

# Robert Wood Johnson MEDICINE

*Studying the Present  
to Shape the Future*

POPULATION  
SCIENCE





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Thanks for making a difference in our community.

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# LETTER FROM THE DEAN

Dear Colleague,

**R**obert Wood Johnson Medicine conveys the extraordinary breadth and strength of our work at UMDNJ-Robert Wood Johnson Medical School.

The cover article, *Popular Science: Studying the Present to Shape the Future*, describes our multi-disciplinary Cancer Prevention and Control Program. Under the program's broad umbrella, RWJMS population scientists collaborate effectively in their quest to improve clinical care and treatment outcomes.

*It Takes a Village to Have a Baby* explores the range of experts at RWJMS — from reproductive endocrinologists, to maternal-fetal medicine specialists, to general obstetricians, perinatologists, and anesthesiologists — who help parents fully realize their hopes for a safe pregnancy and a healthy baby.

*Emergency Medicine and Acute Care* explores our impressive growth in these two important areas. To keep pace with the region's fast-expanding population, we established an acute care division, which helped 3,000 patients in 2010; a residency in emergency medicine; and new fellowship opportunities.

In *Health Care Reform: Cure-all or Band-Aid?* RWJMS faculty members weigh in on the implications of the 2010 health care reform legislation. While they agree that the nation needed a new model of care, they also provide useful insights into the difficulties of revamping the existing system.

*Movement Disorders* reports on our remarkable progress not only in treating patients, but also in investigating the disorders' genetic and molecular causes as a means to develop targeted, preventive therapies.

Transformative technological innovations are the topic of *Where Present and Future Converge*. Using advanced technology, our physicians care for patients with formerly untreatable conditions and train the next generation of surgeons to master these tools.

*Clinical Comparative Effectiveness Research* examines the objectives of the national Patient-Centered Outcomes Research Institute, which seeks to identify and set priorities for the most effective means of patient care and clinician reimbursement.

This issue features three exceptional alumni: Neil S. Calman, MMS '73, MD; Richard S. Liebowitz, MD '80; and Zeshaan A. Rasheed, PhD, MD '04.

A passionate health care activist, Dr. Calman developed the non-profit Institute for Family Health and serves as chief administrator of this 26-site system of community health care centers, noted for delivering high-quality preventive and primary health care services to the medically underserved. Dr. Calman received the Distinguished Alumni Award on April 2 at the Scholarship Gala to Celebrate with Alumni and Friends.

Dr. Liebowitz, whose career-long focus is patient-centered medicine, is both a leader and an innovator in graduate medical education. He serves as vice president for medical affairs and associate chief medical officer at New York-Presbyterian Hospital.

Dr. Rasheed recently received a \$600,000 leadership grant that supports his exploration of the role of pancreatic cancer stem cells in the growth and spread of the disease.

I hope you will enjoy this issue and its in-depth portrayal of the people and programs at RWJMS.

Sincerely,



Peter S. Amenta, MD, PhD  
Dean



JOHN EMERSON

The Foundation of UMDNJ

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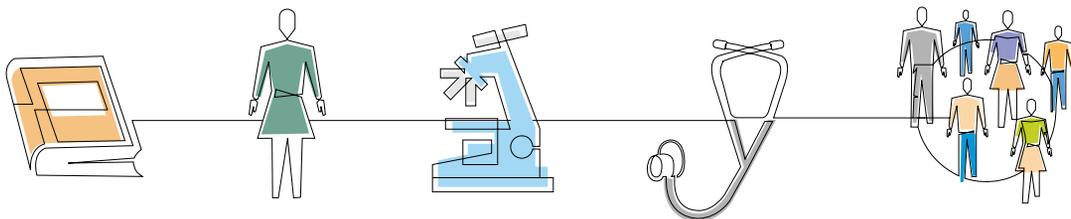
At the **Foundation of UMDNJ** we take great pride in our ability to connect donors and their passions with people at **Robert Wood Johnson Medical School** who share those same passions.

If you want to support the extraordinary work being done at RWJMS every day, we can help.

Your gift can help advance medical research, fund scholarships for health care professionals of the future, support patient care programs or assure that quality health care is available for all who need it.

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# Robert Wood Johnson MEDICINE

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

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 Dr. Calman is the founder, president, and chief executive officer of the New York City–based Institute for Family Health, a multi-practice primary care network, and serves as a presidential appointee to the national Health Information Technology Policy Panel.  
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 By Kate O'Neill

# RWJMS NEWS

## RWJMS GRANTED EIGHT-YEAR ACCREDITATION BY LCME



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UMDNJ-Robert Wood Johnson Medical School has been granted accreditation for the full eight years by the Liaison Committee on Medical Education (LCME).

“This excellent outcome could not have been achieved without the hard work and full participation of our faculty, staff, and students,” says **Peter S. Amenta, MD, PhD**, dean. “Their commitment to our school is invaluable, and their contributions are greatly appreciated.”

Recognizing the extraordinary work of the faculty, students, and staff, the LCME praised RWJMS for exhibiting “great resiliency and perseverance.” It also noted several institutional strengths, including the large number of research opportunities for students and the considerable number of students who participate in the school’s wide variety of community service programs.

The Curriculum Committee and its leadership also were commended for engaging the faculty in the educational mission of the school and for the development of a new curriculum.

## RWJMS DEDICATES SPACE FOR CARDIOVASCULAR INSTITUTE OF NJ

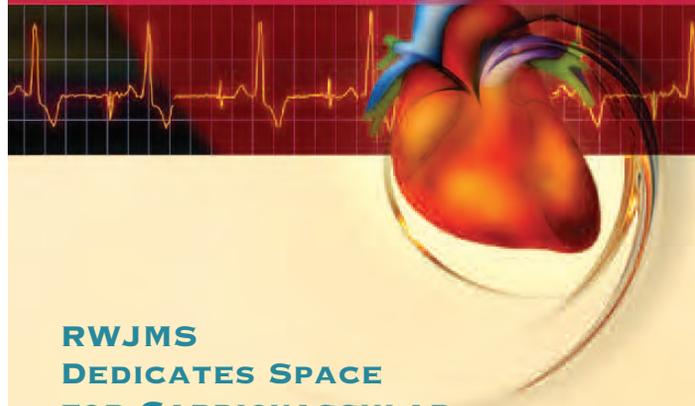
Following a dedication ceremony last spring, The Cardiovascular Institute of New Jersey (CVINJ) at UMDNJ-Robert Wood Johnson Medical School moved into new space in the Clinical Academic Building. A scientific symposium at the event showcased the latest cardiovascular-related research conducted by faculty of the institute.

The goals of CVINJ reflect the four mission areas of RWJMS: seeking excellence in research, clinical care, education, and community health. Its mission focuses on improving heart health by pioneering integrative strategies to prevent, treat, and cure heart disease; translate science and technology into new therapies; and train future leaders in cardiovascular medicine. Since its founding, the institute’s research efforts have centered on clinical research, cardiovascular pharmacology, disease management, and biomedical engineering.

Established in 2001

with a \$10 million grant from the Robert Wood Johnson Foundation (RWJF), CVINJ has benefited from additional support from RWJF, the Schering Plough Foundation, and many individuals. With their help, CVINJ has brought together physicians and scientists who collaborate across many disciplines to advance research for the benefit of patient care and education.

“The Cardiovascular Institute of New Jersey’s continuing development as a cardiovascular center of excellence reinforces its commitment to clinical research, prevention, diagnosis, treatment, and education locally, across New Jersey, and nationwide,” says **John B. Kostis, MD**, John G. Detwiler Professor of Cardiology, professor and chair, Department of Medicine, and founding director of CVINJ. “Most important, it will improve access to increasingly sophisticated research-based care for all patients.”



## RWJMS LOOKS TO LAUNCH ACCOUNTABLE CARE ORGANIZATION

The Patient Protection and Affordable Care Act, which the U.S. Congress passed in 2010, will gradually but profoundly change the landscape of health care. One of the reform-related changes is the development of accountable care organizations (ACOs), a model already successfully used at the Mayo and Cleveland Clinics. These integrated delivery systems convene under one umbrella the many stakeholders involved in health care delivery, including patients, physicians, hospitals, and payers.

In 2011, UMDNJ-Robert Wood Johnson Medical School is working to launch Robert Wood Johnson Partners, one of the few ACOs affiliated with an academic health campus. “Academic health campuses are ideally suited to the goals of the ACO,” says **Alfred F. Tallia, MD '78, MPH**, professor and chair, Department of Family Medicine and Community Health. “We are committed to achieving excellence in each of our missions: in clinical care, education, scientific discovery, and community health. Together, these missions reinforce the reform-related goals of an ACO, such as improving the quality of health care, increasing efficiencies, reducing costs, and

eliminating health care inequalities.”

The ACO system emphasizes quality over quantity. Providers will be paid based on outcomes achieved, rather than on the volume of services provided. It is hoped that this incentive will provide physicians with the freedom to focus on improving the underlying systems of care. The all-faculty Robert Wood Johnson Medical Group will be just one of the clinical providers in the new ACO, which will also include volunteer faculty and physicians at hospitals affiliated with RWJMS and Robert Wood Johnson University Hospital (RWJUH). Dr. Tallia anticipates that the new ACO will serve 200,000 people in a six-county area of central New Jersey.

“Given the changes driven by health care reform, all providers of care will need to be more efficient than ever before in delivering their services,” explained Stephen K. Jones, FACHE, president and chief executive officer, RWJUH. “Academic medical centers like ours are best positioned to take the lead nationally in shaping this new system. We believe that the ACO model — which is driven by *quality*, not *quantity*, of care — is a natural extension of our mission and allows us to integrate



Alfred F. Tallia, MD '78, MPH

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“We are committed to achieving excellence in each of our missions: in clinical care, education, scientific discovery, and community health. Together, these missions reinforce the reform-related goals of an ACO, such as improving the quality of health care, increasing efficiencies, reducing costs, and eliminating health care inequalities.”

— Alfred F. Tallia, MD '78, MPH

our efforts with faculty and private physicians in meeting the needs of our patients.”

Patients will choose an ACO supported “medical home” for their health care. Medical homes are primary care-oriented practices that promote well-being through enhanced relationships between patients and members

of a practice team. They focus care on the full range of cost-effective services for individuals and families — from prevention and acute care to chronic disease management.

Working with the health care team, patients would first identify their own health care objectives and develop a coordinated plan to reach them. Using the resources of the system, they would be connected to a gym, a counselor, or a nutritionist. Second, if they pursue their goals conscientiously, they would be rewarded with lower insurance rates by their payer, who will also be a member of the ACO.

Patients would have access to important parts of their electronic medical records such as medication lists, medication allergies, and laboratory data. They can ask their physician a question using electronic messaging. “If people can more successfully engage with us to develop their own healthcare goals,” says Dr. Tallia, “they are much more likely to achieve those goals and less likely to get lost within the healthcare system. ACOs will facilitate this by aligning everyone to meet those shared goals.”

— K.O’N.

## DR. KIM AND DR. MILLONIG NAMED TO MASTER EDUCATORS' GUILD

The Stuart D. Cook, MD, Master Educators' Guild named its newest members, including two from the RWJMS faculty:

**Sarang Kim, MD**, clinical assistant professor of medicine, and **James H. Millonig, PhD**, associate professor of neuroscience and cell biology, assistant dean of medical scientist training, and resident member, Center for Advanced Biotechnology and Medicine.

"Teaching is a privilege. I learn as much from it as my students do," says Dr. Kim, who joined the faculty in 2004. She serves as assistant director of the third-year clerkship in internal medicine and teaches evidence-based medicine to residents. "Evidence-based medicine is both a core skill and a mind-set," she says. "It helps not only in diagnosis, but also in making sound case management decisions."

Dr. Millonig, a developmental geneticist, has served on the faculty since

1999. A nationally known researcher in the genetics of neurodevelopmental disorders, he teaches first-year medical students, is

a partner in running the undergraduate research program, is a laboratory mentor, serves on numerous thesis committees, and has taught three graduate courses.

"One of the joys of my job is watching students develop and teaching them how to make logical conclusions from a complex set of

data," he says.



Sarang Kim, MD

STEVE HOCKEY



James H. Millonig, PhD

JOHN EMERSON

## LASER SURGERY TECHNIQUE OFFERS HOPE FOR BRAIN TUMOR PATIENTS

**Shabbar F. Danish, MD '01**, assistant professor of surgery and director, stereotactic and functional neurosurgery at Robert Wood Johnson University Hospital, performed the nation's first laser-assisted brain surgery for a specific type of resistant brain tumor, intracranial ependymoma, using technology so advanced that the patient went home the next day. Dr. Danish used the Visualase laser-assisted thermal ablation technique to operate on

a patient whose brain tumor had recurred after two previous surgeries; radiation had failed to permanently destroy the growth.

The surgeon places a laser directly into the tumor, guiding it to perform thermal ablation, while leaving the surrounding areas of the brain untouched. The entry hole that is made through the skull is about the size of the tip of a pen and requires just one stitch and a small



Shabbar F. Danish, MD '01

JOHN EMERSON

bandage following the procedure. Dr. Danish specializes in the latest in stereotactic neurosurgery, which involves targeting small areas in the brain with techniques used to

treat conditions ranging from Parkinson's disease to brain tumors.

Dr. Danish also recently performed laser-ablation surgery on a ten-year-old girl with a highly aggressive tumor growing from the brain stem, which was considered too risky for traditional surgery. Loss of sight, movement, and speech were all possible complications. "We felt that the laser gave us a chance at treating a tumor that is traditionally inaccessible," explains Dr. Danish.

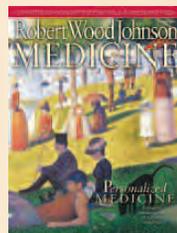
"The post-ablation MRI shows no evidence of tumor progression at this point, so we believe she has a real chance at a cure," he adds.

## RWJMS RECEIVES PUBLICATION AWARDS

The Spring 2009 issue of *Robert Wood Johnson Medicine* received the following awards for excellence:

- A gold award from the 2010 Aster Awards: Excellence in Medical Marketing
- A bronze award from the 27th annual Healthcare Marketing Advertising Awards

The brochure and marketing materials for the dedication of The Cardiovascular Institute of New Jersey received a gold award from the 2010 CardioVascular Advertising Awards.



## J. THOMAS DAVIDSON, MD, CLINICAL ASSOCIATE PROFESSOR OF SURGERY: FOUR DECADES OF LEADERSHIP IN SURGICAL TRAINING

By Kate O'Neill

**J** Thomas Davidson, MD clinical associate professor of surgery, has been involved in the training of general surgical residents since 1974. That was the year he moved to Princeton and joined Princeton Surgical Associates. Freshly graduated from a fellowship in vascular surgery at NYU-Bellevue Hospital Center, Dr. Davidson hoped to join an established, successful surgical practice in a university town with easy access to New York City. He knew about Princeton University. But not until he interviewed at Princeton Surgical Associates did he learn about the proximity of Rutgers Medical School.

The medical school had just signed an agreement with the University Medical Center at Princeton (UMCP) as an affiliate training site for the general surgical residency. When the chair of the Department of Surgery at UMCP asked Dr. Davidson to organize the program in Princeton and serve as liaison to the medical school, he gladly took on the job.

He initially served as assistant site director and assumed the directorship when he became chair of the Department of Surgery at UMCP 18 years ago — and he has continued as director even after stepping down from the chair position last year. “It was serendipitous for me that this need came up just as I arrived and that the affiliation has continued,” says Dr. Davidson, who received a 2010 Volunteer Faculty Award from RWJMS.

“Tom Davidson is the glue that

holds the program at Princeton together,” says Stanley Z. Trooskin, MD, professor of surgery, chief, division of surgery, and director, residency program for general surgery. “He is an excellent surgeon and an excellent teacher.

At the same time, he has a gentle demeanor that makes him a fine role model — our residents need to see the importance of that side of being a surgeon as well.”

When asked how the field of surgery had changed in the

“Being a surgeon is very gratifying. But taking graduate medical students — some of whom have never held a scalpel — and seeing them emerge six years later as fully trained surgeons is also extremely rewarding.”

— J. Thomas Davidson, MD

last three and a half decades, Dr. Davidson states: “Three trends have dramatically altered the field of surgery and, just as dramatically, improved the patient experience. First, diagnosis and planning of surgical interventions are far more accurate, thanks to better and more sophisticated imaging studies, such as ultrasound and CT scanning. Second, minimally invasive surgery has reduced post-operative pain

and shortened the recovery time. Finally, while cooperation among the different members of the patient care team has always been important, it is now being emphasized more than ever, with resultant improvement not only in the

patient experience but also in patient outcomes.

“A lot has changed in 36 years,” he says.

“Two things never have changed, however: patients need and deserve good care, and residents need to be taught how to deliver

that care. I feel very fortunate to have been given the opportunity to combine those two elements in my practice. I also believe that teaching is the best way to stay current not just in your own field, but also in related specialties and sub-specialties.” Everyone in the Department of Surgery at UMCP served on the volunteer faculty at RWJMS. “It isn’t a job requirement,” says Dr. Davidson, “but it’s very important to us.

“Being a surgeon is very gratifying,” he adds. “But taking graduate medical students — some of whom have never held a scalpel — and seeing them emerge six years later as fully trained surgeons is also extremely rewarding. There is definite reciprocity in training residents. Teaching takes time, but it works out well, not only for me personally, but for our patients and our trainees.”



J. Thomas Davidson, MD

COURTESY OF J. THOMAS DAVIDSON, MD

IN MEMORIAM

We report with sadness the deaths of five esteemed former faculty members:

**Robert L. Trelstad, MD**, joined the faculty in 1981 as professor and chair of the Department of Pathology and Laboratory Medicine, and held that position until 1998, when he was appointed acting director and Harold L. Paz, MD, Professor of Developmental Biology at the Child Health Institute of New Jersey. He served a pivotal role in the funding, planning, and construction of the new facility.

The author of more than 175 articles, Dr. Trelstad received the National Distinguished Teaching Award in Basic Sciences from Alpha Omega Alpha and the Association of American Medical Colleges and the Edward J. Ill Outstanding Medical Educator Award.

**Norman Rosenberg, MD**, served RWJMS and RWJUH for more than 40 years. He was appointed to the full-time faculty in 1981 and served as a professor of surgery at RWJMS and chief of the division of vascular surgery at RWJUH until he retired in 1986. He continued to work part-time until 1991, when he was named professor emeritus.

Dr. Rosenberg led the creation of the vascular surgery residency program — one of the nation's first — as well as the vascular surgery fellowship. He was a pioneer in the development of conventional vascular methods, including the bovine graft that led to the modern techniques of minimally invasive bypass procedures.

RWJMS established the Norman

and Ruth H. Rosenberg Chair in Vascular Surgery to celebrate his inventive mind-set and pioneering work.

**Harvey Strassman, MD**, a respected psychiatrist, educator, and researcher, served as professor of psychiatry at RWJMS and as chief of psychiatry at Cooper University Hospital from 1983 until he retired in 1993. Prior to joining the RWJMS faculty, he taught at Chicago Medical School, serving as acting dean.

Dr. Strassman is best known for his documentation of a syndrome that led to the recognition of post-traumatic stress disorder, a result of insights gained from interviews with prisoners of war held in North Korea.

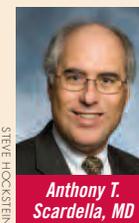
**Tetsuo Shimamura, MD**, professor of pathology and laboratory medicine, joined the faculty in 1968 as an assistant professor, attained the rank of professor in 1975, and retired in 2007. Dr. Shimamura was a dedicated educator, researcher, and physician, concentrating in renal pathology. He published numerous articles and was the recipient of several academic and teaching awards.

**Robert Crane, PhD**, a renowned physiologist and biologist, served as the founding chair of the Department of Physiology from 1966 until his retirement in 1986.

Dr. Crane discovered sodium-glucose cotransport, which helped treat millions of victims of cholera. His many awards include the American Gastroenterological Association Distinguished Achievement Award in 1969 and the Dr. Harold Lampert Award from the New York Academy of Sciences in 1977.

Appointments

**Anthony T. Scardella, MD**, professor of medicine, was appointed senior associate dean for clinical affairs and president, The Robert Wood Johnson Medical Group (RWJMG).

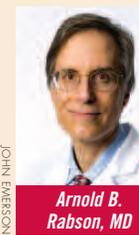


STEVE HOCKSTEIN

Dr. Scardella served as acting senior associate dean for clinical affairs and acting president of RWJMG since 2007. In this role, he oversaw the implementation of a state-of-the-art electronic health records and billing system, a new approach to managed care contracting, and enhancement of overall group function.

Dr. Scardella, who has served on the faculty since 1983, was promoted to professor of medicine in 2008. His honors include the Sir William Osler Humanitarian Award from the American Lung Association of New Jersey. He has directed the Pulmonary and Critical Care Fellowship Training Program since 2001.

**Arnold B. Rabson, MD**, professor of molecular genetics, microbiology, and immunology, pathology and laboratory medicine, and pediatrics, was appointed the second director of the Child Health



NOBBERE NHOE

Institute of New Jersey (CHINJ). He previously served as interim director of CHINJ and deputy director of The Cancer Institute of New Jersey. "Dr. Rabson has the vision and the ability to develop The Child Health Institute of New Jersey into a preeminent center for biomedical research," says Peter S. Amenta, MD, PhD, dean.

Dr. Rabson's research interests center around immune, infectious, and inflammatory disorders, leukemias, and lymphomas. As CHINJ director, he

# Research News

By Kate O'Neill

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

- **Joseph Aisner, MD**, professor of medicine: a six-year, \$1,482,017 grant for "Participation in the Eastern Cooperative Oncology Group."
- **Janet Alder, PhD**, assistant professor of neuroscience and cell biology: a four-year, \$1,755,000 grant for "Neuropeptide VGF in Antidepressant-Induced Neurogenesis and Mood Disorders."
- **Paul Copeland, PhD**, assistant professor of molecular genetics, microbiology, and immunology: a four-year, \$1,233,812 grant for "Expanding the Genetic Code in Yeast."
- **David J. Foran, PhD**, professor of pathology and laboratory medicine: a five-year, \$1,718,441 grant for "Collaborative Systems for Analyzing Tissue Microarrays."
- **Sarah E Hitchcock, PhD**, professor of neuroscience and cell biology: a four-year, \$1,185,600 grant for "Deciphering How Tropomyosin Regulates the Actin Filament."
- **Paul M. Lehrer, PhD**, professor of psychiatry: a four-year, \$2,990,938 grant for "Heart Rate Variability Biofeedback: Its Role in Asthma Therapeutics."

- **Michael J. Leibowitz, MD, PhD**, professor of molecular genetics, microbiology, and immunology and director of academic diversity initiatives, UMDNJ-Graduate School of Biomedical Sciences at RWJMS: a five-year, \$3,975,010 grant for "Biomedical Science Education Training Program."
- **Yufang Shi, DVM, PhD**, professor of molecular genetics, microbiology, and immunology: a four-year \$1,226,496 grant for "Immunosuppression in Adult Stem Cells."
- **Nancy A. Woychik, PhD**, associate professor of molecular genetics, microbiology, and immunology: a four-year, \$1,200,000 grant for "Membrane Protein Production Using the Yeast SPP System."

## PUBLISHED RESEARCH:

The following is a representative sample of articles by RWJMS faculty members published in leading biomedical journals:

## PUBLISHED RESEARCH:

- **Zhaohui Feng, MD, PhD**, assistant professor of radiation oncology, and **Arnold J. Levine, PhD**, professor of pediatrics and biochemistry, RWJMS, and professor of systems biology, Insti-

— Continued on Page 10

says, "I have a unique and exciting opportunity to build a highly interactive center of extraordinary quality, at the forefront of basic discovery and clinical application of research for the treatment and prevention of diseases, such as asthma, juvenile-onset diabetes, childhood cancers, autism, and metabolic and endocrine disorders.

"One of the Child Health Institute's strongest initiatives is to serve as a catalyst for basic science and clinical activities in partnership with the Department of Pediatrics, where more than 20,000 youngsters are treated annually," Dr. Rabson adds. "The Department of Pediatrics includes sub-specialists who provide inpatient and out-patient treatment that did not exist previously in New Jersey for children with cancer, cardiac disease, cystic fibrosis, and other life-threatening illnesses, as well as for neurodevelopmental disorders. Furthermore, the relationship with The Bristol-Myers Squibb Children's Hospital at Robert Wood Johnson University Hospital and the PSE&G Children's Specialized Hospital will enhance the clinical focus of the institute and the well-being of New Jersey's youngest residents."

**Peter M. Scholz, MD**, James W. Mackenzie Professor of Surgery, has



been appointed associate dean for clinical and translational research. Dr. Scholz joined the faculty as an assistant professor in 1983. He subsequently served as chief of the section of cardiac surgery from 2001 to 2005 and as chief of the division of cardiothoracic surgery from 2005 to 2010. He will

continue to serve as director of the thoracic surgery resident training program, a position he has held since 2001.

