Fall 2012

Chironian Fall/Winter 2012

New York Medical College

FALL/WINTER 2012

CHIRONIAN

New York Medical College

INSIDE:

The 6-Minute Interview

Inside the Endoscopy Suite

Dr. Pappas Goes to Paris

TRANSFORMING the Medical School Interview

A new interview format is designed to better assess applicants' interpersonal skills and humanistic traits, and may be a more efficient predictor of success.

BY JEN USCHER

Every year, the School of Medicine at New York Medical College selects 1,400 prospective students—out of the more than 11,500 who apply—to visit campus for an in-person interview. Starting last September, the Office of Admissions began using an innovative new tool to evaluate these aspiring physicians. Instead of meeting with a faculty member for a traditional 30-minute, one-on-one interview, the candidates rotate through a series of short, scenario-based interview stations. This format—known as the Multiple Mini-Interview, or MMI—is designed to assess communication and problem-solving skills, ethical grounding, and other personal traits the admissions committee views as vital to becoming an effective physician.

"We already know about the academic work of an applicant, including their grades and MCAT scores, when we invite them for an interview. The purpose of the MMI is to look at other important personal qualities and abilities, such as empathy, collaboration, professionalism and cultural competency," says Fern R. Juster, M.D., senior associate dean for admissions at the School of Medicine.

During the MMI, each applicant moves through eight different interview stations. The candidate has two minutes to read a scenario posted on the door of an interview room. At a signal, he or she enters the room and begins a focused, six-minute discussion about the scenario with an interviewer. An automated voice prompt over a loudspeaker system announces when it's time to move on to the next room to discuss a new scenario with another interviewer. On a typical interview day, a total of 24 candidates complete the fast-paced circuit.

HEART OF THE MATTER

Developed a decade ago at McMaster University's Michael G. DeGroote School of Medicine in Hamilton, Ontario, the MMI format is gaining popularity. Thus

The customized MMI system at the College was conceived and implemented by Fern Juster, M.D., left, James DeMaio and Robin Camhi Baum.

far it has been adopted by approximately 30 medical schools in the U.S. and Canada. While the specific scenarios used for the MMI at the College are kept confidential, some published examples include questions like these: is it ethical for a physician to recommend homeopathic treatments if there's no widely accepted scientific evidence to suggest they work? What should a physician do if an elderly patient reveals that she is being physically abused by her spouse?

"I tell our applicants that there are no right or wrong answers to these questions," says Dr. Juster. "We're challenging them to think about a situation so we can see how they organize their thoughts, interact with other individuals, and approach a problem that might be complex or new to them."

The medical school interview is no longer the exclusive province of faculty admissions committee members. Over the summer, the staff of the Office of Admissions recruited and trained 150 volunteer interviewers to participate in the MMI. They represent the broader community of NYMC and consist of faculty and staff members, alumni, students, allied health professionals, hospital staff, community members and organizers, and even patients.

COMMUNITY INVESTMENT

Robin Camhi Baum, M.S., director of admissions at the School of Medicine, says it's been particularly gratifying to reach out to the local community and enlist the help of so many volunteer interviewers. "Now we have a wide range of stakeholders who are more aware of and invested in what we do here at New York Medical College," she says.

The MMI sessions are held every Monday and Thursday from mid-September through the end of April, and the interviewers commit to volunteer at least one afternoon a month. After each six-minute interview is complete, the interviewer gives the candidate a score from one to ten and writes comments on his or her performance. Later, when the executive admissions committee reviews the candidate's full application, they'll be able to see both a composite score and the individual comments and scores from all eight interviewers the candidate met with during his or her MMI session.

In fact, one of the main reasons Dr. Juster and her team decided to switch to the MMI format is that meeting with eight interviewers rather than one is fairer for the applicant. It mitigates the unconscious bias or interpersonal chemistry that may affect any single interview and gives the candidate multiple opportunities to show off his

or her skills. In addition, research conducted by the faculty at McMaster University School of Medicine showed that the MMI is a better predictor of how students will perform during their clinical clerkship than the academic measures traditionally used to select medical school students. "Tools such as grade point averages and MCAT test scores predict how students will do during the first two years of medical school, but until now we never had a reliable and valid tool that predicts how students will perform in the third-year clinical clerkship," notes Dr. Juster. Thus the composite MMI score becomes an integral component of the holistic review of the applicant's application including GPA, MCAT scores, the candidate's personal statement, letters of recommendation, research, employment, community service and other volunteer experiences.

CUSTOM FIT

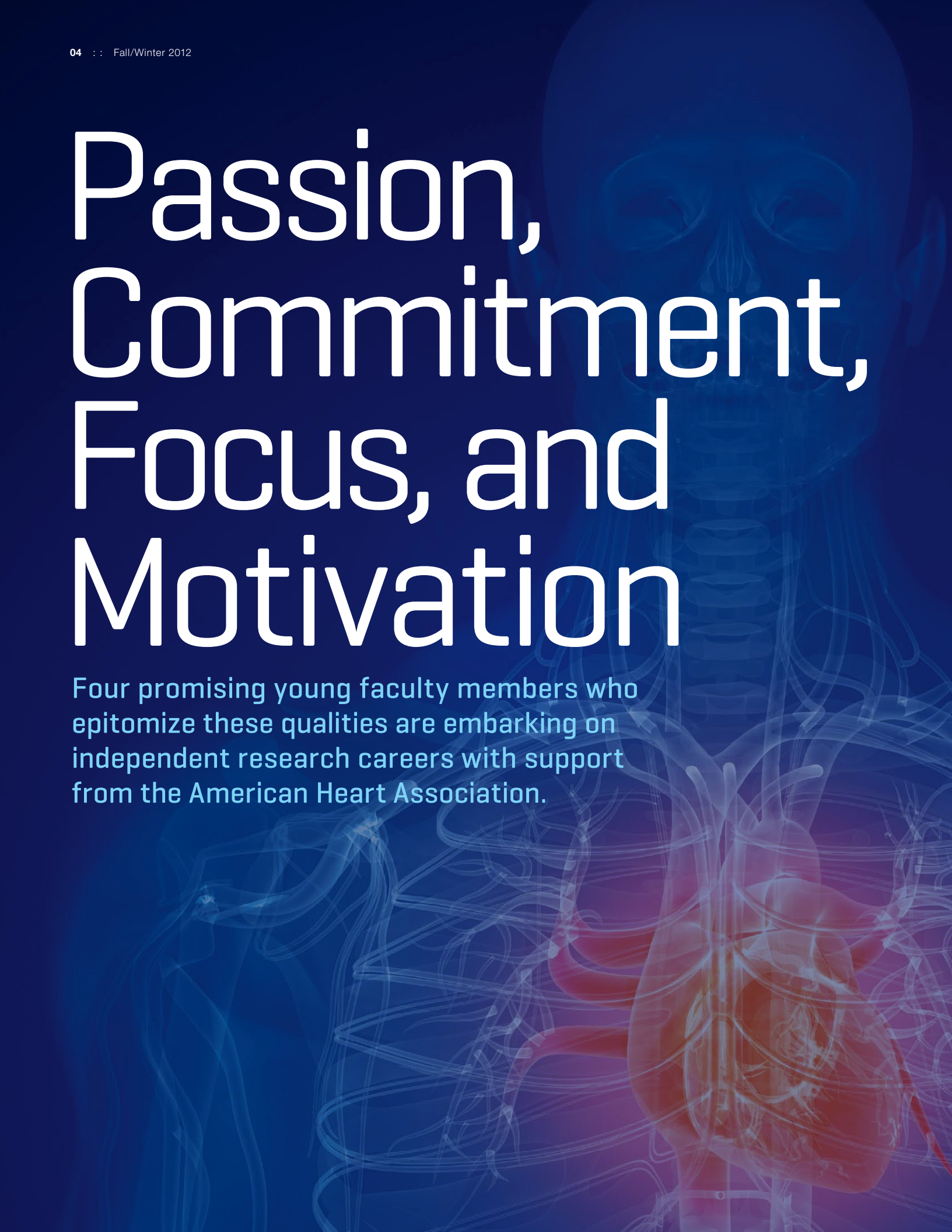
Dr. Juster and Ms. Camhi Baum spent months learning how other schools had implemented the MMI and deciding how to adapt it to reflect the unique culture of New York Medical College. "We began by going on a fact-finding mission," says Ms. Camhi Baum. "We observed how the MMI process works at UMDNJ-Robert Wood Johnson Medical School, spoke with the admissions staff at Stanford University School of Medicine to find out how they implemented the MMI, and eventually hired consultants from McMaster University School of Medicine to work with us." The consultants shared insights from their own experiences on how to train volunteer interviewers and handle other MMI logistics. They also encouraged the admissions staff to tweak existing scenarios and create new ones that fit the College's culture and identity.

