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New York Medical College

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FALL / WINTER 2011

# CHIRONIAN

New York Medical College



## INSIDE:

- Recognizing child abuse
- Pediatric research comes of age
- Visualizing neurons

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# BOOKS by Alumni Authors



**RED SUNSHINE:** *A Story of Strength and Inspiration from a Doctor Who Survived Stage 3 Breast Cancer*, by Kimberly Allison, M.D. '01 (Hatherleigh Press, 2011). In 2008, Dr. Kimberly Allison was 33, the mother of two small children, and an instructor of pathology at the University of Washington in Seattle when she was diagnosed with an advanced and virulent form of breast cancer. Looking for books about how it actually felt to go through cancer treatment, she found none. Now cancer-free, Dr. Allison wrote *Red Sunshine* as a memoir about her journey from physician to patient, her struggle to regain her health and her attempt to make the most of a frightening and unexpected ordeal.

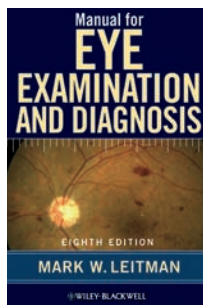
*Kimberly Allison, M.D., is Director of Breast Pathology at the University of Washington Medical Center in Seattle, where she continues to help women as they deal with breast cancer. She is actively involved in breast cancer research, clinical diagnostics, and teaching.*



### MAKING SENSE OF AUTISM SPECTRUM DISORDERS:

*Create the Brightest Future for Your Child with the Best Treatment Options*, by James Coplan, M.D. '73 (Bantam, 2010). A developmental pediatrician who has worked with children on the autism spectrum for more than 30 years, Dr. Coplan presents a detailed analysis of the disorder. In Part I, he discusses causes and symptoms. Part II focuses on treatment, including a thorough examination of behavior management techniques and medications, and in Part III the focus is on the family as the child ages. The book also addresses the many conflicting claims regarding the cause of autistic spectrum disorder, proved and unproved interventions, and possible reasons for the so-called "explosion" of cases of ASD.

*A resident of Philadelphia, James Coplan, M.D., has a private pediatric practice for children with developmental disabilities. He also holds two faculty appointments at the University of Pennsylvania.*



### MANUAL FOR EYE EXAMINATION AND DIAGNOSIS

**(8TH EDITION)**, by Mark W. Leitman, M.D. '71 (Wiley-Blackwell, 2012). Written for health professionals and students, this short, well-illustrated manual, now in its 8th edition, offers a concise introduction to eye diagnosis and treatment. The text summarizes key points needed to understand basic examination techniques, use of instruments and major ophthalmic disorders. There are chapters discussing the latest information on refractive surgery, glaucoma surgery and neuro-ophthalmology, and covers tests such as optical coherence tomography and optic nerve fiber scanning.

*Mark W. Leitman, M.D., has been practicing ophthalmology for more than 30 years. Specializing in cataract and glaucoma surgery, he is an attending physician at St. Peter's University Hospital in New Brunswick, N.J., and at Robert Wood Johnson Surgicenter in East Brunswick. He has a special interest in researching changes in circadian intraocular pressure.* ■



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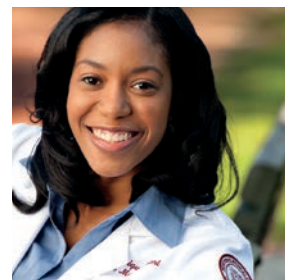
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### ON THE COVER

Gladys M. Ayala, M.D., M.P.H., senior associate dean for student affairs and dean of students, is the engine that drives all matters pertaining to students. Think you can get through med school flying under the radar? Not with Dr. Ayala taking an interest in every student that passes through these halls.

# PIONEER IN REGENERATIVE THERAPIES SIGNALS NEW ERA FOR PEDIATRICS

By Marjorie Roberts

**Y**ou lose some, you win some.


It may sound corny, but in the arena of pediatric cancer research at New York Medical College, this is exactly what happened. Somasundaram Jayabose, M.D., the original chief architect of a division that had become a regional destination for children diagnosed with leukemia and other fatal cancers, retired from a distinguished career in pediatric hematology-oncology at the College and Westchester Medical Center. In 2009, after more than 30 years on the job, Dr. J, as he was called by his patients, brought the research and treatments he had developed in America back to his native India, where he opened a pediatric oncology center. Meanwhile in Valhalla, the search for a replacement had begun in earnest. This time the hunt was on for someone with an outstanding track record in cellular therapeutics.

Enter pediatrician-scientist Mitchell S. Cairo, M.D., formerly of Columbia University, Georgetown University and points west, who joined New York Medical College about a year ago with his team of 16 laboratory and administrative personnel.

Dr. Cairo has signed on for an impressive array of responsibilities. At Westchester Medical Center he is chief of pediatric hematology, oncology and stem cell transplantation, and director of the Children and Adolescent Cancer and Blood Diseases Center. Here at the College he holds professorships in five disciplines: pediatrics, medicine, pathology, microbiology and immunology and cell biology and anatomy. And for the record, Dr. Cairo has delivered more than 800 national and international presentations and written more than 300 peer-reviewed publications.







*Mitchell S. Cairo, M.D.,  
moved his team and  
expertise to Valhalla,  
where opportunity is the  
operative word.*

"Dr. Cairo has a fabulous reputation. We knew we had to take what Dr. Jayabose accomplished to the next level," says Michael S. Gewitz, M.D., professor of pediatrics and vice chairman of the Department of Pediatrics. Dr. Gewitz is physician-in-chief at Maria Fareri Children's Hospital at Westchester Medical Center. He and Leonard J. Newman, M.D. '70, department chair, share responsibilities for running the second largest department at the College. To replace Dr. Jayabose, Drs. Gewitz and Newman needed someone who would not just follow the protocols, but could create them.

#### WHAT THE DOCTOR ORDERED

Says Dr. Gewitz, "Here is a perfect example of how much can be accomplished when all the parties are in agreement. The research facilities Dr. Cairo needs are available at the College, and the clinical services are supplied by the medical center and its children's hospital. But what helps make it all work is the extensive pediatric network we have established all over the Hudson Valley and Connecticut. By the end of 2011, the clinical practice component of the department will have more than 200 physicians at 20 locations. The headquarters is on the Valhalla campus. The entire program represents a significant investment in children's health for the entire region and speaks well for the future."

"I am impressed with the legacy that Dr. Jayabose left. It is a state-of-the-art clinical program," says Dr. Cairo. "My plan is to enhance the development of novel therapies—especially stem cell transplantation. I want to develop a fellowship program [recently approved by the Accreditation Council of Graduate Medical Education (ACGME)] that will expand the bench-to-bedside program. And besides the Department of Medicine, there are other opportunities in the departments of Microbiology and Immunology, Cell Biology and Anatomy and Pathology. We're trying to bring the basic sciences and the clinical

departments home together.” He has made a good beginning by establishing the President’s Molecular and Translational Research Seminar series last October, and the Assistant Professors’ Basic, Clinical and Translational Research Symposium, scheduled for late winter.

### NOT BUSY ENOUGH

When it comes to the inevitable question about why he would leave Columbia, where he spent the last 11 years, the Armonk resident says enthusiastically, “First of all, my commute is half of what it was. But seriously, [the position at NYMC] presented a tremendous opportunity to further develop the programs in pediatric hematology, oncology, stem cell transplantation, tumor immunology, stem cell biology and regenerative therapy, with many more expanded opportunities. All this will be value added to the research mission of the project. I’ve been working with Karen Seiter [M.D. ’85, professor of medicine and chief of the leukemia service] on this and she is a great asset.”

Dr. Cairo’s success in making multi-tasking into a fine art is credited to his division of labor into quarters: “I work 12 to 16 hour days and that includes weekends. I spend 25 percent on teaching, 25 percent on research, 25 percent on seeing patients, and 25 percent on the administrative responsibilities that go into all of my titles. If I had to give up something, the last thing would be taking care of patients.” In October he presented at the Society International Pediatric Oncology in New Zealand, and in November he was invited to the Vatican for a conference on “Adult Stem Cells: Science and Future of Man and Culture.”

“I believe I was one of the few pediatric hematologists-oncologists invited. I wasn’t aware that my work was recognized by the Vatican until I got the invitation,” he says quietly.

### STEM CELL THERAPY

“We are investigating stem cell therapy for neurologic and cardiac uses—for example, babies with the congenital heart disease hypoxia, with and without neurological injury. In 12 to 24 months we hope to have designed immune cells for treating specific cancers such as leukemia, lymphoma and neuroblastoma, dispensing them to patients in the clinical setting. There would be different products for different diseases,” he reveals. “The plans include a state-of-the-art laboratory at Westchester Medical Center that must meet federal regulations for stem cell and gene therapy. Architectural drawings are complete and construction of the 8,000 square foot space should begin soon in a medical center building. There are only a half dozen facilities like it in the country.”



### NO TIN MAN

With so many balls in the air, you might think Dr. Cairo would be partial to one of his studies, but he claims to have no favorites. Still, the cellular and tissue engineering laboratory (they call it C-TEL) has a special place in his heart. And heart he has, along with a brain that thinks outside the box. “When I was a med student I was always seeing kids with brain tumors and sickle cell disease. Then and there I decided I wanted to take care of these children. At that time, there was a 20 percent survival rate—with chemo and radiation. Now we cure 90 percent of kids with lymphoma.”

His creative mentality may be his greatest asset. He tells the story of a year-old child born with epidermolysis bullosa, “a very bad disease caused by a defect in collagen from the 7A gene. The skin separates into layers and blisters form constantly; the prognosis is terrible.” A research dermatologist with an appointment in human genetics, Angela Christiano, Ph.D., knew of Dr. Cairo’s work in stem cell transplantation but didn’t know him personally, though they worked in the same building at Columbia. She approached him, and was rewarded with his assent to helping her treat the child. “Most people of his stature would not have even met with me, but Dr. Cairo said yes to the meeting and yes to the procedure. It turned out to be the first stem cell transplantation performed for a skin disease,” she says. “He has this amazing team who handle everything. One of them, a clinical research nurse, has worked with him for 30 years. Every single one left Columbia to continue working with him.”

And the little boy with the horrible skin disease? “His brother was a perfect match. He is 3 now. His skin is healing and he is gaining weight nicely,” she says. The novel way Dr. Cairo





applies the transplantation procedure to other diseases has earned him fame, and he is credited with having performed the first infusion for sickle cell disease.

### LIVE IMAGING

One thing he couldn't bring with him from his last job is the \$400,000 imaging system, considered essential for sophisticated research, that tracks cell populations in vivo—especially in stem cell and cancer biology. Pediatrics bought him his own machine, which is available for use by other departments for a fee and the proper credentials. This camaraderie from the new guy in town has not escaped notice by faculty who are eager to give him his due.

Joseph D. Etlinger, Ph.D., professor and chair of the Department of Cell Biology and Anatomy, gave Cairo a secondary appointment in his department. Now he's first in line to study blood perfusion in animals with spinal cord injuries, along with cell biology and anatomy colleagues Richard Zeman, Ph.D., associate professor, and Abraham Brown, Ph.D., research associate professor.

In looking back on his road to success, there was little reason to suspect that Dr. Cairo would wind up on the East Coast. His pronunciation of certain words betrays his Chicago upbringing, no doubt nurtured by his undergraduate years at the University of Wisconsin. But when he opted for a warmer climate for medical school, he chose the University of California at San Francisco, and again for the year he was chief resident. He did his residency at UCLA, and following a two-year fellowship at the University of Indiana sponsored by the American Cancer Society, he returned to the University of California in 1981 for his first academic appointment, assistant professor. He stayed

**LEFT PHOTO:** If 17-year-old John Capalbo seems a little old to be examined by Dr. Cairo the pediatrician, consider the odds of a child diagnosed with cancer living long enough to outgrow his “baby doctor.”

**RIGHT PHOTO:** It takes a dedicated team to keep up with the hectic pace of Mitchell S. Cairo, M.D. Clockwise from far left: research assistant professors Yaya Chu, Ph.D., Yanling Liao, Ph.D., and Aradhana Tiwari, Ph.D.; administrative team members Daniel Mitchell and Miguel Muniz; research associate Changhong Yin; clinical research team members Karen Wolownik, R.N., M.S.N., Deidra Burke and Meghan Metzger; assistant professor of pediatrics Gyeonghun Baeg, Ph.D., lab manager Janet Ayello, M.S., and Dr. Cairo.

for 16 years, accumulating the experience and skills that earned him the titles and acclaim. When he departed California in 1997, he was Medical Director, Children's Hospital of Orange County/St. Joseph Hospital Pediatric and Adult Unrelated Bone Marrow Transplant and Collection Program.

### BACK EAST

Georgetown University brought him east as a full professor and Chief, Division of Stem Cell Transplantation, Cellular and Gene Therapy. He also accepted the role of medical director for the National Marrow Donor Program, Unrelated Transplantation Program. He left Georgetown in March of 2000 and joined Columbia University and its New York-Presbyterian Hospital. After 11 years there, he accepted the official position of Hematology/Oncology Chief and Associate Chairman for Translational Research of the Department of Pediatrics at New York Medical College, plus duties that justify all the other titles on his list.

Besides his cohort from Columbia, Dr. Cairo brought with him everything he needs to thrive in his new digs. This includes two major grants, one from the St. Baldrick's Foundation at nearly \$1 million per year, and another from the Pediatric Research Foundation, \$1 million a year for three years. The refreshing aspect to his work is that he is still actively caring for patients.