**Mark B. Anderson, MD**, associate professor of surgery, was



appointed chief of the division of cardiothoracic surgery, succeeding Dr. Scholz. Dr. Anderson joined the full-time faculty in 2000 and served as chief of the section of cardiac surgery since 2005. In 2009, Dr. Anderson led the surgical team at RWJUH that implanted the AbioCor Total Replacement Heart in a patient for the first time.

**James H. Millonig, PhD**, associate professor of neuroscience



and cell biology, resident member, Center for Advanced Biotechnology and Medicine, and UMDNJ Master Educator, was appointed assistant dean of medical scientist training. In his new role, he will assume responsibility for the MD/PhD program jointly sponsored by RWJMS; the UMDNJ-Graduate School of Biomedical Sciences at RWJMS; Rutgers, The State University of New Jersey; and Princeton University.

He will play an integral role in the Office of Research and Sponsored Programs, working closely with the directors of the medical and graduate school programs to nurture the continued growth of the MD/PhD training program.

JOHN EMERSON PLEASE CONFIRM

JOHN EMERSON



# Research News

By Kate O'Neill

Continued from Page 9



tute for Advanced Study, were co-authors of "The Regulation of Energy Metabolism and the IGF-1/Motor Pathways by the p53 Protein," published in *Trends in Cell Biology* July 2010:20(7): 427-434.

- **Wenwei Hu, PhD**, assistant professor of pediatrics, was lead author of "Glutaminase 2, a Novel p53 Target Gene Regulating Energy Metabolism and Antioxidant Function," published in the *Proceedings of the National Academy of Sciences of the United States of America* April 2010:107(16):7455-7460. Dr. Feng and Dr. Levine were co-authors of this article. In addition, Dr. Hu was lead author of "Negative Regulation of Tumor Suppressor p53 by microRNA miR-504," published in *Molecular Cell* June 2010:38(5): 689-699.

- **Shengkang Jin, PhD**, associate professor of pharmacology, was lead author of "Adipose-Specific Deletion of Autophagy-Related Gene 7 (atg7) in Mice Reveals a Role in Adipogenesis," published in the *Proceedings of the National Academy of Sciences of the United States of America* November 2009:106(47):19860-19865.

- **Smita S. Patel, PhD**, professor of biochemistry, was the author of "One Motor Driving Two Translocases," published in *Nature Structural & Molecular Biology* October 2010:17(10):1166-1167.

- **Federico Sesti, PhD**, associate professor of physiology and biophysics, was lead author of "Oxidation of Potassium Channels by ROS: A General Mechanism of Aging and Neurodegeneration?" published in *Trends in Cell Biology* January 2010:20(1):45-51.

- **Yufang Shi, DVM, PhD**, professor of molecular genetics, microbiology, and immunology, and **Arnold B. Rabson, MD**, professor of molecular genetics, microbiology, and immunology, pathology and laboratory medicine, and professor of pediatrics, and director, Child Health Institute of New Jersey, were lead authors of "Immune Activation Induces Immortalization of HTLV-1 LTR-Tax Transgenic CD4 + T cells," published by *Blood* 2010:116:2994-3003.

- **Vasily M. Studitsky, PhD**, professor and vice chair, Department of Pharmacology, was lead author of "Mechanism of Chromatin Remodeling and Recovery during Passage of RNA Polymerase II," published in *Nature Structural & Molecular Biology* December 2009:16(12):1272-1278. In addition, Dr. Studitsky was a co-author of "RNA Polymerase Complexes Cooperate to Relieve the Nucleosomal Barrier and Evict Histones," published in the *Proceedings of the National Academy of Sciences of the United States of America* December 2009:107(25):11325-11330.

- **Eileen White, PhD**, adjunct professor of surgery and associate director of basic science, The Cancer Institute of New Jersey, was lead author of "Autophagy for the Avoidance of Degenerative, Inflammatory, Infectious, and Neoplastic Disease," an editorial overview published in *Current Opinion in Cell Biology* 2010:22(2):121-123. Dr. White was also lead author of "Role of Autophagy in Suppression of Inflammation and Cancer," published in *Current Opinion in Cell Biology* April 2010:22(2):212-217.

## Research Profiles

By  
Lynda  
Rudolph

### Investigation of Calcium Regulation and Tissue Repair

"Calcium controls every moment of our lives," observes **Jianjie Ma, PhD**, university professor and acting chair, Department of Physiology and Biophysics. "It affects our heartbeat, muscle contraction, brain function, and how cells in our body grow and die." Dr. Ma is now pursuing bench research to learn what factors regulate calcium.

"We want to learn the genes involved in regulation of calcium signaling and how does a mutation in the gene cause an aberration in calcium function. Using proteomic and genomic methods together with various engineered animal models, we're learning how these factors work together," he explains.

In the nine years since Dr. Ma joined UMDNJ-Robert Wood Johnson Medical School, his laboratory has made several discoveries that could have important implications in understanding or treating human diseases.

The first is related to the discovery of MG29 as a biomarker for muscle aging. Using a multi-disciplinary approach, Dr. Ma and his colleagues found that MG29 is a key molecule involved in regulation of calcium movement in muscle contraction, where decreased expression of MG29 during the normal aging process leads to a loss of skeletal muscle mass and strength associated with sarcopenia.

His team is now investigating ways of restoring or preventing the loss of MG29 expression, as a therapeutic approach for treatment of sarcopenia or other metabolic diseases.

Through collaboration with Dr. Hiroshi Takeshima at Kyoto

University, Dr. Ma uncovered another gene, named junctophilin, as a biomarker for cardiovascular diseases.

Junctophilin regulates how the different parts of the cell communicate with one another to coordinate the onset and termination of calcium inside the cells.

Genetic mutations in junctophilin can cause heart failure, muscle wasting, or neurodegeneration.

Dr. Ma's research team is currently conducting laboratory research to understand how junctophilins function in normal physiology and how to apply the



Jianjie Ma, PhD

ANDREW HANBERG

team's bench work to clinical medicine.

Recently, a protein named MG53, a key initiator of cell membrane repair in damaged tissue, was discovered in Dr. Ma's lab. This finding has generated wide interest in both academic research and

the pharmaceutical industry. The protein is expected to have applications in repairing tissue in patients who suffer from severe complications of disease and aging, such as muscular dystrophy and heart failure.

The translation of this research, through collaboration with clinicians and pharmaceutical companies, will help determine if what was discovered using animal prototypes can be applied to human treatment. To accelerate the development of these discoveries into clinical therapies, a university spin-off company,

TRIM-edicine Inc., was created to commercialize the intellectual properties discovered in Dr. Ma's laboratory at UMDNJ-Robert Wood Johnson Medical School.

The discoveries could have far-reaching applications in geriatric and regenerative medicine, to treat chronic human diseases as well as acute or traumatic tissue injuries. Funding for Dr. Ma's research is provided by grants from the National Institutes of Health, with support from the New Jersey Commission on Science and Technology.



Cheryl F. Dreyfus, PhD

JOHN EMERSON

## Research Examines Potential for Treatment of Multiple Sclerosis

leading a study to determine if there is a connection between the neurotrophin BDNF (brain-derived neurotrophic factor) in the brain and reduction or even repair of the myelin damage.

The study is currently supported by a four-year, \$1,365,000 grant from the National Institutes of Health and additional funding through a grant from the National Multiple Sclerosis Society.

"In a culture dish, BDNF causes cells that are destined to become oligodendrocytes to divide and mature and to start to express the proteins associated with oligodendrocytes — the myelinating cells of the central nervous system," explains Dr.

Dreyfus. "When we observed mice that have a reduced ability to make BDNF, we discovered that they exhibited a reduction in the number of oligodendrocyte progenitors and a reduced ability to express mature traits."

It was then that Dr. Dreyfus began to ask, "Could this have something to do with MS?"

Dr. Dreyfus and her team evaluated effects of BDNF in a demyelinating mouse model of the disease. "In this model, a lesion in the myelin appears, which then repairs itself," says Dr. Dreyfus. The mice that exhibited reduced BDNF did much worse in this model. Reduced BDNF affected a number

of oligodendrocyte progenitors and their ability to repair the damage. Conversely, when BDNF was infused into the lesion site, it was able to partially reverse damage.

Current work in the laboratory is investigating drugs that might be able to increase levels of BDNF in the brain. Dr. Dreyfus emphasizes that there is a long way to go before we understand how to manufacture such a drug that would increase BDNF and lead to repair. The hope is that one day we could have a significant effect on a devastating disease.

In the demyelinating disease multiple sclerosis (MS), the myelin sheaths that surround nerves in the brain and spinal cord are inflamed and damaged. **Cheryl F. Dreyfus, PhD**, professor and acting chair, Department of Neuroscience and Cell Biology, is

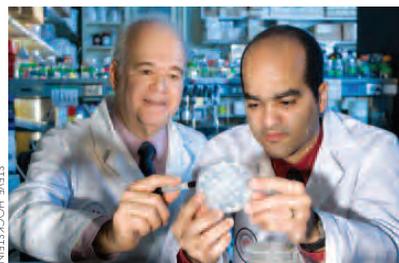
# Research Highlights

By Kate O'Neill



## INSPIRE Program to Train Researchers to Become Scientist-Educators

UMDNJ-Robert Wood Johnson Medical School has received \$3.7 million from the National Institutes of Health (NIH) to support a new program that



STEVE HOOKSTEIN

provides research training to post-doctoral fellows and prepares them to become faculty members whose careers will combine excellence in education and research. The medical school is one of only 18 universities in the United States to receive an Institutional Research and Career Development Award (IRACDA) from the NIH to support the new program, called INSPIRE (IRACDA New Jersey/New York for Science Partnerships in Research & Education).

"The INSPIRE program is designed to train the next generation of science faculty to become successful researchers and educators, while increasing participation of underrepresented groups in biomedical research," says **Michael J. Leibowitz, MD, PhD**, professor of molecular

genetics, microbiology, and immunology, principal investigator for the INSPIRE program, and director of academic diversity initiatives, UMDNJ-Graduate School of Biomedical

Sciences at RWJMS. Graduate students and early-stage post-doctoral fellows who are either American citizens or permanent residents of the United States may obtain more information by visiting <http://rwjms.umdj.edu/research/postdoc/inspire/index.html>; or sending an email to [inspire@umdj.edu](mailto:inspire@umdj.edu).

## New Procedure Guide for Women's Health Services Earns Praise in JAMA

"Despite the common perception that medicine is becoming specialty driven, there are many reasons for primary care providers to offer women's health procedures in an office setting." So begins a new physicians' manual entitled *Primary Care Procedures in Women's Health*, a publication that has received commendation in the *Journal of the American Medical Association (JAMA)*. The manual, which was released

## Research at the Cardiovascular Institute of New Jersey Demonstrates Legacy Effect of Medications to Lower Blood Pressure

In a study published in the December 2010 issue of *Hypertension*, a journal of the American Heart Association, investigators showed that early treatment with medications to lower blood pressure reduces the risk of death from cardiovascular disease. The study was conducted by researchers from The Cardiovascular Institute of New Jersey (CVINJ), in collaboration with researchers from Massachusetts General Hospital and the University of Louvain, Belgium.

"Our study indicates that blood pressure-lowering medications used during clinical trials confer a legacy effect for trial

participants, reducing the risk of death from cardiovascular disorders," says **John B. Kostis, MD**, John G. Detwiler Professor of Cardiology, professor and chair, Department of Medicine, and founding director of CVINJ. "The findings of our study have important implications and denote that earlier intervention would result in better clinical outcomes."

Medications that are determined to be beneficial to patients even after the conclusion of a clinical trial are considered to have a legacy effect. Based on a meta-analysis (analysis of results of multiple studies on the same topic) of all pertinent trials

earlier this year, is co-edited by **Cathryn B. Heath, MD**, clinical associate professor of family medicine and community health, RWJMS, and Sandra M. Sulik, MD, MS, associate professor of family medicine, State University of New York Upstate Medical Center, in Syracuse.



Cathryn B. Heath, MD

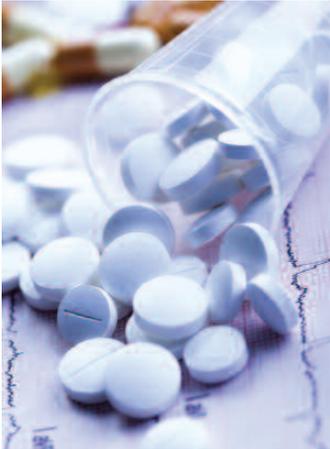
STEVE HOOKSTEIN

The review in *JAMA* praises the procedure manual for detailing common and specialized procedures in women's health, offering counsel on providing sensitive care, and serving as a resource for physicians and office staff on how to integrate the procedures appropriately in a family practice setting.



# Community

H E A L T H



(132,854 patients in 18 trials, including 11,988 deaths), the researchers found that the benefits of medications to lower blood pressure persisted after the end of the trial, indicating a legacy effect.

In these clinical trials, such medications were prescribed for patients with hypertension, myocardial infarction, or left ventricular systolic dysfunction. During the initial phase, 80 percent of the patients randomized to get active treatment actually received it, compared to 16 percent of those randomized to the control group. The risk of death was lower in the active treatment group during the initial phase by about 16 percent.

Following each clinical trial, patients in both the active medication and the control groups were advised to take active medications. Although persons in both groups received that in similar proportions, mortality was about 15 percent lower for patients initially randomized to active medications, thereby receiving medications for a longer period of time — the legacy effect.

## FOUNDATION OF UMDNJ RECEIVES UP TO \$4 MILLION FOR CHANDLER HEALTH CENTER

The Foundation of UMDNJ has received a commitment of up to \$4 million from the Robert Wood Johnson Foundation (RWJF) to establish an endowment and support the operations of the **Eric B. Chandler Health Center**.

funds within the next four years.

“A critical priority for us will be to match the \$2 million endowment in order to maintain the excellent services available through Chandler,” explains George F. Heinrich, MD, vice chair and CEO, Foundation of UMDNJ.



JOHN EMERSON

Patients served through the Chandler Health Center are economically disadvantaged, with 72 percent reporting incomes below the federal poverty level and 92 percent with income levels at or below 200 percent of the federal poverty level. “Like many other organizations providing care for those with a limited

The health center, owned and operated by UMDNJ-Robert Wood Johnson Medical School in collaboration with the Eric B. Chandler Community Board Inc., will receive a \$2 million grant from RWJF to support the operations of the center, which provides a full range of health care services to those in need, regardless of their ability to pay. In addition, a \$2 million challenge grant will establish an endowment allowing the center to continue to maintain the provision of those services in perpetuity. In order to receive this second grant, the Foundation of UMDNJ needs to raise \$2 million in matching

ability to pay, the Chandler Health Center is experiencing financial challenges,” says **Eric G. Jahn, MD '88**, associate professor of family medicine and community health and senior associate dean for community health. “Receipt of these funds will allow Chandler to meet all of its missions in a continued and robust fashion.”

“I am extremely appreciative that the RWJF has been so generous to the Eric B. Chandler Health Center,” says **Sandra Adams**, executive director. “This funding will allow us to continue our commitment to providing quality health care to so many individuals in need.”



## Shazia Mehmood '12 Selected as Nickens Medical Student Scholar

**S**hazia Mehmood, a third-year medical student, was selected as one of the 2010 Herbert W. Nickens Medical Student Scholars by the



*Sonia Garcia Laumbach, MD '99, assistant dean for student affairs (left), and Susan Rosenthal, MMS '75, MD, clinical professor of pediatric gastroenterology and corporate director of medical education, Jersey Shore University Medical Center (right), congratulate Shazia Mehmood, who was selected as one of the 2010 Herbert W. Nickens Medical Student Scholars by the Association of American Medical Colleges.*

Association of American Medical Colleges (AAMC). The scholarship is one of five awarded nationwide to medical students who are

As a second-year student, Ms. Mehmood was accepted into the Global Health Fellows Program through Duke University. She also was an intern in the Patient Safety Programme for the World Health Organization, where she conducted primary qualitative research.

## New Jersey Rheumatology Association Appoints Naomi Schlesinger, MD, as President

**T**he New Jersey Rheumatology Association appointed **Naomi Schlesinger, MD**, associate professor of medicine and chief of the division of rheumatology, as president at its meeting on November 16. Dr. Schlesinger, a renowned international authority on gout, will serve as president of the association for two years.

Dr. Schlesinger has authored more than 140 scientific papers, abstracts, and chapters on the diagnosis, treatment, and understanding of the pathogenesis of gout. She has helped to develop evidence-based treatments for gout within a framework of international committees that have defined various aspects of the disease, outlined the best modalities of treatment, and assessed outcome measures in clinical trials.

leaders in the effort to eliminate inequities in medical education and health care. Ms. Mehmood was presented with the award and a \$5,000 scholarship during the AAMC's annual meeting in Washington, D.C., in November.

"Shazia's longtime commitment to providing service to the underserved, and working toward the reduction and eventual elimination of health care disparities, as well as her excellent performance as a medical student make her an outstanding choice for this prestigious award," says **David Seiden, PhD**, associate dean for student affairs, who nominated her for the award. During her first year at RWJMS, she served as a nationally elected leader for the American Medical Student Association, and for the past two years she has served as the national policy coordinator for the association's Race, Ethnicity, and Culture in Health Action Committee.

## Ill Foundation Honors Three Faculty Members

**T**he Edward J. Ill Excellence in Medicine Foundation honored three RWJMS faculty members at its annual dinner and awards ceremony in May 2011.

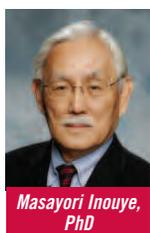
**Deborah Spitalnik, PhD**, professor of pediatrics and executive director, The Elizabeth M. Boggs Center on Developmental Disabilities, received the Verice M. Mason Community Service Leader Award. **Stephen F. Lowry, MD**, professor and chair, Department of Surgery, and senior associate dean for education, received the Outstanding Medical Research Award for Clinical Research. **Masayori Inouye, PhD**, distinguished professor of biochemistry, received the Outstanding Medical Research Scientist Award for Basic Biomedical Research.



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STEVE HOCKSTEIN

## Dean Amenta Honored by Drexel University College of Medicine



**P**eter S. Amenta, MD, PhD, dean, was honored with the 2010 Graduate Citation Award by the Drexel University College of Medicine. The Graduate Citation Award recognizes an alumnus or alumna who is highly acclaimed for significant accomplishments in the field of medical research, as evidenced by notable publications and presentations, or who has made significant contributions by bringing notable medications, devices, or technologies to market that significantly affect the medical profession.

Dr. Amenta was presented with the Graduate Citation Award at the conclusion of the school's tenth-anniversary Discovery research showcase. "I am very proud and grateful for my medical and graduate school experience at Hahnemann University and honored to receive the Graduate Citation Award from Drexel University," says Dr. Amenta.



## E D U C A T I O N

# HIGHlights

By Kate O'Neill

## RWJMS Students Accepted by Prestigious Research Programs

**R**WJMS students were accepted into a variety of prestigious research programs for the 2010–2011 academic year. **Samhita Bhargava**, a Howard Hughes Medical Institute Research Fellow, is working at the University of California at San Francisco, and **Minyoung Jang** is working at the National Institutes of Health (NIH) in the NIH-Clinical Research Training Program. Three students are spending the year as Doris Duke Clinical Research Fellows: **Randy D'Amico**, **Samira Farouk**, and **Sirisha**

**Jonnalagadda**. They are working at Columbia University, the University of Pennsylvania, and Mount Sinai School of Medicine, respectively.

The following students from the Camden campus were accepted into prominent research programs: **Julie You** is in the Doris Duke Program and is doing research in ophthalmology at Children's Hospital of Pennsylvania; **Wan-Ju Wu** is working as a research assistant in the Global Health Corps, Partners in Health Prevention and Access to Care and Treatment (PACT) Program in Boston; and **Robert Joodi** is doing research at the University of Pennsylvania in the Department of Cardiology Research Program. In addition, **Jeffrey Moon** is taking a student scholar year to earn an MPH degree at the Johns Hopkins School of Public Health, and **Marina Zeltser** is in the MBA program at the Wharton School of the University of Pennsylvania.

Second-year student **Stephen Rosenberg**, a participant in the new RWJMS Masters in Clinical and Translational Sciences Program, has been accepted into the Howard Hughes Medical Institute Research Fellows Program. He is working with **James Goydos, MD '88**, associate professor of surgery at RWJMS.

## The Class of 2014 in Profile

**T**he entering Class of 2014 had the highest undergraduate grade point average in the history of the medical school.

Although their average age is 23, the members of the class have accumulated an excellent record of advocacy and service, both in the United States and overseas. As volunteers and employees in the health care field, they have developed a wide range of experience.

The 126 members of the Class of 2014 were educated at 48 different institutions. Twenty-seven percent graduated from Rutgers, The State University of New Jersey, and 17 percent from Ivy League colleges. Five were admitted as members of the MD/PhD program. Seventy-one percent majored in the biological and physical sciences or had science as part of a double major; 12 majored in English. Seventeen percent were born abroad, representing 14 nations.

By Kate O'Neill

## Dean's Scholars: Class of 2014

**P**eter S. Amenta, MD, PhD, dean, initiated the Dean's Scholars Program in 2006. The following outstanding incoming students in the Class of 2014 were named Dean's Scholars, each earning a four-year scholarship to UMDNJ-Robert Wood Johnson Medical School.

- **Erin Honcharuk** earned a bachelor of science degree in psychology with honors at Carnegie Mellon University. Her research experience included a summer fellowship in a pilot study of glucose monitoring in adolescents with type 1 diabetes. As an undergraduate, Erin volunteered on the transplant floor at Children's Hospital of Pittsburgh.
- **Christopher Jakubowski** majored in molecular biology and biochemistry and graduated summa cum laude from Rutgers, The State University of New Jersey. He was co-author of two submitted manuscripts on RNA sequencing and post-transcriptional molecular biology. Chris participated in the 2008 and 2009 research symposiums at Rutgers and was a Columbia University Amgen Scholars Research Fellow.
- **Kumaol Mengesha** earned a bachelor's degree in biology at Rutgers. She participated in the Rutgers-RWJMS Access-Med Program and studied DNA transcription as a research assistant in the Biomedical Careers Program.



*Peter S. Amenta, MD, PhD, dean (center), with the Class of 2014 Dean's Scholars (left to right): Jeffrey Williams, Erin Honcharuk, Aleksey Shapoval, Kumaol Mengesha, Tarika Thareja, Michelle Powell, and Christopher Jakubowski.*

Kumaol served as a tutor in biology and genetics for the Rutgers Office of Diversity and Academic Success and volunteered at University Hospital in Newark.

- **Michelle Powell** graduated magna cum laude from the Rutgers honors program, majoring in biological science and minoring in African studies. As an Access-Med participant, she shadowed a RWJMS cardiologist in her junior year. While she was a Rutgers undergraduate, Michelle served as a volunteer tutor at New Brunswick High School and was the tutoring program's coordinator in her senior year.
- **Aleksey Shapoval** earned a bachelor's degree in biology at Emory University. He was co-author of an article on mtDNA biogenesis and cardiac contractility that was published in *Cardiovascular Toxicology* and served as a research laboratory assistant in the Pathology Department at Emory Medical School. Aleksey volunteered at the Children's Hospital of Atlanta.

- **Tarika Thareja** won the James McIlwain Award for Distinction in Neuroscience at Brown University, where she majored in neuroscience. Tarika served as a research assistant at the Child Stress Laboratory within Warren Alpert Medical School and at The Miriam Hospital in Providence, Rhode Island.
- **Jeffrey Williams** earned a bachelor's degree in chemistry at Bucknell University, where he did research in evolutionary ecology as a Biology Presidential Fellow. Under a National Science Foundation grant, Jeff researched chemical ecology in Cádiz, Spain. During high school, he served as an emergency medical technician, and he was a student emergency response volunteer at Bucknell.

