS doctoral program—had this conversation with her mother: “Hey, Mom, do you think you and Dad could pop over and watch your grandson for awhile? I’ve got a really busy time coming up in school, and he’d like to have his grandparents around.”

“Sure, Honey! How long do you need us for?”

“Oh, let’s say six months, for starters.”

People who know Mandal, 33, wonder how she’s managed to accomplish so much in such a short time, but while she’s humble about her part in the process, she’s effusive when it comes to the contributions made by her family. “I can’t imagine that I could have done the work I’ve been able to do without them,” she says.

Mandal came to America alone in 2002 to enroll in the MS program in plant sciences at West Virginia University. She had already earned her BS and MS degrees from Chattrapati Shahu Ji Maharaj University in India, her native country. After finishing that plant sciences program in 2005, she worked for a year as a medical technologist at a West Virginia hospital, and then began her PhD at



Mili Mandal

GSBS in Newark in 2006.

Mandal’s research as a graduate student for the next few years has profound implications in the field of autism, its causes and prevention. Working in the laboratory of Nicholas M. Ponzio, PhD, professor of pathology and laboratory medicine, she became involved in his research to investigate the underlying causes of autism and other neurological disorders, such as schizophrenia. Based on compelling evidence from human studies that infection during pregnancy can affect the brain development of babies, Mandal used a mouse model to investigate the contribution of immunological mechanisms to the development of autism. Those studies have now been published in the *Journal of Reproductive Immunology* and *Brain Behavior and Immunity*, and have formed the basis for a translational study in humans.

It was during her time as a Master’s student at West Virginia University that she married her husband, Preetanshu, who was working on his own PhD and is now a research investigator at Bristol-Myers Squibb. Their son, Ahaan—which means first ray of sunlight—was born in October 2009.

Raising a baby and fulfilling the demanding requirements of her PhD coursework and research at the same time was difficult. “Ever since Ahaan was born, my parents and my in-laws took turns coming here from India until he was a year-and-a-half,” she explains. “My parents stayed for half a year, and then my in-laws stayed for half a year. Then, I asked my parents to come back, and they stayed for eight months straight.”

Her parents are retired, and her father-in-law just works part-time now, so they could afford the time—and like most grandparents, they spoiled their grandson shamelessly. “We told them, ‘One day you will leave, and we will have to take care of him again,’” she says, laughing. The grandparents apparently paid little attention to the parents’ concerns.

After she finished her PhD this past February, Mandal was offered a position as a post-doctoral research fellow at Rutgers in Piscataway. These days, she’s in the Rutgers University Ernest Mario School of Pharmacy, in the Pharmacology and Toxicology Department, working with Debra Laskin, PhD, Professor and Roy A. Bowers Endowed Chair. Mandal has a pres-

tigious National Institute of Environmental Health Sciences (NIEHS) training grant, studying the role of macrophages in inflammation and tissue injury. Happy in her new role, she is looking forward to expanding her research into other areas, perhaps the adverse effects of environmental pollutants during pregnancy on pre-term birth or fetal life.

"I hope to be here for two or three years, and during this time I want to apply for National Institutes of Health grants to help me transition from a post-doc to a faculty member so I can continue my own research," she says. "Hopefully, I'll get one, and then I'll find a faculty position in the New Jersey–New York City area. At least that's the plan."

Based on compelling evidence from human studies, Mili Mandal has discovered that infection during pregnancy can affect the brain development of babies.

For now, the daily schedule is a bit more manageable than it was in her hectic years as a student. She and Preetanshu leave for work from their home in Piscataway at about 8 a.m. while Ahaan stays in a daycare center just minutes from Mandal's lab. After their eight- or nine-hour work day, both come home for a family meal and try to relax.

"But our son won't let us!" she laughs. "He sleeps at the daycare, but we don't. Maybe by 9:30 p.m., he eventually goes to sleep, and we are both on the couch saying 'Oh, my God!' But we are madly in love with him and his mischief, and he is indeed a first ray of sunlight in our lives."