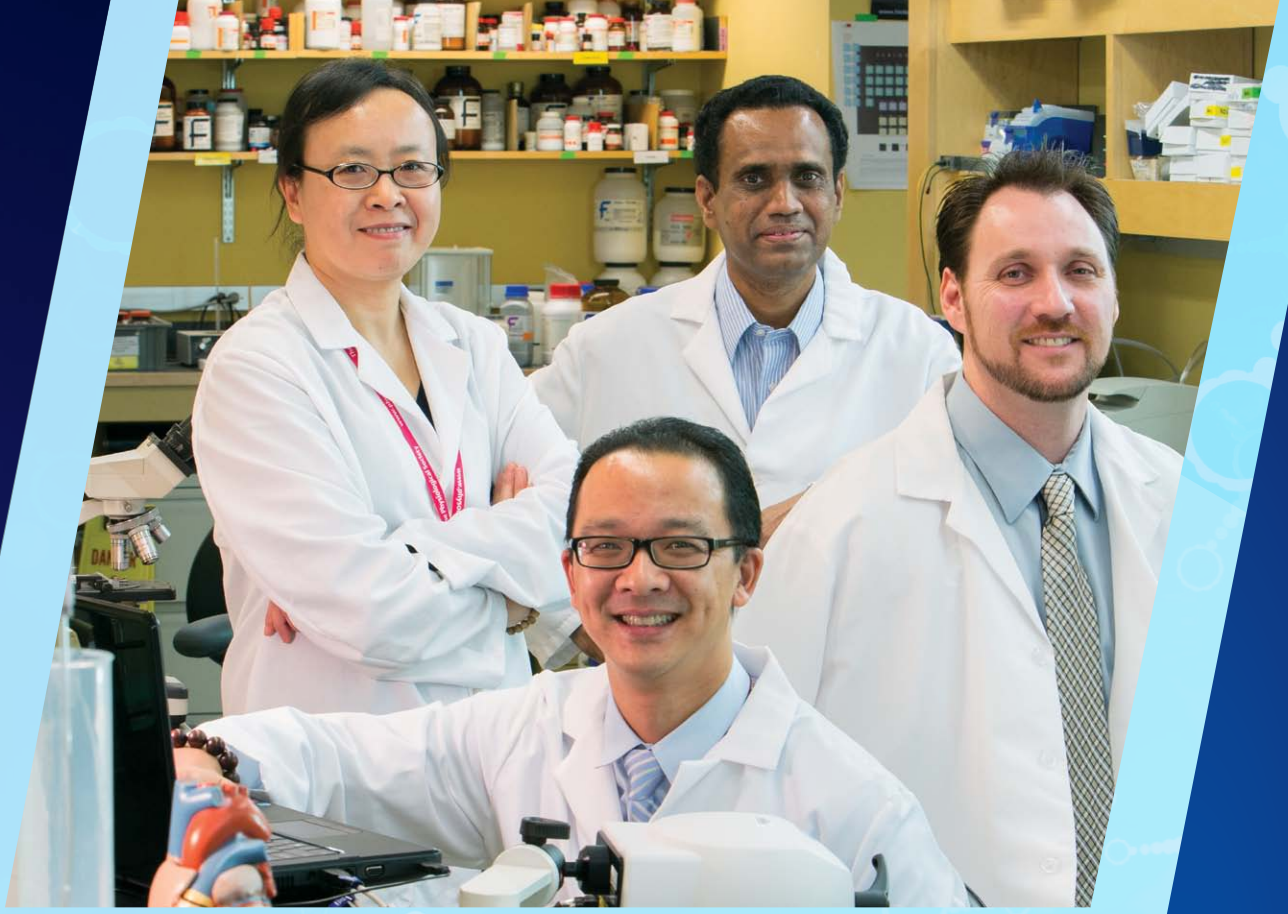
James DeMaio, director of information management for the admissions office, oversees the day-to-day logistics of the Multiple Mini-Interviews, as well as setting up the systems that keep the interviews moving on schedule. He spent time working with Information Services, for example, to create a database into which the interviewers can input their scores and comments, and creating the automated voice prompt system using an iPod and wireless speakers. He says he is receiving enthusiastic feedback on the MMI process from both the volunteer interviewers and the applicants. "They've told us they were impressed that logistically everything ran smoothly and they felt we prepared them for it well," he says. Now colleagues at other medical schools are reaching out to the College for advice on how to adopt the MMI format, including the associate dean of admissions from the NYU School of Medicine, who recently paid a visit to campus to observe the MMI.

"Transitioning to the MMI has been both exciting and challenging," says Dr. Juster. "But we believe the format will enhance our selection of students grounded in the humanistic traits and with the interpersonal skills necessary to practice medicine in an increasingly diverse and complex world." ■

Passion, Commitment, Focus, and Motivation

Four promising young faculty members who epitomize these qualities are embarking on independent research careers with support from the American Heart Association.





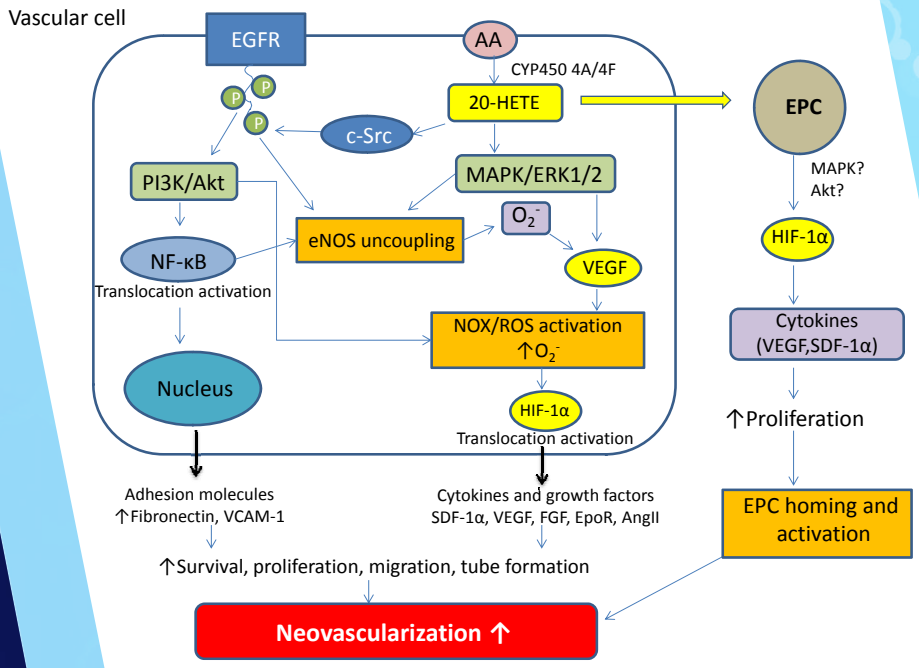
Clockwise from left are Daohong Lin, M.D. (pharmacology), Govindaiah Vinukonda, Ph.D. (pediatrics), Brian Ratliff, Ph.D. (medicine), and Austin Meng Guo, Ph.D. (pharmacology).

BY CYNTHIA A. READ

In these challenging economic times, the step from research training to becoming an independent investigator who can successfully compete for major grants is more of a giant leap. Four New York Medical College faculty members have been honored with national Scientist Development Grants from the American Heart Association (AHA) to help them take that leap. Govindaiah Vinukonda, Ph.D., Austin Meng Guo, Ph.D., Brian Ratliff, Ph.D., and Daohong Lin, M.D., have each received a four-year, $308,000 grant from the AHA. Their research should eventually bring benefits to health challenges as diverse as heart disease and acute kidney injury, brain hemorrhage in premature infants and cancer. Taken together, these projects are evidence of the broad strength of research at NYMC and the excellence of its newer faculty.

The objective of the AHA's Scientist Development Grants is "To support highly promising beginning scientists in their progress toward independence." Researchers must have had a faculty appointment no higher than assistant professor for less than four years, and must demonstrate in their applications the significance, conceptual soundness, and innovation of the proposed project, as well as their own qualifications and those of the scientific environment in which the research will be conducted. The grants are highly competitive, and last year only 21 percent of applications were funded.

Think AHA and one naturally thinks of heart disease. So it's natural to wonder how four such disparate research projects fit within its guidelines. But the AHA's mission encompasses all of cardiovascular disease and stroke, including vascular diseases of the brain and kidney. Scientist Development Grants can go to basic, clinical, bioengineering, and biotechnology projects that quite broadly relate to both function and disease.



Molecular signaling pathways involved in 20-HETE-induced angiogenesis. *The graphic at left illustrates the complex mechanisms that lead to the regulatory effects of 20-HETE on the formation of new blood vessels (neovascularization). At left (inside block) is a depiction of the effects of 20-HETE on vascular cells. The pathway to the right of the block demonstrates the potential influence exerted by 20-HETE on endothelial stem cells (EPC). In both situations, the result is an increase in the production of angiogenic growth factors and thus angiogenesis. Figure courtesy of A. Guo, Ph.D.*

PROTECTING THE BABY BRAIN

The earliest of these Scientist Development Grants was awarded in 2010 to Govindaiah Vinukonda, Ph.D., assistant professor of pediatrics, for his project studying the causes and prevention of post hemorrhagic hydrocephalus in premature infants. Spontaneous bleeding in the part of the brain called the germinal matrix, a form of stroke called intraventricular hemorrhage (IVH), is the most common neurological complication in these very young babies. As a result, they often develop a buildup of fluid in the cavities of the brain (hydrocephalus), which, in turn, all too frequently causes mental retardation and cerebral palsy. “The personal tragedy and suffering that result from IVH are enormous,” he asserts.

Dr. Vinokonda is using both a premature rabbit pup model and human autopsy samples to study the causes of hydrocephalus after a brain hemorrhage. He is also working to develop a therapeutic strategy that will protect a baby’s vulnerable brain in the event of a hemorrhage, using decorin, a growth factor (TGF-beta) antagonist, or TGF-beta-neutralizing antibody therapy. He postulates this would minimize the occurrence of post-hemorrhagic hydrocephalus and also help restore myelination of nerves, the integrity of axons, and overall neurological recovery.

REGULATING THE GROWTH OF BLOOD VESSELS

Austin Meng Guo, Ph.D., assistant professor of pharmacology, is focusing on ischemia, another cause of stroke, that comes from inadequate flow of blood to tissues. His project, funded by the AHA beginning in 2011, is exploring the role of a signaling molecule called cytochrome P450 4A-20-HETE in regulating the growth of blood vessels. Dr. Guo is using both a mouse model and stem cells derived from human umbilical cord blood to better understand this process. Angiogenesis, the formation of new blood vessels from the existing ones, is desirable in some diseases, such as recovery from ischemia. But abnormal angiogenesis is an important factor in cancer, diabetic retinopathy, and macular degeneration. And insufficient angiogenesis may underlie both stroke and heart attack.