“I do take care of patients—but only at Maria Fareri Children's Hospital. I hit the ground running when I got here—ten transplants in ten weeks. I used to do ten in two years!” he says almost in disbelief. The St. Baldrick's funds are earmarked for lymphoma, the most common cancer in adolescents and young adults and third most common cancer in children, to increase long-term complete remission.

That Mitchell Cairo is happy with his new arrangements—situated in Dr. Jayabose's former office in the aging Munger Pavilion—is obvious until you get to infrastructure. “Shouldn't you be getting a new office?” he is asked. The question is repeated to Dr. Gewitz, who shrugs and mumbles something that sounds like *trial by Munger*, an address of historic repute that now includes Dr. Mitchell S. Cairo. ■





# From Any Angle, Pediatric Research Is a Priority

*A significant number of faculty researchers in the Department of Pediatrics are conducting investigations which they hope will bring about advancements in the treatment of children. Here are four whose work runs the gamut.*

By Marjorie Roberts

**R**esearch in the United States is a carefully guarded enterprise. From the initial filing of an application with the Food and Drug Administration to the final testing for efficacy, the agency is empowered to regulate “articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease in man or other animals...” The original Food and Drug Act of 1906 did not mention children, who were expected to be treated the same as adults, but at smaller dosages—a presumption that led to serious, even fatal, consequences. Finally, the 1997 Food and Drug Modernization Act offered an incentive to companies that conducted pediatric studies, marking the beginning of a new era of research protocols for the treatment of children.

And 2011 has been an outstanding year for pediatric research at New York Medical College. Following are four faculty members who have chosen different paths for their research, all the better to cover their areas of interests on subjects who are no longer treated as small adults. They are by no means the only faculty scientists whose work addresses pediatric issues, nor does the Department of Pediatrics hold exclusive rights to pediatric research. A further sampling of studies currently underway can be found in the box on page 9.

**Allen J. Dozor, M.D.**, participates in multi-center trials of new drugs and devices that give his asthma patients a leg up. A major cause of hydrocephalus in premature infants has captured the attention of **Govindaiah Vinukonda, M.Sc., Ph.D.**, who is studying hemorrhagic stroke. A dedicated young critical care specialist, **Simon Li, M.D.**, worries the methodology used in some clinical studies is flawed enough to unfairly influence the end results of the trials. And **Mahrukh Bamji, M.D.**, has been watching over the HIV and AIDS patients at affiliated Metropolitan Hospital Center since they first appeared in the mid-1990s.



#### **ALLEN J. DOZOR, M.D.**

*Professor of Pediatrics*

In Dr. Dozor's world there are two priorities. He is consumed with the diagnosis and treatment of asthma, by far the most common clinical condition in children. Although the inability to catch one's breath can be terrifying, there are effective medications and inhalers—rescue and otherwise—that act on the immune system to stop the wheezing and coughing that are hallmarks of the disease. Of equal concern is his second priority, cystic fibrosis, but cause and treatment are different for this genetic-based ailment that used to guarantee an early death sentence for its victims. At Westchester Medical Center he directs the Cystic Fibrosis Center, the Pediatric Pulmonary Function Laboratory and the Children's Environmental Health Center.

Dr. Dozor attributes the tremendous progress made in treating both diseases to the number of multi-center studies that abound and are entered by his division, one of the largest of its kind with 12 pediatric pulmonologists, 2 allergists and a sleep medicine specialist. “Right now we are participating in eight studies and several more are in the hopper,” says Dozor. “Being in these studies gives our patients access to new drugs that are being designed for specific genetic events that cause cystic fibrosis, which has more than 1,500 mutations. It's a classic case of a single gene disease.

“We have received more than \$3 million from the American Lung Association's Asthma Clinical Research Centers since its inception in 1999. There are 18 centers but only 5 are pediatric, including us. I'm very proud that the College is part of these trials, which are highly competitive to enter,” he says. He is still working on an investigator initiated study that would fit nicely with his role as president of the medical staff at Westchester Medical Center, and the mandate to expedite and expand clinical research at the College.





### GOVINDAIAH VINUKONDA, M.SC., PH.D.

#### *Assistant Professor of Pediatrics*

Govindaiah Vinukonda, M.Sc., Ph.D., is in search of answers to questions that will only leave him with more questions to ask—which in a way is the crux of biomedical research.

“This is my starting point. I’m looking for a breakthrough to find something to prevent hydrocephalus in premature infants,” he says. It is a worthy cause. The so-called fluid in the brain cavities is a medical condition in which there is an abnormal accumulation of cerebrospinal fluid (CSF) in the ventricles (cavities) of the brain. Hemorrhagic stroke—a spontaneous germinal matrix hemorrhage that evolves into intraventricular hemorrhage (IVH)—is the most common neurologic complication of prematurity. Dr. Vinukonda says about 40 percent of the infants with moderate-to-severe IVH develop hydrocephalus. Little progress has been made up to now in developing an appropriate animal model to use in the research, and the total absence of human data further restricts the investigation. But the scientist expects that to change after this study, which is funded by the American Heart Association, is complete. He mentions with pride that he is working on developing a promising translational research model of posthemorrhagic hydrocephalus, a condition found in premature infants after brain hemorrhage.

“Since there is a remarkable increase in the survival of premature infants, the consequences of IVH are a major public health concern. The lifetime cost for the management of one child with this problem is more than \$1 million, and the personal tragedy and suffering is enormous,” says Dr. Vinukonda. His proposal is designed to develop a mechanism-based therapeutic strategy in a preterm animal model, and to treat the IVH with decorin. Decorin is a component of the extracellular matrix, which neutralizes the brain cytokines (transforming growth factor) that appear to play a key role in the development of hydrocephalus.



### SIMON LI, M.D.

#### *Assistant Professor of Pediatrics*

Simon Li is a dedicated physician-researcher. From there on out, nothing is ordinary about what he chooses to study. He is concerned that the way data is collected may be jeopardizing the end results, and he continues to add licenses and certifications to his CV to ensure that his methodology is as near-perfect as he can make it. He is board certified in pediatric critical care medicine.

Dr. Li’s combined internal medicine and pediatrics residency at Baystate Medical Center/Tufts University School of Medicine was followed by a pediatric clinical care fellowship at Yale-New Haven Hospital and in pursuit of his Advanced Professional M.P.H. from Yale. He continues to work as a pediatric hospitalist at Norwalk Hospital in Connecticut.

His research bailiwick is respiratory syncytial virus (RSV), a highly contagious virus that causes respiratory infections such as bronchiolitis and pneumonia in infants under one year of age. In response to a huge influx of pediatric patients with RSV, Dr. Li is principal investigator for a prospective cohort study to characterize the definition, frequency and duration of RSV-related apnea events, along with assessing current treatment modalities and outcomes. Do these babies need intubation or can they be managed without it? He hopes to expand his investigation to a multi-center trial.

Another study is tracking the influenza vaccines’ efficacy and benefits in children at high risk in a multi-center study. Funding originates from the CDC.

“In general, pediatrics has a profound lack of evidence-based medicine,” says Dr. Li. “My research is based on good data. What I’m trying to do is apply science to the art of medicine.”





### MAHRUKH BAMJI, M.D.

*Professor of Clinical Pediatrics*

She was there from the beginning. It was the early 1990s, when 25 percent of children born to women with HIV infection were perinatally infected, when there was no definitive test for diagnosis of HIV infection, when the median age of death in children with HIV infection was 2 years and when approximately 40 percent of hospital beds in New York City were occupied by patients with HIV infection.

Over the years the trajectory of pediatric AIDS in the U.S. has changed dramatically. Now the perinatal transmission rate is less than 2 percent, children are living longer and are leading otherwise normal lives.

With an annual grant funding of approximately \$750,000 each year, Dr. Bamji has been involved with several research projects in the field of pediatric AIDS. Some of these include a CDC-funded maternal infant transmission study, a longitudinal prospective study of HIV-infected mother/infant pairs that determined the rate of perinatal transmission, the timing of transmission, the factors affecting transmission and the natural history of pediatric HIV infection.

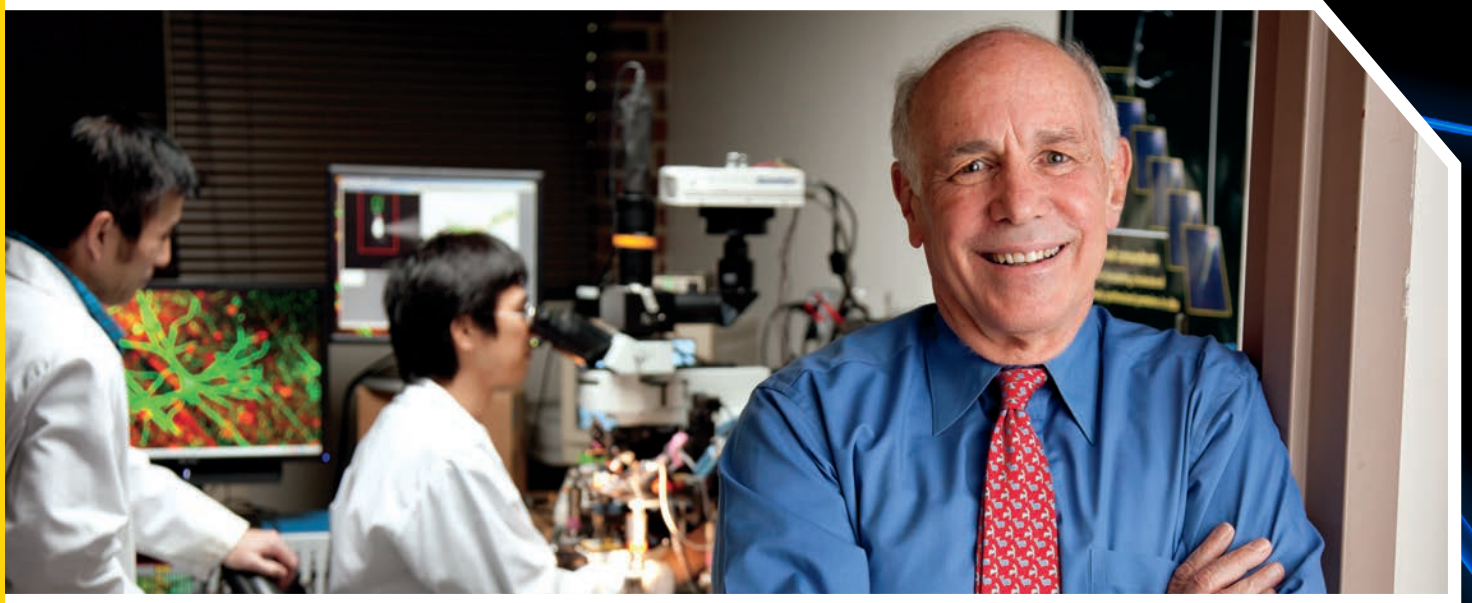
She is a participant in several NIH funded clinical trials including a landmark trial for treatment of HIV-infected pregnant women to reduce perinatal transmission. Well known in the field, Dr. Bamji has a long list of publications in peer reviewed journals.

In her role as a project director in Ryan White funding, she is able to lead a multidisciplinary team that provides comprehensive medical and psychosocial care to HIV infected and affected families.

In addition to her involvement with pediatric AIDS, she is the deputy chief of pediatrics at Metropolitan Hospital Center, actively involved with teaching residents and medical students. ■

As we went to press, there were numerous projects devoted to the study of pediatric research in progress. Though by no means an exhaustive list, the studies here give a representative sampling of clinical and basic research supported by the federal government, private industry and non-profit organizations. All have been highlighted in recent issues of *Chironian*, which are archived at <http://bit.ly/nPCzwL>.

- **Gyeong-Hun Baeg, Ph.D.**, assistant professor of pediatrics. "Identification of Compounds That Inhibit STAT Activity," Children's Cancer Fund.
- **Praveen Ballabh, M.D.**, professor of pediatrics. "White Matter Injury in Germinal Matrix Hemorrhage," National Institutes of Health, and "Cytokines and Maturation of Oligodendrocytes in a Rabbit Model of Intraventricular Hemorrhage," American Heart Association: Founders Affiliate.
- **Richard Noto, M.D.**, assistant professor of pediatrics. "The Genetics & Neuroendocrinology of Short Stature International Study," Eli Lilly & Co.
- **Mehmet Ozkaynak, M.D.**, professor of pediatrics. "A Comprehensive Safety Trial of Chimeric Antibody 14.18 with GM-CSF, I1 and Isotretinoin in High-Risk Neuroblastoma Patients Following Myeloblastic Therapy," and "Children's Cancer Group Program," National Childhood Cancer Foundation (NIH funded).
- **Julian Stewart, M.D., Ph.D.**, professor of pediatrics. "Vascular Dysfunction in Chronic Fatigue Syndrome" and "Local Vasoconstriction in Postural Tachycardia Syndrome," National Institutes of Health.
- **Oya Tugal, M.D.**, professor of clinical pediatrics. "A Multi-Center, Open-Label, Non-Controlled Trial on Safety & Efficacy of N8 in Previously Treated Pediatric Patients with Hemophilia A," Novo Nordisk Pharmaceuticals, Inc.
- **Libor Velisek, M.D., Ph.D.**, professor of cell biology and anatomy. "Mechanism of Genetic Seizure Susceptibility in Juvenile Myoclonic Epilepsy," Columbia University.