Even so, she'd like her parents and in-laws to come back for another extended visit. Maybe several. ●

SEAN CIULLO, MD'08

Not Your Ordinary Resident Supervisor

*Lisa Jacobs is a regular contributor to **Pulse** magazine who has just completed her first two years at the Warren Alpert Medical School of Brown University in Providence, RI. On her very first clinical rotation at Rhode Island Hospital this summer, she discovered the magic touch of one of our recent alums. Here's what happened...in her own words.*

Many people thought I was crazy to schedule surgery as the first rotation of my third year of medical school. Surgery is known for its grueling hours, its intensity, and of course, its culture. I was filled with anxiety and dread anticipating the sleeplessness and humiliation that lay ahead.

The moment I met my resident supervisor, I realized I had the wrong idea about surgery. Sean Ciullo, MD'08, greeted me with a smile and a joke and I knew immediately by his soft-spoken demeanor, sincerity, and genuine interest in me that he envisioned himself more as my teacher than as my boss. I breathed a sigh of relief.

While my peers struggled to navigate the hospital, its culture, and its computer system during our first week, I was oriented slowly and methodically by Dr. Ciullo, who told me, like the nurses and his patients, to call him "Sean." My classmates were shocked as I recounted the steps he took: touring me through supply closets, teaching me to read charts and use the computer system. He wanted to teach anything I wanted to learn, no matter how trivial the matter, or how many times the lesson needed repeating. "The key to teaching is to be willing to take time," he says. "A good resident teacher is the person



Sean Ciullo and Lisa Jacobs

who at 2 a.m. will sit down with a student and say, 'I'll teach rather than sleep.'"

On my first day in the hospital, I learned how to take an arterial blood gas and worked alongside Sean on a code, delivering chest compressions to a trauma patient as he inserted a chest tube. After each moment of urgency had passed, we returned to the desk to resume lessons, which seemed as important to Sean as the procedures.

I soon discovered that Sean has always been a teacher, an interest that stemmed from his love of children, and that later led him to pursue pediatric surgery. "I connect well with children because I can explain things to them. I speak to them as if they are adults, and never talk down to them," he says. Sean applied the skills he developed as a babysitter to volunteer work, tutoring underprivileged children throughout high school and college.

Continued on page 35

ROGER A. MITCHELL, JR., MD'03

Medical Detective

Collecting bullets from bodies, testifying at double murder trials, addressing violence on city streets, writing murder mysteries...every day on the job for this forensic pathologist can be quite an adventure.

BY JENNIFER SALVATO DOKTORSKI

FBI forensic biologist. Doctor. Chief medical examiner. The resume of Roger A. Mitchell, Jr., MD, Northern Regional Medical Examiner for the State of New Jersey, already reads like the stuff of movies and television crime dramas. Add part-time mystery thriller writer to the list and the image of a real-life Castle, the best-selling detective novelist, begins to emerge.

However, Mitchell's role as a forensic pathologist committed to understanding and preventing violent crime is truly the overriding theme in the 38-year-old's life. Of the

1,500 autopsies performed by his office each year, about 200 are homicide victims. And one of the reasons he spends so much time speaking with groups about violence and other health issues is that he doesn't want to see anyone in his audiences end up on his examination table.

"It's novel to have a medical examiner who wants to be part of crime prevention," Mitchell admits. "But I think it's our role, in the same way a cardiologist would want to be part of an anti-smoking campaign, or involved in promoting healthy lifestyles."

Mitchell, who is licensed to practice medicine in both New Jersey and Texas, was introduced to forensic science 15 years ago when he got a job with the DNA Unit of the Federal Bureau of Investigation (FBI) right out of college as forensic biologist technician and became the first black man to do so. At the FBI, he examined DNA evidence from many cases of violent crime that led to the conviction of offenders. "I remember a particular case where I developed critical evidence used to arrest and imprison a serial rapist in the northeast region of the country," recalls Mitchell.

The notion of becoming a forensic scientist first crystallized for him in 1995 when he was a junior at Howard University working in the DNA laboratory at the University's Center of Sickle Cell Disease. At the time, the O.J. Simpson trial was on every television station. "Coverage of the trial highlighted DNA, forensics, and evidence. This seemed so very interesting because I was manipulating DNA too and performing tests similar to those being described during the trial," Mitchell says. Up until then, although he was in pre-med, he hadn't known what kind of medical doctor he wanted to be, or if he really even wanted to attend medical school. The O.J. trial clinched it for him.