IT TAKES A

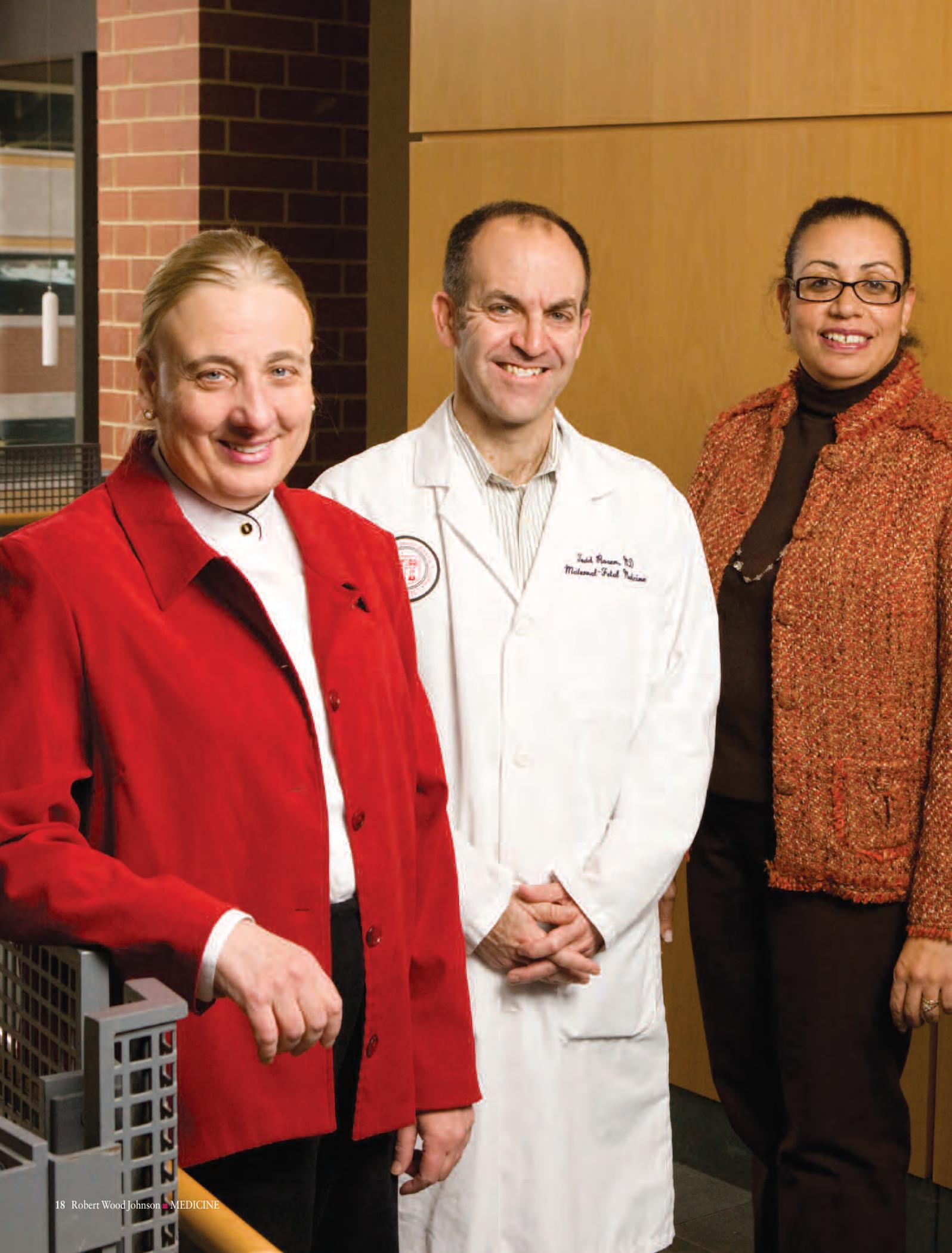


# Village

TO HAVE A **Baby**

BY KATE O'NEILL

**M**ost babies are conceived, develop, and are born without a problem: five out of six pregnancies and births go forward with little assistance — aside from a capable pair of hands easing the newborn into the world. These statistics are reassuring, until you realize that approximately 4.5 million babies were born in the United States in 2009. That means about 750,000 new arrivals needed extra help somewhere along the way.



Paul Rosen, MD  
Maternal-Fetal Medicine



UMDNJ-Robert Wood Johnson Medical School, in partnership with Robert Wood Johnson University Hospital (RWJUH), has built a leading academic medical center that serves as a superb regional resource in many fields, including its delivery of expert patient-centered care for mothers-to-be and their babies.

From reproductive and genetic counseling, to skilled comprehensive care for high-risk pregnancies, to the extensive resources of the state-of-the-art Neonatal Intensive Care Unit, this collaborative center is staffed by trusted specialists who provide expertise in nearly every aspect of obstetric, neonatal, and pediatric care.

“Our ‘village’ consists of the whole community that makes a healthy mother and a healthy baby possible,” says Gloria A. Bachmann, MMS ’72, MD, professor and interim chair, Department of Obstetrics, Gynecology, and Reproductive Sciences, and associate dean for women’s health. “You may not need all the interventions and services we offer — you may not even need anesthesia — but the presence of an on-site, multi-disciplinary team is important.”

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“Our ‘village’ consists of the whole community that makes a healthy mother and a healthy baby possible,” says Gloria A. Bachmann, MMS ’72, MD, professor and interim chair, Department of Obstetrics, Gynecology, and Reproductive Sciences, and associate dean for women’s health (far left), with (left to right) Todd J. Rosen, MD, assistant professor of obstetrics, gynecology, and reproductive sciences, director, division of maternal-fetal medicine, and director, Regional Perinatal Center at RWJUH; Charletta Ayers, MD, MPH, associate professor of obstetrics, gynecology, and reproductive sciences and chief, division of general obstetrics and gynecology; and Joaquin Santolaya, MD, PhD, professor of obstetrics, gynecology, and reproductive sciences.

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## Caring for Two Patients at Once — and Sometimes More

The specialists most often involved in the journey from conception to post-natal care serve in the Department of Obstetrics, Gynecology, and Reproductive Sciences (OB/GYN) or the Department of Pediatrics. The OB/GYN faculty represent seven specialty and subspecialty divisions. The department offers fellowship programs in maternal and fetal medicine and in reproductive endocrinology and infertility. The Department of Pediatrics includes 16 divisions and offers three fellowship programs, including those in medical genetics and neonatology.

The Department of Anesthesiology is almost always part of the labor and delivery process, making birth a safe event that is as painless as possible.

“In every pregnancy, we have two patients, the mother and the baby — and sometimes more, in the case of multiples,” says Charletta Ayers, MD, MPH, associate professor of obstetrics, gynecology, and reproductive sciences and chief, division of general obstetrics and gynecology. Usually, a general obstetrician follows the pregnancy, regularly monitoring the health of both the mother and the fetus, who is delivered, full term, at about 40 weeks. Following the birth, a healthy newborn spends a day or two in the well-baby nursery, under the care of a pediatrician and a specialized nursing staff, before going home.

## A Full Spectrum of Clinical Care

Sometimes extra help is necessary.

Months, or even years, before a baby is conceived, parents may work with specialists in OB/GYN’s division of reproductive endocrinology and infertility or with genetic counselors in either OB/GYN or pediatrics. In the case of high-risk pregnancies, a specialist from the division of maternal-fetal medicine (MFM) cares for both mother and fetus — or fetuses — from the first prenatal visit, through the delivery, and during the baby’s post-partum care.

The Department of Pediatrics includes a cardiology division, one of the sub-specialties most often called on to

diagnose a possible abnormality in the fetus or to help plan the best course of treatment for a newborn. The Department of Surgery offers specialists skilled in the surgical techniques required to treat newborns born with malformations, whether rare or common, such as those of the kidneys, bladder, or genitalia.

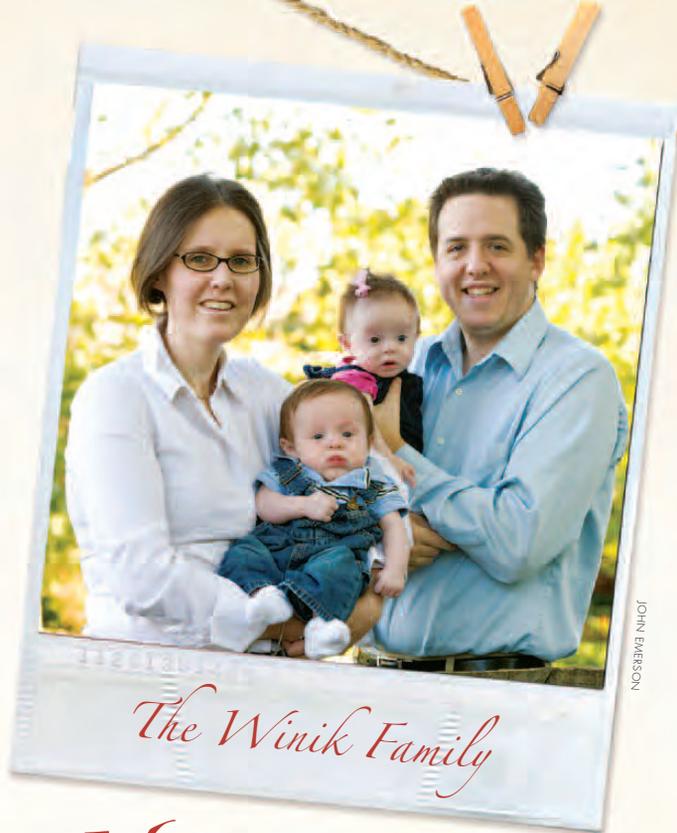
## Maternal-Fetal Medicine: Achieving Best Outcomes in High-Risk Pregnancies

The division of maternal-fetal medicine includes specialists in high-risk pregnancy and counselors who manage the many pre-existing conditions or pregnancy-related issues that can threaten the health of the mother, the fetus, or both. In MFM, a genetic counselor routinely works with couples either as part of the family planning process or when a woman is referred to the division for prenatal care.

One of the most important steps a woman can take is to evaluate her suitability for pregnancy before becoming pregnant, says Todd J. Rosen, MD, assistant professor of obstetrics, gynecology, and reproductive sciences, director, division of maternal-fetal medicine, and director, Regional Perinatal Center at RWJUH. Certain conditions simply make pregnancy too risky or stand too high a chance of affecting the baby’s health.

“If a woman is already pregnant and has a high-risk condition, she should see an MFM specialist at a center such as ours, where comprehensive, multi-disciplinary support will be provided from early screening through delivery and post-partum care,” says Dr. Bachmann.

A woman might independently seek care from an MFM specialist in the hope of reducing the risk of a miscarriage after having suffered several lost pregnancies. Alternatively, the family doctor or general obstetrician may refer a woman with a known high-risk condition — diabetes, seizure disorder, or a history of cardiovascular disease, among others — to an MFM specialist. Prenatal screening, ultrasound, or other diagnostic testing also may reveal the presence or possibility of a risk-related condition, such as a multiple pregnancy or genetic disorder.



treatment that would start immediately after delivery.

“We can also perform transfusions on the baby — through the umbilical cord — while she or he is still *in utero*,” says Dr. Rosen. Recalling a recent complex case that was referred to MFM from another regional perinatal center, he says, “The mother was so grateful that she named her baby after me and the sonographer who assisted during the procedures.”

Dr. Rosen pauses, then adds: “Actually, I got the middle name; the sonographer got the first name.”

## High-Risk Deliveries Increase the Need for Specialized Anesthesia

Specialized anesthesia plays a critical role in the outcome of high-risk deliveries, says Shaul Cohen, MD, professor of anesthesiology. The increase in diabetes and obesity has led to a rise in high-risk deliveries, says Dr. Cohen. In a severely overweight patient, it can be difficult to safely secure the airway and to successfully bypass the vocal cords. Dr. Cohen prefers to use an epidural-spinal split, a combined approach that avoids the airway problem, may enable a vaginal birth and produce a healthier baby, and gets the patient back on her feet sooner. Controlling pain can be especially important for women with cardiovascular disease, he adds, because pain causes a rise in heart rate and blood pressure.

With a “walking epidural,” a patient-controlled form of pain management, a woman administers analgesics to herself locally during the post-partum period, when and as she needs it. The epidural eliminates weakness in the lower extremities, says Dr. Cohen, so she can move about comfortably on her own, and it lowers the risk of thrombosis (blood clot formation) and pneumonia.

## Ensuring a High and Inclusive Standard of Care

Pregnant women who are HIV-positive receive specialized treatment in the Robert Wood Johnson AIDS Program (RWJAP), a division of the Department of Pediatrics. During their pregnancy, they are seen by MFM

*Healthy and happy today, twins Claire and Charlie Winik and their mother, Laura, had extraordinary care from a village of specialists at RWJMS and RWJUH. Seen here with her husband, Adam, and the twins, Mrs. Winik received her obstetric care from the maternal-fetal medicine team. A pre-existing brain shunt failed in her 35th week, necessitating emergency care and specialized surgery. Within days, Mrs. Winik developed pre-eclampsia and required a cesarean section. The ICU team saw her through to complete recovery, while the twins were cared for in the NICU.*

MFM specialists can treat most of these conditions without sending the mother to another specialist, for example a cardiologist, endocrinologist, or neurologist. As high-risk obstetricians, Dr. Rosen and his team can generally make necessary adjustments or substitutions in medications that control heart disease, hypertension, diabetes, or seizures.

The health of mother and fetus is tracked at the center through regular diagnostic screening and testing that includes additional ultrasound — with both three- and four-dimensional imaging — amniocentesis and chorionic villus sampling for Down syndrome and trisomy 18, fetal blood sampling, and fetal echocardiography.

Babies *in utero* are not immune to infection. The virus that causes fifth disease might give the mother only a mild rash, but it can cause serious problems for the fetus, including anemia or birth defects. Fetal testing can reveal the presence of infection, providing the perinatal team with the information it needs to treat the baby *in utero* or to plan



## A NICU Fit for *Two Tiny Kings*

Full-term babies are born in the 40th week of their mother's pregnancy. But twins Nia and Akeelah King had other plans. When their mother, Aliyah King, unexpectedly went into labor in the 25th week of her pregnancy, her obstetrician, a community physician at Somerset Medical Center, sent her to Robert Wood Johnson University Hospital for specialized neonatal care. Nia and Akeelah were delivered by cesarean section with two medical teams on hand, one for each baby. Weighing, respectively, 1 pound 9 ounces and 1 pound 10 ounces and measuring about 12 inches in length each, the babies were whisked off to the Neonatal Intensive Care Unit.

"Nia was so small that when she gripped her mother's finger, her hand only reached partway around," recalls Ms. King's mother, Corliss King.

The babies stayed in the NICU for three and a half months, while Aliyah King lived across the street in the Ronald McDonald House. She spent every waking hour in the NICU with her babies. "First, I just sat with them and talked to them," she says. "As they got older, I could touch them. Then I could hold them, feed them, and bathe them."

Like all their NICU neighbors, Nia and Akeelah had their own nursing teams providing excellent continuity of care. Coincidentally, Dr. Hegyi and several of the nurses already knew the Kings: nineteen years before, when Aliyah King was born in the 24th week of her mother's pregnancy, Dr. Hegyi was her doctor and three of the current NICU nurses cared for her.

In late November, very close to their original due date, Nia and Akeelah were discharged from the NICU, and they have done extremely well since. The staff had coached Ms. King in home interventions that would keep her babies on track developmentally. Ms. King and her family gave the infant's hours of "tummy time" to encourage normal development of motor skills. Every day the twins get lots of human interaction and story time — and no TV. The family is rewarded not only by excellent reports from the NICU's semi-annual developmental clinic, but also by two girls, now three years old, who are, as their grandmother says, "articulate, affectionate, loving and caring little people, who are growing up fast." **M**

*"We bring together a team. We pre-plan with the parents, the NICU, MFM, and possibly a surgeon, if one will be needed after the baby is born," says Susan Sklower Brooks, MMS '73, MD, professor of pediatrics (center), with Thomas Hegyi, MD, professor of pediatrics, and pediatric psychologist Barbara M. Ostfeld, PhD, professor of pediatrics. Dr. Hegyi and Dr. Ostfeld also serve, respectively, as medical director and program director for the Sudden Infant Death Syndrome Center of New Jersey.*

doctors in the RWJMS high-risk clinic. RWJAP follows the mothers and their infants throughout the post-partum period, until the baby is 18 months old. Education is a key to the program's goal of minimizing the risk of mother-to-child transmission of HIV either during delivery or once the baby is home.

Each year, the Eric B. Chandler Health Center at RWJMS provides prenatal care to 900 women, who depend on Medicaid or are self-paying. The Chandler Health Center's services are comparable to those found in private practice, says the center's program director for OB/GYN services, Sharon B. Stechna, MD, assistant professor of obstetrics, gynecology, and reproductive sciences. Chandler's obstetric program has a strong educational component, which addresses issues ranging from prenatal care, to infant care, to contraception. High-risk mothers-to-be — including those who have pre-existing diabetes or hypertension or are pregnant with multiples — are cared for in the MFM division, which offers deeply discounted sonograms for patients who are self-paying. "Everyone at the medical school bends over backward for our patients," says Dr. Stechna. "RWJMS believes that every pregnant woman and her baby deserve the same excellent level of care."

### The Neonatal Intensive Care Unit: Caring for the Tiniest Citizens in the Village

When a baby is born pre-term or with a pre-diagnosed or suspected medical condition, a neonatologist serves on the delivery team. The newborn





*The NICU hosts semiannual reunions for its former patients and their parents, along with physicians, nurses, and staff. Here in the summer of 2010, three-year-old Akeelah King (see sidebar, page 22) is held by Catherine Amato-Bowden, APNC, coordinator, high-risk infant follow-up program, while her mother, Aliyah, holds her twin sister, Nia. At center is the twins' grandmother, Corliss King. NICU reunions include a comprehensive developmental clinic, led by (back row) Thomas Hegyi, MD, professor of pediatrics, and Barbara M. Ostfeld, PhD, professor of pediatrics.*

is quickly transferred to the state-of-the-art Neonatal Intensive Care Unit (NICU), just two floors away in The Bristol-Myers Squibb Children's Hospital at RWJUH.

The NICU can be home to babies for days or months, while they receive constant monitoring and skilled care for a vast variety of needs. Babies in the NICU are fragile, and their status can change suddenly. Their health and development often depend on a multi-disciplinary team of neonatal and pediatric specialists — “a village within a village,” says Barry Weinberger, MD, professor of pediatrics and chief, neonatology services, RWJUH.

Every member of the NICU medical staff holds a faculty appointment at RWJMS, and they are supported by residents and members of the division's 30-year-old fellowship program. Fellows, who have completed a three-year residency in pediatrics, spend three years in the neonatology fellowship, adding to the high level of knowledge and patient-focused care in the NICU.

## Medical Genetics:

# *Deciphering the Secrets of Chromosomes*

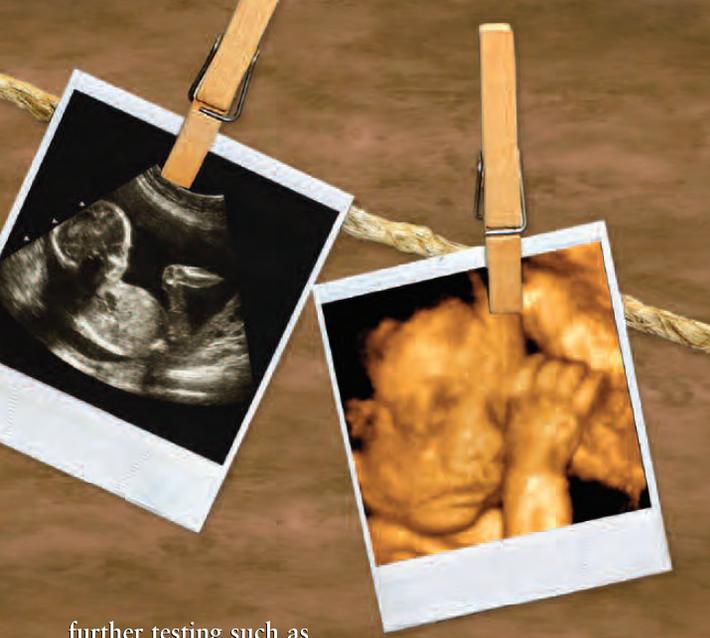
In the past, most prenatal screening for chromosomal defects was limited to women older than 35, and amniocentesis was generally recommended for pregnant women in this age group. “But first-trimester screening has greatly advanced the ability to identify those at higher risk for chromosomal issues,” says Susan Sklower Brooks, MMS '73, MD, professor of pediatrics. “And it has reduced the risks that amniocentesis can present to mother and baby.”

Dr. Brooks joined the faculty in 2004. She initiated the division of medical genetics in the Department of Pediatrics and also oversees the maternity genetics services in OB/GYN. Dr. Brooks's pediatric patients are generally referred to her by another physician but may occasionally be self-referred for reasons that vary from family history or ethnic risk to an anomaly in the fetus, disclosed by ultrasound.

## Non-directive Genetic Counseling

Dr. Brooks's genetic counseling focuses on the family and baby. If, during pregnancy, an ultrasound indicates a developmental anomaly such as a skeletal defect, Dr. Brooks is called in for an interpretation and counsels the parents on what to expect after the baby is born — what treatments will be necessary and what the child's quality of life may be.

When there is a risk that a couple will have a child with a genetic disorder, Dr. Brooks counsels them on the potential consequences for the child. “We provide non-directive counseling,” says Dr. Brooks. “We give people the information, outline



further testing such as amniocentesis that can clarify the risk, and discuss the risks and the treatments available for children with the disorder. We try to give a clear picture of what the future holds for them, but ultimately, the decision is theirs.”

Dr. Brooks and her team provide screening and testing for fragile X, Tay-Sachs disease, cystic fibrosis, and many other genetic disorders. Because a person can carry a genetic disorder without exhibiting symptoms, pre-conception screening of both parents may prevent the conception of a profoundly disabled or very sick child. When there is a history of mental retardation in a family, it is important to test for fragile X, the most common form of intellectual disability, because women can be carriers without exhibiting symptoms. While fragile X causes mental retardation, it may not be diagnosed in a child until he or she is three or four years old; by then, other siblings may have been born with the disorder.

Sometimes, prenatal diagnosis can prepare both the clinical team and the parents for treatment that starts before, at, or soon after delivery. For example, prenatal testing because of family history may show that a baby has a genetic disorder of metabolism. In such cases, nutritional supplements may be needed at birth, to reduce the risk of mental retardation or learning problems and improve the child's chances of survival. A baby with Down syndrome is at particularly high risk for heart defects. Whenever there is a risk of a baby being born with a heart defect, a pediatric cardiologist is alerted as soon as the mother's labor begins and is on call to check the newborn immediately and recommend appropriate treatment. **M**

Supplementing the neonatologists are additional clinicians who specialize in treating children, including newborns: pediatric cardiologists; ear, nose, and throat specialists; rheumatologists; gastroenterologists; neurologists; nephrologists; and pharmacologists. Everyone on the nursing team is neonatology-certified. Nutritionists track the newborns' growth, respiratory therapists help them breathe, physical therapists see to the special physical needs of babies who might spend their days lying in bed, and speech therapists help them learn how to feed and swallow. Social workers help parents adjust to the stress of having a sick baby and assist in planning for the weeks and months ahead.

After going home, babies return to the NICU every six months for assessment in a comprehensive developmental clinic co-sponsored by the medical school and the hospital. Many RWJMS faculty specialists serve at the clinic, which is led by neonatologist Thomas Hegyi, MD, professor of pediatrics, and pediatric psychologist Barbara M. Ostfeld, PhD, professor of pediatrics. Dr. Hegyi and Dr. Ostfeld also serve, respectively, as medical director and program director for the Sudden Infant Death Syndrome Center of New Jersey. For questions in between scheduled clinics, parents may phone Catherine Amato-Bowden, MSN, APN-BC, coordinator, high-risk infant follow-up program, The Bristol-Myers Squibb Children's Hospital at RWJUH.

## The Reproductive Sciences

### Reproductive Endocrinology: Science Verging on Science Fiction

The size of the division of reproductive endocrinology and infertility reflects the rapid expansion of this growing science and its strong presence at RWJMS. With 180 clinical and support staff, covering every aspect of the field, the division is larger than most OB/GYN departments, says its director, Richard T. Scott, MD, professor of obstetrics, gynecology, and reproductive sciences.

“The field is way ahead of where it was 30 — or even 15 — years ago,” adds Dr. Scott. “Still, one couple in every six deals with infertility issues, and, with the prevalence of delayed pregnancy, the numbers are increasing.” Increased precision in screening and significant advances in *in vitro* techniques are making pregnancy possible for many couples with fertility issues or



genetic concerns, and they are achieving results faster.

The division's expertise in comprehensive chromosomal screening has attracted an international clientele. "Our technology includes the only validated assay in the world," says Dr. Scott. "It produces much higher rates of fertility and is much faster than any preceding process. And it was developed here at Robert Wood Johnson Medical School." The technology makes it possible to study an egg or an embryo, looking at all the chromosomes or an individual one, controlling for a number of genetic disorders.

Today most assisted fertilization takes place *in vitro*. Screening occurs prior to the implantation of an embryo, lowering the risk of having a sick or disabled child. Once a healthy embryo has been identified, hormonal assays are among the means of aligning the exact time when the endometrium will be receptive to an implanted embryo. With the assay technology, multiple pregnancies have decreased, eliminating a common high-risk factor.