On the road to joining the NYMC faculty in 2011, Dr. Guo had positions related to toxicology, dermatology, ophthalmology, oncology, and pharmacology. But he said that the central goal of his research has always been to understand the complex

mechanisms involved in angiogenesis. Michal L. Schwartzman, Ph.D., who chairs the Department of Pharmacology, is a world renowned expert in 20-HETE research, and Dr. Guo is gratified to be working in close proximity with her. "I hope my research can ultimately lead to stem cell-based therapy that will enable physicians to manipulate and treat many human diseases by specifically targeting the various pathological angiogenesis involved," he adds.

> "In the current funding environment, it has never been more difficult to embark on a career in biomedical research."
>
> —*Michal L. Schwartzman, Ph.D.*

TREATING KIDNEY INJURY WITH STEM CELLS

Improving stem cell therapy is also the goal of Brian Ratliff, Ph.D., a research assistant professor of medicine working in the Department of Medicine's Renal Research Institute. Says Dr. Ratliff, "Outside of prevention, two of the best courses for treatment of various diseases and injuries that have the greatest ability to save lives are the use of pharmacological agents (drugs) and the application of stem cell therapy. This research area has always fascinated and captivated me by its promise."

Dr. Ratliff received his AHA Scientist Development Grant in 2012 for his research project examining the use of stem cell therapy for acute kidney injury (AKI) caused by sepsis, a severe whole-body inflammatory response to infection. During sepsis, stem cells in the kidneys become scarce or damaged, and AKI that results has a staggering mortality rate—as much as 80 percent. But attempting to treat it by delivering extrinsic stem cells using conventional methods such as intravenous injection is only limitedly effective. So Dr. Ratliff is using a mouse model to study the potential benefits of implanting hyaluronic acid hydrogels—colloidal gels in which particles are dispersed in water—to deliver and improve the therapeutic efficacy of stem cells during septic AKI.

LOOKING AT THE MOLECULAR LEVEL

Daohong Lin, M.D., assistant professor of pharmacology, is interested in kidney function as well. In her current project, funded by the AHA in 2011, she is studying the role of the scaffolding protein called caveolin-1 in regulating the channel that transports excess potassium out of kidney cells (ROMK, or renal outer medullary potassium channel). Working *in vitro* and in a mouse model, she is also examining how a form of microRNA (a small RNA molecule) suppresses caveolin-1 and stimulates the ROMK channels. The balance of potassium in the body is essential in maintaining the normal function of neurons, cardiac myocytes, and skeletal muscles, and both abnormally high and low concentrations of potassium can have a lethal effect.

Dr. Lin has also learned that microRNA facilitates healing from corneal injuries, which can lead to blindness, so her research has potential therapeutic value for many disease conditions. She said that she was attracted to return from Harbin Medical University in China to NYMC's Department of Pharmacology, where she had been a postdoctoral fellow, citing its "friendly working conditions, stimulating spirit, and outstanding and open environment for renal and cardiovascular research."

The College's research environment is certainly paying off for these four promising young scientists. Dr. Schwartzman sums it up: "In the current funding environment, it has never been more difficult to embark on a career in biomedical research. For young investigators with passion, commitment, focus and motivation, such as these four AHA Scientist Development Grant recipients, the results may well lead to successful National Institutes of Health grant awards and long-term careers as independent investigators." ■

Agents of Change

As two dynamic leaders take the helm of New York Medical College, their inauguration ceremony marks the beginning of a new era and a bright future.

BY NELLY EDMONDSON GUPTA

The word "inauguration" prompts a vision of dignitaries in academic regalia, a symbolic investiture before hundreds of witnesses, and a full complement of pomp and circumstance—in short, a splendid and much-anticipated event.

Just such an occasion became part of the history of New York Medical College in early December, when Alan Kadish, M.D., and Edward C. Halperin, M.D., M.A., were inducted into their respective offices as President and as Chancellor and Chief Executive Officer.

Not all of the College's past leaders—including presidents, chancellors, deans and CEOs—have been feted with an official celebration, but the time seemed right for the ceremonial occasion. The inaugural events took many months to plan, but as Dr. Halperin put it, "It's more important to get something right than to get it fast."

Getting it right, according to both leaders, means respecting the College's past while actively planning for its future. Their inauguration, they say, offers the College community and its many supporters an opportunity to reflect both backward *and* forward: it marks the culmination of a lengthy transition process, and the start of an exciting new chapter in the 153-year history of NYMC: its affiliation with the Touro College and University System and its emerging identity as an institution under Jewish auspices.

"Inaugurating these two exemplary leaders is an incredible achievement. The future is very bright."

—Rabbi Moshe Krupka

SEEDS OF CHANGE

Understanding the significance of this change—which has been official for more than 18 months and was in the works long before that—requires a summing up. The Touro College and University System is an international institution whose 33 schools and 20,000 students are focused on health science education. The institution includes two pharmacy schools, three osteopathic medical schools, and a number of health science schools. The vision held by Touro's leaders in affiliating with New York Medical College was to create synergies in health care education and health care delivery that would leverage its status as one of the nation's largest institutions dedicated to health science education.

In order to achieve this vision, NYMC needed a superbly talented visionary leader who could help the institution achieve its potential and vision. In May 2011, when the two institutions became one, Dr. Kadish, Touro's president and chief executive officer, became president of NYMC as well.

As part of his new responsibilities, Dr. Kadish helped oversee a nationwide search for a chancellor and CEO to assume the important task of leading NYMC into a new era, and in February 2012, Dr. Edward C. Halperin accepted an offer to serve as the College's Chancellor for Health Affairs and Chief Executive Officer. "Dr. Halperin is a renowned educator with an excellent reputation as an administrator," said Dr. Kadish in an announcement. "His appointment also enhances Touro's reputation of excellence in the field of health care education."

Dr. Halperin left a position as dean of the University of Louisville School of Medicine to begin his new job, which also includes an appointment as provost for biomedical affairs at Manhattan-based Touro. He started his tenure at both institutions on May 1, 2012.

According to officials at NYMC and Touro, the multi-step process was handled with perseverance and good will. "This transition was carried out in an environment of warmth, sensitivity and collegial spirit, which bodes well for the future," said Rabbi Moshe Krupka, Touro's senior vice president for college affairs. Inaugurating these two exemplary leaders, he added, "is an incredible achievement. We are confident that New York Medical College is stronger today than ever before. The future is very bright."

FIRST IMPRESSIONS

With their sights trained on the future, the two men remain well aware of the College's venerable past. Even before he interviewed for the job, Dr. Halperin knew two things about NYMC that impressed him: First, that in 1928 it became the first white-majority medical college in the U.S. to offer scholarships to African Americans; and second, that NYMC was one of only nine out of eighty U.S. medical schools to defy the quotas that limited the educational enrollment of Jews and Catholics in the early part of the 20th century. "I had," he explains, "the impression of a thoughtful and progressive place."

Prejudice and discrimination are subjects of keen interest to Dr. Halperin. The May 2012 issue of *Academic Medicine* published a paper he wrote entitled, "The Rise and Fall of the American Jewish Hospital," which explored admission quotas at medical schools that discriminated against Jews.

Indeed, Dr. Halperin has published more than 200 articles in peer-reviewed scientific, historical, education and ethics literature, and his scholarly output has not slowed since his arrival. (Ed. Note: an article by Dr. Halperin on page 12 marks the first time since the early 1900s that a scholarly treatise by a student or faculty author has appeared in the *Chironian*).

Moreover, within weeks of his arrival, Dr. Halperin delivered the Commencement address at the College's graduation ceremonies. In that speech, he moved medical ethics to center stage, delivering what amounted to a history lesson on white doctors who treated black slaves before and during the Civil War. The audience was surprised, then rapt—and grateful. One parent of a graduate thanked Dr. Halperin for seizing a teachable moment to address a subject of great importance.

Throughout his career, Dr. Halperin has taken a special interest in ethics as well as racial, religious and gender discrimination in higher education. "Poverty is a carcinogen. Poverty is also a diabetic causal agent, and a cause of heart disease," he declares. "Racial discrimination and its associated poverty is responsible for as much disease and disability in the U.S. as bacteria, viruses, and blocked coronary arteries."

Those close to both men say that Alan Kadish and Edward Halperin have already forged a strong partnership. As Rabbi Krupka describes it, "Theirs is a collaborative relationship based upon respect and personal regard, which only enhances the possibility of greater success."

Of the two, Dr. Halperin has more of the day-to-day responsibility for NYMC, while Dr. Kadish oversees the needs of all member institutions in the Touro College and University System, including NYMC. This combination, say some observers, is akin to simultaneously having boots on the ground and eyes in the sky.

ALL ROADS LEAD TO NEW YORK

Before coming to Valhalla, both men had impressive careers in other parts of the country. Dr. Halperin, a radiation oncologist, medical historian and educator, was on the faculty of Duke University for 23 years, where he held several top posts, including that of chairman of the Department of Radiation Oncology and vice dean of the School of Medicine. In 2006, he went to the University of Louisville as dean; during his six-year tenure there, the medical school's applications for admissions rose 67 percent, and its research funding increased by more than 28 percent, a remarkable and enviable achievement that did not go unnoticed by the search committee.