"It became clear that I wanted to be a forensic scientist but the question was, 'Where?'" Working for the FBI right out of his undergraduate program turned out to be "a dream come true." He was with their DNA lab from 1997 to 1998 and the experience put him on his path to medical school. After NJMS, he did his residency at George Washington University Hospital in Washington, DC, where he was chief his last year from 2005 to 2006. A fellowship in the Office of Chief Medical Examiner in New York City moved his career even further.

Mitchell, who is board-certified in anatomic and forensic pathology by the American Board of Pathology, also worked for four years as the assistant deputy chief medical examiner in charge of Medicolegal Death Investigations at the Harris County



Roger A. Mitchell, Jr.

Institute of Forensic Sciences in Houston, TX. A New Jersey native, he returned to his home state in 2011 where he is currently the assistant state medical examiner in charge of the Northern and Southern Regional Medical Examiner Offices. He believes there is something to be learned from every death. "Our job is to be able to see a wound and know what caused it."

Throughout his career, violence has been an undercurrent of his work. As a medical examiner, Mitchell has personally performed more than 1200 autopsy examinations and

Becoming a forensic scientist was an idea that crystallized for Mitchell during the O.J. Simpson trial. "I was manipulating DNA and performing tests similar to those described on TV."

provided expert testimony in numerous cases. On average, he finds himself in court twice a month. "We can't be wrong. During my tenure as a medical examiner, it has become clear that we play a critical role in all homicide cases. We collect bullets from bodies, provide information about the type of weapon used in stabbing cases, as well as give evidence of whether an asphyxia death is due to a ligature or manual strangulation. Sometimes we can give an idea of body position at the time of injury."

Mitchell testified recently in a very sad case in Texas involving an elderly, homeless woman who had been beaten, strangled and raped. "What was critical to the case was the post-mortem sexual assault examination," he explains. "We were able to isolate the suspect's DNA from the victim's body. Both critical evidence collection and expert court testimony led to a conviction."

Continued on page 36

Resident Supervisor

Continued from page 33

When it came time to apply to medical school, Sean chose NJMS with teaching and community service in mind. He was drawn to its reputation for early, extensive clinical experience, and was eager to apply his teaching skills to high-need populations. Regarding his education at NJMS, Sean says, "I learned from every person I was with. All of my expectations were met. Right from the beginning, I was sold."

At NJMS, Sean expanded his teaching skills by participating in the SHARE program, working with teenagers who had a diagnosis of HIV or AIDS in their families. The work was challenging, and he found that his energy and desire to help were only as meaningful as his teaching skills were effective. "You have to learn to explain things to people at a level they can understand," he says. "You also have to be flexible and adapt to each student, because everyone learns differently. And you need to constantly check comprehension level to make sure they actually understand."

In building his skills as a teacher, Sean reflected on notable teachers he had as a student. His third-grade teacher "scared him into a sense of responsibility," which taught him that toughness can motivate students. Working in the SHARE program, he refused to give up on those who made poor progress. Instead, he would tell them, "You have to work, and you have to try, because I know you can do this." He cultivated an appreciation for perfection working as a scrub tech for a surgeon in high school. He went on to "apply that precision to everything in life and medicine." It was this value that later brought him to surgery. Sean stays enthusiastic and excited while teaching, remembering how his vertebrate zoology professor's passion brought the details of science to life.

When I started in surgery, what scared me most were the stories of "pimping," or being



quizzed in public. Other students described it as humiliating and felt it was meant more to create power differentials than to educate. Sean believed otherwise, and I soon learned from him that "pimping" was nothing more than using the Socratic method as a teaching tool. "I don't think most people learn well just by hearing facts. There must be engagement with the learner," he says. "Pimping is just asking questions. It's not derogatory, you just learn better by struggling."

As I recounted the stories of my first two weeks in surgery to my peers, some said that it didn't seem fair that my experience was so much better than theirs, and I agree. Every medical student deserves a teacher like Sean who prioritizes teaching and invests in students' success. Struggling for understanding and searching for answers do encourage learning, but humiliation and hierarchy do not. It was only because Sean made me feel comfortable that I was willing to ask questions and become an active learner, rather than retreating into submission in fear of the consequences of showing ignorance or incompetence. Under Sean's supervision, I built confidence and skills in a safe environment, a chance every student should be afforded.