# Waves and Sparks:

Toward Understanding the Complexity of Neurons

By Cynthia A. Read

*William N. Ross, Ph.D., has developed new imaging techniques to help visualize and explain the role of calcium in how neurons communicate.*

**M**ention biomedical research, and what's the first thing that comes to mind? Many people will think first of studying disease—understanding how it invades and develops in the body, and ways to prevent, treat, or cure it. Underpinning these critical research challenges, however, is the need to understand what is happening at the molecular and cellular level, and determining how the body's natural processes can become defective, thus leading to disease. This is the goal, indeed the fundamental necessity, of those who study the basic sciences.

For one New York Medical College scientist, it all comes down to nerve cells—how they operate internally and how they communicate with other neurons. William N. Ross, Ph.D., professor of physiology, spends his days in search of clues to this fundamental cellular process. Using sophisticated, high speed optical imaging, Dr. Ross is exploring the exchange of signals within the intricate system of pyramidal neurons found in the hippocampus, the seahorse-shaped part of the brain involved in learning and memory.

Dr. Ross didn't begin his career probing the mysteries of the brain. As an undergraduate he enjoyed biology, but earned his B.A. and Ph.D. in physics from Columbia University. Later he turned to the study of the brain when talent and good fortune enabled him to obtain research and postdoctoral fellowship positions, first in physiology and then neurobiology, at Columbia, Yale University Medical School, and Harvard Medical School.

#### GRAY MATTER

"As a particle physicist, I was already comfortable with technology-based research, so it seemed natural to try to exploit this background in a new field," Dr. Ross explains. He quickly became fascinated by the complexity of neurons, and his early research focused on the relatively simple, large neurons in squid and other marine animals such as barnacles, leeches and crabs. But in 1984, after a sabbatical at Hebrew University in Jerusalem, he shifted his focus to the mammalian brain. Most of his current work is based on neurons in the hippocampus of the rat brain, although he is also beginning to work with mice—a promising path, since the many available mutant mouse models will, he hopes, enable him to further refine his understanding of neuronal messaging.

In any area of biomedical research, the available technology often controls what you can study. In the 1970s when Dr. Ross began his research, microelectrodes were the state of the art in stimulating and recording cellular impulses, but they presented a challenge. If electrodes can record from only a single place, then how does one examine the complexity of action throughout the cell—in the small, fragile dendrites that carry impulses into the nerve cell body and the axons that carry the impulses away, as well as within the cell body itself? The answer, it turns out, lay in a technique that he pioneered.



Nerve impulses are far more than simple on-off processes that transmit signals from one neuron to the next. They involve a cascade of biochemical events, and what happens in one part of the cell may not happen in another. To observe how neurons integrate and distribute information, Dr. Ross focused on exploiting the potential of optical imaging, a technique that uses a chemical indicator whose fluorescence is sensitive to substances such as calcium. In essence, it is a highly sophisticated version of a scientific process familiar even to elementary school children—the litmus test.

Changes in the concentration of calcium reveal several important things about neurons. Since calcium concentration increases when an impulse occurs, it is a good indirect indicator of an electrical impulse in a cell. Calcium also controls the release of neurotransmitters, the chemical messengers that neurons become to communicate with each other. And in ways that are not yet completely understood, calcium controls changes in neurons that underlie learning and memory. To observe this process using optical imaging, a living neuron in a slice cut from the brain is infused with the chemical indicator, and the neuron is stimulated with an electrode. The response is recorded by a sensitive high speed digital camera, which signifies the changes in calcium concentration by detecting the changes in light intensity. The result is a computer-generated film that offers a visual display of these changes—spatially throughout the cell and over a period of time.

### SEEING THE LIGHT

Dr. Ross was the first to use calcium imaging to study dendrites in individual neurons and, as a result, to observe the spatial heterogeneity, or unevenly distributed chemical signals, that an electrode in the cell body misses. He has observed “calcium waves” occurring when a cell is stimulated—pulsating flashes of light that indicate increases in calcium moving through the

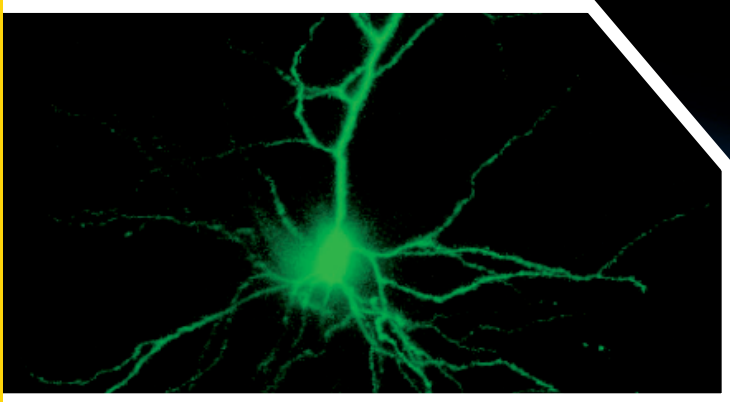
He has observed “calcium waves” occurring when a cell is stimulated—pulsating flashes of light that indicate increases in calcium moving through the dendrites and into the cell body.

dendrites and into the cell body. He is studying whether these calcium signals can control the expression of genes. In addition, he has identified very localized “calcium sparks” in neurons, flashes of activity that occur spontaneously in the brain, even when there is no electrical stimulation or activity.

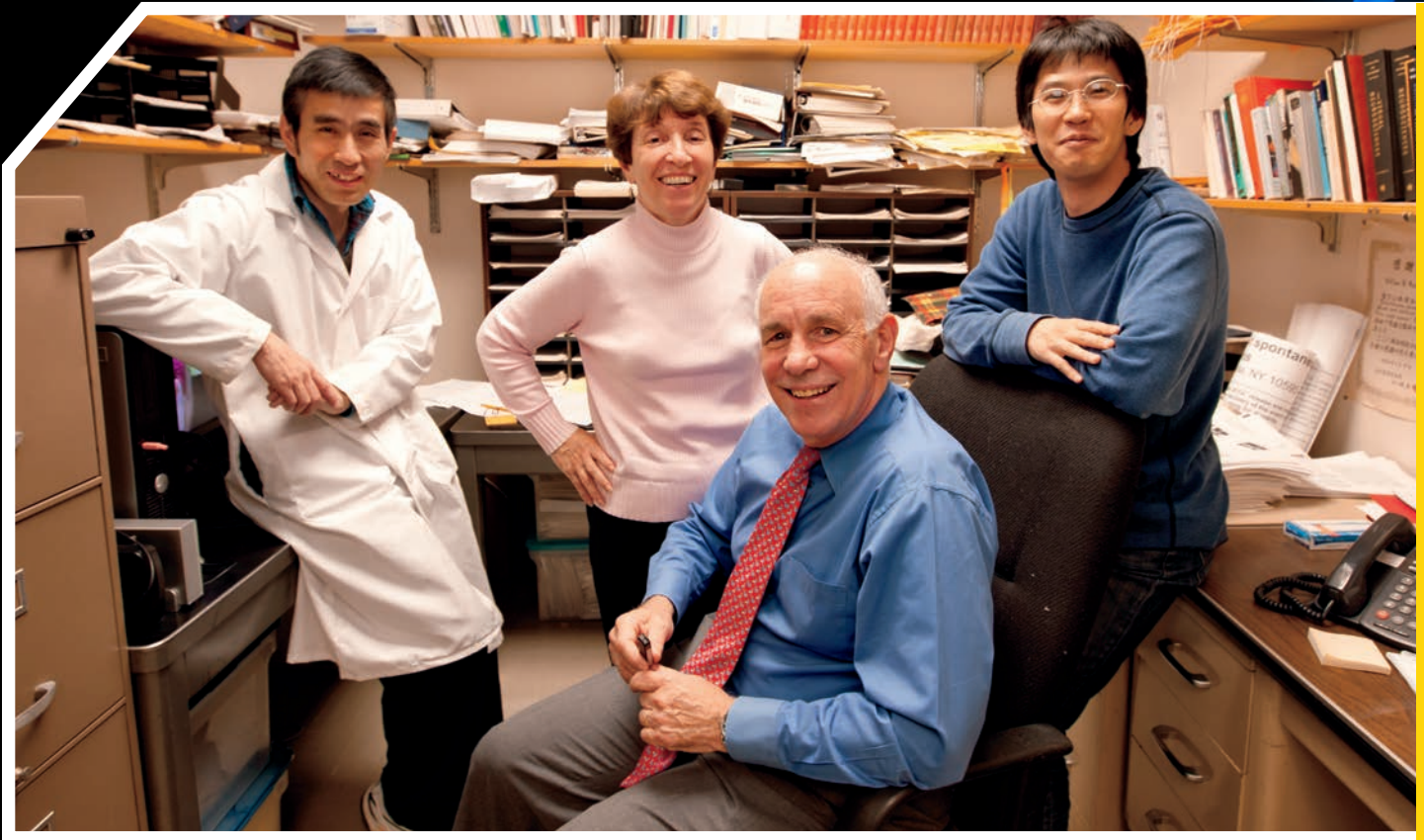
Under his current NIH grant, “Calcium Waves in Pyramidal Neurons,” Dr. Ross is looking at the precise localization and timing of calcium waves and sparks, as well as their possible functions. Some calcium enters a neuron from the outside, across the synapse from another neuron, but the calcium in sparks and waves is released from internal stores within the nerve cell. Calcium waves are found only in the main dendrites of pyramidal neurons, but sparks are observed in other dendrites as well as in axons and the cell body, or soma. What cell functions are the waves and sparks controlling? And how are they related to the excitability of neurons, whose behavior in the circuits of the hippocampus is known to be involved in learning and memory?

Helping Dr. Ross to focus on answering these questions are the members of his laboratory team: research assistant professor Nechama Lasser-Ross, Ph.D., his wife, and postdoctoral fellows Kenichi Miyazaki, Ph.D., and Changqing Xu, Ph.D. Most summers, Dr. Ross continues his research at the Marine Biological Laboratory in Woods Hole, Mass., where he notes that many fruitful collaborations and research projects have been generated.

In addition to his research, Dr. Ross lectures medical students in physiology and neuroscience, and teaches an advanced neuroscience course with other faculty in the School of Medicine. Throughout his 30-plus years at the College, Dr. Ross says he has enjoyed the stable environment, the collegiality, and the support of his department for his research.



**PYRAMIDAL NEURON:** In the image above, taken with a 2-photon microscope, a pyramidal neuron in the hippocampus glows with a fluorescent dye that is sensitive to changes in calcium concentration. A series of images taken at one-micron intervals were stacked and flattened to give the resulting image. The tiny stubs protruding from the branches are dendritic spines, sites of synaptic contacts. (Image courtesy of Dr. Ross)



Helping William Ross, Ph.D., to maintain his intense focus on his neuroscience research and teaching are the members of his laboratory team. They might even be called the “brain trust.” (From left): postdoctoral fellow Kenichi Miyazaki, Ph.D., assistant professor Nechama Lasser-Ross, Ph.D., and postdoctoral fellow Changqing Xu, Ph.D.

## NEURONS AT WORK

“Bill Ross is not only an asset to New York Medical College, he’s also a leading authority known world-wide for his studies of calcium movement within neurons,” says Department Chair Thomas H. Hintze, Ph.D. ’80. “He has published in the best journals, including the *Proceedings of the National Academy of Sciences (USA)* and *Nature*, and he was invited to write a review article on calcium movement in neurons for the *Annual Review of Physiology*. It’s not unusual to see him hosting a scientist from another institution who has come seeking his advice—not just about the science but also the techniques that Dr. Ross has perfected. He has made a significant impact on our understanding of how neurons work, and the College is fortunate to have him on the faculty.”

Francis L. Belloni, Ph.D., dean of the Graduate School of Basic Medical Sciences, concurs: “Bill has been a valuable contributor to the College’s strong international reputation in biomedical research. His work is both scientifically important and, owing to his computer-assisted visualization methods, it’s also aesthetically stimulating. He is a key member of both the physiology department and the neuroscience core group, which spans several departments.”

In focusing on neurons at the cellular level, Dr. Ross sees his work as a contribution to the larger story of understanding the brain, from the most basic—the molecule—to what some call brain science’s ultimate question, consciousness. He expects those calcium waves and sparks to hold an important clue. ■





Gladys M. Ayala, M.D., M.P.H.,  
*Has Her Finger on*  
the Pulse of  
Student Life

By Andrea Kott, M.P.H.



“She works endlessly, much of it behind the scenes, to advance student life in general at New York Medical College and to help individual students in need. She sees herself as having 800-plus students in her charge.”

**H**er business card makes it clear: Gladys M. Ayala, M.D., M.P.H., Senior Associate Dean for Student Affairs, Dean of Students and Associate Professor of Clinical Medicine, is a highly accomplished woman. What the card does not reveal, however, is just how sweeping her role at the College is—overseeing the educational life cycle of every medical student, from the moment they arrive on campus until the day they graduate.

It is a formidable job and Dr. Ayala is quick to credit the Office of Student Affairs for carrying it out. “From receiving them [students] at the admissions office to making sure they are certified and ready to graduate—anything that happens in between will usually be handled through this office,” she says.

Dr. Ayala is a compact, fast-talking woman with a penchant for speaking in the third person, even when she is the topic of conversation. “I’m not much for talking about myself,” she says with an awkward smile.

In fact, Gladys Ayala is the engine that drives the Office of Student Affairs. Under her leadership, the academic,

extracurricular, personal and professional details of every medical student’s life are guided and coordinated—from academic advising to career planning, from housing and financial aid to health and wellness, from diversity issues to study abroad, and from internships to fellowships to Match Day. “We make sure no student falls through the cracks,” she says.