Ultra-rapid vitrification — or freezing — is another almost-science-fiction technology. Combined with 24-chromosome pre-implantation genetic diagnosis, vitrification helps reduce the risk of chromosomal defects in delayed pregnancies. Rapidly vitrified eggs and embryos can be preserved for months or years, retaining the age of the mother at the time they were retrieved. These new technologies, many of which were developed by the RWJMS division of reproductive endocrinology, reduce the risk of pregnancy loss and increase the probability that the infant will be healthy.

After a successful pregnancy is achieved, the mother remains in the care of Dr. Scott's staff until the pregnancy is firmly established and the fetus is developing normally. Then the mother is referred to MFM if she has a history of problematic pregnancies or to a general obstetrician. "A pregnancy that starts *in vitro* is not necessarily at higher or lower risk than a normally conceived pregnancy," says Dr. Scott, "but many of our patients have special circumstances that require the expertise of outstanding MFM physicians."

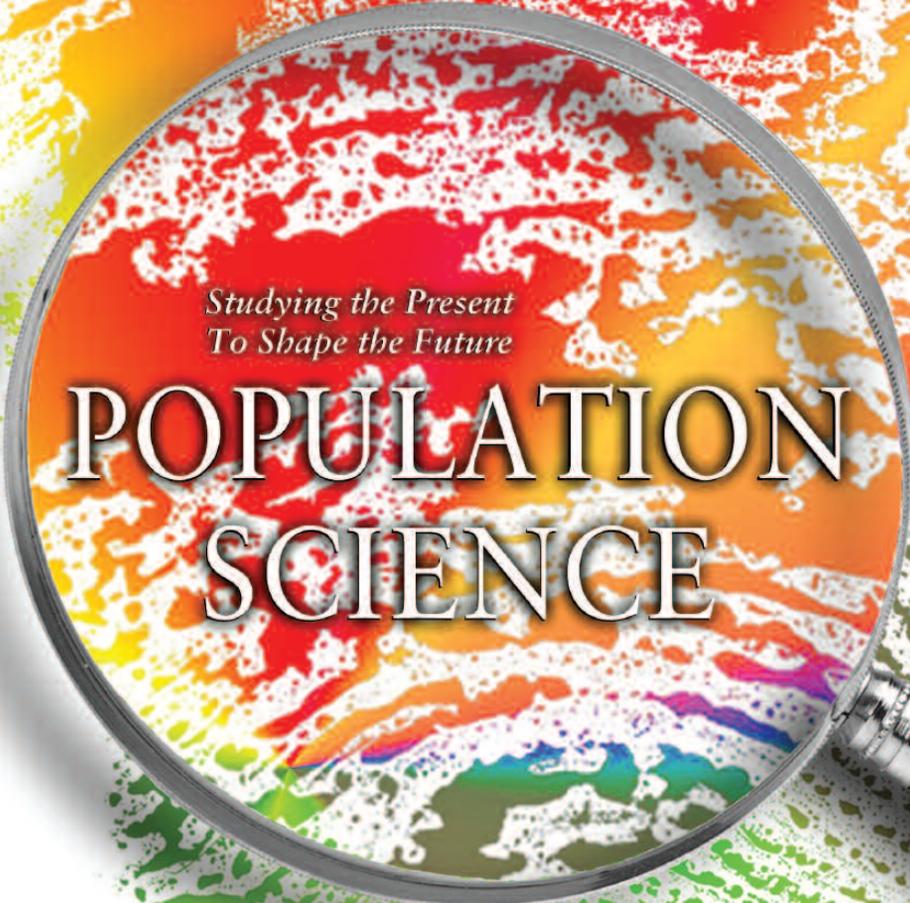
*"Today most assisted fertilization takes place in vitro. Screening occurs prior to the implantation of an embryo, lowering the risk of having a sick or disabled child. Once a healthy embryo has been identified, hormonal assays are among the means of aligning the exact time when the endometrium will be receptive to an implanted embryo. With the assay technology, multiple pregnancies have decreased, eliminating a common high-risk factor."*

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## Present Meets Future: Combining Clinical Care, Research, and Bioethics

The expertise of Joaquin Santolaya, MD, PhD, professor of obstetrics, gynecology, and reproductive sciences, unites three fields: clinical care, research, and bioethics. Dr. Santolaya's career spans 25 years in prenatal screening, diagnosis, and treatment. After completing fellowships in fetal medicine at the University of London and medical genetics at Yale and the University of Illinois at Chicago (UIC), he served as director of reproductive genetics and fetal medicine at UIC and Texas Tech University, then joined the Perinatology Research Branch of the National Institutes of Health. He subsequently served as the director of reproductive genetics at Brigham and Women's Hospital in Boston and joined the RWJMS faculty in the summer of 2010.

Dr. Santolaya is spearheading a three-way collaboration between several RWJMS clinical departments and the Stem Cell Institute of New Jersey to introduce new technology directed at better detection and cure of genetic and congenital abnormalities. His clinical research looks at the education and support of families at increased risk for adverse pregnancy outcomes. Dr. Santolaya seeks answers to questions concerning the response of the community to the introduction of new genetic screening technologies, the long-term effects of assisted reproduction technologies, and the effect of cancer treatments in young women. Dr. Santolaya is also collaborating with other faculty members, students, residents, genetic counselors, and fellows to develop ways to close the gap in health care disparities. **M**



*Studying the Present  
To Shape the Future*

# POPULATION SCIENCE

*“If you want  
to know your future, look at what  
you are doing in this moment.”*

*— Tibetan proverb*

**F**or population scientists, there is no magical view into the future. Instead, as the proverb suggests, to see and shape a better future, they first study the present.

**BY KATE O’NEILL**





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Population science encompasses many disciplines. Convened under the broad umbrella of public health science, population scientists take an epidemiological approach to research by amassing the greatest possible amount of evidence on a topic and using that data — meticulously analyzed and verified — to determine patterns and trends. Applied to health care, the goals of population scientists are achieved through the dissemination of their findings beyond the research community, to prevent disease, improve clinical care, and enhance the quality of life.

### Population Science at The Cancer Institute of New Jersey: *Diversity of Background, Unity of Purpose*

At UMDNJ-Robert Wood Johnson Medical School, the multi-disciplinary Cancer Prevention and Control Program is based at The Cancer Institute of New Jersey (CINJ), New Jersey's only Comprehensive Cancer Center designated by the National Cancer Institute (NCI) and one of only 40 such centers nationwide.

*Population scientists (left to right): Elliot J. Coups, PhD, associate professor of medicine; Shawna V. Hudson, PhD, associate professor of family medicine and community health and director of community research, CINJ; Robert S. DiPaola, MD, professor of medicine and director, CINJ; Sharon Manne, PhD, professor of medicine and chief of the section of population studies, CINJ; Benjamin Crabtree, PhD, professor of family medicine and community health and director, division of research, Department of Family Medicine and Community Health, RWJMS; Grace Lu-Yao, PhD, MPH, professor of medicine; and John J. Graff, PhD, associate professor of radiation oncology and chief, division of cancer bioinformatics and surveillance.*

**T**he multi-disciplinary Cancer Prevention and Control Program coalesces the complementary knowledge, experience, and resources of individual researchers who are affiliated with UMDNJ-Robert Wood Johnson Medical School and with the UMDNJ-School of Public Health. The members' individual research interests vary widely — but they share linked goals: to reduce the incidence of cancer and to improve cancer survival by establishing evidence-based improvements in clinical care and treatment outcomes.

The Cancer Prevention and Control Program is the outgrowth of a \$12 million award from the Robert Wood Johnson Foundation (RWJF) for a four-year project aimed at growing the research areas of cancer prevention and control, along with population science at CINJ. The grant supported strategic planning at CINJ for an expanded population science program as well as the hiring of a co-director and additional support faculty.

Most population science research teams at RWJMS have been based in the Department of Family Medicine and Community Health or the Department of Environmental and Occupational Science. The Cancer Prevention and Control Program provides the structure needed to bring together investigators who are doing similar work but may not necessarily be working side by side in a single department or even on the same campus.

The multi-disciplinary Cancer Prevention and Control Program coalesces the complementary knowledge, experience, and resources of individual researchers who are affiliated with the medical school and with the UMDNJ-School of Public Health. The members' individual research interests vary widely — ranging from pure bench research into the cellular pathways of tumorigenesis, to primary prevention of cancer, to the psychosocial needs of cancer survivors and their families. But they

share linked goals: to reduce the incidence of cancer and to improve cancer survival by establishing evidence-based improvements in clinical care and treatment outcomes.

In addition to researching cancer prevention, members of the program investigate delivery of care to patients with cancer, disparities in treatment, and the occurrence and recurrence of the disease. They seek improved outcomes through the application of behavioral science to improving quality of life for cancer patients and survivors as well as families affected by cancer.

The program's breadth and depth are evident in the contrasting interests and exceptional research experience of its co-directors: medical anthropologist Benjamin Crabtree, PhD, professor of family medicine and community health and director, division of research, Department of Family Medicine; and clinical psychologist Sharon Manne, PhD, professor of medicine and chief of the section of population studies, CINJ.

Dr. Crabtree is a longtime leader in population science research. Known for his expertise in qualitative research, he has focused on developing strategies that will create a new model for medical practices. The dual objectives of his research have been to educate patients to get the care they need and to provide improved screening, treatment, and follow-up care for patients with cancer. Dr. Crabtree has

been the principal investigator on numerous grants from RWJF and the National Institutes of Health (NIH). The NCI recently awarded him a five-year senior investigator grant for a study investigating how individual primary care practices can be better integrated into "medical neighborhoods."

Dr. Manne joined the RWJMS faculty in the summer of 2010 as co-director of the Cancer Prevention and Control Program. As the principal investigator in four current studies funded through multiple R01 research grants from the NIH, Dr. Manne has evaluated psychological interventions that promote adaptive communication and supportive behavior for couples coping with cancer. While co-directing the program and doing further work on additional studies, she will continue to develop and evaluate behavioral interventions aimed at improving treatment outcomes and promoting screening practices among family members and cancer survivors.

### The Cancer Institute of New Jersey: Synergies in Population Science Boost Cancer Research

Seeking to grow in a major area of cancer research, CINJ developed the Cancer Prevention and Control Program, which expands the existing population science program and maximizes research collaborations in this field. "This area of research will make a difference to the people of New Jersey," says Robert S. DiPaola, MD, professor of medicine and director, CINJ. "The highest priority of CINJ is to serve as a resource to the state of New Jersey. That is how we started, and it continues to be our mission. Through collaborative research done here and with other scientists across the state and the nation,

our goal is to provide comprehensive cancer care and improved outcomes for patients with cancer.”

## Translational Science

“The Cancer Institute is the ideal hub for the Cancer Prevention and Control Program,” says Dr. DiPaola. Every member of CINJ conducts research, but it is also a center for patient care, where the emphasis is on translational science — discoveries that will improve clinical care and outcomes for patients with cancer.

“It is gratifying to work in a place where your research can directly affect clinical prevention and treatment,” says epidemiologist Grace Lu-Yao, PhD, MPH, professor of medicine. “In research, it’s always a strength to include doctors who treat patients and know the issues. They know the questions we need to ask to make our work clinically relevant.”

Dr. Lu-Yao, a member of the Cancer Prevention and Control Program, has published several studies that reflect the value of “watchful waiting” for men diagnosed with low-risk prostate cancer. Most recently, she found that a high proportion of men with that diagnosis still choose radical treatment — most often surgery or radiation — when it may not be necessary. In continuing research, Dr. Lu-Yao will study the decision-making process that leads to a patient’s choice of aggressive treatment for low-risk disease. “This is especially concerning for older men,” she says, “as previous studies done by our team show excellent disease-specific survival for men with low-risk cancer following conservative management.”

Dealing with prostate cancer benefits from a multi-disciplinary approach, including the psychosocial reasons for choosing a form of treatment. “Perhaps it is because cancer is viewed as

an enemy to be fought. Men who have initially chosen the ‘watchful waiting’ approach may be influenced by a cancer survivor, friend, or family member who presses them to get treatment,” says Dr. Lu-Yao. “It’s hard for patients to choose among available treatments, but patient education using the facts derived from a population science approach will help them to weigh the risks and benefits of the treatments and understand that watchful waiting, with monitoring, may be the most sensible choice.”

“Many people think of population science as a dry laboratory science, but it is the cornerstone of all medicine, leading to disease prevention and increased survival among people of all ages,” says epidemiologist and former physician Kitaw Demissie, MD, PhD, MPH, associate professor and chair, Department of Epidemiology, and



## CINJ Researchers Apply Population Science Methodologies

Following is a representative sampling of the population-based studies led by members of CINJ who are also members of the Cancer Prevention and Control Program:

- “The Jersey Girl Study”: An evaluation of environmental factors, including nutrition, that affect early onset of puberty, a possible risk factor of breast cancer (**Elisa V. Bandera, MD, PhD**, associate professor of surgery)
- A study of the association between increased physical activity and greater quality of life in patients who have undergone surgery for early-stage lung cancer (**Elliot J. Coups, PhD**, associate professor of medicine)
- Investigation of possible factors underlying the finding that breast cancer is more aggressive and more lethal for African American women than for white women (linked studies by Dr. Bandera and **Kitaw Demissie, MD, PhD, MPH**, associate professor and chair, Department of Epidemiology, and director, Institute for the Elimination of Health Disparities, UMDNJ-School of Public Health)
- Development of an intervention to increase cancer screening in obese patients by improving patient navigation in primary care practices (**Jeanne M. Ferrante, MD**, associate professor of family medicine and community health)
- Identification of small but common genetic changes that may have significant implications for the identification of those at risk for early breast cancer and the treatment of those at risk of relapse (**Kim M. Hirshfield, PhD, MD ’99**, assistant professor of medicine)
- A study of smokers of mentholated cigarettes to determine the role of menthol in increased tobacco addiction and its interference with cessation attempts (**Jill M. Williams, MD**, associate professor of psychiatry)

director, Institute for the Elimination of Health Disparities, UMDNJ-School of Public Health. “It’s exciting, because we are like detectives.”

## Diverse Affiliations

Before Dr. Manne’s arrival at CINJ, the Cancer Prevention and Control Program was already under way, with a core of experienced members doing complementary research. Despite their many different department affiliations, they are based at CINJ and have significant history with the institute. On this strong foundation, Dr. Manne will build a larger team, recruiting new faculty as members of the program.

Elisa V. Bandera, MD, PhD, associate professor of surgery, is leading an NCI-supported study that investigates the role of post-diagnosis obesity and

weight changes in the survival of patients with ovarian cancer. In her proposal, Dr. Bandera collaborated with Lorna Rodriguez, MD, PhD, professor of obstetrics, gynecology, and reproductive sciences and chief of gynecologic oncology, CINJ. “Because of our close working relationship, we were able to translate clinical findings into an epidemiologic study in which we will be able to evaluate important issues in the clinical management of ovarian cancer patients,” says Dr. Bandera.

CINJ is the core of a broad network of institutions that will contribute information to researchers in the program. Its clinical network and research affiliations provide access to extensive data from broad, randomly selected groups, ensuring that the researchers have sufficient information to draw valid and reliable conclusions. The CINJ hospital network alone compris-

es eleven hospitals, including Robert Wood Johnson University Hospital and ten clinical research affiliates, serving patients of diverse racial and cultural backgrounds. CINJ’s affiliation with Princeton University and Rutgers, The State University of New Jersey, adds access to vast new quantities of scientific data from research faculty at those institutions.

## The New Jersey State Cancer Registry

A new partnership between CINJ and the New Jersey Department of Health and Senior Services (NJDHSS) created a Center of Excellence for Cancer Surveillance. Through this agreement, CINJ will manage the New Jersey State Cancer Registry (NJSCR).

As the state’s only NCI-designated

## Population Science Is Key to Student Honors Project

The RWJMS Distinction in Service to the Community program motivated two members of the Class of 2013 to create and implement a project that may earn them graduation honors. Tovah Tripp (*right*) and Dina Podolsky (*left*) designed a study of issues surrounding the incidence of breast cancer in the South Asian community in central New Jersey. They will attempt to “reach every woman in this group and find out how much she knows and how much she wants to know,” says Ms. Tripp.

The study of attitudes and beliefs begins with a survey distributed through the Internet and through emails forwarded from doctor to patient, family to family, friend to friend. The students



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will visit health fairs, community centers, and local temples to distribute the survey.

Patterns in the survey results will inform the development of a sustainable Web site featuring educational information and breast health resources.

The site will include information about the importance of regular self-examination, as well as where and how often to schedule a mammogram; the site will remain online after the students’ graduation.

The students are mentored by Charletta Ayers, MD, MPH, associate professor of obstetrics, gynecology, and reproductive sciences and chief, division of general obstetrics and gynecology. Naveen Mehrotra, MD, clinical assistant professor of pediatrics, serves as the study’s principal investigator. **M**



Comprehensive Cancer Center, CINJ has the infrastructure, technology, and experience to handle the huge volume of data in the registry, says John J. Graff, PhD, associate professor of radiation oncology, who serves as chief of the division of cancer bioinformatics and surveillance. Dr. Graff, a cancer epidemiologist, directs the Cancer Registry. In addition, he is a co-investigator on the Cancer Surveillance and Outcomes Research Team, a national consortium investigating outcomes associated with treatment, treatment decisions, and patient-provider communication in breast cancer.

The NJSCR is a longtime contributor to the NCI's Surveillance, Epidemiology and End Results (SEER) Program, a national database on cancer incidence, prevalence, survival, and mortality. SEER data are gathered from specific geographic areas representing 26 percent of the population of the United States. The NJSCR is also a contributing member of the Centers for Disease Control and Prevention's National Program on Cancer Registries, which collects data from state-based registries representing 96 percent of the population of the United States.

As one of the largest state cancer registries, the NJSCR is a sought-after resource not only for scientists doing population-based cancer research in New Jersey, but also for their colleagues across the country. New Jersey, with 51,000 reported cases of cancer annually, is one of the highest rates nationwide — though not *the* highest. The state has a highly diverse population — 3 percent Asian American, 5 percent Hispanic, and 10 percent African American — as well as marked disparities in cancer treatment and outcomes. In addition to its diversity and rate of cancer occurrence, the state's small geographic size and population density increase the broad usefulness of the registry.

Standardized electronic medical records (EMRs), when added to the data recorded in the NJSCR, create

promising synergies for cancer researchers. Starting with a patient's original diagnosis, the standardized EMR will report in real time not only much of the information now collected on every cancer patient, but also other data not always recorded but with the potential to play a role in treatment and outcomes. From more complete data, researchers will be able to draw conclusions that will assist in targeted community education and in the application of personalized medicine, tailored to specific patients.

"You can't prevent all cancers," says Dr. Graff, "but you can improve outcomes and give patients a better quality of life."

## Outreach and Education: Research Transforming Lives

### Population Science: *The Outreach Piece*

Community groups can become critical partners in research, moving an academician's discoveries into the lives of the people they are designed to help. Sociologist Shawna V. Hudson, PhD, associate professor of family medicine and community health and director of community research, CINJ, coordinates the institute's outreach efforts. Since joining the faculty in 2002, Dr. Hudson has participated in or led several prevention-focused population science studies, often in collaboration with Dr. Crabtree. The studies have included NIH-sponsored research, describing cancer detection and outreach in community settings and assessing how effectively primary care practices handle screenings for specific cancers.

In 2008, the NIH awarded Dr. Hudson a five-year, \$643,361 career development grant for diversity that focuses on early-stage cancer survivors

and examines their post-treatment follow-up care. This research was inspired by her community collaborations with the CINJ Network hospitals and by organizations such as the Sisters Network of Central New Jersey, an African American breast cancer survivors group.

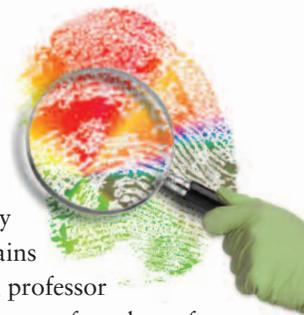
Because breast cancer tends to be more aggressive in African American women, Dr. Hudson wants to understand and improve the patterns of follow-up care after cancer treatment and explore the role of primary care in that process. Her study targets the needs of various cancer survivors, including the elderly and ethnic or minority groups.

In addition, Dr. Hudson is working on a survey study that will help develop follow-up interventions 10 or even 15 years after treatment. "There is little research on cancer survivors in the community. It is important that we understand their needs," says Dr. Hudson.

In September, the NCI awarded a one-year, \$200,000 grant to CINJ to support outreach efforts in South Asian populations. Dr. DiPaola serves as principal investigator, and Dr. Hudson directs the effort. The grant made CINJ one of 17 sites in a national network of organizations seeking to improve community education in the areas of cancer prevention, care, and outcomes.

## South Asian Total Health Initiative

The South Asian Total Health Initiative (SATHI) was officially launched at RWJMS in 2009. A comprehensive research, education, and outreach initiative, SATHI started as a grassroots effort and soon found its home in the Department of Pediatrics. The initiative is the product of concerns about health care disparities in central New Jersey's fast-grow-



ing South Asian community, which increased from 100,000 to 185,000 between 1990 and 2000 and continues to grow.

The best research partnerships resemble the one between CINJ and SATHI: they create valuable synergy, with a community-focused organization informing scientists about its constituents' most significant health care issues, and clinician-scientists providing research, screening, and education.

"The word 'sathi' means 'partner' in Hindi," says Naveen Mehrotra, MD,

clinical assistant professor of pediatrics and co-director, SATHI. Dr. Mehrotra is leading several collaborations in the Cancer Prevention and Control Program, including a research survey on breast cancer awareness and the understanding of screening guidelines by the South Asian community.

Through the partnership with CINJ, SATHI is educating South Asian Americans about the importance of taking measures to prevent cancer. CINJ clinicians and staff regularly attend health fairs and provide prostate and breast cancer screenings. "In South

Asia, people do not go to see a doctor or dentist when they feel healthy," explains Sunanda Gaur, MD, professor of pediatrics and a co-founder of SATHI. "Prevention is not part of their culture.

"The rate of breast cancer seems high among South Asian women living here, but is it related to diet, or lack of exercise, or a tradition of modesty?" adds Dr. Gaur. "Is that the barrier, or is it something else? We need the numbers, and we need to know why." **M**

## Population Science in the Department of Pediatrics

**B**eyond The Cancer Institute of New Jersey, faculty, graduate students, and now medical students are using the tools of population science to better understand health trends. They include a student honors research project and several ongoing studies in the Department of Pediatrics. Population science studies in the Department of Pediatrics are resulting in better lives for the little — sometimes tiny — people who are the focus of their research.

The husband-and-wife team of neonatologist Thomas Hegyi, MD, professor of pediatrics, and pediatric psychologist Barbara M. Ostfeld, PhD, professor of pediatrics, has broad interests surrounding the factors that lead to mortality in pre-term babies, healthy newborns, and very young children. They are, respectively, medical director and program director for the Sudden Infant Death Syndrome (SIDS) Center of New Jersey.

Dr. Ostfeld was lead author and Dr. Hegyi was senior author of a recently published study of all 244 documented cases of SIDS in New Jersey between

1996 and 2000. In a majority of the cases, the researchers found multiple risks, including parental smoking and pre-term birth. In 70 percent of the cases where data were available on sleep position, infants had been placed in the non-supine position (on their side or stomach) in the last sleep before death. In the cases where data were complete, only 1 percent of cases were found to have been free of the risk factors studied.

The findings support "Back to Sleep," an educational campaign aimed at parents and care providers that contributed to the 45 percent decline in infant deaths from SIDS in New Jersey between 2000 and 2006, says Dr. Hegyi, and a decline in overall infant mortality of 17 percent.