In the future, Sean hopes to continue to teach as the director of a residency program or as a lecturer in medical education. I hope that he does, because I know he would help to create an educational environment that is collaborative and conducive to learning, that will not only make medical students more comfortable, but also more competent learners, communicators, and teachers. ●

Reunion Revelations

Continued from page 31

other pregnant women who have survived this nightmare. Her fraternal twins—Grace weighed 4 lbs., 11 oz. and Callie was just 3 lbs., 15 oz.—“are going into sixth grade this year and are completely healthy and happy,” according to their Aunt Cynthia. “But I remember how upset Clay was that day. All of a sudden, three lives were at stake.”

De Lia was also upset. He left the hospital not knowing the fate of this mother or her babies and remembers thinking, “It had been a terrible day and something awful had happened, not the sort of thing that usually occurs at St. Joe’s. When I got off the eleva-

This is what reunion weekends are for, says Cynthia McChesney, having these kinds of unexpected conversations.

tor the next morning at the hospital, I was expecting to see everyone moping around. But there was no gloom.” And when he heard the good news that she had been resuscitated and both she and her babies were doing fine, he became teary with emotion. “Unbelievable,” he says now. “I have even run into Eliz every two to three years when she came to the intensive care unit for follow-up care there.”

De Lia, who is much more than an ordinary on-call physician at St. Joseph’s, is the director of the International Institute for Treatment of Twin-to-Twin Transfusion Syndrome (TTTS). He chose Milwaukee as the center for his work because it is centrally located for his pregnant patients who travel there from all across the country and Canada. TTTS is a disease of the placenta that occurs in 10 percent of identical twin pregnancies and affects more than 4,300 in

the U.S. each year. If not corrected, shared abnormal blood vessels in the placenta can end up killing one of the babies and causing neurological handicaps in the survivor. One pediatric pathologist, “my real mentor,” De Lia says, “pointed out that the placenta is the only biological organ that can kill two or more persons at one time.” De Lia, who grew up in Newark and followed his father’s footsteps into medicine, pioneered placental laser surgery to correct the problem in the uterus and did his first procedure in 1988. He first headed west to the University of Utah School of Medicine in Salt Lake City to fulfill his dream of being a teacher, a clinician and a researcher before moving his very special practice to Wisconsin. (For a more detailed look at his work, see the *Pulse* story, “Saving Twins in Peril,” which ran in the winter 2006 issue.)

This is what reunion weekends are for, according to McChesney, having these kinds of unexpected conversations. “Here was Dr. De Lia, born and raised in Newark, a Jersey boy who describes his medical education here as pivotal in his development as a surgeon and there he was on the team working on my sister-in-law in a very different part of the country.” McChesney shakes her head in amazement again. “What are the chances of this happening? Here I am in New Jersey working for UMDNJ but with family in Wisconsin—they even live in the same town as the De Lias, Fox Point, as it happens. How did all these threads come together?”

The very next night at the Alumni Association formal dinner on Saturday at the Sheraton Hotel, what are the chances that Cynthia McChesney will be seated at the same table as Julian De Lia? (Place settings were assigned weeks before!) Yet, there they were, across the table from one another. “We were able to continue the conversation,” McChesney recalls laughing about how serendipitous the entire weekend was. “I got to learn more about what he does. He has patients who are passionate supporters of his work.” Here’s a link to his site: <http://tttsfoundation.org>. ●

Medical Detective

Continued from page 35

Mitchell’s office receives about 4,500 death calls a year and averages five autopsies per day. He oversees a staff of approximately 50 people in the Newark office and an additional 10 employees in the southern region. Typical days begin with morning meetings with forensic pathologists, a medico-legal death investigator, and the morgue staff. All cases received that day are triaged and discussed. After that, autopsies or external examinations get started.

While murder is the cause of death in only one out of every seven autopsies performed, Mitchell says it’s difficult to ignore the fact that violence is reaching epidemic proportions, especially in certain communities. “There are nearly 400 homicides per year in New Jersey. A disproportionate number of these cases occur in our urban centers...Newark, Trenton, Camden, and Atlantic City,” Mitchell says. “It is critical that we develop and coordinate evidence-based programs geared toward violence prevention, intervention, and deterrence.”