Dr. Kadish, a renowned cardiologist, worked as a clinician, scientist, teacher and research scholar before becoming a top administrator. Prior to coming to New York, he held several senior-level positions at Northwestern University in Chicago and before that, at the University of Michigan. Those who know him will attest to his intense dedication to his work. "He has the unique ability to have a laser focus on priorities and tasks at hand—short- and long-term—coupled with an incredible sense of ethics and devotion to the Touro and NYMC communities at large," says Rabbi Krupka.

Larissa Reece, M.A., associate vice president for development, is another important newcomer to NYMC. She, too, was recruited from the University of Louisville, succeeding Julie A. Kubaska, M.S., who retired in July. Having worked with Dr. Halperin at U of L, Ms. Reece is well acquainted with his vision and determination—not to mention his impressive track record for turning around an academic institution. And she has come to know Dr. Kadish as they work to expand the College's fundraising capabilities. As she puts it,

"We have new energy, new ideas, and big plans. Exciting things are happening here!"

—Edward C. Halperin, M.D., M.A.

"Our collective potential to make great strides in medical education, clinical care and public health will bring about advances that will benefit the next generation."

—Alan Kadish, M.D.

"To have these two leaders—each of them with extraordinary academic credentials—come together at this point in time is incredibly fortunate for New York Medical College."

TIME TO REST AND REFLECT

Like many powerful men in positions of great responsibility, both are constantly on the go—and, one might observe, constantly in touch, whether it's through their mobile devices or their peripatetic natures. But it would be wrong to assume they never rest; both are devoted family men who also understand the importance of down time.

Dr. Halperin's wife, Sharon, is a physical therapist with a Master's degree in public health from Columbia University. The couple has three grown daughters (one is married) who live in New Jersey, North Carolina, and Georgia. An avid cyclist, Dr. Halperin participates in an annual charity bike ride, often with one or more of his daughters and his son-in-law, to raise money to combat multiple sclerosis. "When you're my age, you have to train for 6 months to ride 60 miles in two days," he says with a chuckle.

Dr. Kadish and his wife, Connie, a Brown University alumna who works with rare art prints, have four children ranging in age from 17 to 25. The Kadish family lives in Teaneck, N.J., where Dr. Kadish, an observant Jew, balances hectic workweeks with a mix of exercise, reflection and family time on the Sabbath. He is also an avid reader of novels, American history and books on Jewish topics.

BEYOND THE INAUGURATION

In discussing his vision for the future, Dr. Kadish says, "We are entering a time of great excitement for New York Medical College and Touro. Our collective potential to make great strides in medical education, clinical care and public health will bring about advances that will benefit the next generation.

"I know that may sound trite," he adds. "Everyone wants to say they've revolutionized their field of influence. But if you consider the resources, the commitment, and the synergy that is flowing between our two institutions at this time, you might conclude, as I do, that there is a real opportunity for us to deliver on that ambition."

Dr. Halperin concurs. "There are people who have a long history with New York Medical College. They know about our honorable past, but I'd also like them to know that we have a tremendous future that is beginning to unfold. Then there are those who are just now learning about NYMC. To them I would say, 'Get to know us better. We have new energy, new ideas, and big plans. Exciting things are happening here!'" ■

EDITORIAL

The Debate Over Premedical Curriculum Requirements for Admission to Medical School

BY EDWARD C. HALPERIN, M.D., M.A.

What is the appropriate undergraduate preparation for medical school? Generations of applicants were told that at least one year each of college biology with laboratory, chemistry with laboratory, organic chemistry with laboratory, physics with laboratory, English, and calculus were necessary for most U.S. medical schools. In the last few years, this standard has been questioned.[1] There are three significant organizational/individual drivers of proposed changes:

First, in 2015 the Medical College Admissions Test (MCAT) will change. There will be four test selections with scores, for each, reported on a scale of 1 to 15: biological and biochemical foundations of biological systems; chemical and physical foundations of biological systems; psychological, social and biological foundations of behavior; and critical analysis and reasoning skills assessed by critically analyzing information for reading passages in a wide range of social sciences and humanities disciplines.[2] There can be little doubt that anxious premedical students will adapt their undergraduate curriculum and study habits to the MCAT.

Second, a joint committee of the Association of American Medical Colleges (AAMC) and the Howard Hughes Medical Institute (HHMI) has recommended eight core competencies for scientific training of premedical students. (The word "competencies" was carefully chosen. The committee was more interested in acquisition of certain bodies of knowledge than of assuming that a specific course was sufficient.) The competencies are: application of mathematics to describe the natural world; understanding of scientific inquiry; basic physical principles; basic principles of chemistry and their application to the living world; how biomolecules contribute to the structure and function of cells; the structure and function of molecular and cellular assemblies, organs, and organisms; how organisms control their internal environment and respond to external change; and evolution and natural selection.[3] The committee hopes that this list will prompt the development of more integrated studies for undergraduates seeking careers in the health professions. I think this is highly unlikely. Faculty are notoriously conservative in defending their courses and curricula and are unlikely to respond to such requests. When he was president of Princeton University, Woodrow Wilson said that changing the curriculum of a college was very much like moving a cemetery. You have no idea how many friends the dead have until you try to move them.

Third, Ezekiel J. Emanuel, M.D., Ph.D., M.Sc., a widely respected medical ethicist, has published his views that "many premed requirements—especially calculus, organic chemistry, and physics—are simply a waste of time and effort."[4–5] Of these three drivers of change, the easiest to dispense with, in my

opinion, are the views of Dr. Emanuel, with all due respect to his right to his opinion and his scholarship, he is wrong.

I take strong exception[6] to the removal of calculus, organic chemistry and physics from our requirements for premedical preparation. While some assert they cannot see what calculus, organic chemistry or physics have to do with human medicine, I can.

It is easy to derive a very long list of examples of the essential nature of these subjects as a preparation for the study of medicine.

Calculus and physics are crucial to an understanding of the interaction of ionizing radiation with human tissue, cardiac contractility and blood flow, the gas laws, biomechanics and the behavior of light in the human eye. Organic chemistry is essential to an understanding of how drugs are designed, absorbed, metabolized and excreted; neutral impulse transmission; and metabolism and hormone activity. Mathematical reasoning and calculus are important prerequisites to understanding statistics; and a grounding in statistics, as we are all coming to understand, is essential for the modern physician who wishes to analyze clinical research and practice evidence-based medicine.

In my opinion, the practical applications of the change in the MCAT and the AAMC-HHMI report will be to certainly add the following four courses to the aforementioned six typical premedical classes: biochemistry, statistics, sociology, and psychology. There will also be pressure to add evolutionary biology, some form of anatomy instruction and, perhaps, neuroscience. This will total 17 to 20 one-semester college courses or 50 to 63 percent of the typical four-year college course load. Some critics will say that medical schools are pushing their medical curriculum down into the undergraduate curriculum—particularly regarding biochemistry and large organ structure and function.

There is a danger in this growing list of science requirements. Many of today's premedical students have exceptional training, as undergraduates, in the biomedical disciplines. We increasingly see students who have completed highly sophisticated scientific research projects and have published in the peer-reviewed letter medical literature. This is entirely to be commended. I cannot, however, countenance the fact that many students also lack a rudimentary familiarity with the history of western thought and culture. Immersion in science, as an undergraduate, is a necessary part of premedical education. It must not, however, be at the expense of a general liberal arts education. "If we aim to prepare tomorrow's physicians to appreciate the challenges and privileges of practicing medicine, [sacrificing the liberal arts] is a fool's bargain."[7]

A clear understanding of written and spoken English, and the ability to express oneself, underpins our ability to communicate with patients, communicate with other health care providers and express ourselves in the medical chart and scientific literature.

There is simply no substitute for reading and discussing the greatest minds in the history of our civilization: in philosophy, Plato and Aristotle; in history, Thucydides and Gibbon; in literature, Cervantes and Shakespeare. Reading the great books offers an opportunity to understand what makes us human, including vital features that cannot be titrated in a beaker or imaged with x-rays.[7]

A similar point of view was expressed by Lewis Thomas, author, former dean of the medical schools of New York University and Yale, and former president of Memorial Sloan-Kettering Cancer Center. Thomas argued that the premedical curriculum should include a sound footing in the liberal arts.

We could look forward to a generation of doctors who have learned as much as anyone can learn, in our colleges and universities, about how human beings have always lived their lives. Over the bedrock of knowledge about our civilization, the medical schools could then construct as solid a structure of medical sciences as can be built, but the bedrock would always be there, holding everything else upright.[8]

A firm grounding in physics, organic chemistry, English and calculus have historically been, and will remain, crucial for science-based clinical medicine. We should not "redefine" premedical education into less-than-adequate preparation.

---

1. Ganguli I. Medical school on demand. *Lancet Oncol* 2006;7:900-1.

2. Association of American Medical Colleges. *MCAT 2015: A better test for tomorrow's doctors.* Washington, DC: AAMC, 2012.

3. American Association of Medical Colleges. *Scientific foundations for future physicians: Report of the AAMC-HHMI Committee.* Washington, DC: AAMC, 2009.

4. Emanuel EJ. Changing premed requirements and the medical curriculum. *JAMA* 2006;296:1128-31.

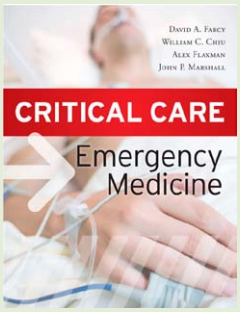
5. Emanuel EJ. How to redefine a medical education *Chron Higher Ed* 2006;53,9:B12-3.