In her corner office, Dr. Ayala sits at a massive desk, with an equally large work table behind her. Stacks of files and papers cover every surface. Two computer monitors stand side by side. A bag of almonds nearby suggests that breaking for lunch, at least today, probably won’t happen.

It is an especially busy time. The academic year has just begun and about half of the school’s 800 medical students have arrived on campus—but all need attention. First-years need guidance choosing classes and electives and thinking about a potential summer research fellowship. Second-years need help identifying faculty members to mentor them. Third-years need help with career planning and securing letters of recommendation for residency applications. Fourth-years need help applying to

residency programs and making sure they have all the credits they need to graduate.

“Each class year has its different components and needs,” Dr. Ayala says, patting a pile of medical student evaluations awaiting her approval. She will not simply sign these in rubber-stamp mode. She will familiarize herself with the medical school careers of each of the 200 students they represent, who are scheduled to graduate in May. The material covers classes they have taken, clubs they have joined, committees they have served, research they have published, internships they have done, scholarships they have won, careers they are pursuing and residencies to which they have applied. She has just a few weeks to read them all. And this is only part of her job, she says, using a grammatical metaphor to describe the nonstop pace at which she and her colleagues work. “We only have run-on sentences. There are no periods.”

Some might find such constant and demanding work overwhelming, but Dr. Ayala is a devout multi-tasker whose personal mission is nothing less than assuring the well-being of every student.

"The task is daunting, but she meets it head on with enthusiasm and focus," says her immediate supervisor Paul M. Wallach, M.D., vice dean of undergraduate medical education, who has worked with Dr. Ayala for the past two years. "She works endlessly, much of it behind the scenes, to advance student life in general at New York Medical College and to help individual students in need. She sees herself as having 800-plus students in her charge."

What makes Dr. Ayala especially well-suited to the particular challenges of her post is having endured the trials of her own medical education and training. "I've been there and I've lived through them," she says.

At one time, all Dr. Ayala ever wanted was to become a primary care physician. "I can't remember anything else that I wanted to do," she says. She grew up in Brooklyn during the 1960s and 1970s, the youngest child of Puerto Rican immigrant parents, neither of whom finished high school or spoke English when they arrived in the United States.

"They had to learn English at a time when language support services were not available," Dr. Ayala says. "That's being a pioneering spirit."

*With her two closest Student Affairs colleagues, associate deans Elliot N. Perla, M.D. '74 (left), and Christopher Cimino, M.D., Dr. Ayala shares a love of students and a deep understanding of the many challenges they will face in their careers.*

Dr. Ayala knows plenty about pioneering: She went to the Mount Sinai School of Medicine, when few women and even fewer women of color attended medical school. Yet, she notes, "I was going to medical school because I was qualified, not because of my ethnic or racial background."

Her qualifications started with a rigorous parochial school education. She earned her bachelor's degree at Long Island University in Brooklyn, graduating in 1982 with the Pre-medical Science Award and recognition for outstanding services in the biology department. Immediately afterward, she began medical school, followed by internships and residency in internal and emergency medicine at St. Luke's/Roosevelt Hospital Center in Manhattan.

Few role models propelled Dr. Ayala through medical school. TV characters like Dr. Kildare and Marcus Welby, M.D. offered some inspiration, as did her personal physician, a woman. But the real calling was her deep desire to be able to care for anybody who walked through her door. She saw illness as an equalizer, and the practice of medicine as a way of focusing on people's shared humanity, instead of their differences.





"Ours is a racially driven society and I saw medicine as a way of bridging that," Dr. Ayala says. "Whatever patient walks through the door is my patient, my focus. Once a patient is sick, nothing else matters."

Before launching her career as a primary care physician, Dr. Ayala took off some time to volunteer with the International Focolare Movement, and ecclesiastical Catholic society. For two years she worked and volunteered as a medical consultant, and also pursued religious studies in Italy and Switzerland. In 1992, she began working at College-affiliated Metropolitan Hospital Center in Manhattan.

Always seeking new challenges, she became an assistant program director in residency training one year after joining the staff of Metropolitan as assistant professor of medicine. Two years later, she became co-director of medicine-pediatrics residency training and deputy chief of medicine for graduate medical

education. Along the way she squeezed in a promotion to associate professor and earned a master of public health degree from Columbia University. Later she became an adjunct associate professor of clinical public health.

"I think it improved everything I did," she says of her M.P.H. "It gave me more credibility."

For Dr. Ayala, pursuing new opportunities has been a way to enhance her experience and skills, and bring more to the table. "As I was exposed to more and more things, I found a lot that I was interested in doing," she says.

With each advancement, she has become more visible and sought after as a practitioner, a clinical teacher, a medical school professor, faculty committee member and a leader. In 1997, Dr. Ayala was appointed associate dean for student and minority affairs. Until just a few years ago, she still was dedicating 20 percent of

her time to clinical work, which included supervising residents in clinic. But, she says, "There comes a time when balls start dropping."

In 2008, after accepting her current appointment, she made a complete transition from a clinical to an administrative life. "We've moved from a patient-centered care model to a student-centered care model," she says, using her signature style of the "royal we." She confesses to missing clinical practice and therefore continues to teach Foundations of Clinical Medicine I and II.

Carrying such a full load can be a tremendous motivator, and Dr. Ayala would not want it any other way.

"I'm the type who looks at opportunities to see how they improve what I'm currently doing and how they could lead to something else," she says. "One has to be open to possibilities and never close oneself off." ■



# "Service learning"

By Melissa F. Pheterson

places classroom lessons under real-world pressures

What drives students to reach out to the community at a time when they're immersed in their studies? Often it's about exploring today's landscape of medicine—and putting to the test what they *think* they know.

**A**fter a rigorous first year of medical school, Monique Hall spent the summer learning even more.

"I wanted my summer break to be a rewarding experience where I could be exposed to clinical research and be of benefit to the community," says Hall, who helped hypertensive patients manage their blood pressure at a community health center in Peekskill as part of a four-week service learning preceptorship in Family and Community Medicine.

"My family has been plagued with hypertension and strokes for generations," she says, "so it seemed only natural that the project sparked my interest."

## SHATTERING MYTHS

Initially, Hall was skeptical about the efficacy of the community health center, part of the Hudson River Health Care System (HRHC), which serves 42,000 patients a year, many of whom are migrant workers and other vulnerable populations. "I thought the center would be dismal, poorly kept, and overflowing with patients," she recalls. "I thought the staff would be tired, overworked, underpaid and irritable. I expected patients to receive minimum medical treatment and have few resources."

But she says the moment she actually set foot in the clinic, she saw how wrong these assumptions had been. The



*Monique Hall's preconceived notions about working at a community health center were overturned by her positive experiences there.*

cheerful, compassionate staff, the well-lit waiting room stocked with reading material, and the flat-screen TV showing a program on diabetes shattered the stereotype she had held.

## LESSONS COME TO LIFE

In the classroom, all medical students learn about the biopsychosocial model of treating patients, which considers science, psychology and social interactions. "I knew every patient was different, and should be treated first as an individual instead of a 'disease state,' says

Hall, "but it was still hard to determine exactly how their lives were affecting their treatment."

At the health center, Hall saw the model come to life. She observed as attending physician Jaime Khemraj, M.D., reviewed each patient's chart and medical history before entering the examining room. She also noticed how the doctor took different tactics with each patient, reading subtle cues in facial expressions or body language. "With an elderly hypertensive

female who was non-compliant on taking her medication, she was stern,” Hall recalls. “With a newly sexually-active teenage female who was poorly advised on the effects of birth control, Dr. Khemraj became a teacher. With a young woman who had irregular menstrual cycles, but was only there for a physical to accompany a job application, Dr. Khemraj was more cautious about suggesting that the patient start on birth control pills to regulate her periods,” says Hall. “In this situation, she felt that pushing the patient might have had adverse results.”

“When I finally decide which specialty I would like to pursue and in what community setting,” Hall says, “I will think back to my time at HRHC.”

## NEW HORIZONS, NEW PERSPECTIVES

Like Hall, second-year Jawad Rashid decided to take part in the Department of Family and Community Medicine’s first service learning summer preceptorship, an innovative new program aimed at improving opportunities for and raising the visibility of underrepresented minority students in the health professions, overseen by Montgomery Douglas, M.D., chairman of the Department of Family and Community Medicine.

When it came time to choose a summer preceptorship, Rashid decided on public health research. He spent four weeks at the Westchester County Department of Health in New Rochelle, harvesting and killing the mosquitoes that cause West Nile virus. Through a program established in response to the initial outbreak of West Nile in 1999, Rashid and his cohorts used nets to capture a representative mosquito population from parts of Westchester county that were deemed as high risk, sending samples to the state lab in Albany to be tested. Positive samples are reported to the state, county and the CDC for tracking the number of positives and incidence of human infections for its yearly report.



*Jawad Rashid conducted public health research during his preceptorship—now an M.P.H. is likely to be in his future.*

“Initially, it was mostly curiosity about how the Department of Health functioned,” says Rashid of his choice. But now he appreciates how the experience broadened his perspective of medicine and health.

“In class, our focus is mostly on the human body, whereas the impact of environment and society is not often explored,” he says. “When I took Microbiology this year, my understanding of pathogens was made richer by the experience of how a local government often has to get involved to reduce the incidence of infectious diseases.”

Rashid’s experience left him with both a deeper appreciation of the work of the Department of Health and a “newfound interest in public health, a focus on the bigger picture”—to the point where he’s considering a Master’s in Public Health and perhaps a position at the CDC or the FDA.

## ENRICHING THE ENVIRONMENT

Dr. Douglas coined the phrase “service learning” opportunities to describe the preceptorships whose broader objectives take them out of the realm of “pure volunteerism.”

“Because it’s hands-on, and because people remember more by doing something than by hearing about it, the retention of the material is much higher,” he says. “And I’m sure the students will tell you, it’s so much more fun than sitting in a classroom. But when they return to the classroom and lab, they bring so much back with them that it enriches the whole learning environment. Moreover, going into the real world and seeing what happens in the clinic or at the Department of Health helps students get a peek at their future and allows them to hone their career goals.”

Dr. Douglas is working with faculty members and the students themselves to develop a menu of service-learning opportunities. Ultimately, he says he will recommend that every student at New York Medical College participate in some form of service learning. The initiative will include expanding the program at La Casita de la Salud, the student clinic established in East Harlem in 2005 by a group of medical students with the support and blessing of Ralph A. O’Connell, M.D., provost and dean of the School of Medicine.



## THE MED SCHOOL PARADIGM

In addition to their academic workload, second-year medical students Breige O'Donnell and Jesse Roberts are the volunteer administrative director and clinical director, respectively, of La Casita de la Salud, a clinic in East Harlem coordinated by first- and second-year students and supervised by volunteer physicians. O'Donnell and Roberts oversee 72 volunteers and an executive board of 20. They're at the clinic nearly every Saturday, with on-campus meetings several times a week.

"When I applied to med school, a student clinic was a feature I was looking for," says O'Donnell. "I wanted to take my ideas to the next level, to have a bigger impact."

While a grad student at Tufts University in Boston, Roberts had worked at a student clinic to explore how lecture-hall principles fare in the real world. "I knew it would be a great way to see first hand how clinical medical care impacts a community with limited access to care,"

he says. "At La Casita, we try to dig into those social issues, ones that go beyond clinical care." The East Harlem patients—many struggling with poverty, illiteracy and increased risk for chronic disease—can provide a litmus test of "how our ideas might conflict with reality," he explains.

"This reverses the paradigm of medical school," he points out. "We have the privilege of learning from our patients, not just treating them. That gets to the heart of why I wanted to be involved."

O'Donnell adds, "We're so focused on learning from textbooks, but it's important to look at the community you serve and apply, or even expand, your source of knowledge."

Teams of medical students and at least one supervising attending physician take patient histories, perform physical exams, make diagnoses and create treatment plans. What makes the experience value-added for the students is the opportunity to examine the barriers patients face in

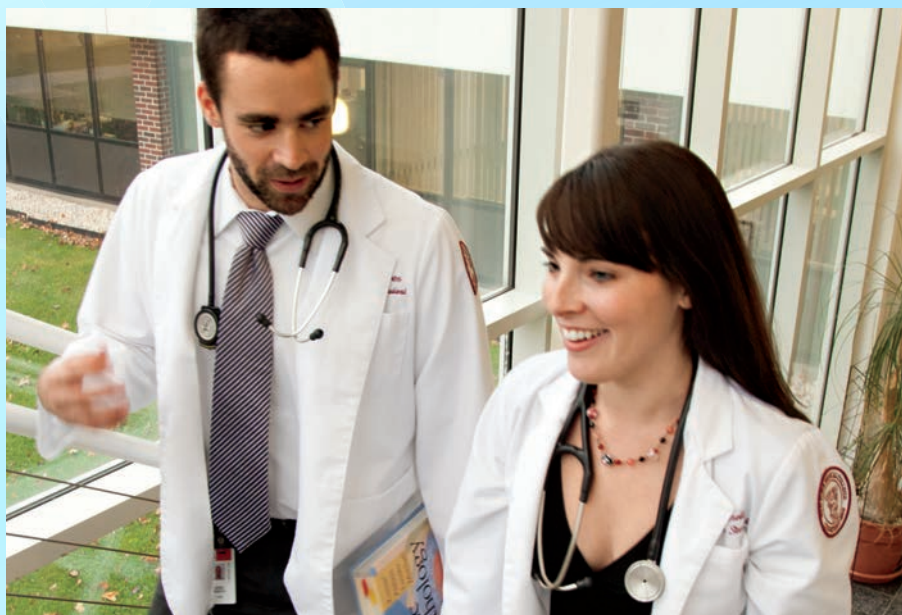
seeking and receiving care—"the steps in the process that turn patients away," says Roberts. Among those barriers are discrimination or intimidation, subtle or not, patients' long work hours and ineligibility for insurance.