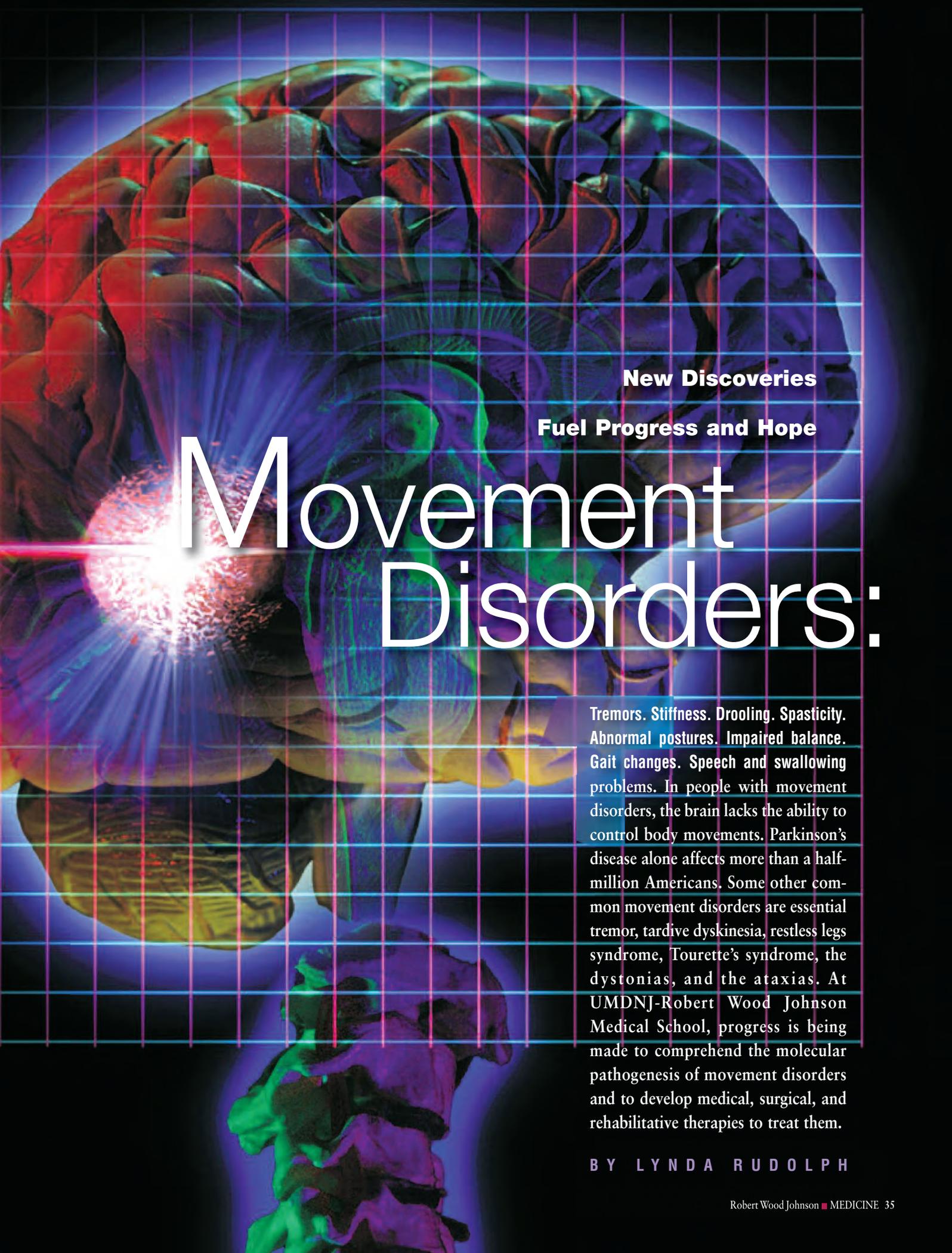
A health economist and demographer, Nancy Reichman, PhD, professor of pediatrics, describes the focus of her work as "the persistent knot between socio-economic status and children's health."

Dr. Reichman's principal areas of research are the social and economic factors that affect maternal-child

health, the effects of children's health on their families, and the quality of the data used in public health research. Using data from New Jersey birth records and national and international surveys, Dr. Reichman has studied the effects of social, demographic, and economic factors and public policies on birth outcomes.

She recently completed a five-year, \$1.4 million grant from the NIH for a comprehensive study of the effects of poor child health or disability on their families. She found that having a child in seriously poor health makes the parents less likely to stay together and to maintain gainful employment, and they are more likely to rely on public assistance. However, having a severely disabled child does not seem to affect the family's health insurance status or level of material hardship — probably *because* it increases their reliance on public assistance, says Dr. Reichman.

"Policy makers should make decisions based on facts," she adds. And that is what she provides, in maximum quantity and quality. **M**



**New Discoveries**

**Fuel Progress and Hope**

# Movement Disorders:

Tremors. Stiffness. Drooling. Spasticity. Abnormal postures. Impaired balance. Gait changes. Speech and swallowing problems. In people with movement disorders, the brain lacks the ability to control body movements. Parkinson's disease alone affects more than a half-million Americans. Some other common movement disorders are essential tremor, tardive dyskinesia, restless legs syndrome, Tourette's syndrome, the dystonias, and the ataxias. At UMDNJ-Robert Wood Johnson Medical School, progress is being made to comprehend the molecular pathogenesis of movement disorders and to develop medical, surgical, and rehabilitative therapies to treat them.

BY LYND A RUDOLPH

“Our focus is to look at these diseases on every level to better understand not just the genetic basis but what scientific thought or practice we can use to drive the pursuit of new solutions,” says Suhayl Dhib-Jalbut, MD, professor and chair, Department of Neurology.

## Discoveries That Could Lead to Gene Therapies



**P**arkinson's disease is the second most common neurodegenerative disease of the brain, after Alzheimer's disease. “One percent of the population

55 years of age and older have the disease, and the prevalence is expected to increase as the population ages,” says M. Maral Mouradian, MD, William Dow Lovett Professor of Neurology and director, Center for Neurode-

generative and Neuroimmunologic Diseases. Although there are a number of symptom-driven treatments, they don't have an impact on the degeneration of neurons. “Our objective is to develop a disease-modifying therapy — to try to understand what's causing the neurodegeneration at the molecular level and find a way to impact the molecules to stop the progression of the disease,” Dr. Mouradian says.

Genetic factors play a significant role in Parkinson's. Five such genes have been identified to date. Thirty percent of the cases can now be attributed to recognized genetic causes, and that number is expected to double as technology advances. In studying three of the five genes, Dr. Mouradian and her team of investigators discovered that the amount of alpha-synuclein, which forms a major protein aggregate in the brains of those with Parkinson's, is critical in causing neuronal damage. The breakthrough came when it was learned that microRNA-7, a small RNA molecule that is present in neurons, directly represses the expression of alpha-synuclein. Tightly regulating the amount of these proteins in the brain is now more than theoretically possible using various approaches, including gene therapy. “We're testing this strategy in mice now,” reports Dr. Mouradian. “It's conceivable that within five years, it can be tested in patients.” The National Institutes of Health (NIH) has awarded Dr. Mouradian a \$1,720,455 grant to study the molecular pathogenesis and neuro-protective mechanisms in Parkinson's disease.

Another study is being conducted on a gene that makes tau proteins, which are abundant in neurons in the central nervous system. “There is a whole set of disease called tauopathies,” says Lawrence I. Golbe, MD, professor of neurology and research director, CurePSP, the national organization devoted to progressive supranuclear palsy. Tau aggregates are associated with Alzheimer's, PSP, and a handful of other neurodegenerative diseases. In the late 1990s, certain genetic mutations of the tau protein were found to be associated with PSP. The hope is to ultimately stem the tide — not to change the genes but to find a drug to affect the broken biochemical pathways, possibly one already on the market that has never been used before in this application.

Dr. Golbe is also organizing a national registry of patients who have PSP. There are about 5,000 people in the United States who carry a diagnosis of PSP — believed to be roughly one-quarter of those who actually have the disease. “The purpose is to look for epidemiological patterns in the pool — to help us develop new research studies that could lead to treatments or prevention,” explains Dr. Golbe. Start-up of the registry is funded by a grant from the Rainwater Charitable Foundation.



STEVE HOCKSTEIN

“Our objective is to develop a disease-modifying therapy — to try to understand what's causing the neurodegeneration at the molecular level and find a way to impact the molecules to stop the progression of the disease,” says M. Maral Mouradian, MD, William Dow Lovett Professor of Neurology and director, Center for Neurodegenerative and Neuroimmunologic Diseases (above right).





## Neurosurgical Brain Mapping for Precision Targeting



**But what happens if you are a patient for whom it is too late for this kind of molecular research to help you? Advancements in deep brain stimulation (DBS) are**

being pioneered at RWJMS to give those with movement disorders a way to treat the effects of such conditions. DBS involves connecting electrodes by wires to a type of pacemaker device to send electrical pulses to target areas of the brain, thereby modulating the impulses that cause muscle stiffness and tremors. A new breed of technology in brain mapping is the key to better results and fewer side effects. What was once a task dependent on the clinical specialist to identify small subcortical targets in the brain, based on sounds produced by their electrical activity, is emerging as an exact science. Using technology that provides a stereotactic frame, specialists create a three-dimensional map of the brain, registering the coordinates

*“Our focus is to look at these diseases on every level to better understand not just the genetic basis but what scientific thought or practice we can use to drive the pursuit of new solutions,” says Suhayl Dhib-Jalbut, MD, professor and chair, Department of Neurology (above left), with Lawrence I. Golbe, MD, professor of neurology and research director, CurePSP, the national organization devoted to progressive supranuclear palsy.*



of the emission of the neural output.

“We look for changes of neural activity from quiet to active patterns and determine borders,” says Stephen Wong, MD, assistant professor of neurology and co-director of the Translational Deep Brain Stimulation Research Laboratory. This map becomes the visual guide in determining where the deep brain stimulator should be implanted.

“It’s like assigning colors to sounds and converting audible impressions into signals to tell us what is the correct path,” explains Shabbar F. Danish, MD ’01, assistant professor of surgery and director, stereotactic and functional neurosurgery at Robert Wood Johnson University Hospital.



In the case of DBS, precision is everything. “Electrodes must be placed in the correct area; if they stimulate an adjacent area, there can be side effects such as pain or tingling,” says Dr. Wong. Clinicians and researchers are working to standardize the procedure, developing reproducible signals each time. Specifically for Parkinson’s, data have been collected since 2005 to develop an algorithm that was used as early as 2006 to visualize DBS placement. A patent for the procedure has been applied for, and research and development are currently grant-funded. “Our goal with this research is to create a functional image that becomes a standard part of DBS surgery in order to make the surgery more accurate and safe,” emphasizes Dr. Wong.

### Non-Motor Studies Address Quality-of-Life Issues



**Limitations that arise from the manifestations of Parkinson’s disease aren’t always obvious. Most of the research is focused on motor manifestations. Yet the**

non-motor issues that Parkinson’s patients face can be significant. “Depression, sleep problems, memory impair-

*The objective of these projects is to help Parkinson’s patients recognize the goals they can still achieve and what else they can still do. ...“Our basic premise here is that we will hopefully one day find a cure, but until then, we want to find ways to make people’s lives better,” says Matthew Menza, MD, professor and chair, Department of Psychiatry (pending approval of UMDNJ Board of Trustees).*

ment are all largely unresearched,” observes Matthew Menza, MD, professor and chair, Department of Psychiatry (pending approval of UMDNJ Board of Trustees). Dr. Menza leads the first NIH randomized clinical trial to investigate the use of antidepressants for Parkinson’s, as well as a second trial to investigate insomnia in those with Parkinson’s.

These studies will investigate whether there are biological bases for such problems and whether the immune system is involved. “Dr. Roseanne Dobkin, assistant professor of psychiatry, who works in our group, obtained an NIH grant to use cognitive behavioral therapy with Parkinson’s patients who suffer from depression,” says Dr. Menza. The objective of these projects is to help Parkinson’s patients recognize the goals they can still

achieve and what else they can still do. Issues can easily be talked through over the phone — important since many Parkinson’s patients have travel limitations. “Our basic premise here is that we will hopefully one day find a cure, but until then, we want to find ways to make people’s lives better,” says Dr. Menza.

## Rehabilitation Innovations Proven to Slow Disease Progress



**You might think that the key to rehabilitation in movement disorders would be to train the body to remain still. But it’s just the opposite. “The bottom line is that**

exercise has been shown to be the only known intervention to slow the progression of the disease,” says Roger Rossi, DO, associate professor of physical medicine and rehabilitation and director, Parkinson’s Disease Clinic at the JFK Johnson Rehabilitation Institute. There are specific therapeutic and movement-based techniques that can help patients reshape the brain and increase motor coordination, complex attention, and executive functioning. Learning-based, dual-task exercises, such as reading while on a treadmill, serve to reinforce normal activity and motor circuitry. Learning-based memory exercises, such as dancing and skipping, require spontaneous reactions that also have been proven to be effective. Verbal cues, such as a request to lift each leg while walking, or visual cues, such as asking a patient to step toward a beam of light, improve the movement of Parkinson’s patients.

“The problem with Parkinson’s patients is that they often can perform a task, but they can’t remember the sequence or recall the learned response,” explains Dr. Rossi. “We’re simply helping them relearn that response and reinforce the learning behavior or activity.” The use of repetitive activities on a treadmill, where the body weight is supported to alleviate the fear of falling, also has been productive. The rhythmic activity helps to create new motor pathways and reinforce established ones. Even use of the Wii — with repetitive motion in sports games — is improving the motor function and speed of processing of people with Parkinson’s.

Along with physical and occupational therapy, speech therapy is used to address problems with communication, speech, language, and cognition, as well as problems with swallowing and drooling. Amplification systems and computer devices are used in the late stages of Parkinson’s, when communication is difficult or largely non-verbal. “No one treatment transcends to each Parkinson’s patient,” says Dr. Rossi. “We determine what works for each individual in his or her own environment, at the specific stage of the disease, based on their needs and goals. In

a sense, it is identifying the right care at the right time, over time.” It was once thought that when a function was lost, one must be taught compensatory strategies. Now, experts are realizing that the brain is plastic, forever remodeling itself. Rather than compensation tactics, the brain must be challenged to incorporate those areas of involvement, and to work on them to maintain or improve function.

While there is great hope for future progress through genetics, the yeoman-like efforts of those who are developing new ways to treat these complex movement disorders are making a difference in the lives of all the patients they treat here and now. **M**



JOHN EMERSON

**“The problem with Parkinson’s patients is that they often can perform a task, but they can’t remember the sequence or recall the learned response. ... We determine what works for each individual in his or her own environment, at the specific stage of the disease, based on their needs and goals. In a sense, it is identifying the right care at the right time, over time,” says Roger Rossi, DO, associate professor of physical medicine and rehabilitation and director, Parkinson’s Disease Clinic at the JFK Johnson Rehabilitation Institute.**



# Emergency Medicine and Acute Care:

Keeping Pace with Growing Regional Needs

N

## Emergency Medicine Residency Augments Teaching and Patient Care

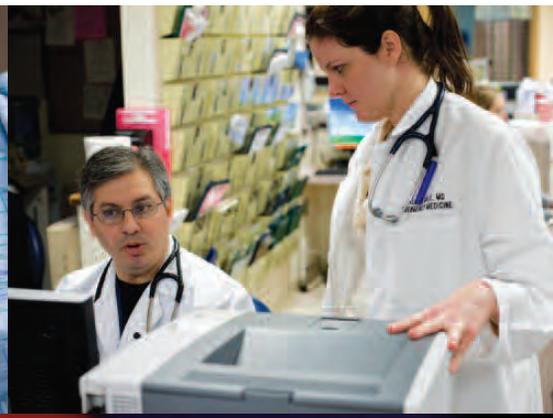
**Night or day, the Emergency Department doors** never stop swinging. In 2010, the emergency medicine team provided treatment for an astounding 68,000 adult patients — the equivalent of the entire combined populations of the city of New Brunswick and neighboring Highland Park. Of these, 3,000 were trauma patients, with multi-organ illness or injury. The Pediatric Emergency Department served an additional 27,000 patients.

Whatever the level of disease or injury, excellent care is provided, thanks to the successful collaboration of the UMDNJ-Robert Wood Johnson Medical School's Department of Emergency Medicine and Robert Wood Johnson University Hospital (RWJUH), a Level 1 Trauma Center. New Jersey is home to only three Level 1 Trauma Centers. Now in its 20th year as a Level 1 service, the Trauma Center at RWJUH serves Region 2, the center of the state.

The intense, never-ending activity of the Emergency Department team is extraordinary, yet the team maintains the sense of order and calm that is necessary to diagnose, treat, and either admit or discharge patients of highly divergent ages and needs. "In the Emergency Department, we do in hours what others do in days or weeks. It takes some getting used to," says Robert Eisenstein, MD, associate professor and vice chair, Department of Emergency Medicine. →



By **Kate O'Neill**



# EMERGENCY



Eighteen emergency medicine physicians hold appointment on the RWJMS faculty and form the core medical staff of the Emergency Department. All are board certified or board prepared in emergency medicine, and most are credentialed in emergency ultrasound. The medical school requires that fourth-year medical students complete a four-week clerkship in emergency medicine. In addition, students are offered two emergency medicine electives, including an emergency medical services (EMS) elective that provides experience in pre-hospital, disaster, and tactical medicine. Students learn pre-hospital evaluation and treatment of sick and injured patients in a course that involves extensive pre-hospital training.



**“In the Emergency Department, we do in hours what others do in days or weeks. It takes some getting used to,”** says Robert Eisenstein, MD, associate professor and vice chair, Department of Emergency Medicine.

In 2010, the first six residents entered the newly launched three-year Emergency Medicine Residency Program, approved by the Accreditation Council for Graduate Medical Education. (See *“A Day in the Life of Emergency Medicine Resident Alexa Gale, MD,”* below right.) The department also sponsors a fellowship in EMS. Another fellowship, in trauma/acute care, provides further teaching and clinical expertise. In addition, faculty, fellows, and residents participate in a variety of research on topics related to pre-hospital and emergency medicine.

### Trauma/Acute Care Medicine: Specialized Care for Critically Injured and Ill Patients

**Trauma is complex. In a split second,** an incident can leave its victim critically injured, with damage to multiple organ systems. A fragment of metal, a shard of glass, or a bullet can rip the skin, splinter bones, destroy nerves, tear the bowel, and sever a major artery — five body systems injured and in critical need of repair. Shock is likely to follow, as well as a high risk of infection.

Traumatic injuries or critical illnesses call for medical teamwork that offers a patient the best chance not just to survive, but to regain the optimum quality of life. Trauma/acute care surgeons are skilled in evaluating and treating different organ systems. The acute care process may begin at an accident site or in the home of a critically ill patient. It continues in the pre-hospital setting of an ambulance or helicopter — sometimes with the trauma surgeon on board. At RWJMS, the patient makes a seamless transition into one of

the state-of-the-art bays in the Emergency Room, reconfigured in 2010 to provide a specialized area where the trauma team can simultaneously care for or operate on three or four severely injured patients.

“We are building on the great foundation of trauma at RWJMS. Using a surgical perspective to evaluate patients, our goal is to create a cohesive system, integrating every level of care involved in trauma and critical care,” says Vicente H. Gracias, MD, professor of surgery, chief, division of trauma/surgical critical care, and medical director, trauma and surgical critical care at RWJUH.

Since the establishment of the division of trauma/surgical critical care, six full-time critical care surgeons have joined the Department of Surgery. Dr. Gracias has developed new critical care services that supplement the emergency medicine faculty, and he foresees the evolution of a comprehensive catastrophic center of excellence at the medical school.

“Patients with severe or life-threatening soft tissue infection or any traumatic injury are best managed at →

### A Day In the Life of Emergency Medicine Resident Alexa Gale, MD

**Today is a day of firsts for Alexa Gale, MD:** the first day of the first rotation in her first year in the new Emergency Medicine Residency Program. It is also her first shift in the Emergency Department.



In 2010, during her internship at Lenox Hill Hospital, Dr. Gale switched from surgery to emergency medicine. “I liked the procedure

PHOTOS BY JOHN EMERSON



“We are building on the great foundation of trauma at RWJMS. Using a surgical perspective to evaluate patients, our goal is to create a cohesive system, integrating every level of care involved in trauma and critical care,” says Vicente H. Gracias, MD, professor of surgery, chief, division of trauma/surgical critical care, and medical director, trauma and surgical critical care at RWJUH.

part of surgery,” she says. “But I found emergency medicine more user-friendly. I like talking to people, taking their history, and thinking about the possible processes.”

On her first day in the department, Dr. Gale gets what she had hoped for: not the melodramatic scenarios of the recent television series *E.R.*, but rather the opportunity to help care for patients whose symptoms do not necessarily add up to a clear diagnosis.

Today, assigned to the emergent — or sickest — side of the department, Dr. Gale meets six patients with six different problems. She also meets new colleagues: attending physicians and community physicians, nurses, technicians, and others who contribute to the department’s high standard of

patient care. She begins mastering the basics: computerized order entry, the phone system, and the template for patient histories.

At every step, Dr. Gale reports to Robert Eisenstein, MD, associate professor and vice chair, Department of Emergency Medicine, who helps her develop an evidence-based plan for each patient.

**Following is a partial log of Dr. Gale’s first day in the Emergency Department:**

→ **10:20 A.M.:** Dr. Eisenstein asks Dr. Gale to perform an endotracheal intubation on an intoxicated young man with a possible head injury and altered level of consciousness.



She tries but is unable to perform the difficult procedure on the patient, whose neck must remain stabilized. Dr. Gale asks Dr. Eisenstein for help and watches as he quickly intubates the patient, demonstrating how it can be done successfully under these challenging circumstances.

→ **11:10 A.M.:** Dr. Gale sees a woman in her 70s who suffered a serious fall while visiting her daughter, who lives locally. Despite her mother’s

reluctance, the daughter brought her to the hospital. The patient’s face is a sea of bruises. She is in pain, vague, depressed, and somewhat disoriented.

The daughter explains that her mother, who suffers from multiple sclerosis, has had many falls, adding, “She lives alone and wants to remain independent.” Dr. Gale reviews the case with Dr. Eisenstein and plans what tests to order. He discusses the importance of looking for acute injury but also emphasizes that the patient’s MS raises the likelihood that she has suffered earlier injury from recurrent falls. Dr. Eisenstein agrees with Dr. Gale’s plan to order a CT scan to rule out brain injury or broken bones and reminds her, “Always give the radiologist an idea of

— Continued on Page 44

an academic medical center such as RWJUH, with multi-disciplinary expertise,” says Stephen F. Lowry, MD, professor and chair, Department of Surgery, and senior associate dean for education. “Our folks seek these cases. Many others don’t!”

The new division of acute care is attracting top-level faculty with strength not only in clinical care, but also in teaching and research. “This is a faculty of outstanding surgeons with an intense interest in research,” says Dr. Lowry. “Collaborations with the trauma surgeons will offer new opportunities for federal support.”

### Pediatric Emergency Department: Tailor-Made for Children

No one goes to the Emergency Department with a small problem — especially not the youngest people. Pediatric patients, whether they have an ear infection, appendicitis, or an injury, are usually in pain, scared, and anxious.

The people who serve in the Pedia-

tric Emergency Room in The Bristol-Myers Squibb Children’s Hospital at RWJUH recognize that a pediatric emergency patient has a different psychology from that of an adult. So every child is cared for by pediatric emergency specialists who know how to make children feel safe and comfortable, and who will send them home as soon as possible.

The 20-year-old Pediatric Emergency Department moved in 2005 from shared but separate quarters in the adult Emergency Department to its current location in the children’s hospital. It is covered by 12 board-certified pediatricians from the pediatric emergency medicine division of the Department of Pediatrics. They are supported by pediatric nurses and technologists, specially trained in the needs of children. In turn, they have the support of residents doing a rotation in either pediatrics or family medicine, as well as physician’s assistants and nursing students.

“Our Pediatric Emergency Department has grown tremendously, from 3,000 visits a year to 27,000 visits last year,” says Ernest Leva, MD, associate

professor of pediatrics. “The care we provide is the equivalent of any in the world.”

### Emergency Medicine Provides Broad Pre-Hospital Training

To be unfamiliar with the pre-hospital environment — the arena beyond the Emergency Department doors — is like missing the opening scenes of a movie or starting a book in the second chapter. The scene of an incident, initial evaluation, and any pre-hospital treatment can provide emergency medicine and trauma teams with vital information on the status of a patient newly arrived in the Emergency Department.

The department offers a one-year post-residency fellowship in EMS/ Disaster Medicine. Since 2009, EMS fellows have received two federal grants and published 15 manuscripts, most co-authored with members of the Department of Surgery. Many have gone on to leadership in EMS systems nationwide. **M**

## A Day In the Life of Emergency Medicine Resident Alexa Gale, MD

— Continued from Page 43  
what you are looking for.” They agree that the patient should be admitted for her own safety, regardless of any injuries found. Dr. Gale contacts social services.



→ **11:45 A.M.:** The Emergency Department is packed to overflowing, so Dr. Gale sees her next patient, a 91-year-old nursing home resident, in one of the critical care rooms. The patient, who reports “pressure and

pain in her stomach,” has suffered two previous heart attacks.

“Could you point to where the pain is?” asks Dr. Gale.

“You don’t know where my stomach is?” asks the patient impishly. “I thought you were a doctor.” Dr. Gale smiles and waits. The patient points to her lower abdomen.

“Could you rate the pain on a scale of 1 to 10?” Dr. Gale asks.

“A 9,” the patient quickly replies.

“Someone once said that a 10 would be like giving birth through your nose,” says Dr. Gale.

The patient smiles and replies, “Then I’d say it’s more like a 5.”