6. Halperin EC. A continued need for pre-med courses. *Chron Higher Ed* 2006;53,16:B18.

7. Gunderman RB, Lanzieri C. The need for the liberal arts. *J Am Coll Radiol* 2006;3:904-6.

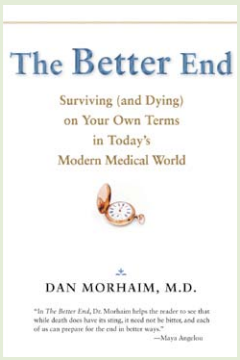
8. Thomas L. *The medusa and the snail: more notes of a biology watcher.* New York: Viking Press, 1979. ■

BOOKS by Alumni Authors



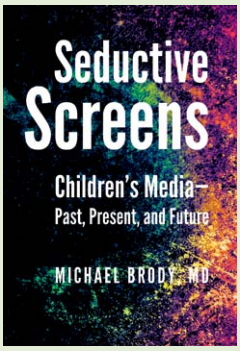
CRITICAL CARE EMERGENCY MEDICINE, *by David Farcy, M.D., Fifth Pathway '01, William C. Chiu, M.D., Alex Flaxman, M.D., and John P. Marshall, M.D. (McGraw-Hill Professional, 2011).* This comprehensive resource examines the overlap between emergency medicine and critical care. Incorporating the perspectives of intensivists and emergency physicians, it aims to teach emergency physicians everything they need to know and do to better care for critically ill patients in an emergency department or to provide care in an ICU. The book includes algorithms that speed decision making in a wide variety of situations, and displays full-color illustrations demonstrating anatomy and technique.

David Farcy, M.D., a 2001 graduate of the New York Medical College Pre-Internship Program, is medical director of the surgical intensivist program and director of emergency department critical care at Mount Sinai Medical Center in Miami Beach, Fla. He has a special interest in critical care, and serves as president of the Florida American Association of Emergency Medicine. Dr. Farcy was a first responder at the World Trade Center on 9/11/01, forced to flee when the buildings collapsed.



THE BETTER END: SURVIVING (AND DYING) ON YOUR OWN TERMS IN TODAY'S MODERN MEDICAL WORLD, *by Daniel Morhaim, M.D. '75 (Johns Hopkins University Press, 2011).* By confronting the barriers to this difficult but essential topic, Dr. Morhaim offers readers hope, empowerment, dignity and control in managing medical crises and end-of-life care. The author details care choices available to patients and explains why living wills and advance directives are a necessity for every American. Readers are encouraged to make their own decisions and communicate them to their families to help avoid the uncertainty and trauma of dealing with unclear end-of-life wishes in a time of crisis.

Daniel Morhaim, M.D., has more than 30 years of clinical experience treating patients in emergency medicine and internal medicine, and is on the faculty at the Johns Hopkins Bloomberg School of Public Health and the University of Maryland Medical School. As the only physician member of the Maryland State Legislature since he was first elected to office in 1994, he has dealt with health policies surrounding end-of-life issues.



SEDUCTIVE SCREENS: CHILDREN'S MEDIA—PAST, PRESENT AND FUTURE, *by Michael Brody, M.D. '66 (Cambridge Scholars Publishing, 2012).* Dr. Brody describes the rise of media aimed at children, from its early beginnings on radio to the ubiquity of Facebook. He traces the collision of economics, psychology, needs of parents, and technology in creating the perfect storm for the unprecedented growth of children's media. Using case studies and personal anecdotes, Dr. Brody explores children's media from the perspectives of education, civility, celebrity, violence, play and child rearing.

Michael Brody, M.D., practices adult and child psychiatry. He is chair of the Media Committee of the American Academy of Child and Adolescent Psychiatry, liaison to the American Academy of Pediatrics and is an adjunct professor at the University of Maryland. He was a key advocate in the creation of the children's televisions rating system and the Children's Online Privacy and Protection Act (COPPA). ■

Ansley Bacon, Ph.D. (in red), leads a team of professionals who have helped give the LEND program its staying power. From left are Marilyn Klein, M.A., CCC-SLP, John Maltby, M.S.W., Patricia Aguayo, M.D., M.P.H., Catherine Yankou, M.P.H. '07, Barbara Levitz, M.S.Ed., Dr. Bacon, and Patricia Towle, Ph.D. Not pictured is Lisa Katz, L.M.S.W.

Changing the System, Changing the World

The well-regarded LEND program taps multiple disciplines to train future leaders to better address the needs of children with disabilities and their families.

BY ANDREA KOTT, M.P.H.

Patricia Aguayo, M.D., M.P.H., was pregnant with her daughter when her two-year-old son was diagnosed with autism. At the time, Dr. Aguayo was a medical school graduate and a stay-at-home mom. She was also immersed in her son's care, isolated and depressed. While searching for services for him, she found the Westchester Institute for Human Development (WIHD) and, in turn, Leadership Education in Neurodevelopmental and related Disabilities (LEND), a nationwide, interdisciplinary training program for health professionals who work with children with neurodevelopmental disabilities, and for parents and siblings of individuals with disabilities and other special health care needs.

In LEND, Dr. Aguayo found something she hadn't expected: a tightly-knit community of health care professionals and some families who bring invaluable leadership training and skills to the work and advocacy they do on behalf of children with neurodevelopmental disabilities. "I thought, 'Oh my God. I want to be like these people,'" Dr. Aguayo says.

The LEND program is operated at WIHD, which is a federally funded University Center for Excellence in Developmental Disabilities (UCEDD). WIHD runs LEND in partnership with the Center on Disability and Health at the College's School of Health Sciences and Practice (SHSP). LEND is funded through a $693,000 grant from the Maternal and Child Health Bureau of the Health Resources and Services Administration, which was recently renewed through 2016 (the first grant was awarded in 1968). This in itself is an achievement, as only a handful of programs nationwide enjoy consistent renewal.

"Trainee follow-up surveys show that 90 percent of our graduates are in leadership positions, working on behalf of children with disabilities."

—Ansley Bacon, Ph.D.

LEND's nine-month curriculum provides an overview of neurodevelopmental disabilities, as well as seminars in leadership skills and evidence-based research methods. Faculty and trainees come from a dozen core academic disciplines like pediatrics, audiology, nursing, psychology, social work, physical therapy and speech-language pathology. LEND trainees are eligible to earn a 15-credit certificate from the SHSP.

PARTNERS IN TEACHING

Although LEND programs typically train graduate-level students and health care professionals, the NYMC program, which is one of 43 such university-based programs in the United States, is distinct in a few ways. First, it was the first to recruit family members as faculty and trainees. As LEND director and WIHD president and chief executive officer Ansley Bacon, Ph.D., explains, "To have family members as LEND trainees reflects our strong belief that the parents are full partners with professionals, and they have a lot to teach young professionals." Second, the program places special emphasis on disability policy and advocacy. Third, it enjoys a long-term relationship with the University of Puerto Rico, from which it receives two distance-learning students each year.

LEND's hallmark is its interprofessional approach to teaching participants how to understand and negotiate the health care and social service systems on which children with disabilities and their families depend. Indeed, the needs of these children and their families are vast and complex, ranging from pediatric and other medical services, to developmental assessments, to speech and physical therapy, to help with managing Medicaid and Social Security's Supplemental Security Income. Thus, it is critical to bring medical, therapeutic and social service disciplines to any conversation about children's and their families' needs, according to Patricia Towle, Ph.D., LEND faculty and psychology training co-director. "We want our trainees to understand that there's an entire system associated with these issues," Towle says. LEND trainees learn how their disciplines overlap and how different disciplines can help each other, explains Lisa Katz, L.M.S.W., a social worker, program research associate and leadership course director. "Each discipline has to present its training and role to the entire team of disciplines," Katz says.

Trainees also learn how to conduct and understand research, including performing literature searches and data collection and analysis. "Any leader has to be a good consumer of research," Dr. Bacon says. Each trainee participates on an evidence-based research team, working on one of seven research projects throughout the year, which culminate in posters that they present at the state health department in Albany.

INFORMED ADVOCATES

The policy and advocacy component of LEND is especially important, because it familiarizes trainees with the intricacies

of health care policy, says Marilyn Klein, M.A., CCC-SLP, director of training. “Policy and research are usually lacking for people who work with children with disabilities,” Ms. Klein says. Ultimately, LEND’s policy training prepares participants for their role as advocates, both at the individual and legislative level. For example, in 2006, LEND faculty and graduates advocated for the passing of the “Combating Autism Act,” which authorized nearly one billion dollars to combat autism spectrum disorders through screening, education, early intervention, prompt referrals for treatment and services, and research. Each spring, six trainees accompany Dr. Bacon to the National Disability Policy Seminar in Washington, D.C., where they learn about current disability policy issues and meet with policy makers on Capitol Hill.

Dr. Bacon notes that the program has documented long-term impacts on the careers of its graduates, who are followed for 10 years. “Trainee follow-up surveys show that 90 percent of our graduates are in leadership positions, working on behalf of children with disabilities,” she says.

Dr. Aguayo is a case in point. Her LEND training not only introduced her to a whole new arena of agencies and systems involved in her son’s care, but it also inspired her to become professionally involved in the lives of children with neurodevelopmental disabilities and their families. “I went from being a stay-at-home, depressed mom to training as a child psychiatrist,” she says from her office at the Yale Child Study Center in New Haven, Conn., where she is currently a fellow in child psychiatry.

Each spring, LEND trainees attend the National Disability Policy Seminar in Washington, D.C., learning and meeting with policy makers on Capitol Hill.

EMPOWERMENT OBJECTIVE

John Maltby, M.S.W., another LEND graduate, is now the director of WIHD’s Community Support Network. Mr. Maltby, who has a 38-year-old son with developmental and cognitive disabilities, enrolled in the program after leaving a career on Wall Street to become a social worker. “I thought it would be a way to enhance what I knew and to get different perspectives,” he says. He found this, and more. “Having a diverse interdisciplinary class heightened the need to see things from the other person’s point of view and deepened my understanding and patience,” he says.