To surmount these obstacles, the staff of La Casita works to shape the clinic into an "outreach mechanism," as Roberts describes it, "where we lower barriers to care, offer individualized assistance in negotiating the health care system, and fold patients into the long-term health-care relationship that's right for them."

The clinic has helped Roberts hone his own career focus. He plans to pursue a position in health-care management, coordinating services and ideas among different groups with distinctive perspectives of medicine.

But La Casita has also inspired Roberts and O'Donnell to draw together fellow students in a common objective: enhancing their studies while helping the community. To that end, the two are helping to develop a curriculum for all students who choose to pursue service learning at the clinic. They credit the faculty of Metropolitan Hospital, along with Dr. Douglas and Gladys M. Ayala, M.D., M.P.H., senior associate dean for student affairs, for their crucial support.

"We're full-time students," Roberts says. "We don't go from idea to implementation in a month. But our strength lies in harnessing the manpower of the entire first-year class." ■



Jesse Roberts (left) and Breige O'Donnell volunteer portions of their scarce free time as the student directors of La Casita de la Salud, a clinic in East Harlem where medical students confront the cultural obstacles that can hinder access to affordable health care.





# TRAINING PEDIATRICIANS TO Recognize Child Abuse

By Nelly Edmondson Gupta

*A new nationally accredited fellowship program—led by a doctor who’s also a mom—aims to protect the region’s most vulnerable kids.*

**A**s a nationally known child abuse expert and one of the nation’s first board-certified child abuse pediatricians, Jennifer Canter, M.D., M.P.H., is well acquainted with the deep complexity of family life. Dr. Canter directs the Child Abuse Pediatrics programs at New York Medical College, Maria Fareri Children’s Hospital at Westchester Medical Center, and the Westchester Institute for Human Development (WIHD). In that role, she evaluates more than 600 children each year for signs of maltreatment, including physical and sexual abuse, neglect and unexpected fatalities.

But it was becoming a parent herself that really helped Dr. Canter more fully understand the myriad complexities and challenges of parenting, and aided in her understanding that

some suspicious injuries may *not* be abuse-related. (See sidebar on page 23, “Abuse—or Not?”)

“When I began this work I thought it would be interesting and diverse and I enjoyed the fast pace,” says Dr. Canter, an assistant professor of pediatrics and the mother of two sets of twins under the age of 10. “But since becoming a mother I can understand parenting and children from an enhanced perspective. I have more insight into the stressors of parenting, and I recognize the need to have an open mind. For example, I was trained in med school that certain fractures couldn’t happen in certain ways. But sometimes they can. You really have to listen carefully to what parents are telling you.”





Teaching the complex skill set required of a pediatrician trained to recognize and treat child abuse can be stressful and disturbing, but Jennifer Canter, M.D., M.P.H., is up to the challenge. She consults often with her two fellows, Vinod Rao, M.D., left, and Wan-Keung Chen, M.D.

Good listening is just one of many skills child abuse pediatricians need. In order to become board certified, medical school graduates must complete a residency in general pediatrics, followed by a rigorous three-year fellowship. In the course of training, they learn how to examine children in a sensitive manner and how to conduct a comprehensive assessment for all types of abuse. Fellows also must become expert in the legal issues that pertain to cases, and may be called upon to testify in court.

The field of child abuse pediatrics got its start in 1962, when the *Journal of the American Medical Association* (JAMA) published a groundbreaking article, "The Battered Child Syndrome." Though it focused attention on the issue of child maltreatment, the subspecialty did not become accredited until 2008. New York Medical College currently sponsors one of only 20 child abuse pediatrics fellowship programs in the country.

"Child abuse is a regrettably common public health problem that society has not dealt with adequately, partly due to a

lack of trained medical personnel," says Richard G. McCarrick, M.D., vice dean for graduate medical education. "It's an extremely valuable program, and I am very proud that we are among the few academic medical centers to offer it."

#### A DAY IN THE LIFE

Pediatricians Wan-Keung Chen, M.D., and Vinod Rao, M.D., are currently enrolled in the fellowship program. Dr. Chen is in his second year; Dr. Rao is in his first.

Dr. Chen grew up in Maryland and knew early on that he wanted a career in medicine. But he didn't settle on child abuse pediatrics until he did a two-week rotation at an advocacy center in Queens, N.Y. "Child abuse pediatrics isn't really well known," he points out. "It's a very small field, and it doesn't get that much exposure."

Dr. Rao, born and raised near Akron, Ohio, knew he wanted to work in pediatrics even before starting medical school. But he, too, decided to focus on child abuse during his residency after realizing

"Child abuse is a regrettably common public health problem that society has not dealt with adequately, partly due to a lack of trained medical personnel."

—Richard G. McCarrick, M.D.

that the family dynamics and interpersonal aspects of abuse cases fascinated him. He also liked being part of a team that requires careful observation and skillful listening. "Some cases are very straightforward, others are more complex," he says. "Those are the ones that interest me the most."

When the two doctors arrive each morning at the Children's Advocacy Center (CAC), located in the WIHD building on the campus it shares with the College, they often don't know what the day will bring. Although the center is officially open from 9 to 5, hours often change depending on the calls that come in from the State Central Register of Child Abuse and Maltreatment. "It's very different from an ordinary medical clinic where you have patients scheduled weeks, even months, in advance," says Dr. Chen. The doctors must be flexible, sometimes working late to accommodate the needs of their patients. "Five patients may not sound like very many," he says. "But that can include five different families and five separate multi-disciplinary teams that may include investigators, attorneys and law enforcement officials."

In addition to their clinical work, which takes place at the CAC or the hospital, the fellows conduct research, and provide education for medical students and residents. Dr. Chen says this gives students who are considering careers as general pediatricians an overview of the



subject, so that when they encounter suspicious injuries later on, they will know when to ask themselves, *Is this something I should be concerned about? Does it raise enough suspicion to get someone else involved?*

For his research project, Dr. Chen is developing a questionnaire for physicians focusing on how they assess injuries in infants less than one month of age to determine whether those injuries are the result of abuse, accidents, or birth-related trauma. Dr. Rao has yet to decide between a study of depression in premature infants and a project that will screen children for head trauma.

After completing their fellowships, both men hope to work at children's advocacy organizations that are affiliated with hospitals or academic centers, perhaps even establishing additional child abuse pediatrics fellowship programs.

Dr. Chen and Dr. Rao agree that dealing with the deaths of children is the most challenging and disturbing part of their training. They, along with Dr. Canter, are involved in all unexpected child fatality cases that occur in Westchester County. This entails meeting with other team members to determine exactly what happened to cause a child's death.

### ON CLOSER INSPECTION

When a child dies unexpectedly, the Westchester County Child Fatality Review Team meets to evaluate the factors that may have contributed to the child's death to see if there are any injury-prevention lessons to be learned. The reviewers include members of the pediatric child abuse team, the medical examiner, the district attorney and Child Protective Services.

Two of the most important public education initiatives that have come out of this process include one on safe sleep and one on Shaken Baby Syndrome (SBS). "We have evaluated fatalities of children who die in what are considered to be unsafe sleep situations," says Dr. Canter. She and her colleagues explain to families that safe sleep includes putting a baby flat on its back on a firm mattress in a bed designed for sleep—not a couch or playpen—that is free of pillows and toys.

She is also one of the principal investigators in the New York State Shaken Baby Syndrome program, a statewide initiative that aims to educate parents about SBS shortly after a baby is born. The program teaches parents to heed the warning signs that they are likely to become abusive, and to take action to keep from harming their children. In a study led by her colleague Robin L. Altman, M.D., associate professor of pediatrics, Dr. Canter and fellow investigators from the Department of Pediatrics found that the initial program covering the Hudson Valley led to a 75 percent reduction in the frequency of shaking injuries. Their study was published in the November 2011

*Pediatrics*. ■

## ABUSE—OR NOT?

*According to Jennifer Canter, M.D., M.P.H., one of the most important skills child abuse pediatricians learn is how to distinguish abuse from injuries that mimic abuse. As the following incidents suggest, this requires patience, persistence and trusting one's gut instincts.*

*Dr. Canter described two examples with babies she has evaluated over the past 10 years. The first was a three-month-old infant with a bruise on its head. "There was no real reason why the baby should have that bruise. The situation was not consistent with the child's developmental level," says Dr. Canter. "But when I talked to Mom alone and asked, 'Do you feel okay going home?' she disclosed there had been domestic violence—and that father had thrown the baby against the wall."*

*In the second case, after examining a baby with a skull fracture and talking with the family and other members of her team, Dr. Canter concluded that the injury was an accident. The new mother had placed the baby on a changing table, and when she turned around to get a wipe, the child fell to the floor. "These are things that can happen to any parent," says Dr. Canter, "and there are simple things parents can do to prevent them."*

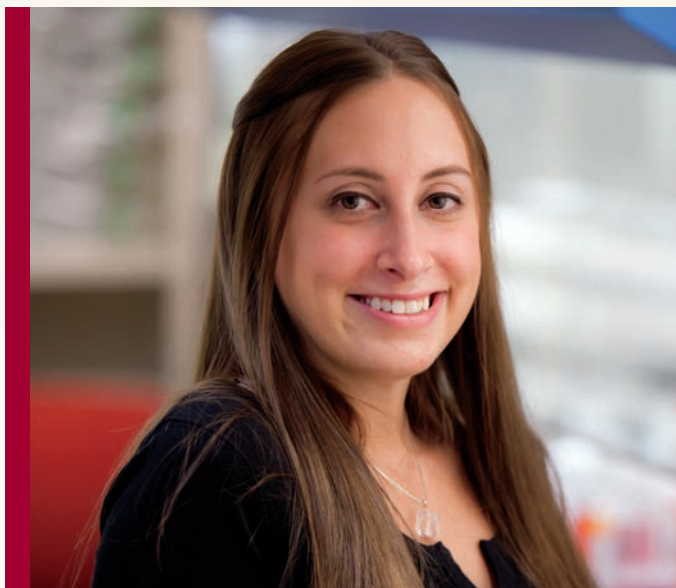
*Dr. Canter stresses that her role is not to pass judgment on families, and she trains the fellows the same way. "I make it clear that the child abuse pediatrician's role is not to decide who gets prosecuted or who the child goes home with," she says. "Rather, it is to work with the family to understand what happened, to evaluate the patient and provide accurate medical information to the team."*

*Dr. Canter says there is no easy solution to the problem of child maltreatment: "I have patients who were teenagers when I started 10 years ago, and sometimes their own children come in to be evaluated for suspected abuse. It makes me sad. It also tells me that I have to accept that we are never going to solve the problem of child abuse 100 percent. All we can do is use each day to do the best we can."*

—N. Gupta

## GRADUATE STUDENTS

# Explain It All for You



### Novel Intervention Strategies in Breast Cancer Cellular Crosstalk

By Andrea George

**B**reast cancer is one of the leading causes of death among women, and more than 200,000 new diagnoses will be made this year in the U.S. alone. Playing a critical role in cancer development is the breast tumor microenvironment, or TME. The breast cancer TME is composed of cancer cells, infiltrating endothelial cells that help form tumor blood vessels, and immunomodulatory cells like macrophages that generate an inflammatory microenvironment. Each of these cell types plays a role in tumor growth and metastasis, and cancer

research has begun to focus on disrupting this interplay, or "crosstalk," of different cells in development of novel therapeutic strategies.

Rapid tumor growth relies on formation of tumor blood vessels that provide the cancer cells with nutritional support. The tumors recruit cells from the bone marrow, which help form these vessels and feed the tumor. These cells are known as bone marrow-derived endothelial progenitor cells (BM-EPCs). Our novel finding in our lab is that circulating hormones, like estrogen, help mobilize these bone marrow cells and direct them to the tumor. Here these cells secrete factors that aid in new blood vessel formation, or neovasculogenesis. However, the cellular mechanism by which estrogen is able to participate in neovasculogenesis remains unclear.

But other cells are found in the breast TME as well. Macrophages and endothelial cells create an inflammatory tumor environment, and this inflammation helps the tumor cells undergo a morphological change known as epithelial to mesenchymal transition (EMT). EMT makes the tumor cells more aggressive and allows cancer cells to metastasize from the primary breast tissue into the circulation and other organs. Our goal is to determine how the various cells in the breast TME promote this morphological change, and to develop new strategies aimed at diminishing breast cancer metastasis.

We are conducting studies to determine the precise interaction of tumor associated macrophages (TAMs) with breast cancer cells. We hypothesize that by decreasing the interaction of TAMs with cancer cells, we will diminish inflammation and prevent the cancer cells from metastasizing. By focusing on both development of tumor blood vessels and inflammation, we hope to uncover new targets for breast cancer therapeutic strategies and gain a better understanding of cancer cell metastasis. ■

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#### ► ANDREA GEORGE

Andrea George, originally from Elmira, N.Y., is a Ph.D. candidate working in the laboratory of Raj K. Tiwari, Ph.D., professor and graduate program director in the Department of Microbiology and Immunology. Prior to entering the college's Integrated Ph.D. Program in 2007, Ms. George earned a B.A. in biology from Alfred University. She then joined the laboratory of Bud Tennant, D.V.M., at Cornell University in the Department of Comparative Medicine where she studied Hepatitis B infection using a woodchuck animal model. It was during her work there that she became interested in immunology with a specific focus on tumor immunology. Ms. George intends to pursue an academic career in cancer research, with a specific focus on the immunological response.