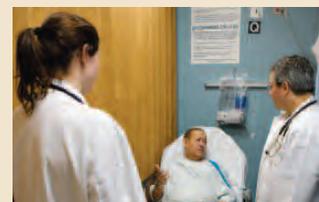
Returning the smile, Dr. Gale continues: “Do you know what year this

is?” The patient is uncertain, then asks, teasing, but with a hint of doubt: “Are you going to put me in the crazy house?”

“Of course not,” says Dr. Gale, as though they’d shared a joke. She completes the history, adding details on the patient’s current health and medical history — earlier procedures, medications, allergies. She asks the patient for permission to examine her abdomen: “Would that be OK?”

Dr. Gale and Dr. Eisenstein compare an EKG taken this morning with one archived from the patient’s earlier visits to the hospital for cardiac surgery. Dr. Gale orders an X-ray and blood tests and leaves, assuring the patient that she will be back.

→ **12:30 P.M.:** Dr. Gale has the first blood results for the elderly patient in the critical care bay and reports back, explaining that this test only establishes a baseline. Re-testing over the next few hours will indicate whether the patient has suffered a heart attack. Dr. Gale contacts the patient’s interventional cardiologist, who agrees with admitting the patient to the hospital to rule out a heart attack.





On her first day in the Emergency Department, Alexa Gale, MD, gets what she had hoped for: the opportunity to help care for patients whose symptoms do not necessarily add up to a clear diagnosis. At every step, Dr. Gale reports to Dr. Eisenstein, who helps her develop an evidence-based plan for each patient.

→ **2:40 P.M.:** A new patient in Exam Room 3 has presented with nausea, vomiting, and abdominal pain. Four months ago, she had a gastric banding, a surgical procedure to promote weight loss. The patient has lost about 50 pounds but has not felt good since the surgery. Due to this and other complications, the band was subsequently removed. Dr. Gale asks the patient to precisely describe the pain (“Constant pressure? Radiating pain?”) and any other symptoms (“Any acid reflux?” “No”), then inquires about medications the patient takes and any diagnostic procedures she may have undergone (“Have you had an endoscopy?” “No”).



→ **2:45 P.M.:** Dr. Gale excuses herself to take a phone call. The patient with MS will be admitted. The house physician will smooth her transition to the hospital and coordinate her care with a primary care physician.

→ **2:48 P.M.:** Dr. Gale resumes taking the history of the patient who had the gastric band procedure. Her non-technical language — the urinary system is “the waterworks” — successfully puts the patient at ease.

Dr. Gale asks permission to examine the patient’s abdomen and proceeds with the examination.

Dr. Gale finds Dr. Eisenstein and reports on the details of the patient’s symptoms and medical history. They discuss the next steps. Dr. Gale mentions the possibility of post-operative complications, but Dr. Eisenstein redirects her: “Think about it more broadly. You’re thinking like a surgeon!” He is concerned the patient may have a bowel obstruction and suggests that Dr. Gale order an abdominal X-ray. When the X-ray does not show an obstruction, a CT scan is ordered, and a kidney stone is found. The patient begins to feel better, so she is discharged with a

prescription for pain medication and referred to a urology group for outpatient evaluation.

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*This partial log describes the first shift of Dr. Gale’s emergency medicine residency. In the year ahead, she will spend six months in the Emergency Department and a month each in anesthesia, obstetrics, dedicated trauma, and pre-hospital emergency medical services. By 2013, when she completes the residency program, she will be competent in every area of emergency medicine, including toxicology, pediatrics, administration, and research, and will have trained in every level of intensive care. **M***

# Where Present and Future Converge:

*Technological Firsts Are Becoming Common at RWJMS*

BY JONI SCANLON

PHOTOS BY

JOHN EMERSON

**S**hould you happen to find yourself wandering through the corridors of UMDNJ-Robert Wood Johnson Medical School and Robert Wood Johnson University Hospital (RWJUH) someday soon, you might feel like one of those quirky film characters suddenly blasted into a far-off future, where nothing seems quite familiar.

Venturing tentatively into this world, you will discover cutting-edge surgeries so advanced that they seldom involve actual incisions. You will notice machinery that aims precisely focused radiation beams to treat brain tumors in just minutes per session. You will also observe operating techniques that can return patients with potentially deadly aneurysms to their normal routines in just a week or two.

Continue this fantastic journey until you see what could be a normal operating room in any hospital — until you slowly open its stainless-steel doors to behold a sterile facility unlike any you've ever seen. Before you

is the most incredible vignette, in which a patient and an artificial machine become one.

For those whose lives depend on the continuous march forward of medical research and new technologies, these are some of the advances that might seem difficult to imagine.

The faculty members who brought these seemingly futuristic technologies to RWJMS are among the renowned specialists who are moving RWJMS and RWJUH to the forefront of teaching, groundbreaking research, and clinical practice. With technologies like these, the future of medicine has already become a fixture of the here and now at RWJMS.



It would be no exaggeration to say that Todd Vogel, MD, assistant professor of surgery, has traveled to the ends of the earth to learn new ways to help patients with deadly abdominal aortic aneurysms.



**T**he AbioCor Total Replacement Heart was implanted in a patient for the first time in June 2009. Mark Anderson, MD, associate professor of surgery and chief, division of cardiothoracic surgery at RWJMS and RWJUH, led the surgical team performing this precise, highly specialized procedure.

## A Lean, Cancer-Fighting Machine

**D**espite a name that conjures images of *Star Wars*, the patented “Gamma Knife” is no movie prop — nor is it even a knife.

In fact, the Leskell Gamma Knife “Perfexion” stereotactic radiosurgery system is a sharp, powerful, supremely advanced cancer-fighting machine that aims exceptionally focused radiation beams into the brain to combat tumors and other abnormalities.

“This technology allows us to carefully guide radiation beams with extreme focus. That’s a key advantage because it’s this precision that helps ensure the beams directly hit their target without damaging healthy surrounding tissue,” says Shabbar F. Danish, MD ’01, assistant professor of surgery and director, stereotactic and functional neurosurgery, RWJUH.

“This precision is a vast improvement over earlier generations of the Gamma Knife, which means we can now offer patients a safer and more effective treatment option,” he adds.

While the Gamma Knife technology has been in existence for some time, its newest and most advanced model, the “Perfexion,” was purchased in 2010 and was clinically operational in March 2011, according to Ning Jeff Yue, PhD, professor and vice chair, Department of Radiation Oncology. It has been installed at RWJUH and radiation oncologists and medical physicists from The Cancer Institute of New Jersey will provide the radiotherapy services at the Gamma Knife Center at RWJUH.

With nearly perfect accuracy, the Gamma Knife offers the most advanced protocol known for treating brain abnormalities and tumors, says Atif Khan, MD, assistant professor of radiation oncology. “It was the first machine developed that could localize with a high degree of precision small intracranial targets for pinpoint irradiation. The ‘Perfexion’ is even more advanced. It can localize and treat multiple targets in a very efficient and elegant way.”

All three of these chief proponents of this technology will use the Gamma Knife “Perfexion,” along with specialized teams of radiation oncologists, neurosurgeons, and medical physicists.

## Where Cardiac Patients Turn for Hope

**“T**here’s nothing more we can do.” These are probably the most difficult words any doctor must say to a patient, and this all-too-common sentence, or something like it, is uttered every day in countless hospitals and medical offices around the world.

For cardiologists, it becomes necessary when a patient with end-stage heart disease or a member of the patient’s family anxiously looks to the doctor for other options, for

next steps, for *hope* — when there are no other options, there are no next steps, there is no hope — because the patient is simply not eligible for that last-resort option, a human heart transplant.

Although technology might never render these devastating conversations obsolete, medical breakthroughs are holding out the promise that one day there will be a diminished need for such a bleak moment.

Cardiologists treating end-stage heart disease can now offer the promise of a new, life-enhancing possibility to some patients, thanks to an unusual collaboration involving a medical device manufacturer, the U.S. Food and Drug Administration (FDA), a skilled team of cardiac surgeons, and the extraordinary bravery of one man who briefly contributed to the advance of medical knowledge.

That man was the 76-year-old recipient of the world’s first totally artificial heart approved by the FDA. Known as the AbioCor Total Replacement Heart, this fully implantable and self-contained device is capable of taking over when a patient’s own organ fails. The AbioCor was implanted in a patient for the first time in June 2009 at RWJUH. Mark Anderson, MD, associate professor of surgery and chief, division of cardiothoracic surgery at RWJMS and RWJUH, led the surgical team performing this precise, highly specialized procedure. Sadly, the first AbioCor patient survived for only a few months following surgery.

In addition to its pioneering work with the AbioCor, RWJUH is among the first medical centers to offer another highly advanced treatment option for patients for whom a cardiac dysfunction may eventually prove reversible. This procedure involves inserting a tiny mechanical pumping device known as the Impella 5.0 — a new, miniaturized version of the typically permanent Left Ventricular Assist Device (LVAD) used today.

Even more compelling than the cost-effectiveness of the Impella 5.0 are the patient health and recovery benefits that the device offers, according to Dr. Anderson.

“One of the device’s main advantages is the time it buys for both patient and doctor, as it temporarily assists the heart in pumping blood until a patient’s condition and treatment options can be fully assessed,” he says. Dr. Anderson adds that the insertion procedure is much less invasive than it is for the LVAD; it involves introducing the catheter-based device into the aorta through small incisions in the patient’s groin area.

“We have found that the Impella is useful as a temporary pumping aid, especially in cases where a patient is too ill for immediate corrective surgery,” says Dr. Anderson. “It’s also helpful in cases where a patient has just suffered a heart attack or when they’re recovering from surgery.”

## Hope for Patients with an Abdominal Aortic Aneurysm

It would be no exaggeration to say that Todd Vogel, MD, assistant professor of surgery, has traveled to the ends of the earth to learn new ways to help patients with deadly abdominal aortic aneurysms (AAAs).

A Wylie Fellowship sponsored by the Society for Vascular Surgery funded Dr. Vogel's globe-spanning travels. The year-long fellowship gave Dr. Vogel a chance to observe and train with leading specialists in Australia — as well as Cleveland, San Francisco, and Washington — providing a rare opportunity to master a groundbreaking, minimally invasive type of endovascular surgery known as “fenestrated graft” surgery.

This cutting-edge surgical capability adds considerable weight to the growing toolbox of endovascular techniques now available. It also provides yet another new endovascular treatment option to patients previously shut out due to health concerns. Perhaps most significant is that its introduction coincides with RWJUH's new \$2 million endovascular suite, which features ultra-advanced imaging capabilities and is very well equipped for this new procedure.

AAAs are the tenth leading cause of death in men over 50. They typically occur below the kidneys, often appearing in either of the two large iliac arteries that branch off from the aorta within the abdominal cavity. Each year, some 200,000 Americans are diagnosed with this malady, and an estimated 40,000 opt for surgical repair procedures. Not all patients require surgery; those with smaller AAAs, less than five centimeters in diameter, usually are not treated but instead are closely monitored through ultrasound imaging.

Patients, with advice from their doctors, can choose endovascular or traditional open surgery. Endovascular surgery is by far the surgical method of choice for most patients and surgeons. However, individual health issues have not allowed some patients to take advantage of endovascular surgery. For these patients, says Dr. Vogel, the fenestrated graft technique offers great promise.

“Our ability to provide fenestrated grafts will allow many people who were deemed unsuitable candidates for endovascular repair of their aneurysms to become candidates,” he says.

Similar to other endovascular surgeries, the fenestrated graft technique is truly a minimally invasive procedure. It involves making two tiny incisions in a patient's groin area and then inserting an endovascular graft affixed to a catheter (which acts as a type of guide wire) through these incisions into the femoral artery. The catheter is deployed through the artery's hollow cavity and maneuvered up toward the targeted aorta; when that is reached, it is simply relined with the graft.

As might be anticipated, global hospital records reveal

a significantly improved recovery rate for patients who have undergone endovascular surgeries, as compared with traditional open surgery.

In stark contrast to traditional open surgery patients, who might expect to spend about a week in the hospital and then another one to three months in recovery, an endovascular surgery patient can expect to spend an average of only two to three days in the hospital and will usually recover within one to two weeks.

## More Fun Than a Video Game?

Seldom has an educational program generated as much enthusiasm from medical students as has the new RoSS Robotic Simulator, a one-of-its-kind training station that students and residents use to practice robotic surgery in a lifelike environment.

“We saw what this simulator could be, so we made a commitment to buy the RoSS when it was in its infancy,” says Joseph G. Barone, MD '87, associate professor of surgery, chief, division of urology, and chief, The Bristol-Myers Squibb Children's Hospital at RWJUH.

Encouraging students to practice robotic surgery is of critical importance, as there is no doubt that it represents the future of surgical medicine. This type of surgery typically achieves dramatically improved patient outcomes, and it is increasingly being sought after by discerning patients. At RWJUH, robotic surgery is a popular option that patients can now choose, at their doctors' discretion, for many gynecologic, chest, urological, and general surgeries.

RWJMS students are quite aware of the popularity of the robotic surgery. “They're already enticed to develop these skills. They know this is what their patients will be demanding from them in the future,” says Dr. Barone.

The RoSS — which is reminiscent of a flight simulator used by pilots — permits students to peer into a telescope and view a three-dimensional “surgical site,” where they can practice robotic suturing, knot-tying, and tissue-cutting techniques under nearly lifelike conditions.

The RoSS also creates an enhanced environment in which to simulate laparoscopic surgery, says Dr. Barone. Practicing laparoscopic surgery was particularly troublesome in the past, because residents had to rely on a two-dimensional television screen as a practice surgical guide. This 2-D view seriously impeded their depth perception as they worked.

“The RoSS is one of the first simulators I've seen that even residents have really wanted to use,” Dr. Barone says. “I definitely think the real value of the RoSS simulator is that it's going to shorten the learning curve.” **M**



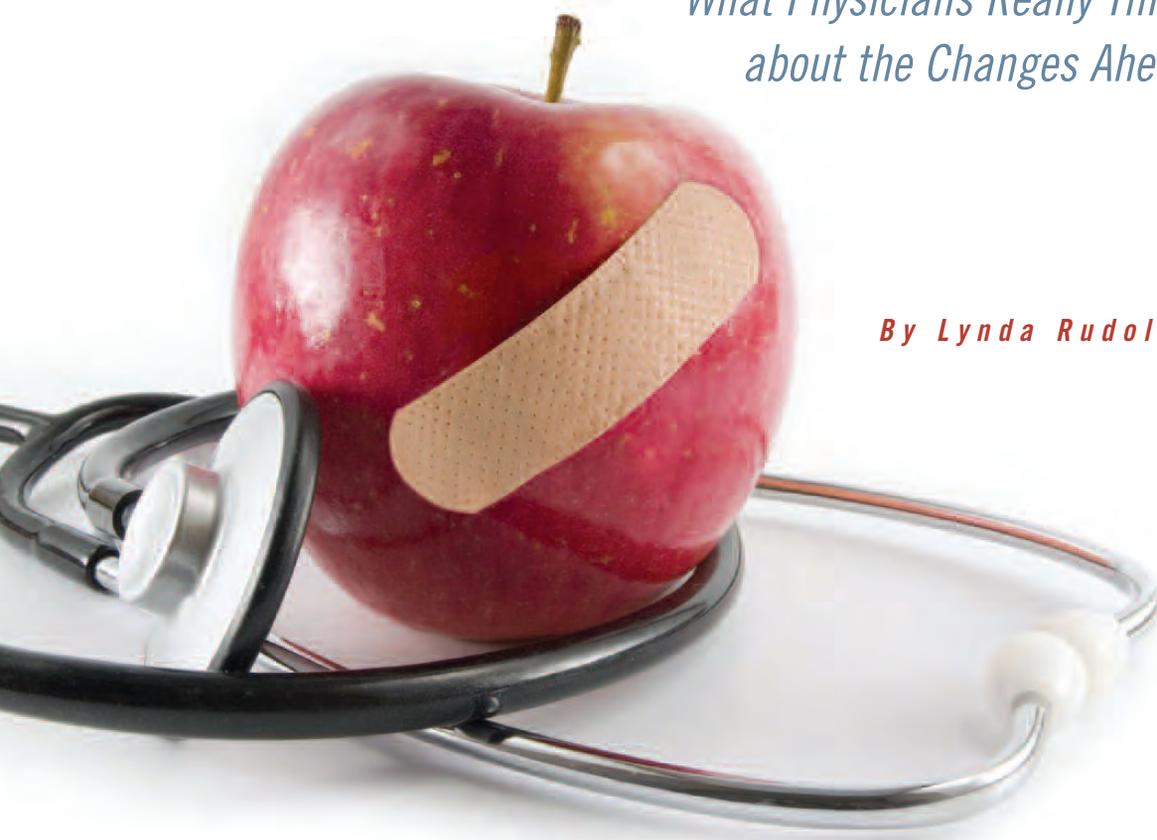
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Health Care Reform:

# Cure~all Or Band~Aid?

*What Physicians Really Think  
about the Changes Ahead*

*By Lynda Rudolph*





JOHN EMERSON

“Patients ask me all the time what I think about the reform. I ask them how could we not provide health care to every single citizen in the United States?” says Jeffrey L. Carson, MD, Richard C. Reynolds Professor of Medicine and chief, division of general internal medicine, who does not mince words when it comes to the new health care legislation. “Obama care — or call it what you will — first and foremost broadens coverage to almost everyone. Health care is a right, not a privilege.”

Alfred F. Tallia, MD '78, MPH, professor and chair, Department of Family Medicine and Community Health, sees the reform as a step in the right direction — but not without implications yet to be addressed. “What happened in Washington was just a start. It isn't health care reform. It's entitlement reform. A lot of people weren't covered and now they will be. That's the good news.”

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Many critics have linked the term “rationed care” to the reform legislation. There has been widespread talk of government “death panels” selecting who would receive care, including life-extending drugs or medical procedures, depending on life expectancy. In response, Dr. Tallia says, “First of all, the government has been involved in health care long before even Medicare debuted in the ‘60s. And second of all, we already ration care.”

He adds, “As it stands now, those who have money or insurance get care, and those who don’t, do not. To have

insurance, you have to be a veteran, elderly, work for a generous employer, buy it yourself, or if you are very poor, live in a state with Medicaid benefits. That leaves a lot of people out. The new legislation evens the playing field.”

For physicians as well as individuals, the impact of a lack of insurance for millions of people has been long-term. Emergency rooms have been full. Preventive care has been nonexistent for many. Diseases often have been diagnosed only in late stages. Tests and screenings have not been taken. Prescriptions have not been filled. The

financial burden of a lengthy illness has been bankrupting. There was no question that something had to be done.

## Millions More to Care For

Everyone in the medical world watched expectantly as the Patient Protection and Affordable Care Act, estimated by the Congressional Budget Office to cost \$940 billion over the next ten years, moved through Congress and was signed into law on March 23, 2010 (followed one week later by a reconciliation bill containing a number of changes). At the heart of the legislation is a goal of covering 32 million more Americans, for a total of about 94 percent of the population being insured.

All of this is in response to predictions of health care costs spiraling into the financial stratosphere. According to the Centers for Medicare & Medicaid Services (CMS), the nation’s an-

nual spending for health care was \$2.5 trillion in 2009. By way of comparison, CMS cites a figure of \$75 billion for 1970 — a 39-year increase of \$2.424 billion. CMS projected that by 2018, health care spending would be more than \$4.3 trillion and account for 20.3 percent of the gross domestic product (GDP).

The legislation includes a planned 21 percent pay cut for treatment of Medicare patients. This is a result of change in Medicare’s controversial sustainable growth rate formula — or SGR — for physician reimbursement. A temporary fix, in the form of a law that was passed in June 2010, put the cut on hold and gave physicians a 2.2 percent Medicare raise, but it was not a permanent solution. For 2011, the proposed rule projects an additional 6.1 percent cut, starting on January 1.

## Financial Implications for the Medical Profession

Physicians are clearly concerned about the financial ramifications. “This will have a huge impact across all disciplines,” says Amy Pappert, MD, assistant professor of dermatology. “The system of reimbursement is cumbersome. That alone will drive up costs. Not only do we lose money on seeing a patient, but we have to spend more time and resources to collect on the insurance claim.”

“The legislation still doesn’t address the problems of the system such as the administrative burden and cost containment,” remarks Dr. Carson. “Our motive should not be saving money. And it should deal with the fact that doctors still practice defensive medicine. That has not been addressed at all.” The cost of defensive medicine — the ordering of tests primarily in fear of malpractice liability — totaled about \$45 billion in

2008, according to a study by researchers from Harvard University and the University of Melbourne.

Rachana Tyagi, MD, assistant professor of surgery, wonders what impact the legislation will have on the choice of medicine as a career. On average, physicians leave medical school in debt. “How do you afford a seven-year residency and survive as a physician if there are limits on what you can earn?” she asks.

Although there may be some disincentives to practice medicine, the legislation does provide for a plan to bring more physicians into family medicine and other primary care disciplines, through the use of debt forgiveness. The health care legislation will expand the National Health Service Corps, offering some physicians loan forgiveness in exchange for providing care in underserved areas. “There is currently discussion about offering enrollment in the corps, at

the time of entering medical school, that will provide paid tuition in exchange for seven years of service post-graduation,” explains Steven J. Levin, MD, associate professor of family medicine and community health and director, the Eric B. Chandler Health Center.

## Fewer Physicians in Primary Care Medicine

Among the biggest questions on everyone’s mind is where will all the physicians come from to provide care to 32 million more people? Dr. Tallia points out, “We have a collision between the demand of people who will need access to care and a dearth of providers.” In the United States, 30 percent of the doctors are currently primary care physicians and 70 percent are specialists.

What created the situation?



STEVE HOCKSTEIN

“ This will have a huge impact across all disciplines. The system of reimbursement is cumbersome. That alone will drive up costs. Not only do we lose money on seeing a patient, but we have to spend more time and resources to collect on the insurance claim. ”

— Amy Pappert, MD, assistant professor of dermatology



“ How do you afford a seven-year residency and survive as a physician if there are limits on what you can earn? ”

— Rachana Tyagi, MD,  
assistant professor of surgery

Students are following the dollars into specialized medicine “There is a huge disparity between the incomes of primary care providers and subspecialty physicians — in some cases a three-to-five-times difference,” says Dr. Tallia. This is not a lifestyle issue but an economic one, which the next stages of reform must address. “We’re going to have to develop new models to bring about payment reform,” he emphasizes. In the meantime? “This reform is going to force us to use our existing workforce in innovative ways,” says Dr. Tallia.

One expectation is that nurse-prac-

tioners and physician’s assistants will join teams responsible for specific patient populations. Called patient-centered medical homes, such system-based units will use collaborative teams working with physicians to provide care. “Along with physician extenders, we see the possibility of shared medical appointments,” says Dr. Pappert. If a group of patients has the same diagnosis — for example, diabetes — each would get individual attention and then receive explanations, follow-up care, and any other instructions in a shared environment.

## Community Health Expected to Grow

Community health is also expected to play a much larger role in meeting patient demand. “There are provisions in the new legislation to bolster the care we

can provide at the community health level,” says Dr. Levin. A total of \$11 billion has been allocated for funding the construction, expansion, and operation of health centers throughout the nation. “I think once people have access to care, they will seek it out. There are misconceptions about economic status. People are motivated when they know the care is available to them,” adds Dr. Levin.

Although understanding health risks and monitoring them will be a large part of what health care reform will offer those who have been previously uninsured, there are other life-altering issues that can be resolved. “There are people who are in constant pain, or who have dental issues, who become unemployable,” says Dr. Levin. “It’s a vicious cycle: these individuals haven’t been able to fix the health issues that keep them out of jobs because they have no insurance, and they have no insurance because they haven’t been employable.”



“Roughly 40 percent of the Hispanics in the United States speak limited English. When the physician is the key to care for such a large population, will we be prepared with language-based services?”

— Alejandro Interian, PhD, assistant professor of psychiatry

## Cultural Competency Issues

When it comes to access to care, Alejandro Interian, PhD, assistant professor of psychiatry, is concerned about the Hispanic population and its unique needs. He wonders if they will feel comfortable seeking care from providers who may not speak their language. “Roughly 40 percent of the Hispanics in the United States speak limited English. When the physician is the key to care for such a large population, will we be prepared with language-based services?” he asks. If this patient population feels disenfranchised, it will simply refuse to use the services, defeating the purpose of providing the care to begin with.

There is also a concern about appointment availability on the community health level in general. Demand will be greater, and so there will most likely be expanded hours. The \$11 billion for health centers in the reform legislation could be used to resolve some of these issues. The difficulty, from Dr. Levin’s point of view, is that to apply for the funds, you must have a plan — and the development of a plan to meet the needs will be driven by a “reform focus” that has yet to be revealed. “The information will be released just 60 days prior to the application deadline. We have to be ready for just about anything to be in the running,” he points out. “We’ll do our best by sticking to what we know is our goal at the Chandler Health Center, as it is at all community health centers: to

meet the unique needs of our patients and promote healthy lifestyles.”