Mitchell’s office and UMDNJ School of Public Health are now developing a Violence Prevention Laboratory at the Medical Examiner’s Office. Mitchell loves serving the community. “I like the fact that the medical examiner can act as a resource for law enforcement and public health prevention programs,” he explains. “And I enjoy talking to people about making the right decisions regarding their healthcare.”

The advice he dispenses runs the gamut from cautioning youths against picking up a weapon and using it against someone, to warning others about the health risks of picking up a cupcake when they should be choosing an apple. Being out into the community offers him balance in a career that can be emotionally demanding at times. “Tomorrow, I’m testifying in a double murder trial,” he says. One thing is certain: he has seen enough in his life as a forensic scientist to write a book. ●

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Alumni Association of NJMS, 185 South Orange Avenue, MSB-B504, Newark, NJ 07101-1709. Photos are welcome. You can also send your news via e-mail to: njmsalum@umdj.edu or fax us at (973)972-2251.

1960'S

James DeGerome, MD'68 has been re-elected for another three-year term as president of the Digestive Disease National Coalition.

Thomas Kiernan, MD'67 retired in 2010 but continues to work part-time as a staff gastroenterologist at VA Medical Center in Augusta, GA.

Andre H. Vanderzanden, MD'68 writes that he is enjoying being a granddad and is looking to retire in two years.

1970'S

Stephen Blank, MD'77 is the founder and creator of New Life Shoes for pregnant women which are available for order on line.



Winning Logo

Michael Denson, NJMS fourth-year medical student, designed the winning logo for the Greater Metropolitan Medical Alumni Council, a consortium of eight medical schools in the greater New York metropolitan area which was created by their Alumni Association Presidents. The group meets three times a year to share ideas and solve mutual problems.

Thomas Dayspring, MD'72 has relocated to Richmond, VA, to become the director of cardiovascular education at the Foundation for Health Improvement and Technology.

Peter Dorsen, MD'72 has authored a new book entitled *Crazy Doctor: Mixing Drugs and Mental Illness*.

Donald E. Greydanus, MD'71 is professor and chair in the Department of Pediatrics at Western Michigan University School of Medicine. He was recently inducted into the Michigan State University Gamma Chapter of the Alpha Omega Alpha Honor Medical Society.

Robert Jarmon, MD'73 writes that his company has just built and tested the only mechanical wheelchair seat designed to prevent pressure ulcers in wheelchair-bound patients.

Harvey Wieseltier, MD'76 became a grandfather for the fourth time on July 6, 2012.

1980'S

Anthony D. Ciardella, MD'80 is the associate chief of medicine at the Hospital of Central Connecticut.

Thomas R. Ortiz, MD'81, FAAFP, has his own family practice in Newark, NJ, the Forest Hills Family Health Associates, PA.

Peter Thompson, MD'85 is working as a trauma surgeon in Atlantic City.

A New Doctor's Must-Have Book

Allan Tunkel, MD'84, PhD'80, chair of medicine at Monmouth Medical Center in Long Branch and a professor of medicine at Drexel University College of Medicine has recently co-edited a new textbook entitled *Medicine: A Competency-Based Companion* published by Elsevier. Written by experts in their fields, the book will be a useful and practical tool to educate and train medical students and residents. Sold online through the publisher, a leader in health science books and journals, the 832-page book is described as "a complete yet concise textbook that provides the core information you need to think like an experienced clinician during your medicine rotation and during your internal medicine residency. It is a handy, pocket-sized medical reference book that hones in on the must-know differential diagnoses of the common medical presentations and guides you through the most up-to-date and effective approaches to treatment that is competency-based, equipping you to excel."



Tunkel's co-editor is Jessica Israel, MD, section chief of Palliative Care and Geriatrics at Monmouth, which is part of Barnabas Health. The physicians point out that this book discusses "all the things you wish someone had told you when you were a medical student and training in internal medicine." Israel adds, "A unique aspect of the book is that it teaches you how to communicate with your patients and how to deal with cultural barriers." To reach out to Tunkel, email: atunkel@barnabashealth.org.