## 20-HETE: A Key Player in Hypertension and Vascular Inflammation

By Yan Ding

**T**he main focus of my work is on 20-hydroxyeicosatetraenoic acid (20-HETE)-mediated vascular inflammation and remodeling in hypertension. 20-HETE is a 20-carbon hydroxylated fatty acid found in the microcirculation, where it participates in the regulation of vascular tone and contributes to vasoconstriction, proliferation of vascular smooth muscle cells and growth of new blood vessels from pre-existing vessels. Studies in the lab identified 20-HETE as the mediator of androgen-induced hypertension and vascular dysfunction. Inhibition of 20-HETE's production prevents the ability of androgen to induce hypertension.

Epidemiological, clinical, and experimental studies have implicated androgen as an important determinant of gender-specific differences in arterial blood pressure. Men younger than 60 years of age have a higher systolic blood pressure than premenopausal women of the same age. In addition to loss of

estrogen, androgen levels are often elevated in postmenopausal women. In fact, postmenopausal women have a risk in developing high blood pressure that is equal to that of or greater than men.

Hypertension is a major risk factor for cardiovascular complications including myocardial infarction, atherosclerosis and stroke. Changes in vascular function and structure including endothelial dysfunction, vascular inflammation and remodeling are the consequence of persistent high blood pressure. 20-HETE has been shown to affect vascular function.

Our laboratory is currently investigating the mechanism underlying 20-HETE-mediated vascular inflammation and remodeling in androgen-induced hypertension. Recent studies have demonstrated that androgen upregulates 20-HETE synthesis in the vasculature and suggest that the CYP4A-derived 20-HETE is a key mediator of androgen-induced vascular dysfunction and hypertension.

In other studies we have shown that 20-HETE mediates androgen-induced hypertension in rats and mice and that androgen increased the rate of vascular synthesis and actions of 20-HETE. In addition, androgen-induced 20-HETE-mediated hypertension is associated with increases in vascular expression of inflammatory factors, production of superoxide and infiltration of inflammatory cells within the vascular wall. We also have demonstrated that androgen-induced hypertension is accompanied by remodeling of the renal microvasculature and that this process is dependent on the synthesis and actions of 20-HETE.

We are preparing to explore specific pro-inflammatory and pro-hypertensive factors underlying vascular remodeling in this androgen-induced hypertensive model and their relationships with 20-HETE. In perspective, this study will suggest that 20-HETE can be a potential target for vascular dysfunction and remodeling that take place in hypertension. Inhibition of 20-HETE-mediated signaling in the vasculature may be a novel therapeutic approach to treating hypertension and its cardiovascular complications. ■

### ► YAN DING

*Yan Ding, originally from China, is a Ph.D. student in the laboratory of Michal L. Schwartzman, Ph.D., professor and chair of pharmacology. After earning her bachelor's degree from Huazhong University of Science and Technology in 2009, she joined the Integrated Ph.D. Program in the Graduate School of Basic Medical Sciences to pursue her interest in researching cardiovascular diseases with Dr. Schwartzman. Ms. Ding's future research will further explore the role of the arachidonic acid metabolite, 20-HETE, in vascular remodeling and inflammation in hypertension. She hopes to add noteworthy scientific achievements to her CV by the time she finishes her Ph.D., and plans to continue this avenue of research throughout her career.*

## ALUMNI



## NEWS

## PERFECTING BONE MARROW AND STEM CELL TRANSPLANTATION TO SAVE LIVES

RUTHEE-LU BAYER, M.D. '92

By Cynthia A. Read

Physicians and researchers always aim for perfection, although it may often seem distant or even impossible. Yet Ruthee-Lu Bayer, M.D. '92, believes even that lofty goal is attainable in treating people with leukemia, lymphoma and other life-threatening diseases who need a bone marrow or stem cell transplant.

Call her a bold dreamer, but striving for hard-to-reach goals is a touchstone in Bayer's life. Her journey to her present position as chief of the Don Monti Bone Marrow and Stem Cell Transplantation Unit in the Montefiore Cancer Center at North Shore LIJ Health System—and her connection to New York Medical College—began in childhood. Because of a congenital defect, she had 22 corrective orthopedic surgeries while growing up. Her skilled and beloved surgeon, who eventually became her mentor, was Arthur Michele, M.D. '35, who was professor and chairman of the Department of Orthopaedic Surgery at Flower Fifth Avenue Hospital when it was still part of the College.

Michele encouraged Bayer's interest in medicine and urged her to major in engineering as an undergraduate, which he believed would provide a good basis for understanding the human body. Inspired by Michele, Bayer received her B.S. from Columbia University School of Engineering and Applied Science in 1988 and her M.D. from the College in 1992. At first she had wanted to follow in his footsteps by becoming an orthopedic surgeon, but realized she didn't have the physical stamina and ability that specialty requires. Her grandmother's death from breast cancer sparked her interest in oncology and in bone marrow and stem cell transplantation.

Chemotherapy and radiation are used to treat cancer because cancer cells divide more rapidly than most healthy cells. But bone marrow cells also divide frequently and can be damaged or destroyed by the treatment, leaving a patient without healthy bone marrow to make the blood cells necessary to carry oxygen, fight infection and prevent bleeding. Sometimes healthy blood-forming stem cells from bone marrow (or from the bloodstream or umbilical cord blood) are transplanted into cancer



Bayer is currently running six clinical trials focusing on improving the outcomes for transplantation in five virulent forms of cancer.

patients to restore their bodies' ability to produce new blood cells. In autologous transplants, patients receive their own cells, which are removed before chemotherapy or radiation; in allogeneic transplants, they can receive stem cells from a closely matched family member or an unrelated donor.

"Of the 35,000 adults and children diagnosed every year with leukemia and other life-threatening blood diseases for which a marrow or blood stem cell transplant could be a cure, only 2,500 find a match and receive a transplant," Bayer says. And even the outcomes for those 2,500 are currently far from perfect. Whether the transplant results in a cure depends on many factors, including the type of cancer, the patient's age and any other illnesses or health problems, how well the donor's cells match, and any complications from the procedure. Generally,



# MILESTONES

## ALUMNI ACHIEVEMENTS

though, the treatment is about 50 percent successful—far better, Bayer observes, than when she started in the field in the mid-1990s.

The program that Bayer directs at Monter Cancer Center can handle some 75 transplants a year in adult patients. It is one of only 159 programs worldwide that are accredited by the Foundation for the Accreditation of Cellular Therapy (FACT), and the only one accredited in Brooklyn, Queens and Long Island. The program is a National Marrow Donor Program Transplant and Collection Center. Bayer also heads the North Shore University Hospital stem cell laboratory.

She is very involved in caring for patients, not only performing their transplant procedures but also offering the compassionate support essential for people with such life-threatening conditions. In another New York Medical College connection, some of Bayer's patients are referred to her by her husband, Frank Cacace, M.D. '92, whom she met when they were medical students. He is a primary care internist at North Shore University Hospital and associate program director of the NS/LIJ internal medicine residency program.

Bayer is currently running six clinical trials focusing on improving the outcomes for transplantation in acute myeloid leukemia, acute lymphoblastic leukemia, multiple myeloma, non-Hodgkins lymphoma and chronic lymphocytic leukemia. "It's amazing how quickly the field has changed," she marvels. For many years, it was thought that before performing a transplant, ablative treatment—high doses of chemotherapy and radiation—were required to kill any cancer cells. Now, though, some patients receive a reduced intensity treatment that relies on chemotherapy to get the disease under control but does not necessarily wipe out the marrow. This enables older patients or those with other co-existing medical conditions to more safely receive a transplant.

Her research is also exploring ways to control graft-versus-host-disease (GVHD), which occurs when the donor's bone marrow/stem cells attack the recipient's own healthy tissues. She calls this potentially fatal problem "the bane of our existence." Researchers have labeled T cells the culprit in GVHD, but Bayer thinks that the study of B cells, which influence the T cells, might be a better place to look for answers.

In her clinical practice and research, Bayer is uplifted by the resilience of the human spirit that she sees in her patients, and by the strength and compassion of her transplant team. "In my lifetime we will continue to see major advances in the field of transplantation," she vows. "I think that eventually we'll have it perfect." ■

In this section of *Chironian*, we publish Class Notes sent by our readers. News items should be brief, timely—and legible! Submit Class Notes online at [www.nymc.edu/AlumniAndDevelopment/Secure/address.asp](http://www.nymc.edu/AlumniAndDevelopment/Secure/address.asp), or mail to Alumni Relations, New York Medical College, 40 Sunshine Cottage Road, Valhalla, NY 10595. Be sure to look for us on Facebook and Twitter. Our handle is @NYMC\_tweets.

### THE 10s

**Theresa Devins, M.S. '01**, Dr.Ph. '11, was a panelist at a Federal and Drug Administration symposium, "Dialogues in Diversifying Clinical Trials: Successful Strategies for Engaging Women and Minorities in Clinical Trials," jointly sponsored by the Office of Women's Health and Society for Women's Health Research, held in Washington, D.C., in September.

**Jordan Wicker, M.D. '10**, is completing his residency in anesthesiology at Mount Sinai Hospital in New York City.

attending physician at New York Hospital in Flushing, Queens.

**Julia M. Braza, M.D. '04**, has finished her first year as an attending physician staff member in a private pathology practice with her husband Anthony Martyniak, M.D., in the greater Boston area. They have two sons: 18-month-old Anthony, and Thomas, who was born in November. Dr. Braza subspecializes in hematopathology and cytopathology but remains busy with general surgical pathology and the clinical laboratory.

**Kamel Ghandour, M.D. '01** (Fifth Pathway), was appointed assistant chief of anesthesia at St. Barnabas Hospital in New York City.

### THE 00s

**Rebecca McAteer, M.D. '08**, completed her residency in family medicine at Lancaster General Hospital in Lancaster, Pa., and is staying on for one year as a full-time hospitalist with Internal Medicine Hospitalists Specialists. She is planning to spend time in India this winter doing medical missions and community development with a Kolkata-based organization.

After completing a year as chief resident in internal medicine at Albany Medical College, **Wallace J. Wang, M.D. '07**, began a fellowship in gastroenterology at New York Hospital Queens/Weill Cornell Medical College in July.

After residency in California, **BaoQing Li, M.D. '05**, moved back to New York with his wife, **Zhaohui Li, M.S. '01**, and their two sons. Dr. Li was appointed assistant professor of radiation oncology at Weill Cornell Medical College and is a full-time

**Arie Pelta, M.D. '01**, is the only board certified colon and rectal surgeon at Atlanta Medical Center. He is on the full-time teaching staff in the AMC general surgery program and is an associate professor of surgery at the Medical College of Georgia.

After completing four years of general surgery at Washington Hospital/Georgetown University, **Deepak Sudheendra, M.D. '01**, completed a radiology residency at the University of Pittsburgh Medical Center and a fellowship in interventional radiology at George Washington University Medical Center. Dr. Sudheendra is currently assistant professor of interventional radiology and surgery at the Hospital of the University of Pennsylvania.

### THE 90s

**Scot G. McAfee, M.D. '97**, was promoted to vice chairman, education

and director, residency training at the Department of Psychiatry at Maimonides Medical Center in Brooklyn.

**Marc Danziger, M.D. '92**, is a partner of New York Urological Associates in New York City and has a special interest in robotic prostate cancer surgery.

**Richard Kaiser, M.D. '91**, and **Elizabeth Peters Kaiser, M.D. '91**, celebrated their 20th anniversary. They were married one week after graduation from NYMC.

**Charlotte Nutt Hagan, M.D. '90**, loves the rural life in southwest Virginia. The mother of three children—two of them in college—she practices in Roanoke.

**Renee Kohanski, M.D. '90**, has published her novella *Cheat Show*, a psychological autopsy of marriage and relationships. She can also be heard on [www.podjockey.com](http://www.podjockey.com). Her husband, **Phillip Kohanski, M.D. '87**, is now chief of the Department of Radiology, Backus Hospital in Norwich, Conn.

## THE 80s

**Donna Gallagher, M.D. '89**, now divorced, works as a radiologist at Regional Radiology in Staten Island, N.Y., and is an NYMC assistant professor of radiology at Richmond University Medical Center.

**Gregory Jarrin, M.D. '89**, has enjoyed working with the Indian Health Service with the Navajo and Hopi for more than 13 years.

**Michelle A. (Grosz) Multz, M.D. '87**, works full time at Huntington Hospital. She reports that her husband is chairman of medicine at Nassau University Medical Center; daughter Rachel is a junior in high school; and son Daniel just started middle school.

**Neil Mitchell Rofsky, M.D. '85**, was inducted as a fellow in the American College of Radiology. He is professor and chairman of radiology at the University of Texas Southwestern Medical Center.

**Mark J. Cerbone, M.D. '84**, **Kevin C. Delahanty, M.D. '84**, and **Mario Tagliagambe, M.D. '84**, were almost successful in this year's

annual feats-of-strength endeavor. During the summer, while trying to swim the width of all five of the Great Lakes, one aquanaut developed a cramp. In keeping with their spirit of one-for-all, the challenge was put on 2012's calendar.

**James A. Deutsch, M.D., '84**, is a professor at SUNY Downstate where he is director of pediatric ophthalmology at Kings County Hospital and Long Island College Hospital. He writes, "I have kept my private practice at half time. My daughter, Emily, is premed at Emory University in Atlanta."