## A New Expectation for Patient Proactivity

One of the more interesting reform changes is in the role patients will be expected to play. The physician-patient prototype will no longer be anything like Dr. Welby, or even Dr. House. Patients are going to be actively engaged in their

own care experience and responsible for their own health and well-being. This is a move away from an antiquated model of care in which the physician did all the “telling” and the “asking,” and the patient went along passively. A shift toward patient-centered medical homes means that physicians and patients — and their family members — are partners in the pursuit of health. The belief is that this model of care will improve not only patient satisfaction but quality as well.

The final chapters of this story are yet to be written. The doomsayers have all weighed in on the costs and inadequacies of the new legislation and what it will mean to the practice of medicine. But, in the end, this is all about ensuring that every individual has access to health care regardless of economic status. On that, most physicians agree: it’s a new day whose time had to come. **M**



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— Steven J. Levin, MD, associate professor of family medicine and community health and director, the Eric B. Chandler Health Center



BY  
LYNDA  
RUDOLPH  
PHOTOS BY  
JOHN EMERSON

# CLINICAL COMPARATIVE EFFECTIVENESS RESEARCH:

*How Will It Work, and How Will We Use It?*

“Clearly CCER makes enormous sense. The challenge is doing it so we get solid results,” says Jeffrey L. Carson, MD, Richard C. Reynolds Professor of Medicine and chief, division of general internal medicine.

As part of the American Recovery and Reinvestment Act, the federal government allocated \$1.1 billion for clinical comparative effectiveness research (CCER). The goal of CCER is to compare the effectiveness of different treatments for different illnesses. Although there is no disagreement that there must be a better way to learn what treatments, drugs, and procedures work best, questions surrounding CCER are already stirring the pot in Washington and in academic communities across the country.

“Clearly CCER makes enormous sense,” says Jeffrey L. Carson, MD, Richard C. Reynolds Professor of Medicine and chief, division of general internal medicine. “The challenge is doing it so we get solid results.” Most physicians agree that CCER is a huge step in the right direction, but the concept has its limits regarding both how it will be implemented and how large a role it will play in decision making.

“As a patient, it’s important to know what your options are so you can make the right decision,” says Grace Lu-Yao, PhD, MPH, professor of medicine and member, The Cancer Institute of New Jersey.



## A NEW INSTITUTE LEADS THE WAY

The logistics of the initiative led to the creation of the Patient-Centered Outcomes Research Institute (PCORI). PCORI is not a government agency but a nonprofit organization, the goal of which is to help patients, clinicians, purchasers, and policy makers reach informed health decisions through the collection and analysis of research related to outcomes, clinical effectiveness, and appropriateness of different treatments and services.

PCORI has a 21-member Board of Governors, including Carolyn Clancy, MD, director of the Agency for Healthcare Research and Quality (AHRQ); Francis S. Collins, MD, PhD, director of the National Institutes of Health (NIH); and 19 additional members who were appointed in September by the acting comptroller general of the United States. The institute is charged with establishing a methodology, ensuring a peer review to assess scientific integrity, providing opportunities for public comment, and making the findings publicly available.

At the national level, PCORI will collaborate with other organizations to determine what drugs, devices, interventions, and procedures should be given highest priority on the CCER list. There are also questions regarding process that are yet to be answered. For example, in what form will the information be shared — meeting the mandate for transparency — while keeping in mind the need for patient confidentiality, and what method will be used to explain the results to the public?

Recent events have reinforced the importance of how the results are communicated. For example, when a new official position about mammographies was made public more than a year ago, the information was released in such a way that it became a spark for inflammatory comments that nearly obscured the important redefined protocol contained in the findings.

## SPENDING LESS BUT ACHIEVING MORE

The objective in all of this is to improve health outcomes and help us learn how to spend more wisely. “There are obviously limited resources available for health care. If anything, this increases the pressure to reduce the cost of care,” observes Frank Sonnenberg, MD, professor of medicine and director, clinical information systems at The Robert Wood Johnson Medical Group.

Dr. Sonnenberg describes how some diagnostics are ordered without enough reasons, saying, “Sometimes testing is done in physician offices on asymptomatic people

without supporting evidence.” One of the key problems is misaligned incentives: fee-for-service reimbursement encourages more, not less, spending on testing and procedures.

The fact that profits are based on fees for service rather than on the best care and outcome might seem to be illogical, but it is a long-standing tradition in the U.S. health care system. As a result, there has been a lot of thinking about how to pay physicians differently to promote more effective treatments. Ideas on the table include value-based provider payments, increasing reimbursements for the most effective treatments and for preventive services.

CCER could be used as a guide to determine what should be included in bundled payments. Once bonuses are tied to compliance with CCER-based metrics, the evidence-based practice could become a reality.

Redefining protocols, as well as paying physicians for effective treatments rather than just more treatments, could make a substantial difference in health care costs. The Commonwealth Report — from the private Commonwealth Fund, which promotes high performance in health care — found that if information about clinical and cost effectiveness of alternative treatment options was incorporated into insurance benefit design, it could result in \$480 billion in savings over ten years, shared by all payers.

## SHARING INFORMATION TO INCREASE EFFECTIVENESS

The ultimate goal of new guidelines as a result of CCER is to increase the use of effective care and decrease the use of ineffective care. Dr. Sonnenberg explains that occasionally — as is the case with Prostate Specific Antigen (PSA) testing and subsequent surgical procedures to remove the prostate — there is controversy about whether the commonly used procedure is beneficial.

“PSA tests have become very widely used to screen for prostate cancer, despite a lack of evidence that there is any long-term benefit, and the testing and treatment may do more harm than the disease,” Dr. Sonnenberg says. “Studies have not consistently shown that screening populations with PSA has improved outcomes.”

CCER can help determine to what extent procedures such as PSA tests are effective, if at all. This will inform providers so that dollars spent on ineffective care can be eliminated, leaving more to be spent on care that is both necessary and effective.

There are obviously limited resources available for health care. “If anything, this increases the pressure to reduce the cost of care,” observes Frank Sonnenberg, MD, professor of medicine and director, clinical information systems at The Robert Wood Johnson Medical Group.



Assuming that giving the appropriate care saves money, how will the consumer look at this new movement? Will it appear that this is not as much about the best procedure or test as it is about the most affordable one? “As a patient, it’s important to know what your options are so you can make the right decision,” says Grace Lu-Yao, PhD, MPH, professor of medicine and member, The Cancer Institute of New Jersey.

“The most confusion in a patient’s life — with potentially the most serious financial implications — typically comes at the point when he or she and his or her family members must make a decision about a path to take to resolve a health problem,” Dr. Lu-Yao observes. When options are offered, CCER can make a difference

As a result of research, patients will learn not just the expected outcomes but also how the drug, device, or procedure will affect the quality of life. Even randomized clinical trials (RCT) have not provided that kind of information for patients’ decision making. Paradoxically, outcomes evidence is inadequate in 18,000 RCTs published each year. The “end user” has been neglected in evidence collection in the past. “There is no one-size-fits-all in many cases,” says Dr. Lu-Yao. “It’s important for patients to know what is right for them.”

## A GAME CHANGER FOR DRUG AND DEVICE DEVELOPMENT

Another, equally important objective of CCER is to eliminate the translational gap in procedural development in health care. Clinicians and scientists agree that 20 years is too long to wait for research to go from bench to bedside. This initiative will undoubtedly change pharmaceutical, medical technology, and biotech businesses by shortening the process for developing drugs, devices, and equipment.

With transparency, there may be more opportunities than ever before for collaborations to develop the right solutions for a given disease or other health problem. On the other hand, CCER could affect the randomness of drug development. Once it is documented that certain drugs or types of devices or equipment are valuable only in nominal situations, it may be difficult to pursue or adopt them.

Given that the methodology and processes are developed with care and in collaboration with key stakeholders, this intersection of science and health care has the potential to advance decision making, inform physicians, transform the creation of drugs and devices, and empower consumers. And that is a win-win situation for everyone involved. **M**

L E T T E R F R O M T H E  
A L U M N I A S S O C I A T I O N  
P R E S I D E N T

Dear Alumni and Friends:

**I**t is my pleasure to welcome you to the spring issue of *Robert Wood Johnson Medicine!*

I am honored to serve as the president of the Robert Wood Johnson Medical School Alumni Association. We are looking forward to another successful year with many opportunities to mentor current RWJMS students, reunite with classmates, and collaborate on a variety of initiatives. We began our year with the 23rd Annual Career Night, with Dean Amenta joining us to open the evening. Despite the weather, more than 40 of our colleagues met with more than 100 students in the Great Hall to provide insight into career choices and the daily lives of physicians from more than 20 medical specialties. As always, everyone enjoyed the evening. I would like to express my thanks to all those who volunteered their time to make this event such a success. We are always interested in expanding the scope of represented specialties and welcome new participants next year.

The Scholarship Gala to Celebrate with Alumni and Friends on Saturday evening, April 2 at The Heldrich was a great success! We enjoyed a wonderful evening with classmates, students, friends, and colleagues, while providing more than \$195,000 in financial support for RWJMS students. With increasing financial demands on our current and future students, the ability to offer scholarship support has never been more important.

As you are aware, the Alumni Association has a long history of striving to provide support for the young men and women who attend RWJMS. They represent the best and the brightest future physicians who will represent RWJMS throughout the state, the region, and beyond. Through the efforts of the Alumni Association and the generous support of our donors, the Board of Trustees was able to award \$151,200 in scholarships and loans to RWJMS students during the 2010–2011 academic year. We thank you for your contributions during this very difficult financial climate and ask for your continued dedication to this cause. Our students benefit from access to these resources, without which the dream of becoming a physician may not be possible.

Let us not forget, however, that the Alumni Association is a wonderful way to keep in contact with fellow classmates, network with other colleagues, socialize with our students, collaborate on community/institutional projects, and keep abreast of the ongoing advancements at RWJMS. We welcome new members and invite you to contact Roberta Ribner at [ribners@umdnj.edu](mailto:ribners@umdnj.edu) if you are interested in learning more about the Alumni Association. I want to thank the past presidents of the Alumni Association and members of the Board of Trustees for all the work that they have done and continue to do. It is my hope that we can continue to accomplish wonderful things together.



Sincerely,

Tamara A. LaCouture, MD '94  
*President, RWJMS Alumni Association*

P.S. Please visit our Web site at <http://rwjms.umdnj.edu/alumni> and click on *Make a Gift* to contribute to the 2011 Alumni Association Annual Fund or mail your gift in the envelope enclosed in the magazine.

# RWJMS • ALUMNI NEWS

## ALUMNI ASSOCIATION AWARDS HIPPOCRATES SCHOLARSHIP TO DANIELLE DAVIES '14

by Kate O'Neill

**D**anielle L. Davies '14, of Freehold, is the Alumni Association's ninth Hippocrates Scholar. The association awards the scholarship annually to an incoming first-year student based on academic excellence. Hippocrates Scholars receive \$20,000 toward tuition each year.

"I was surprised, excited, and grateful to get the scholarship," says Danielle. "I didn't know how I was going to meet the expenses of medical school. But thanks to the Alumni Association, I'll be able to pursue my goal: to go into third-world medicine."

Danielle — who has volunteered in El Salvador and Mexico as well as in post-Katrina New Orleans and in Appalachia — discovered an exciting new opportunity in the spring of 2008. The Founda-



tion for International Medical Relief for Children was looking for volunteers, and she jumped at the opportunity.

She chose to work in a clinic in Alajuelita, Costa Rica, that provides primary care for the children of impoverished Nicaraguan immigrant families, who have no other source of health care. During her ten days at the clinic, Danielle took medical histories, assisted in a medical education program, and shadowed physicians.

Danielle also saw the large difference that primary care could make in a small community with so much poverty. "It was just the experience I needed to finalize my decision about a career in medicine," she says.

A biology major at Villanova University, Danielle wrote her thesis on phosphate signal transduction pathways in yeast. The thesis grew from preliminary research she had done while co-authoring a study that was published in the fall of 2010 in *Genetics*.

### ALUMNI ASSOCIATION AWARDS SCHOLARSHIPS AND LOANS

**T**he Alumni Association Board of Trustees approved \$151,200 in scholarships and loans, which were awarded to RWJMS students during the 2010–2011 academic year. The scholarships include \$20,000-per-year awards to each of four Hippocrates Scholars, one in each class.

## Zeshaan Rasheed, PhD, A Clinician-Scientist Puts Pancreatic Cancer Stem Cells in the Crosshairs

**Z**eshaan A. Rasheed, PhD, MD '04, will never forget his excitement and disbelief at the news that he would receive the first Pancreatic Cancer Action Network–American Association for Cancer Research Pathway to Leadership Grant.

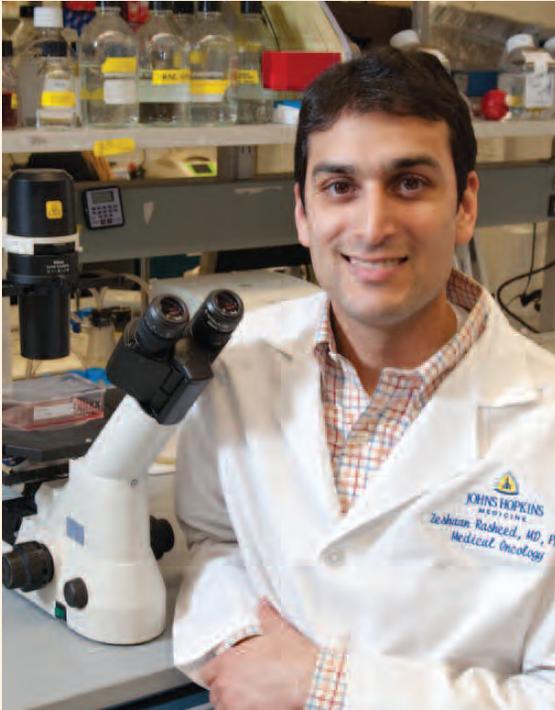
This is the first year that the network has offered the grant, which is comparable to the National Cancer Institute's K99-R00 early career investigator awards. Totaling \$600,000 over five years, the grant supports Dr. Rasheed's transition from his post-doctoral fellowship at the Johns Hopkins School of Medicine to the establishment of his own laboratory, two years from now. "It's a big step for me," he says, "and allows me to become an independent investigator in academia."

The grant is supporting the final two years of Dr. Rasheed's post-doctoral fellowship in medical oncology, mentored by William Matsui, MD, associate professor of oncology, Sidney Kimmel Cancer Center, Johns Hopkins School of Medicine. It will then support Dr. Rasheed's first three years as an independent investigator. As a laboratory scientist in a fast-breaking field, says Dr. Matsui, "Zeshaan is at the forefront. This award will

# YOUNG ALUMNI

By Kate O'Neill

MD '04



COURTESY OF SIDNEY KIMMEL COMPREHENSIVE CANCER CENTER AT JOHNS HOPKINS

prove tremendously useful as a means of kick-starting his career."

Both Dr. Rasheed and Dr. Matsui investigate specific cancer stem cells. Dr. Matsui, a liquid cancer specialist, focuses on the myeloma stem cell, while Dr. Rasheed, whose main interest is solid tumors, is exploring the role of pancreatic cancer stem cells in the growth and spread of the disease. Both hope that their research will lead to the development of therapies targeting cancer stem cells.

Cancer stem cells initiate tumors and differentiate cells, including the cells that make up the heterogeneous population of a tumor. They are nearly undetectable, but the recent discovery at Johns Hopkins of biomarkers for pancreatic stem cells has made them easier to identify. Dr. Rasheed's research centers around this finding, in particular the enzyme aldehyde dehydrogenase (ALDH), which is released by pancreatic cancer stem cells. Stem cells marked with ALDH accompany earlier disease progress, accelerated metastasis, and decreased survival rates. Even before targeting stem cells becomes a therapeutic reality, says Dr. Rasheed, they could be-

come prognosticators of disease, helping clinicians to better counsel patients in selecting the most appropriate course of treatment.

Dr. Rasheed completed his PhD in cellular and molecular pharmacology at the UMDNJ-Graduate School of Biomedical Sciences at RWJMS, while working at The Cancer Institute of New Jersey. His mentor, Eric H. Rubin, MD, PhD, vice president, Oncology Research Laboratories, Merck & Co., then served as professor of pharmacology and medicine at RWJMS. He recalls: "Zeshaan was one of the best. He has an excellent, pure science perspective and a complete ability to experiment and test hypotheses — an unusual combination. Some follow instructions, some have ideas; he does both."

In the Rubin lab, Dr. Rasheed developed cellular-imaging techniques that contributed to key discoveries, a patent, and publications relating to the TOPORS gene as a potential cancer drug target.

**"I was always interested in doing basic science that had clinical relevance. I came away**

**from the PhD program as a good basic scientist, and my subsequent training exposed me to such a wide variety of clinical problems that I am never overwhelmed. I'm a very proud RWJMS grad, and I often boast about it."**

**— Zeshaan A. Rasheed,  
PhD, MD '04**

After four years of bench research, Dr. Rasheed enjoyed the transition to clinical work in his third and fourth years of medical school. During his internal medicine residency at Mount Sinai School of Medicine, he developed a dedication to understanding and improving treatments for pancreatic cancer.

"I was always interested in doing basic science that had clinical relevance," says Dr. Rasheed. "I came away from the PhD program as a good basic scientist, and my subsequent training exposed me to such a wide variety of clinical problems that I am never overwhelmed."

He adds, "I'm a very proud RWJMS grad, and I often boast about it."

Dr. Rasheed's science is driven by his clinical experience with the aggressiveness of this disease, its resistance to treatment, and the pain it causes. "Translational research is an iterative process, with different skills and goals, but — as it should — Zeshaan's work in the clinical area informs his work at the bench," says Ross Donehower, MD, professor of oncology, director, division of medical oncology at the Johns Hopkins Oncology Center, and director, Medical Oncology Fellowship Training Program.

Dr. Donehower, who often sees Dr. Rasheed in a clinical setting, remarks on his quiet but firm leadership style and his thoughtful and sensitive manner with patients and their families. "Zeshaan has many qualities that set him apart," says Dr. Donehower. "He is a very effective and exceptionally kind educator who is recognized and appreciated by everyone from house staff to physicians, nurses, and social workers to the guy at the security desk."



## Neil S. Calman, MMS '73, MD: HEALTH CARE REFORM AS A TOOL FOR SOCIAL JUSTICE

**I**n 1971, the energetic young institution that is now UMDNJ-Robert Wood Johnson Medical School was looking for bright, inquisitive applicants, people with a sense of adventure and a commitment to work for meaningful change — people like Neil S. Calman, MMS '73, MD. In the eyes of the admissions committee, says Dr. Calman, the disciplinary “red letter” he received for participating in a college sit-in was reason *for*, not against, accepting him. “I am forever grateful for the medical school’s confidence in me,” he says.

RWJMS chose well in 1971, in selecting Dr. Calman, and it has singled him out again: this time, to receive the 2011 Distinguished Alumni Award at the Scholarship Gala to Celebrate with Alumni and Friends. Dr. Calman serves as president and chief executive officer of the Institute for Family Health and clinical professor of family medicine and community health at Albert Einstein College of Medicine of Yeshiva University.

### National Recognition for Achievement in Health Care

**B**orn to a family of activists, Dr. Calman came naturally to his passion for health care as a means of social reform. He has

been extraordinarily successful in developing and administering the non-profit Institute for Family Health, a multi-site system of community health care centers that delivers high-quality preventive and primary health care services to the medically underserved. In addition to serving as the institute’s president and CEO, Dr. Calman sees patients twice a week.

The Institute for Family Health comprises 26 separate practice locations, from New York City to the mid-Hudson Valley. The staff of 750 cares for more than 100,000 people — many of whom lack insurance — totaling 350,000 visits a year. In 2002, the institute became one of the first community health centers in the country to implement a fully integrated electronic medical

BY KATE O’NEILL ■ PORTRAITS BY JOHN EMERSON

record system, which interconnects its sites and, more recently, some of its hospital partners.

In 2009, Dr. Calman received a presidential appointment to the new Health Information Technology Policy Panel, to represent the interests of vulnerable populations. The 13-member panel makes policy recommendations on the development of the nationwide health information technology infrastructure, a critical factor in a health care reform plan that ultimately seeks high-quality, affordable care for every resident of the United States.

In honor of his achievements, Dr. Calman earlier received the Robert Wood Johnson Community Health Leadership Award, the Pew Charitable Trust Primary Care Achievement Award, and the Public Health Award of the American Academy of Family Physicians. He also won the first annual National Physician Advocacy Merit Award, which recognizes physician advocates for promoting the principles of civic engagement and medical professionalism.

Such recognition has helped build government, foundation, and individual support for Dr. Calman's work. But it was not always so.

### **An Uphill Road: Providing Primary Care as a Means of Social Reform**

As an undergraduate at the University of Chicago, Dr. Calman studied immunology, published several papers, and envisioned a career in research. While he was a student at Rutgers Medical School, he volunteered in its free clinic for the medically underserved and found his focus shifting. "I realized I wanted to be a 'doctor doctor,'" he recalls. "Once you have the research bug, you don't get rid of it, but I wasn't cut out for life in the lab."

In 1973, when the majority of Rutgers Medical School students still completed their medical degree at other schools, Dr. Calman returned to Chicago to do his clinical training at Rush Medical College. "Then, after imagining a career in basic research, I ended up in family practice, the least research-oriented medical field at the time," he says.

A pre-residency job in United Farm Workers clinics immersed him in the wide range of work he had looked forward to: delivering babies, suturing wounds, setting fractures, taking X-rays, and doing his own lab work. "I think this was the single most important thing that happened to me in my career in medicine," he recalls. "We were taking care of people with no access to the general health care system. None of them had any insurance." The work persuaded Dr. Calman that primary care physicians were the key to a successful health care system.

During his residency at Montefiore Medical Center, in the Bronx, Dr. Calman took his first step into the area that has become his life's work: along with three like-minded fellow residents, he strove to start a top-quality community clinic in the northeast Bronx. Lack of access to health care was a fundamental issue, he realized, even more important than insurance. A decade later, Dr. Calman appeared on *The McNeil-Lehrer Report* and said, "Even if every American were to get an insurance card today, most would have nowhere to take it — especially if they live in the inner city or in a remote rural area."

The initial project failed, but it taught Dr. Calman lessons about building community consensus that would serve him well in the future. Although he had organized sound funding and plans for an excellent clinical program, community leaders, feeling excluded from the process, withdrew their support at the last minute. A second attempt — to start a collaborative, community-directed clinic in the southwest Bronx — succeeded, but Dr. Calman says, "The narrow view of the clinic's leadership restricted the ability for me to develop the clinical services and the educational programs I had planned."

Undaunted, Dr. Calman persevered, and in 1983 he established the Institute for Family Health, which opened its first clinical site at Bronx-Lebanon Hospital Center. The clinic combined the service elements of a community health center with the personalized care available in private practice, and it became the home for a new residency that he developed in family medicine. Within two months, the newly established institute was chosen to take over the bankrupt, union-run Sidney Hillman Clinic in lower Manhattan. The institute repurposed the clinic to serve all the community's residents, using a family practice model that eliminated unnecessary procedures and dramatically lowered the cost of care for union members, preserving their health fund.

Family medicine practitioners were essential to the model, yet the specialty was not widely offered in New York City medical schools or elsewhere. So the institute promoted the development of a family medicine department at Albert Einstein College of Medicine. It subsequently initiated the National Family Practice Education Program — leading to the establishment of family medicine interest groups for medical students at other New York City institutions, including New York University, Cornell, and Mount Sinai, as well as Harvard, Yale, and Johns Hopkins. New York's Beth Israel Medical Center contracted with the institute to start a family medicine residency program, and the Hillman Clinic became the home of the new Department of Family Medicine there as well.

## Electronic Medical Records: Improving Health Care Quality and Patient Outcomes

Program by program and site by site, the institute has grown, providing wider services to a growing number of communities. With support from the Ryan White CARE Act, the institute expanded its training to include HIV and AIDS prevention, counseling, and treatment. It also started its own managed care plan and implemented a state-of-the-art electronic medical record (EMR) system.

Dr. Calman continues to confront and resolve broad-based health care issues, one by one, every day, initiating new health centers, developing new training programs, and creating successful solutions that improve people's lives.

While demand for community health care has continued to grow, government funding for health information technology improvements has become available only as a result of the 2010 health reform legislation. However, Dr. Calman and his colleagues decided almost a decade ago that EMR was essential for providing excellent primary care, and they invested \$2 million to install and implement their system and train staff at every site.