Dr. Aguayo concurs: “Many minds think better than one. Having a team of people with different perspectives definitely leads to better outcomes for a child than having just the perspective of one person.”

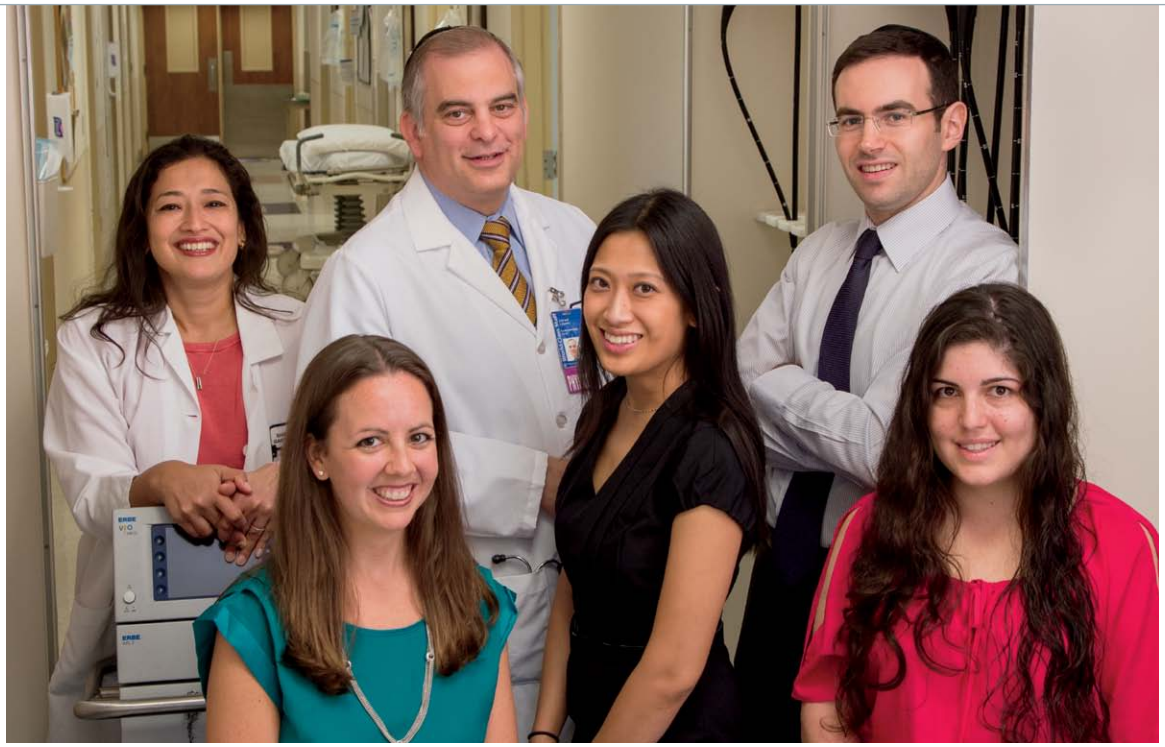
Mr. Maltby, who is also an assistant professor of public health practice at the College’s Center on Disability and Health, found the research training especially useful in helping him understand how to approach systems change. “LEND helped me to acquire new tools for advocacy. It gave me a better understanding of how the social services systems function, how federal, state and local legislation and regulation enable those systems, and how to follow the money that affects policy.”

At the same time, the program has given Mr. Maltby and Dr. Aguayo education and skills to help them become the best possible advocates for their own children. “I connected with a lot of leadership-oriented people and I got a sense of ‘I can do this,’” Dr. Aguayo says. “I felt empowered.”

Mr. Maltby agrees. “Families are not victims,” he says. “Years of dealing with the system can leave a parent exhausted and cynical. LEND allowed me to see that, despite the failings of our systems, the people who have dedicated their careers to helping people with disabilities are extraordinary professionals. It gave me optimism that the changes we are working toward may eventually be realized.” ■

FELLOWS WITH A FUTURE

The gastroenterology fellowship program is training young doctors for a people-focused career in which ever-smaller technology will bring about an ever-larger number of cures.



Edward Lebovics, M.D. (third from left), program director and division chief, sets the bar high for his team of future gastroenterologists. Clockwise from upper right are fellows David Weinerman, M.D., Maria Kassab, M.D., Chau Che, M.D., Amy Tyberg, M.D. '08, and Shireen Pais, M.D., assistant professor. Fellows not pictured are Lubin Arevalo, M.D., Ashley Maranino, M.D., and Ayesha Zahiruddin, M.D.

Dr. Lebovics holds up an endoscopy capsule containing a tiny camera, while faculty members Daniela Jodorkovsky, M.D., assistant professor, and Brad Dworkin, M.D., professor, look suitably impressed.

BY ROBERT S. BENCHLEY

When a man walked into the Metropolitan Hospital Center emergency room vomiting blood, he didn't appear to be someone whose day was going to end well. "By the time I got there, it looked like a massacre had taken place," says Chau Che, M.D. "There was blood everywhere."

But Dr. Che, a second-year fellow in New York Medical College's Fellowship in Gastroenterology and Hepatobiliary Diseases, went to work on the patient. "He was fairly young, about 40, an alcoholic and cirrhotic—he had very advanced liver disease," she says. Once she and other on-duty medical personnel got the patient stabilized, Dr. Che decided it was time for "the talk."

"You have the rest of your life to live," she told him. "If you don't stop drinking, it will kill you. This is it."

At the time, Dr. Che had no way of knowing whether she had gotten through to the patient, but the next month he was back—and proudly announced that he had stopped drinking. He continued to stop by every couple of months, and always asked for Dr. Che. "He's been alcohol-free for six months, and I just referred him to a liver transplant program," she says. "Now he expects to see me whenever he comes in. I feel like he is my patient, and I think my counseling played an important role in his recovery. Maybe I gave him a new life."

In modern gastroenterology, old-fashioned counseling and the latest treatments go hand-in-hand. Amy Tyberg, M.D. '08, another second-year fellow, has her own story to tell.

"I was on call one weekend at Westchester Medical Center," she says, "and a patient came in with cholangitis caused by a gall bladder stone blocking one of the ducts that drains the liver and the gall bladder. It's a potentially life-threatening infection, and the patient was starting to go into shock."

Endoscopic drainage has replaced emergency surgical common duct exploration in such cases, being just as effective, less invasive and posing less risk to the patient. "Soon after the procedure," says Dr. Tyberg, "his fever resolved, and his white blood cell count came down. A couple of days later, he walked out of the hospital as if he had never been life-threateningly ill. This happens a lot. People get admitted to the hospital or come into the office, and more often than not we diagnose them with conditions that we can treat endoscopically. That's one of the reasons I was attracted to gastroenterology—I like working with people, and I like fixing things."

THE BEST AND BRIGHTEST

In singling out one of the hundreds of cases each has seen so far, Drs. Che and Tyberg reveal different personal motivations for entering medicine in general and gastroenterology in particular. What they share, however, is having been chosen from hundreds of applicants for the Fellowship's rigorous three-year training program.

"We are currently interviewing for two positions for July 2013," says Edward Lebovics, M.D., who joined the College's faculty in 1986, and has been director of both the Sarah C. Upham Division of Gastroenterology and Hepatobiliary Diseases and the Fellowship program since 1997. "We have 350 applications, from which we will interview 40 candidates to make our choices."

Those are pretty long odds for the candidates, but how does one decide who makes the cut when most of the applicants look outstanding on paper? "During the application review, we look for a record of clinical excellence in medical school, but more important, in their residency," says Dr. Lebovics.

"It is due to Dr. Lebovics's extraordinary leadership as division chief and fellowship director that the NYMC program is now widely recognized as one of the top gastroenterology fellowships of the entire region, attracting faculty and fellows with outstanding credentials."

—Richard G. McCarrick, M.D.

"That will usually be apparent in their performance reviews and their letters of recommendation. We also look at the reputation and quality of the institutions at which they have trained. And we look for evidence of their commitment to the field, such as participation in research. In the interview round, we look for people who come across as personable, ethical, passionate and motivated."

Drs. Che and Tyberg, both the daughters of physicians, rose to the top in that highly competitive process two years ago.

Dr. Che grew up outside of Philadelphia, did her undergraduate work at Villanova University (biology, with a minor in Spanish), earned her M.D. at Drexel University College of Medicine and did her residency at the New York University School of Medicine. "My pathway to this fellowship goes back to a gastroenterology elective that I took during my fourth year of medical school," she says. "I was very interested in preventive medicine, and I still am, but that was my first experience with seeing colonoscopies. At that time, I felt I had seen a disproportionate number of large, cancerous masses in elderly Asians who were sent for their screening colonoscopies. I saw them diagnosed with potentially-preventable colon cancer. I realized that this was an area of medicine in which I could make a difference."

Dr. Tyberg, a native of Scarsdale, N.Y., is often asked why she didn't become a cardiologist like her father. The truth is, she wanted to find her own field of passion in medicine. She ventured south to Duke University as an undergraduate (history of medicine major, chemistry minor, public health certificate), then returned for an M.D. at New York Medical College and a residency at New York-Presbyterian Hospital/Weill Cornell Medical Center. Like Dr. Che, she took a fourth-year medical school elective in gastroenterology. "I really liked the fellows and attendings that I worked with," she says. "Everyone was very smart and passionate. I liked the procedural aspect, but also the fact that it was intellectual and encompassed multiple organs, allowing for a large amount of variability within the specialty. In truth, there's nothing more interesting or more satisfying."