1990'S

Steve Paragioudakis, MD'93, an orthopedic spine surgeon and founder of Orthopedic Spine Specialists of NJ, has been named to the board of medical advisors for United Health Products.

2000'S

Melanie Kaufer, MD'10 and **Kevin Tierney, MD'10** were married on October 29, 2011.

Demetri Merianos, MD'04 has just started his last year of training in pediatric surgery.

Roger Mitchell, MD'03 is New Jersey's regional medical examiner. He and his team of investigators review roughly 4,500 deaths from Essex, Hudson, Passaic, and Somerset counties each year. (See story on page 34.)

Brian Prystowsky, MD'06 writes that his wife, Ellen Green, MD, completed her training in family medicine in Santa Rosa, CA, and plans to work as a primary care physician with him.

Sindhu Srinivas, MD'00 is an assistant professor of OB/GYN at the University of Pennsylvania.

Grant Winners

\$300,000, \$142,000, \$100,000, \$50,000 and more...gifts from The Healthcare Foundation of New Jersey, the Robert Wood Johnson Foundation, the Victoria Foundation, the Prudential Foundation, ACS–Project SEED as well as private individual donations are funding projects in the hospital and on campus. The UH trauma rehabilitation team wants to understand and prevent delirium in patients. Two members of the Endocrinology, Diabetes and Metabolism Division are trying to keep patients with chronic conditions from bouncing right back into the hospital. Empowering patients to become more informed about their health is a new initiative of Theresa Rejrat, MA, RN, UH vice-president of patient care services. And over at the Public Health Research Institute, local high school students were studying science with the experts in a summer experience that was priceless.

BY MARYANN BRINLEY



The Delirium Dilemma

Up to 56 percent of all hospitalized people and nearly 80 percent of all patients in the ICU end up in an extreme state of confusion, agitation, aggression... unable to think clearly or pay attention, hearing imaginary voices and seeing things that are not really there. It's called delirium and it's very dangerous. Hallucinations, disorientation, memory loss, speech problems—all symptoms of what is now being recognized as an epidemic of hospital-acquired delirium—are simply far too common. “This affects about three out of every four patients in the ICU,” according to Peter Yonclas, MD, NJMS assistant professor, surgery, physical medicine and rehabilitation, and director of trauma rehabilitation at UH. Why is this happening? What are hospitals doing that are literally driving patients crazy?

With a grant of \$100,000 from the Healthcare Foundation of New Jersey, Yonclas and Anne Mosenthal, MD, NJMS professor and interim chair of the Department of Surgery, co-investigators, are



trying to answer those questions. At UH, this yearlong, interdisciplinary investigation, the Hospital-Acquired Delirium Prevention & Treatment Initiative, is also aimed at reducing the number of delirium diagnoses by at least 20 percent. “Patients with hospital-acquired delirium require lengthier hospital stays and in many cases, rehabilitation,” Mosenthal explains. “Both increase healthcare costs.”

“Delirium typically comes on suddenly and patients can recover within days or weeks,” Yonclas says. “Much of the research on hospital-acquired delirium suggests that it can result from insufficient oxygen getting to the brain, electrolyte imbalances (or chemical changes to the brain), infections and pain.” This is a physiological condition, an acute brain disorder, not psychological and not to be confused with dementia, which “progresses over a period of years and most often is permanent,” he explains.

Coordinated interventions at UH include a pharmacological approach—avoidance of medicines (some tranquilizers, narcotics, sedatives, anesthetics and analgesics) known to be linked with delirium—as well as assessments of patients’ sleep-wake cycles and other therapeutic touches including massage, music, and light therapies. This grant also made it possible for an educator/research assistant to be available to help patients, families and hospital staffers understand delirium better. Ultimately, a clinical protocol will be designed for delirium risk assessment, prevention and treatment that will focus on all patients over age 50 admitted to the ICU or trauma units. This is all good, life-saving news because some experts have been pointing to delirium as a predictor of death within 12 months following an ICU hospital patient’s discharge.

Healthier Transitions

Being discharged from the hospital to go home is never easy, especially when a patient has an ongoing illness like diabetes, cardiovascular disease, respiratory issues, HIV or sickle cell anemia. Those first days of self-care can be so overwhelming that people end up right back in the hospital—and too often in the emergency room when a primary care doctor would have been more appropriate and less expensive.