**Amy Batterman, M.D., '83**, reports her daughter Lisa will be in her alma mater Hobart & William Smith Class of 2015, joining her sister Rebecca, Class of 2013.

**Jeffrey Krupen, M.D. '82**, writes, "Finally finished with tuitions. Two lawyers and one computer animator, 19 years of tuition—done!"

**Malcom Z. Roth, M.D. '82**, was named president of the American Society of Plastic Surgeons and chief of the Division of Plastic Surgery at Albany Medical Center.

**George V. Tsimoyianis, M.D. '82**, is looking forward to the 30th reunion, especially since his daughter Christie Tsimoyianis will be graduating in the Class of 2012.

**Alan Conrad, M.D. '81**, advanced to fellowship status in the American College of Healthcare Executives.

**Ron LoPinto, M.D. '81**, is one of the first surgeons in the northeast to perform cataract surgery utilizing the first FDA-approved laser for cataract surgery. He lives in Manhasset, N.Y., with his wife Jennifer and four children.

**Victor L. Modesto, M.D. '81**, is currently working for the Orlando Veterans Administration as a general and colorectal surgeon.

## THE 70s

**Roger Madris, M.D. '79**, was elected to the Board of Governors of the NYMC Alumni Association.

**Katha Rossein, M.D. '78**, and **Ronald Razzore, M.D. '78**, are proud new grandparents to Andrew Parker Razzore, born March 27, 2011.

# FROM PATHOLOGY LAB TO EDITING DESK

ALICIA PRATER, PH.D. '07

By Cynthia A. Read

Serendipity—which might be defined as a fortuitous accident—can play an important role in scientific research. It can also land a person in an unexpected (but in hindsight perfectly natural) career and place to live. And so it is that both serendipity and skill have taken Alicia Prater, Ph.D. '07, from the pathology laboratory at New York Medical College to a small town in northern New Hampshire, where she has forged a successful career as a medical writer and editor.

After receiving her Bachelor of Science in biochemistry from Indiana University in 2002, Prater came to the College to focus on genetics and molecular biology. While working toward her Ph.D. in experimental pathology and writing her dissertation on the genetic mechanisms underlying hypertension, she was also a teaching assistant and lecturer for several graduate pathology courses. By the time she finished her degree, however, she had grown weary of the intense, narrow focus of her life.

She knew that, should she continue doing research as a post doctoral fellow, it would be another long five years before she would be, as she put it, "in the driver's seat." Intensifying the pressure was the economic downturn in 2007, which rendered both fellowships and teaching jobs increasingly hard to find. So Prater decided to take some time away from hands-on science.

Almost by chance, she came across a Craigslist posting from a company called San Francisco Edit. They were looking for a Ph.D. with a genetics background who could help non-native-English speaking scientists polish their research papers for peer-reviewed journals. Her degree and background gave her just the credentials they were looking for—a happy accident indeed—and since March 2008 she has worked for San Francisco Edit as an independent contractor. Her assignments include editing, proofreading, and bringing papers into accordance with the target journal's style guidelines, which are not always easy to find, she observed.

The company's clients come from all over the world, and Prater has worked on papers by scientists from China, South Korea, South America, the Netherlands and several Nordic countries, among others. Through networking and other outreach, she has also found her own clients. Several of these, with whom she first worked when they were Harvard post-docs, have now gone on to start biotech companies, and Prater has helped them with other writing tasks like website copy and capabilities brochures.

She always enjoyed writing, says Prater, and had dabbled in poetry and fiction. But she says her skills in academic and medical writing were well-honed during her years at New York



Medical College. Soon after graduation, when she began to explore her options beyond biomedical research, she began participating in science discussions she found online. Soon she was contributing articles. She is now the Medical Sciences Channel Manager and leader of the fact checking team at Helium.com, as well as a contributing writer, and is the AIDS/HIV topic editor at Suite 101.com. Her own website and blog, Maeflowers, started as a personal home page when she was an undergraduate, and evolved into a site to connect the general public with validated medical information. She currently tweets under the handle @Maeflowersblog and issues a daily research roundup to her followers.

From her early years in Indiana, to New York for graduate school, to a brief stint in Raleigh, N.C., Prater now calls northern New Hampshire home. She fell in love with New England when visiting family in 2008 and started looking for a place to rent in the Concord, N.H., area. There serendipity struck again: to counteract a disappointing house search, she and her partner decided to take a drive up through the mountains, where they happened on Littleton, and immediately knew they'd found their spot. Much like leaving laboratory research and becoming an editor and writer, says Prater, although she knew what she didn't want, she didn't know what she'd say yes to until she found it.

Sometimes you do find that "yes" by serendipity. But Prater wishes she had paid more attention to all that was available at the College. She offers this advice to current students: "Don't just focus on the narrow topic of your degree. Learn as much as you can from the people around you in other departments—you never know where that might lead." ■

**Douglas A. Byrnes, M.D. '77**, has been president of the medical staff at North Shore LIJ Huntington Hospital since January 2010.

**Stuart J. Kaufman, M.D. '77**, has been happily married to Debby for 34 years. Their daughter Jaclyn married Ross Karel on May 29, 2011 and is a global treasure analyst in Chicago. Their son Jonathon is a second-year ophthalmology resident at Texas Tech and will be joining Stuart's ophthalmology practice in Tampa.

**Robert C. Hock, M.D. '76**, has been practicing in the Rockville Centre, N.Y., area for more than 31 years and has been chairman of OB/GYN at South Nassau Hospital for 20 years. He and his wife Peggy are about to retire to sunny southwest Florida, where they have had a home for several years. They have a 31-year-old son who recently returned from his third deployment in the Middle East with the U.S. Navy. Stationed in San Diego, he will be getting married next year.

**Bernard Powers, M.D. '76**, had a great trip to Vietnam to participate in a teaching cultural exchange. "It's a big world and we have a lot to learn," he writes.

**Robert A. Stern, M.D., '76**, reports he and Anita now have four grandchildren—Eli, Judah, Maxwell and finally a princess, Lana Rose. He is still practicing OB/GYN in Poughkeepsie, N.Y.

**David Huang, M.D. '75**, is the proud grandfather of two—Cole Kim and Ryan Kim.

**John Stinson, M.D. '75**, left his clinical practice of orthopedic surgery after 30 years and is now a medical officer with the FDA, working on the development of new bone drugs.

**Edward Swibinski, M.D. '75**, was recently appointed clinical professor of medicine, division of endocrinology, on the faculty of Cooper Medical School of Brown University.

**Alan S. Sacerdote, M.D. '74**, co-authored a chapter entitled "Latest Therapeutic Advances in the Treatment of Congenital Adrenal Hyperplasia in Adolescents and

Adults" in the newly published book *Amenorrhea*.

**John A. Ambrose, M.D. '72**, and his wife of 41 years, Avis, lifelong New Yorkers, have discovered the wonders of California. He is chief of cardiology at UCSF, Fresno, program director of the cardiology fellowship program and professor of medicine at UCSF. They live in Fresno and have a weekend home on the coast of Monterey. He continues to travel yearly to Europe and South America to lecture on coronary artery disease.

**Robert A. Peinert, M.D. '70**, retired from practice after his wife died, but eventually got very bored. He's now "back in the grind" in Las Cruces, N.M., dividing his time between fracture surgery and trout fishing.

**Donald E. Sawyer, M.D. '70**, is currently working just three days per week and enjoys the extra time off. He likes seeing patients too much to retire completely. "My wife Anne is in an extended care facility with a rare variant of Alzheimer's. It is hard to watch her drift away," he writes.

## THE 60s

**Richard Hirsh, M.D. '69**, recently celebrated his 50th high school reunion for the Great Neck North Senior High School Class of 1961. "Two of my high school classmates are also my NYMC classmates: **Kenneth Hodor, M.D. '69** and **Michael L. Bernstein, M.D. '69**. Small world!" he writes.

**Mark L. Rosenblum, M.D. '69**, has been appointed director of a novel Health Services Innovation Center at Henry Ford West Bloomfield Hospital, where he also serves as vice president of clinical programs. He continues as the chairman of the Department of Neurosurgery and Neuroscience Institute and Hermelin Brain Tumor Center. He and his wife Pam live in a Detroit suburb along with their two children, their spouses and three grandchildren.

**Richard Fogler, M.D. '68**, completed his 14th year as chairman of surgery and chief medical officer at Brookdale Hospital Medical Center in Brooklyn, N.Y., and became chairman emeritus in July 2011. He continues



as chief medical officer with a specific interest in quality issues.

**Albert J. Bajohr Jr., M.D. '67**, retired from private practice in vascular surgery in January 2009. "Life is wonderful—six months in Florida and six months on Long Island. We travel a lot to Italy and are very much enjoying our four sons and four grandchildren," he reports.

**Morton Meltzer, M.D. '65**, gave up urgent care and is just practicing psychiatry now.

**Barry E. Nash, M.D. '65**, is retired. He and his wife Muriel have four children—Eric, Michael, Eileen and Heather—and seven grandchildren.

**Alan Wecksell, M.D. '65**, writes, "Retirement is great!"

**Howard Cooperman, M.D. '63**, is enjoying retirement in Santa Barbara with Trudy, his wife of 54 years. He spends his time painting, printmaking, traveling and spending time with his family, which includes 10 grandchildren. "Life is good," he writes.

**Robert A. Bennett, M.D. '62**, is fully retired. Painting, book club, investments and travel keep him occupied.

**Mark Levey, M.D. '62**, is retired and doing well with six grandchildren.

**Barry S. Meltzer, M.D. '62**, is looking forward to the 50th reunion in May. He is retired since 2008 and loves to travel. He is involved in town politics and enjoys live theater.

**Alan L. Rubinstein, M.D. '62**, is enjoying retired life in Florida. "I am looking forward to the 50th reunion. I will miss **Norm Katz, [M.D. '62]**, **Bill Tesaro, [M.D. '62]** and **Lester Berkow, [M.D. '62]**," he wrote.

**Robert D. Hirsch, M.D. '61**, has been fully retired for four years now and is spending more time in Sarasota, Fla., with his wonderful wife. He enjoys the cultural arts and liberal education classes he never had time for in medical school and in 41 years of a busy practice.

## THE 50s

**Howard Kline, M.D. '58**, received a Special Recognition Award for outstanding teaching contributions as a member of the clinical faculty from the University of California, San Francisco, School of Medicine. He still actively practices cardiology in San Francisco and is a competitive swimmer for the University of San Francisco Masters Swim Team. His son **Christopher Koontz, M.D. '10**, is in his second year of surgical residency in New York City.

## TAKING CARE OF THE BUSINESS OF HEALTH CARE

**JASON TENZER, M.P.H. '04**, WIELDS MEDICAL KNOWLEDGE AND BUSINESS SAVVY TO FORGE A PATH TO LEADERSHIP.

By Melissa F. Pheterson



Even as a student, Jason Tenzer, M.P.H. '04, caught a glimpse into his future career while talking with classmates and professors about their jobs in the health care industry.

"By bringing real-world experience to the classroom, they gave me knowledge that went far beyond the textbook," he recalls. "Looking back, it was one of the greatest strengths of my education."

After graduating from the Health Policy and Management program in the School of Health Sciences and Practice, Tenzer joined Mt. Sinai Medical Center as an administrator overseeing staff and operations. While there, he completed a rigorous training program in Lean Six Sigma, a business management strategy originally used by Motorola and GE. "The reasoning was, if Six Sigma works in industry, why not in medicine?" Under the program, he completed a project that entailed improving efficiency and "patient throughput" in Mt. Sinai's endoscopy suite. "We sat in the unit day after day, timing the whole process of the procedures." Tenzer's recommended improvements to maximize the practice included an electronic alert system that paged doctors when the room was ready.

### "AHEAD OF THE CURVE"

In his next job as administrator at New York University's Langone Medical Center, Tenzer joked he felt like "the Lone Ranger" while running his own department, at the Center for Arthritis and Autoimmunity. "I used what I learned to make improvements," he says. "I felt like I was ahead of the curve in quality improvement." Among the problems he solved was pinpointing, and changing, an inefficient phone system at the Center—a case study he often describes in presentations. "Six Sigma," he says, "is an organized way of digging through the layers of a problem."

As of last May, Tenzer serves as director of physician practice management at Metropolitan Jewish Health System in Brooklyn. His ascent through the ranks of health care has proved a secure and successful career move. He calls it "a leap of faith" that inspired

him to leave the familiar environment of academic medicine to take a job in a health system that focuses on providing mostly ancillary services. His daily activities include business planning, financial management and development of infrastructure and processes to support the system's physician practices. He admittedly spends much of his time dealing with administrative minutiae. "Since my job cuts horizontally across all facets of the organization, I spend lots of time organizing the troops," he says. But it fits in with his boyhood aspirations. "As a kid, I always loved to fix and reengineer anything I could get my hands on, and I have never really stopped. I think working in health care at the present time is giving me the greatest opportunity I've ever had to help fix something that every person in this country is paying attention to."

Tenzer credits the student experience in the School of Health Sciences and Practice with helping him navigate the industry. "Because we had strong relationships with our professors, with many students and teachers working in the field, I had the opportunity to get face-time, learn to network and become what I wanted to be," he says. "The education I got was excellent. But it was those intangibles, those extracurriculars, that gave me skills beyond basic book knowledge."