TRIPLE THREAT

During the program, fellows rotate through three NYMC-affiliated hospitals, giving them a wide variety of clinical experiences and patient populations. Westchester Medical Center, where they spend the most time, is a 635-bed advanced medical care and referral hospital. This is where doctors on the field's cutting edge perform state-of-the-art procedures on patients who can't be treated adequately elsewhere. Metropolitan Hospital Center, located in Manhattan's East Harlem neighborhood, is a 356-bed municipal health care facility that gives the fellows the experience of treating underserved indigent populations, most of whom have no insurance. The third is Sound Shore Medical Center, located in New Rochelle, N.Y., a 252-bed community hospital with a broad range of patients. Full-time College faculty staff all three hospitals and work with the fellows during their rotations.

In the course of three years, the fellows gain considerable experience in gastrointestinal consultation services, inpatient services, clinics and procedures, including all varieties of endoscopy and related therapies. Westchester Medical Center has special strengths in liver transplantation, with about 80 performed each year, and fellows evaluate and track patients pre- and post-surgery, and participate in research and conferences.

Richard G. McCarrick, M.D., vice dean for graduate medical education and affiliations, credits the program's robust success to its director. "Directing a fellowship with three disparate hospital sites, imbuing fellows with the most advanced medical knowledge and technical skills, and creating an ambitious program of clinical and translational research, while continuing to fulfill

the increasingly stringent accreditation requirements, is a very challenging task," he says. "It is due to Dr. Lebovics's extraordinary leadership as division chief and fellowship director that the NYMC program is now widely recognized as one of the top gastroenterology fellowships of the entire region, attracting faculty and fellows with outstanding credentials."

PREDICTING THE FUTURE

Dr. Lebovics notes that he has seen major progress in the field in his 25 years of practice, and he predicts that the current fellows may see even more due to advances in technology. "Liver transplantation is now a widespread lifesaving procedure," he says. "My career has spanned the time that the hepatitis C virus was first discovered in 1988 to its being curable in most patients today. Endoscopic technology has also progressed; we now have high-definition endoscopes with narrow-band imaging and tiny endoscopes that can go into bile ducts. Looking ahead, there will be less invasive ways to screen for colon cancer than colonoscopies. Non-alcoholic fatty liver disease will emerge as the dominant cause of liver failure due to the epidemic of obesity in the U.S. There will be non-surgical endoscopic treatments for obesity. And stem cell treatments may replace liver transplantation for some indications.

"We have a very well-rounded program, and the fellows come out extremely well-trained," he continues. "Our goal is to produce gastroenterologists who will practice on a high level clinically, academically and ethically. About 60 percent go into private practice, usually joining a group practice; the other 40 percent become clinical faculty at a hospital or medical school." Drs. Che and Tyberg haven't determined their career courses yet, although both are considering an additional year of advanced endoscopy training.

"Our fellows have a proven history of success in getting the positions they want, partly because of the varied and excellent training they receive," says Dr. Lebovics. "Part of my job is mentoring them in terms of career paths. Whatever their dream may be, I want to help them achieve it." ■

Graduate Students Explain It All

In Hypertension, 20-HETE Holds the ACEs

BY VICTOR GARCIA

Hypertension continues to be a growing concern worldwide. Uncontrolled high blood pressure is sometimes called "the silent killer" because it has no symptoms. Left untreated, high blood pressure can cause heart attack, heart disease, congestive heart failure, aortic dissection and atherosclerosis, stroke, kidney damage, erectile dysfunction, angina and peripheral artery disease.

In the laboratory of Michal L. Schwartzman, Ph.D., professor and chair of the Department of Pharmacology, our work focuses on the actions of hypertension, centering on the relationship between 20-hydroxyeicosatetraenoic acid (20-HETE) and the renin angiotensin system (RAS). More specifically, we are studying the angiotensin-converting enzyme (ACE), in hypertension. 20-HETE is a 20 carbon-hydroxylated fatty acid, produced primarily by vascular smooth muscle in the microcirculation, which promotes vasoconstriction and contributes to the regulation of vascular tone. ACE, a key enzyme of the RAS system, converts angiotensin I to angiotensin II, which is a powerful vasoconstrictor of blood vessels. An increase in 20-HETE production in the vasculature as well as in components of the RAS, including ACE, can lead to the development of hypertension.

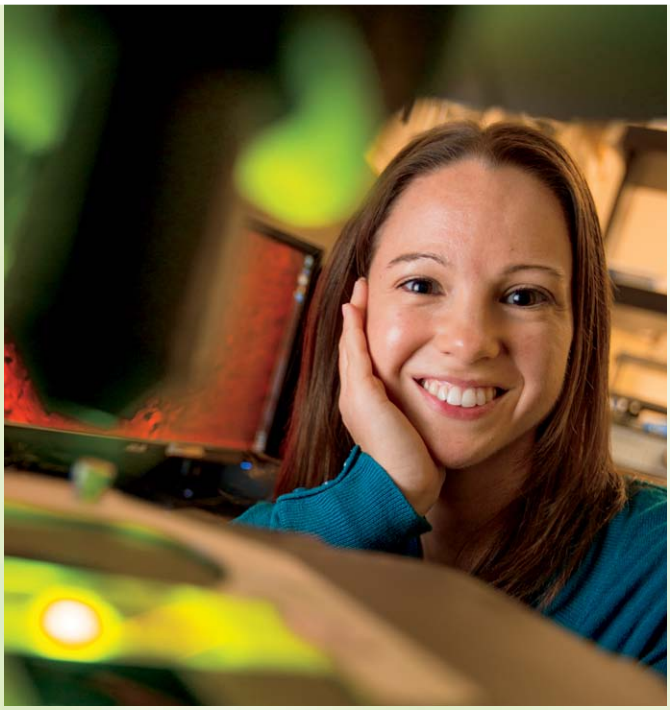
Treatment often includes drugs that target the RAS, including ACE inhibitors, such as lisinopril, and angiotensin II type I (AT1) receptor blockers, such as losartan. Work in our lab and by others has demonstrated that 20-HETE levels are increased in animal models of hypertension and in hypertensive individuals. Moreover, genetic polymorphisms in enzymes that produce 20-HETE are associated with increased risk of hypertension and cardiovascular disease, including stroke and myocardial infarction. The mechanism by which 20-HETE contributes to hypertension is not clear. My work identified 20-HETE as a potent inducer of ACE in the vasculature and suggested that 20-HETE promotes hypertension in part by activating the RAS. Further studies in our lab showed that in models of 20-HETE driven hypertension, the increase in blood pressure can be mitigated by either inhibiting the synthesis and actions of 20-HETE or by administering lisinopril or losartan to target components of the RAS.

How 20-HETE induces ACE activity and what is the clinical relevance of this induction is the current focus of my research. Using human microvascular endothelial cells, I observed that administration of 20-HETE to these cells led to a robust increase in ACE expression and activity within 12 to 24 hours, a time period that has never before been reported when compared to known activators of ACE. The increase in ACE expression was measured at the levels of mRNA, protein and activity that produce more angiotensin II.

To date, this work has uncovered a novel mechanism for ACE regulation that is controlled by 20-HETE. My initial findings were published in the August 2012 issue of the journal *Arteriosclerosis, Thrombosis and Vascular Biology.* For future studies, I plan to use animal models in which the ACE gene is deleted and to assess whether increasing the levels of 20-HETE in the vasculature leads to hypertension. Results from these studies will shed light on the interaction between 20-HETE and the RAS and may provide novel therapeutic targets for the treatment of hypertension and its cardiovascular complications, especially for individuals who do not respond to the typical drug regimen. ■

➤ VICTOR GARCIA

Victor Garcia, a native of Puerto Rico, earned his bachelor's degree from Drew University in 2007. He went on to complete his master's degree at the University of Medicine and Dentistry of New Jersey (UMDNJ) in 2009 with concentrations in pharmacology and stem cell biology. Mr. Garcia joined the Integrated Ph.D. Program in the Graduate School of Basic Medical Sciences to pursue his interest in vascular biology and pharmacology. Victor is a recipient of a NIH Diversity Supplement Award. He plans to continue researching the relationship between the arachidonic acid metabolite, 20-HETE, and angiotensin converting enzyme (ACE) as contributors of hypertension. He plans to graduate in 2014, and hopes to make a significant contribution to undiscovered regulatory pathways, applying classical pharmacology principles.



The Adrenal Renin-Angiotensin System: A Therapeutic Target in the Stress Response

BY REGINA NOSTRAMO

Stress can be defined as a sensed threat to homeostasis. In order to handle this threat and restore physiological balance, the body elicits the "fight or flight" response, necessary for survival. It is this stress response, for example, that allows a zebra to run for its life from a hungry lion. We humans turn on this same stress response, although the situations that trigger it are not always life-or-death. Unlike many other species, humans may activate the stress response in anticipation of a sensed physical or psychological stressor, often for days or weeks at a time. Although our bodies are well-prepared to handle short-term activation of the stress response, when activated repeatedly or when not turned off, it comes at a cost, contributing to the development of cardiovascular and psychiatric disorders and influencing the progression of chronic diseases such as diabetes and cancer.

According to the World Health Organization, by the year 2020 all of the top five diseases projected to cause the greatest global disease burden will have stress as an underlying factor. It is important to understand the molecular mechanisms mediating the stress response in order to find novel targets and therapeutic approaches to prevent the development of stress-related diseases.