"We had other ways we could have spent the \$2 million," Dr. Calman told a meeting of colleagues in 2006, "but nothing we could have spent that money on could have saved as many lives or led to the number and extent of improvements in the health of our patients." System-wide electronic medical

records put patients first by making their records readily available at every site. After the visit, patients get a written summary from the doctor and can also access their own health records online.

In addition to maintaining continuity and engaging patients in their own care, the system flags potential health risks, such as women of childbearing age who are taking medications that may cause birth defects. After the institute began using the system to identify patients with diabetes and early signs of kidney problems, 32 patients were found who needed referral to specialists for medical treatment and dietary counseling — interventions that are likely to prevent or delay years of expensive and debilitating dialysis.

Electronic health records can play a part in epidemiological studies as well: distinctive symptoms of an incipient flu strain are more likely to be recognized when significant current data can be gathered, quantified, and evaluated by local health departments. The system also enabled the institute to greatly increase the percentage of patients older than 65 who had received vaccine to prevent pneumonia, from 22 percent to 91 percent in only two years.

### "Problem Solved"

Dr. Calman, whom a colleague calls a "model doctor," likes to tell a story about himself that might serve as an illustration of the doctor and leader he became. On Dr. Calman's first day as a volunteer in a free clinic run by a Rutgers Medical School pediatrician, he repeatedly failed to hear the patient's pulse while taking blood pressure for the first time. Embarrassed, but not afraid to learn how to overcome a challenge, he went to his preceptor and said, "I can't hear a thing. No pulse. No blood pressure. Nothing." He adds, "The pediatrician reached over and, without a word, flipped the head of the stethoscope to the correct side, and that was all there was to it. Problem solved."

Dr. Calman has addressed some of the toughest issues involved in delivering quality health care services to those most in need. Although he is unlikely ever to declare, "Problem solved," Dr. Calman continues to confront and resolve broad-based health care issues, one by one, every day, initiating new health centers, developing new training programs, and creating successful solutions that improve people's lives. **M**



RICHARD S.  
LIEBOWITZ, MD  
SENIOR MANAGER  
Presbyterian

## Richard S. Liebowitz, MD '80, MHS: ADVANCING CLINICAL CARE THROUGH MEDICAL EDUCATION

A sturdy little plane tree on the Piscataway campus of UMDNJ-Robert Wood Johnson Medical School offers respite and shade to all. The tree, which was first rooted on Kos, Hippocrates' home island in the Aegean, represents the patient-centered philosophy taught by the father of clinical medicine to his protégés. Legend tells us that Hippocrates met with his pupils one-

on-one while seated under just such a tree. In a sense, the plane tree provided the setting for the first medical school, and its traditions are intrinsic to the lessons carried forward by RWJMS alumni.

Strong plane-tree themes run through the career of Richard S. Liebowitz, MD '80, MHS, both in his emphasis on patient-centered medicine and the doctor-patient relationship and in his work as a leader in medical education. Dr. Liebowitz has served since 2006 as vice president for medical affairs at New York-Presbyterian Hospital (NYP) and also, as of 2010, as associate chief medical officer there. In addition, he holds an appointment as an assistant professor of clinical medicine at Weill Medical College of Cornell University.

### Melding Academia and Patient Care

As associate chief medical officer, Dr. Liebowitz provides leadership to New York-Presbyterian's 5,000 physicians, with responsibility for all credentialing, and serves as a hospital representative to the governing medical board. In his other role, as vice president for medical affairs, he also serves as the hospital's designated institutional official as defined by the Accreditation Council for Graduate Medical Education (ACGME). Dr. Liebowitz is responsible for the 1,600 residents and fellows in the 119 NYP-sponsored graduate medical education programs on the campuses of both the Columbia University Medical Center and the Weill Cornell Medical Center. He is also the director of information for

B Y K A T E O ' N E I L L

**Richard S. Liebowitz, MD '80, MHS**

alumni of NYP graduate programs. “We always have RWJMS graduates in our programs, and we have a number of RWJMS alumni on our faculty,” says Dr. Liebowitz. “I don’t get back [to RWJMS] as often as I’d like, and when I do visit, I’m amazed at how much it has changed. So it’s good to meet new alumni and stay current on what’s happening at the medical school.”

One of Dr. Liebowitz’s greatest challenges is to ensure that the residency programs function effectively in a fast-changing academic, clinical, and technological environment. Some aspects of change are easier to incorporate than others, he finds. The switch to electronic medical records and the use of podcasts to teach and learn are not difficult for today’s residents: “The residents come in knowing it — sometimes better than the attendings,” he says. A separate issue is the new work hour rules established in 2003 by the ACGME and recently amended to take effect as of July 1, 2011. “The system has adapted very well to the ACGME rules,” says Dr. Liebowitz. “We know that no one benefits if we depend on tired residents to care for patients.”

A system for determining the effectiveness of a residency program is more difficult to establish. “I went out and looked at the top schools,” says Dr. Liebowitz. “No one had the answer.” So he took charge, working with a team at NYP to attempt an algorithm that would evaluate residency programs using key indicators, including the number of trainees, the faculty-resident ratio, and the quality of education. His equation, he hopes, will provide medical schools with the necessary scaffolding for improving existing graduate programs or creating successful new ones.

### Plane Trees, Large and Small

**D**r. Liebowitz has spent most of his career in the traditional academic world. He graduated from Rutgers, The State University of New Jersey, cum laude and Phi Beta Kappa, with distinction in biochemistry. Upon graduation from RWJMS, he completed his residency in internal medicine at the University of Massachusetts, where he served for several years on the faculty. He was subsequently elected to Alpha Omega Alpha, the national medical honor society.

From Massachusetts, Dr. Liebowitz took a brief but exciting detour from academia to serve at the Mid-Columbia Medical Center in The Dalles, Oregon. In the late 20th century, a movement known as “plane-tree medicine” inspired the launch of new medical practices that emphasized a whole-patient approach to clinical care, and

Mid-Columbia became the first hospital in the country to go completely plane tree. In The Dalles, Dr. Liebowitz found a vibrant, close-knit community, with good access to the Pacific coast. Everyone seemed passionate about the outdoors, and people of all ages were involved in some sort of adventurous sport, recalls Dr. Liebowitz, adding: “They kept our practice busy!”

Dr. Liebowitz moved from The Dalles to the shade of much larger trees. At Duke University, he earned a master of health sciences degree in clinical research in a program co-sponsored by Duke and the National Institutes of Health. He had earlier joined the faculty of the University of Arizona College of Medicine, where he took his first step into medical school administration. He initially served as medical director of the Department of Medicine Out-Patient Clinics and was subsequently appointed medical director of the Patient Care Center, with responsibility for all medicine inpatient units. Dr. Liebowitz was later appointed section chief for the division of general internal medicine and director of education for a fellowship. He was honored on seven occasions for excellence in education and in the teaching of medical students and residents.

Before moving back to New York City — he is a proud son of Bensonhurst, Brooklyn — to take his current position, Dr. Liebowitz went to Durham, North Carolina, where he became the medical director for business development and strategic planning at the Duke University Health System. He also served as executive medical director of the campus of the Duke Center for Living, a wellness and fitness center.

Dr. Liebowitz served as deputy editor of the *Archives of Internal Medicine* and section editor of the *American Journal of Medicine*. He was a peer reviewer for the *Annals of Internal Medicine*, the *Journal of the American Medical Association*, and the *Journal of Respiratory Disease*. As a writer, Dr. Liebowitz has reached well beyond professional journals to inform lay readers about medical issues. He serves as an expert for EverydayHealth.com, a Web site on which physicians answer questions about symptoms, diagnoses, treatments, medications, management, and resources.

“I believe that it is prevention and not treatment that offers the best approach for each of us to live our most healthful lives,” he has told visitors to the site. “Another critical factor in maintaining optimum health is the creation of a successful collaboration between physician and patient. I strongly believe a well-educated patient is key for this collaboration.” **M**

**NINETEEN  
SEVENTY-FOUR**

**Mark Bloomberg** writes: "Mark and Judy celebrated their 40th anniversary this year. Mark is teaching QI to physicians at the Harvard School of Public Health and working to create 'Cultures of Health' for major employers as they seek to reduce workforce absenteeism and increase productivity."

**Stephen Rabin** writes that his daughter Nicole is in a PhD program in biracial studies at the University of Hawaii, his daughter Alexa is in a PsyD program in child psychology in San Diego, and his son Harris is an undergraduate at the University of California at San Diego, playing varsity soccer.

**NINETEEN  
SEVENTY-SIX**

**Lloyd McPherson** writes: "I spend time working on Indian reservations in the Midwest, doing emergency medicine. I enjoy grandsons, Julian and Carter."

**NINETEEN  
SEVENTY-SEVEN**

**Roger Shell** reports: "My cardiology practice has grown to ten board-certified physicians providing all aspects of invasive, clinical, and imaging cardiology. I have been blessed with my grandchildren, Charlie and Tyler. My daughter, Alyssa, is an MD/PhD student at the University of Texas, Galveston."

**NINETEEN  
SEVENTY-EIGHT**

**Robert Chvala** writes: "Frances and I welcomed a grandson, Jonah, on July 11, 2009."

**Villi Enders** writes: "Greetings to my classmates! Come on up to Maine for a lobster!"

**Alan Schwartzstein** received the 2010 Community Service Award from the Dean Clinic in Madison, Wis.

**NINETEEN  
SEVENTY-NINE**

**Stephen Grybowski** is medical director of Samaritan Keep Nursing Home in Clayton, N.Y.

**Richard Murray** practices general surgery at Doylestown Hospital in Pennsylvania.

**NINETEEN  
EIGHTY**

**Michael Rosenthal** reports: "I began a new position as chair of the Department of Family and Community Medicine at Christiana Care Health System in Delaware. I will remain as a professor of family medicine in Jefferson's Department of Family and Community Medicine."

**NINETEEN  
EIGHTY-ONE**

**John Spieker** is CEO of Orthopedic Associates of Southern Delaware and medical director of the Lewes Surgery Center.

**Mary Ann Venezia** joined the Department of Psychiatry at Doylestown Hospital in Pennsylvania.

**Bruce Weiner** is the medical director of the new Breast Health Center at Phoenixville Hospital in Pennsylvania.

**NINETEEN  
EIGHTY-TWO**

**Lynn Helmer** was elected to the board of directors of the American College of Physician Executives for a three-year term.

**NINETEEN  
EIGHTY-FOUR**

Pediatric neurologist **Mark Mintz** was appointed medical director of the Autism Services Group. He is also president and CEO of the Clinical Research Center of New Jersey.

**Linda Fortunato Sieglén** was appointed senior vice president of medical affairs for Princeton HealthCare System.

**NINETEEN  
EIGHTY-SIX**

**Gayle Ephraim** is a rehabilitation specialist at the Rehabilitation Institute of Chicago and works with terminal cancer patients.

**Thomas Fynan** is a medical oncologist and hematologist at Medical Oncology & Hematology in Connecticut.

**Paul Jenkins** writes: "I am currently in my 20th year of practice in anesthesiology (15th year as department chair) at St. Peter's University Hospital. I hope to see many of my classmates at our 25th reunion in 2011!"

**NINETEEN  
EIGHTY-SEVEN**

**Christopher Koenig** is vice chair, Department of Pathology, at Hackensack University Medical Center.

**Susan Simandl** is the medical director of the St. Barnabas Medical Center Echocardiography Laboratory.

**Paul Weber** is executive director in medical affairs at Celgene.

**NINETEEN  
EIGHTY-EIGHT**

**James Dalzell** is a radiation oncologist at the Nazha Cancer Center in Northfield.

**NINETEEN  
EIGHTY-NINE**

**Bruce Beckwith**, laboratory director and chair of pathology at North Shore Medical Center in Salem, Mass., is the first recipient of the College of American Pathologists Excellence in Teaching Award.

Anesthesiologist **Keiron Greaves** is board certified in pain management. He practices at Seaview Orthopaedics in South Jersey.

**Nicholas Namias** is professor of surgery and director of the University of Miami/Jackson Memorial Burn Center.

**NINETEEN  
NINETY**

**Gregg Shivers** is a hospitalist with Riverside Health System's Walter Reed Hospital.

**NINETEEN  
NINETY-ONE**

**Martin Gluck** is assistant professor of neurology at Mount Sinai Medical Center; adjunct associate professor, Department of Chemistry, City University of New York; and staff neurologist, Bronx Veterans Medical Center.

**NINETEEN  
NINETY-TWO**

**Elias Iliadis** is associate director, Cardiac Cath Laboratories; director, Vascular Intervention Program; and director, fellowship research program, all at Cooper University Hospital.

**Leonard Lee** is director of advanced aortic and valvular heart surgery at Hackensack University Medical Center.

**Lynn-Beth Schwartz Satterly** was the recipient of the Mother Xavier Award given by the College of Saint Elizabeth to honor its alumni. She is a family physician on the faculty of Upstate Medical University at Syracuse, N.Y.

**Vered Stearns** was named co-director of the Johns Hopkins Kimmel Cancer Center Breast Cancer Program. She leads a research team at the center and helped to build the multidisciplinary breast cancer program.

— Continued on Page 74

## NOTES

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### NINETEEN NINETY-THREE

**Sunita Mann** practices at the Garden State Pain and Radiology Center. She is board certified in radiology and neuroradiology.

**Ourania Rossettos** practices OB/GYN at the Ocean Health Initiatives, in Lakewood and Toms River.

**Hope Schlossberg** reports: "I am in private practice on OB/GYN and live in Bergen County. I am married with four daughters."

### NINETEEN NINETY-FIVE

**Samantha Collier** joined St. Luke's Health System in Boise, Idaho, as the vice president and system chief quality officer.

**Steven Vath**, a board-certified plastic surgeon, practices at the Center for Cosmetic Surgery in Denver.

### NINETEEN NINETY-SIX

**Michael Diem** is a board director at CalciMedica and a board observer at Trinity Biosystems and Protez Pharmaceuticals.

### NINETEEN NINETY-SEVEN

**Charles Evans III** writes: "I am celebrating the third anniversary of opening my own practice, New Beginnings Pediatrics, LLC, in Phillipsburg. Also, I am celebrating my 13th wedding anniversary."

**Ravi Goel** is chair, Young Physicians Section, at the American Medical Association.

**Peer Soderberg** is medical director of Jordan/Elbridge and Marcellus Volunteer Emergency Services.

### NINETEEN NINETY-NINE

**Jeffrey Evans** married Aarti Kakkar, MD. He is an emergency medicine physician at Mount Auburn Hospital in Cambridge, Mass., and a clinical instructor of medicine at Harvard Medical School.

**Jongming Li** is on the medical staff of North Star Lodge Cancer Center in Yakima, Wash. He received his training in hematology and medical oncology at the National Institutes of Health.

### TWO THOUSAND

**Aaron Auerbach** is medical director of Hematacor, a hematopathology and molecular laboratory in Silver Spring, Md.

**Allison Gurey Wasserstein** practices in the Pediatrics Department at Summit Medical Group in Summit.

**Gabriel Wong** was elected co-president of the New Jersey Academy of Otolaryngology-Head and Neck Surgery. He practices at ENT Specialty Center in Gibbsboro.

### TWO THOUSAND ONE

**Kathleen Greaney** married Michael Schmidt in March 2010. She is a board-certified pediatrician and partner at Maple Avenue Pediatrics in Fair Lawn.

**Thomas McPartland** writes: "My wife and I welcomed little Gavin Thomas McPartland on July 21. The little guy is growing fast."

**Felix Olobatuyi** is board certified in anatomical and clinical pathology. He is a staff pathologist at Scott & White Memorial Hospital in Temple, Texas.

**Khashayar Vaziri** is an assistant professor of surgery at George Washington Medical Faculty Associates in Washington, D.C.

He specializes in advanced laparoscopic and gastrointestinal surgery.

### TWO THOUSAND TWO

Radiologist **Robert Perez** practices at Radiology Associates of Hartford, in Connecticut.

### TWO THOUSAND THREE

**Melissa Hayward Warta** writes: "I was married on September 6, 2009. I am completing a fellowship in surgical critical care at the University of Michigan in Ann Arbor. I plan to apply for pediatric surgery this application cycle."

**Anand Kapur**, a family physician at Eastern Virginia Medical School, was honored by the American Academy of Family Physicians Foundation for his commitment to education in the field of family medicine. He received a 2010 Pfizer Teacher Development Award, a \$2,000 scholarship to further develop his teaching skills.

**Jeremy Kukafka** writes: "I am a cardiac anesthesiologist at the Hospital of the University of Pennsylvania. My wife, **Sarah Rosen '03**, and I recently had our second child. Sarah is an OB/GYN in private practice in Voorhees."

**Jason Lichtenberger** recently joined Bellingham Ear, Nose & Throat in Bellingham, Wash.

**Jennifer Reeder** joined the Department of Hematology/Oncology at Summit Medical Group in Summit.

**Shona Velamakanni** joined Anchor Health Centers in Florida as a board-certified noninvasive cardiologist.

**Dianna Taylor Deignan** is a board-certified family practice physician in Stone Harbor

### TWO THOUSAND FOUR

**Douglas Berkman** writes: "I completed a fellowship in minimally invasive urologic oncology at NYU. I joined Delaware Valley Urology and will be working out of its Mt. Laurel office and operating at Virtua Memorial in Mt. Holly. My practice will be largely limited to oncology, and I will be performing robotic surgeries. My wife, Rachele, and daughter, Talia, and I moved to Pennington."

**Steven Falowski** reports: "I completed my residency in neurosurgery at Thomas Jefferson University Hospital. I am doing a fellowship in functional neurosurgery (a subspecialty that deals with electrode implantations, deep-brain stimulators, Parkinson's disease, and mental-illness disorders) at Rush University in Chicago."

**Lee Kubersky** writes: "I joined the Meadowbrook Neurology Group after completing a movement-disorder fellowship at the University of Pennsylvania. My wife, Robin, and I and our two-year-old daughter, Serafina, live outside Philadelphia."

**Amy Modi** married Ketan Kulkarni, MD, in April 2010. She completed a fellowship at Thomas Jefferson University Hospital and joined Diagnostic Imaging, a radiology group practice in Trevoise, Pa.

### TWO THOUSAND FIVE

**Prisca Diala** joined Eye Physicians of St. Mary's, a new ophthalmology practice in Charlotte Hall, Md.

**Christopher Gentle** writes: "In December 2009, I became board certified in emergency medicine."

**Leonardo Salese** reports: "I have completed my residency in internal medicine at Thomas Jefferson University Hospital and am in my second

year of a gastroenterology fellowship at Cooper University Hospital."

**Lauren Stern** writes: "I had a great year as a second-year renal fellow/internal medicine chief resident at Mount Sinai, and I am one of two fellows who have been selected to be on the American Society of Nephrology's Training Program Director's Executive Committee. . . . I hope to pursue a career in academic medical education, and this will definitely help me along. I am always proud to tell patients/co-workers where I went to medical school, because I received such a wonderful education!"

## TWO THOUSAND SIX

Otolaryngologist **Michael Zozzaro** has joined ENT and Allergy Associates in the Bronx, N.Y.

## TWO THOUSAND SEVEN

**Richard Byrne** joined the Department of Emergency Medicine at Cooper University Hospital following his residency at Cooper, where he was chief resident.

**Joshua Torres-Cruz** joined the AtlantiCare Regional

Medical Center following his residency in emergency medicine at Cooper University Hospital.

## TWO THOUSAND EIGHT

**Christopher Manfred** and his wife, Amanda, are pleased to announce the birth of their second child, Alex Riley, on February 26, 2010.

## IN MEMORIAM

**Ronald Modlinger, MD '76**

## FORMER RESIDENTS

**Paul Han** joined the Sleep Disorders Center at Pulmonary Associates of Northern New Jersey in Englewood.

**Brian Kann** is an assistant professor of clinical surgery and program director of the colon and rectal surgery residency at Penn Surgery and Penn Presbyterian Medical Center.

**Eugene Principato** writes: "I have been in the Surgical Department at Cooper Health System for 65 years."

**Thomas Vates** practices at Pediatric Urology Associates in East Brunswick.

Other opportunities for collaborative research may stem from a recent announcement by the office of the NIH director, Francis S. Collins, MD, PhD, regarding the creation of a new translational and therapeutic center, the National Center for Advancing Translational Sciences (NCATS). With the overall goal of increasing the translation of discoveries into new therapies and treatment options for various diseases and conditions, this center is expected to begin operation in October 2011.

All translational medicine programs formerly within the National Center for Research Resources, including the Clinical Translational Science Awards, will be under the aegis of this new center, along with a new partnership program between the NIH and the U.S. Food and Drug Administration to help surmount current regulatory hurdles. The Molecular Libraries Program, Therapeutics for Rare and Neglected Diseases, Rapid Access for Interventional Development, the Cures Acceleration Network, and possibly other NIH programs are also being considered for inclusion in this center. The NIH expects to dedicate between 1 and 2 percent of its entire budget to NCATS. Because clinical research constitutes 40 percent of NIH funding, however, other institutes within the NIH will probably continue to support grants for large projects and multi-investigator grants that have a translational nature. We will keep you informed as we learn more about this new center and the funding opportunities that it presents.

Meanwhile, the recent appointment of Peter M. Scholz, MD, James W. Mackenzie Professor of Surgery, as the first associate dean for clinical and translational research will certainly help to spearhead additional collaborations between the clinical and basic scientists at our institution. Dr. Scholz will work closely with Terri Goss Kinzy, PhD, professor of molecular genetics, microbiology, and immunology, interim senior associate dean for research, and senior associate dean, UMDNJ-Graduate School of Biomedical Sciences at RWJMS; Diane Ambrose, PhD, director of special projects; and me.

In a nutshell, this is an opportune time to capitalize on the complementary expertise of our colleagues in the RWJMS research community in order to develop collaborative research projects and apply for collaborative grants, including multi-P1 R01 grants, which can involve as few as two investigators. **M**

— Céline Gélinas, PhD  
Professor of Biochemistry, Associate Dean for Research,  
and resident faculty, Center for  
Advanced Biotechnology and Medicine

**WHAT'S NEW?** Please send your professional and personal news for **CLASS NOTES** to: Roberta Ribner, Editor, Robert Wood Johnson Medicine, Coordinator, Alumni Affairs, UMDNJ-Robert Wood Johnson Medical School Alumni Association • 335 George Street Suite 2300 • New Brunswick, NJ 08903 • Phone: 732-235-6310 Fax: 732-235-9570 • Email: ribnerrs@umdnj.edu • Or log on to our Web site: <http://rwjms.umdnj.edu/alumni>.

# P L A S T P A G E

## Capitalizing on Opportunities for Collaborative Research

A cornerstone of all leading academic medical institutions, strong research programs have yielded many important scientific advancements in recent years, including exciting insights into molecular causes of disease and new approaches to treatment. Increasingly, however, even most successful research programs require collaborative efforts to move science forward. In response to this scientific reality, an objective of the National Institutes of Health (NIH) road map is to advance science through more collaboration.

At UMDNJ-Robert Wood Johnson Medical School, the faculty brought in more than \$70 million in research grants in fiscal year 2010, including support for several collaborative research programs through P01, P30, U01, multi-PI R01, and other grants from the NIH. Beyond that, there are strong incentives to foster other collaborations within our research community. In addition to helping to further advance research at RWJMS, such collaborative efforts often bring greater recognition to an institution and its research community, which in turn can facilitate the ability of scientists to tap into important new funding opportunities for research dollars in these challenging economic times.

With that in mind, the Office of Research and Sponsored Programs expanded the scope of the internal competition for research grants from the Foundation of UMDNJ this year, launching a new funding opportunity for “high-impact collaborative research projects.” The proposed projects would involve two or more RWJMS investigators, building on their joint expertise but in an area different from the primary focus of each investigator’s laboratories. The office encouraged collaborations between basic scientists and clinical investigators, as well as across departments and disciplines. The likelihood that a collaborative project could develop into multi-investigator extramural grant applications was a strong consideration in the review.

Among the many outstanding applications that were received this year, the Foundation of UMDNJ funded four high-impact collaborative research grants. It is hoped that this new funding opportunity will become a fixture of the annual RWJMS competition for internal research grants from the Foundation of UMDNJ, to help bring additional collaborative programs to fruition.

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For his heart transplant, Dr. Laskow knew his  
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Dr. David Laskow is a high-energy man and a champion for living a healthy lifestyle. His friends say no one is more health conscious than he is. He is also director of the Transplant Center at Robert Wood Johnson University Hospital and UMDNJ – Robert Wood Johnson Medical School. But five years ago he went from being the doctor, to being the patient and was rushed to Robert Wood Johnson for the fight of his life – and the life of his heart.

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Dr. Laskow is grateful to the team who never left his side and the donor who saved his life. Now he is back at work saving other lives.

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