Now, with a \$300,000 grant from the Robert Wood Johnson Foundation through its New Jersey Health Initiatives program and an additional \$50,000 from the Healthcare Foundation of New Jersey, UH is piloting a program to put a stop to repeat hospital visits. Called I-Care-4-Health Transitions, this program will help the neediest patients stay healthier at home.

“We hope to prevent discharged patients from unnecessarily returning to the hospital within the first 30 days and as a result, improve their health-related quality of life,” says Melissa Scollan-Koliopoulis, EdD, APRN-BC, CDE, BC-AND, assistant professor, medicine, endocrinology, diabetes and metabolism. David Bleich, MD, associate professor, chief of the Division of Endocrinology, Diabetes and Metabolism and co-project director, says, “Our goal is to extend the attention and care that patients receive from us beyond the four walls of UH, thereby improving patients’ outcomes.”

The transition team will include a certified home health aide/patient navigator, a registered nurse, an advanced practice nurse and a physician. “It’s all about education being delivered in a way patients can comprehend. We’re all learning together how to improve access to care with the overall goal of serving our patients in the most efficient, cost-effective way possible.”

Melissa Scollan-Koliopoulis and David Bleich





Theresa Rejrat

Ask Me 3

When patients understand the answers to three questions—1) What is my main problem? 2) What do I need to do? and, 3) Why is it important for me to do this?—they have a better chance of getting well and staying that way. Studies show that even when people are living with a chronic condition, those who understand health instructions clearly will make fewer mistakes taking medicines or preparing for procedures.

To improve this kind of health literacy at UH, The Healthcare Foundation of New Jersey has given the hospital \$142,000 to support Ask Me 3, a national program sponsored by the National Patient Safety Foundation. This initiative encourages health care professionals to communicate better with patients and to educate patients to ask these three questions. This funding will also support the Patient and Family Resource Center in the UH lobby staffed by professionals and trained volunteers.

“Our Ask Me 3 program is unique,” explains Theresa Rejrat, MA, RN, UH vice president of patient care services, “because we not only encourage patients to ask these three

important questions but we provide them with answers for conditions that are most commonly treated here at the hospital. We empower them to make informed decisions and to become active partners in their care.”

Summer High Science Stars

Fourteen students from local Newark high schools spent their summers steeped in science at the NJMS–Public Health Research Institute (PHRI) thanks to funding from the Victoria Foundation, Prudential Foundation, ACS–Project SEED and private individual donations. Under the direction of Yaakov Saturen, recently retired from Jane Addams High School in the Bronx, NY, and teaching assistant Omaru Washington from Drew University in Madison, the students started their adventures with a two-week workshop introducing them to the vocabulary of molecular biology and basic lab skills, tools and techniques. After that, they were paired up with principal investigators at PHRI for six weeks of real research on individual projects as well as

field trips and lots of exposure to educational and career options.

The young researchers’ topics were hardly inconsequential, ranging from “Biochemical characterization of Simian HIV envelope proteins,” and “The activity of novel anti-fungal drugs against *S. cerevisiae*,” to “Effects of antioxidants and mutants on thymine-less cell death.” Five high schools—Marist, Mother Seton Regional, Saint Vincent Academy, Science Park and West Side—sent students: Deseree T. Anderson, Dominique Bynum-Cooper, Hannah Delos Reyes, Ysamerlyn Gonzalez, Victoria Hale, Shante M. Larry, D’aundra Lewis, Mufasa Johnson, Afia Obeng, Oluwadamilola T. Oke, Edward Paz, Stephanie W. Njeru, Daram Nicholas Ramdan and Kabin Traore. Veteran PHRI Professor Issar Smith, PhD, known by all as “Smitty,” is associate director of programs and development and helps to write the summer funding proposals. “Smitty” believes that this hands-on program of laboratory research experience is priceless. Perhaps one of his greatest satisfactions comes from the look on the faces of the parents and families present at the end of the eight weeks when their summer students give poster and oral presentations on their research. ●



Edward Paz, Stefanie Njeru, Shante Larry and Yaakov Saturen



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