## GIVING BACK

Tenzer has made a commitment to mentoring students and new graduates, speaking at health care leadership summits and New York Medical College alumni seminars. "I remember being one of those new grads, trying to find my way, wanting a peer—and it shaped my wanting to give back, reach out, and help students." During his years of graduate study, Tenzer was president of the student chapter of the American College of Healthcare Executives. "Now I'm an ingrained member," he says. "I've spoken at national conferences and mentored groups locally. It's turned out to be one of the best things for my career."

The faculty advisor for the group, Deborah Viola, Ph.D., M.B.A., associate professor of public health practice, stands out in Tenzer's mind for playing a key role in the development of his career. "She recognized that I could give the extra mile," Tenzer recalls, "and pushed me to do it." In fact, when a board seat opened up on a local chapter of health care executives, Tenzer decided to throw his hat in the ring for the elected seat—and was rewarded with his first win. "Sometimes we all need that push," he says.

An avid scuba diver, Tenzer has taken vacations just to explore tropical waters. "Diving is my connection to my scientific background, to make sure it doesn't fade away," he says. Tenzer received his biochemistry degree from SUNY Purchase in 2001, and had once hoped to study marine biology. "Diving is a highly technical hobby, yet it forces me to take time off. My BlackBerry does not work underwater! And because I literally immerse myself in it, it's a great way to keep balanced." ■

# IN MEMORIAM

## ALUMNI

**Matthew R. Curley, M.D. '09**, died August 29, 2011. He was 28.

**Marc H. Horowitz, M.D. '92**, died June 7, 2011.

**Anthony G. Giatras, M.D. '91**, died July 17, 2011. He was 51.

**Richard L. Blitz, M.D. '88**, died November 23, 2011. He was 51.

**Lawrence Woode, M.D. '87**, died June 20, 2011.

**Joseph J. Altieri, M.D. '82**, died June 6, 2011.

**Steven Forst, M.D. '77**, died June 21, 2011. He was 59.

**John J. Hughes, M.D. '71**, died April 27, 2011.

**William E. Tesauro, M.D. '62**, died November 7, 2011.

**Nicholas A. Conforti, M.D. '61**, died November 1, 2011. He was 81.

**William F. Grant Jr., M.D. '61**, died April 27, 2011. He was 76.

**Edwin S. Stempler, M.D. '61**, died August 5, 2011.

**Roger L. Hinkson, M.D. '60**, died June 18, 2011.

**Timothy C. Zoba, M.D. '59**, died May 19, 2011.

**Donald J. Bradley, M.D. '56**, died October 18, 2011.

**Theodore Jacobs, M.D. '55**, died May 15, 2011. He was 81.

**Edmund W. McGrath, M.D. '55**, died October 18, 2011. He was 81.

**Arthur S. Campbell, M.D. '54**, died July 9, 2011. He was 83.

**Richard Fisch, M.D. '54**, died October 23, 2011. He was 84.

**Thomas J. Weber, M.D. '54**, died September 21, 2011.

**John E. Aiken, M.D. '53**, died December 6, 2011.

**David H. Darling, M.D. '53**, died February 6, 2011. He was 83.

**Jay P. Sackler, M.D. '53**, died September 19, 2011. He was 83.

**John T. Sheridan, M.D. '53**, died July 20, 2011.

**George R. Walker, M.D. '53**, died June 9, 2011. He was 87.

**Robert E. Gaffney, M.D. '52**, died July 3, 2011. He was 88.

**John P. McCloy, M.D. '52**, died May 14, 2011.

**Arthur G. Sullivan, M.D. '52**, died December 12, 2011.

Colonel (USA Ret.) **Henry T. Uhrig, M.D. '51**, died November 17, 2011.

**Leonard M. Rapoport, M.D. '50**, died March 20, 2011. He was 89.

**Milton Olf, M.D. '49**, died September 24, 2011. He was 90.

**Alvin M. Donnenfeld, M.D. '48**, died June 24, 2011. He was 86.

**Richard H. Lange, M.D. '48**, died September 5, 2011. He was 87.

**Robert J. Suozzo, M.D. '48**, died October 6, 2011. He was 88.

**Leonard Biel Jr., M.D. '46**, died February 25, 2011. He was 89.

**Warren W. Daub, M.D. '46**, died May 26, 2011. He was 87.

**Eugene E. Gaudet, M.D. '46**, died November 4, 2011. He was 92.

**Ciro S. Tarta, M.D. '43**, died March 25, 2011. He was 94.

**William Rubin, M.D. '37**, died November 4, 2011.

## FACULTY

**Jules R. Bemporad, M.D.**, clinical professor of psychiatry and behavioral sciences, died June 3, 2011.

**Fey Chu, M.D.**, emeritus clinical associate professor of surgery, died May 24, 2011 at the age of 95.

**Peter B. Engel, M.D.**, assistant professor of psychiatry and behavioral sciences, died August 28, 2011 at the age of 53.

**Lawrence C. Miller, M.D.**, clinical associate professor of psychiatry and behavioral sciences, died June 29, 2011 at the age of 86.



# TRIBUTES



## DAVID LEHR, M.D. 1910–2010

**David Lehr, M.D.**, professor emeritus of the Department of Pharmacology, died October 4, 2010, at the age of 100. A member of the faculty for more than 40 years, he joined the College in 1940 as an instructor in the Department of Medicine. He subsequently rose to become the first chairman of the Department of Pharmacology, which he founded, serving in that capacity for 25 years.

Born and educated in Vienna, Austria, David Lehr achieved international recognition as a physician scientist, educator and scholar, authoring more than 370 scientific publications throughout his long and productive career. One of his earliest contributions was to demonstrate that a "triple sulfonamide mixture," i.e., a one-third effective dose of each of three sulfonamide antibiotics, could essentially eliminate the risk of renal toxicity that was a common side effect of a full dose of a single sulfonamide. His work was an early demonstration of a common dogma in therapeutics today, of using combinations of drugs that add their respective efficacies, but "dilute" their toxicities.

He was a survivor of the Holocaust, and often alluded to a stroke of luck which helped him escape the Nazi takeover of his native Vienna during the Anschluss. A renowned lecturer and scholar, in 1938 Dr. Lehr was invited to spend a year teaching in Sweden just prior to the Nazi occupation, and thus managed to escape with his family to that country. He later wrote about these experiences in his book, *Austria Before and After the Anschluss*, which was published in 2000 and earned him significant honors.

On the occasion of Dr. Lehr's 90th birthday, New York City Mayor Rudolph W. Giuliani proclaimed March 22, 2000, to be Dr. David Lehr Day in the City of New York, and the street where he lived as David Lehr, M.D., Boulevard.

He is survived by his wife of 45 years, Lisa Lehr, who was employed by the College from 1966 to 1983.



## ALBERT WILLNER, M.D. '43 1918–2011

**Albert Willner, M.D. '43**, former College trustee, died on November 16, 2011, at the age of 93. From the day he became a physician, Dr. Willner ardently believed he owed a debt of gratitude to New York Medical College for giving him the education he needed to succeed. Throughout his entire career he worked tirelessly to repay that debt—even donating the first paycheck he earned as a physician to the College. He was active in the Alumni Association for more than four decades, joined the Board of Trustees in 1996, and was a member of the President's National Advisory Council.

Dr. Willner and his wife Blanche were generous supporters of the medical student scholarship program, often responding to needs they learned about on their visits to campus by underwriting various campus facilities and structures. In the late 1990s Dr. Willner and his family donated funds to build a playground in student housing, and later funded the renovation and construction of the atrium lobby of the Medical Education Center which is named after the couple in honor of their longtime patronage and dedication.

In 2006, the College awarded Dr. Willner the William Cullen Bryant medal, in recognition for his distinguished and wide-ranging leadership. He once said, "I hope that those students who are part of the College today will not take the value of [their education] for granted, and will help in their own way when they become leaders in medicine."

One of three children born to parents who left Poland and came to the U.S. in the 1890s, Albert Willner was one of several "Dr. Willners" in his family: his uncle Irving (who graduated from New York Medical College in 1913), his brothers Philip and Milton, and Albert himself, who met his wife, Blanche, on a commuter train while attending New York University as an undergraduate. Their two children became doctors, and so did several grandchildren, a nephew and a grand-nephew—all told, about one out of three were New York Medical College graduates.

He was predeceased by his wife Blanche, and is survived by his son, Dr. Joseph Willner, daughter Dr. Jane Bloomgarden, and numerous nieces, nephews and grandchildren, including Noah Bloomgarden, M.D. '10.



## FELIX E. WASSERMANN, PH.D. 1924–2011

**Felix E. Wassermann, Ph.D.**, professor emeritus of microbiology and immunology, died May 22, 2011, at the age of 86. Born in Bamberg, Germany, he lived there until the age of 12, when he fled with his family to Prague to escape the Nazis. The family moved several times in the next few years, first to England, then Mexico, finally reaching the United States in 1941.

He served in the army during World War II, and later earned bachelor's and master's degrees in agricultural bacteriology from the University of Wisconsin. He returned to the East Coast, where he received a Ph.D. in microbiology from New York University. He had one more stint in the armed services, working as a bacteriological supervisor at Camp Detrick, Md., a job he detested, loading dried anthrax spores into artillery shells for the Army Chemical Corps for testing as a biological weapon.

Dr. Wassermann joined the College in 1965 as an assistant professor of virology in the Department of Microbiology and Immunology at Flower-Fifth Avenue Hospitals in New York City, becoming full professor in 1977. Twice he served as acting chairman of the Department of Microbiology and Immunology, from 1970 to 1976 and again from 1999 until 2002.

For 38 years, until he retired from the College faculty in 2004, Dr. Wassermann made innumerable contributions to education and research programs. He was instrumental in helping establish the College's curriculum in medical and research ethics, which he called "a passion." But his dedication to learning, and to the individuality of the students he taught, remains his legacy: Dr. Wassermann could remember nearly every student he ever taught, matching names to faces with uncanny recall, and saved every Commencement program and yearbook since 1958 until they were destroyed in a flood. He was also a devoted family man to his wife Hannah and their three sons, Ross, Joel and Eric.



## FELICIEN M. STEICHEN, M.D. 1926–2011

**Felicien M. Steichen, M.D.**, professor emeritus of surgery, died June 27, 2011, at the age of 84. A member of the faculty from 1978 to 2008, Dr. Steichen was the first occupant of the eponymous Felicien M. Steichen Chair of Surgery and the first director of the Institute for Minimally Invasive Surgery, which he established. His contributions to the field of minimally invasive surgery and surgical stapling won international acclaim and earned him a lifetime achievement award as a pioneer in the development of laparoscopic technologies and stapling methods.

Born in Luxembourg, Felicien M. Steichen graduated first in his class from the Medical School of the University of Lausanne in Switzerland. He emigrated to the U.S. in 1953 to complete his training at Lakewood Hospital in Cleveland and Johns Hopkins University School of Medicine in Baltimore. In 1978 he was recruited as chief of surgery at College-affiliated Lenox Hill Hospital in New York.

Throughout his long and illustrious career Dr. Steichen contributed hundreds of articles, books and book chapters to the surgical literature, continuing long after he had retired from the practice of surgery. In 1986, he was awarded the Mayor's Liberty Medal from New York City Mayor Edward I. Koch. He was elected to a score of European and American surgical societies, as well as earning honors from the governments of France, Luxembourg and Germany. A \$1.5 million grant from the U.S. Surgical Corporation in 1993 established an endowed chair of surgery in his honor at New York Medical College.

In 2003 the College honored Dr. Steichen with its Distinguished Service Award. In 2008 he was recognized for his contributions to the technique of surgical stapling at the Society of Gastrointestinal and Endoscopic Surgeons annual conference, which marked the 100th anniversary of the technique.

He is survived by his wife Michele and his three children, Anne, Francois and Claire, and five grandchildren. He is buried in Brittany, France.



## GABOR KALEY, PH.D. 1926–2011

**Gabor Kaley, Ph.D.**, professor and former chairman of the Department of Physiology, died on December 15, 2011, at the age of 85. A member of the faculty since 1964, he helped establish the Graduate School of Basic Medical Sciences, and became chairman of the Department of Physiology in 1970. Until he stepped down from that post in 2007, he had the distinction of being the longest sitting chair of physiology in the nation.

Born in Budapest, Hungary, Gabor Kaley first studied medicine, but when war intervened, he was sent to a labor camp in Yugoslavia where only 600 of the 6,000 inmates survived. After the war, he boarded a ship for America where he worked as a busboy, cab driver and singing waiter to pay for his studies. After receiving a B.S. in biology at Columbia University, he was drafted into the U.S. Army during the Korean War, and later used the GI Bill to earn an M.S. in physiology from New York University and a Ph.D. in experimental pathology.

During his career Dr. Kaley wrote more than 150 articles, edited an authoritative three-volume edition of *Microcirculation*, gave invited lectures around the world and served on the editorial boards of numerous scientific journals. A member of the Hungarian Academy of Sciences, he was awarded the Semmelweis Medal in 1982 for his work in microcirculation. In 2001 he received the Wiggers Memorial Award, which recognizes outstanding and lasting contributions to cardiovascular research. He received the Eugene M. Landis Award from the Microcirculatory Society in 1994 and was named the George E. Brown Memorial Lecturer by the Council on Circulation of the American Heart Association in 1998. In 2005, he was named an Eminent Physiologist by the American Physiological Society. The honor resulted in a videotaped interview with Dr. Kaley about his life, achievements and vision for the future of physiology, a record that is now housed in the society's historical archives.

He is survived by his wife of more than 40 years, Harriette Weintraub Kaley, Ph.D., a psychologist and psychoanalyst, and son David. ■

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