In the laboratory of Esther L. Sabban, Ph.D., professor of biochemistry and molecular biology, we are investigating the involvement of one particular system in the stress response, the renin-angiotensin system (RAS). Systemically, this system is known to regulate blood pressure and fluid balance. However, independent RASs also exist within tissues like the adrenal gland, a key site for the production and release of the major stress hormones, glucocorticoids (released from the adrenal cortex) and catecholamines (released from the adrenal medulla). Our aim has been to determine how the individual components of this complex system in the adrenal medulla are modulated by stress and how they work together to mediate the stress response.

To activate the stress response, we used the stress model of immobilization. For rats, this represents a situation similar to being stuck in a frustrating traffic jam. When we analyzed the changes in the RAS in the adrenal medulla following either single or repeated immobilization, we were amazed by how many components were altered by even a single stress exposure. Many of the changes were observed for components only recently identified as players in the RAS, with functions that are still unknown. One particularly interesting finding was that levels of the angiotensin II type 2 receptor (AT2R), which is considered to be beneficial, decrease by 90 percent following a single stress exposure.

Overall, our findings highlight the RAS in the adrenal medulla as a key mediator of the stress response. We hypothesize that the specific pattern of stress-triggered changes in RAS expression allows for increased catecholamine production to respond to the threat to homeostasis. As stress is a growing global health problem, future research will explore several of these RAS receptors, particularly the AT2R, AT4R, and (pro) renin receptor, as potential targets for preventing the development of stress-related disorders. ■

➤ **REGINA NOSTRAMO**

Regina Nostramo, who plans to graduate in 2013 with a Ph.D. in biochemistry and molecular biology, earned a B.S. in biological sciences from Binghamton University and a Master of Forensic Sciences from George Washington University. She became interested in catecholamine research during graduate school, where she studied forensic toxicology. Intrigued by her studies of drugs and their mechanisms of action, many of which modulate catecholamine neurotransmission, she decided to join the lab of Esther Sabban, Ph.D., an expert in the field of catecholamines and stress. Ms. Nostramo intends to pursue an academic career in basic research in the biomedical sciences, and hopes to one day head her own lab where she can help identify new drug targets for the prevention and treatment of stress-related diseases.

TESTING MED SCHOOL METTLE

A program in the Graduate School of Basic Medical Sciences gives med school hopefuls a year to blend in with fellow students—and prove beyond doubt they can succeed.

BY MELISSA F. PHETERSON

What better way to prove you're med-school material than to spend a year *at* medical school, taking classes at New York Medical College?

The Accelerated Master's Program (appropriately abbreviated as AMP) is a one-year track of the master's program in the Graduate School of Basic Medical Sciences. It allows a select group of strongly-qualified candidates for medical school to live, study, and take classes alongside medical students as they prepare their applications for medical school and review material to take (and often re-take) the MCAT. Upon completion of the program, they are qualified for a master's degree—and, almost always, acceptance to medical school, in many cases New York Medical College's own.

Introduced in 2007 with just one student, the program has soared in popularity and spiked in its number of applicants. But the AMP remains small and selective, unlike the swelling ranks in similar programs at other medical schools, accepting fewer than 20 students every year from an applicant pool in the hundreds.

"We keep the class small so we can fully integrate the students into the med school, and to let them experience firsthand the classroom and culture," says Norman Levine, Ph.D., professor of physiology and program director of the AMP. "They live alongside medical students in the dorms, sit with them in class, take the same exams, and even study together.

"They're indistinguishable from the med students," he says.

AMP students take four of the six classes that first-year medical students take: Histology, Biochemistry, Physiology and Neuroscience. If their grades are strong and they remain on campus for medical school, they can choose to serve as teaching assistants or tutors to engage with the material from an additional perspective.

Limiting the group to a close-knit community also lets faculty devote efforts and personal attention to bolster each student's chances of admission to medical school, such as setting up clinical research opportunities and giving feedback on personal statements. The course material often boosts AMP students' MCAT scores; and, just as crucially, the validation they receive from thriving in medical school builds their confidence.

"These students have strong records, strong potential, and are just on the cusp of being accepted to medical school," says Dr. Levine. "Our program is an academic enhancer to help them get there."

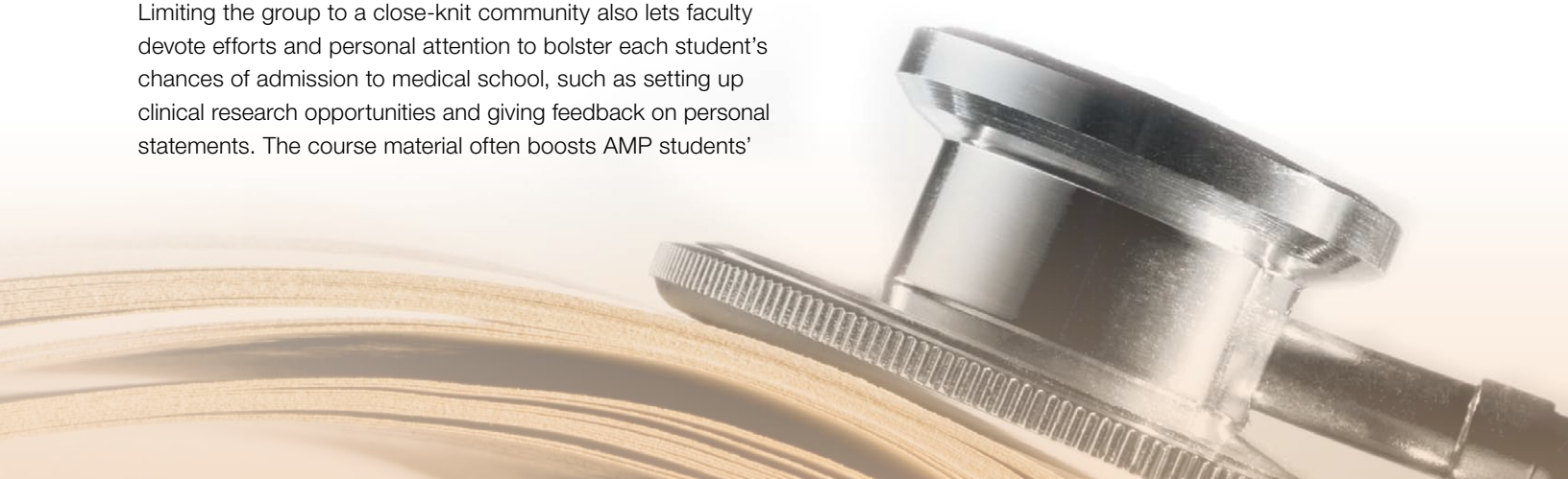
Students credit Dr. Levine, as well as Ken Lerea, Ph.D., associate professor of cell biology and anatomy and faculty advisor for the accelerated program, and Carolyn Chiarieri, M.S., a retired director of admissions for the School of Medicine who now directs recruitment and admissions for the AMP, for working to hone each students' application and build their cases for acceptance.

PROOF "BEYOND DOUBT"

Norman Roth, now a fourth-year medical student, was among the 20 students in the AMP's second year, 2008. He had majored in economics at the College of Holy Cross, with a focus on pre-med; and despite strong MCAT scores, admission to medical schools eluded him in the year after graduation.

"Though my overall GPA was pretty good, I didn't quite have the science GPA to make me competitive," says Roth. "Getting 20 rejection letters is enough to shake anyone's confidence. My year in AMP showed admissions committees—and it showed me, too—that I could handle the work in medical school, beyond doubt. Not only *could* I do it, I *was* doing it." Though he applied to a range of schools, he was thrilled to stay at NYMC.

"It felt like home," he says. "My classmates and I were all pulling for each other. And Dr. Lerea, Dr. Levine and Ms. Chiarieri were amazing in how much they helped me, not only when I was applying to med schools but also in their encouragement and support."



> “These students have strong records, strong potential, and are just on the cusp of being accepted to medical school,” says Dr. Levine. “Our program is an academic enhancer to help them get there.”

In his first year of med school, Roth tutored physiology, having already taken the course during the AMP.

“Being a tutor—making lesson plans, explaining concepts—forced me to re-learn the material even more thoroughly,” he says.

NO REGRETS

Suparna Shah, a second-year medical student, worked in the business sector before admitting to herself that medicine, not management, was her passion.

“I didn’t want to look back on my life with regret,” she says. “I wanted to be proud of who I was. But I figured I’d chosen my career and couldn’t back out now.”

In 2008 she made the agonizing decision to leave an accomplished career in finance, then enrolled in a few pre-med courses at NYU and began volunteering at Roosevelt Hospital in Manhattan, assisting orthopedic surgeons. Still, medical school seemed a dim and distant prospect. By chance, a resident at Roosevelt mentioned a master’s program at Georgetown similar to the AMP. When Shah went to NYU to secure a letter of recommendation, she noticed a flyer for New York Medical College’s program tacked on a bulletin board. She applied immediately, but then received acceptance from Georgetown and reluctantly planned a move. In the span of five days in 2010, “the craziest week of my life,” Shah found out she was accepted to NYMC, went to Valhalla for an interview, cancelled her move to Washington, D.C., and a trip to India, got word her sister on Long Island had gone into labor, and prepared to start the AMP that fall.

“Even though it was the most stressful week of my life, it was the best decision I ever made,” she says. “The year in AMP not only reaffirmed my passion for medicine, but also reassured me that I could succeed in medical school. And some of the people I met will be my friends forever.”

After a successful year, Shah was accepted into New York Medical College. With many core classes already under her belt, she enjoyed the experience of being a T.A. and had time to become involved in the Student Senate.

“I never expected to come into a medical college with such dedicated faculty,” she says. “I’ve been lucky. Not many people get the help and support to totally change their lives.” ■

ALUMNI NEWS

Christopher Pappas, M.S. '06, Ph.D. '11:

FORGING CONNECTIONS FROM PURCHASE TO PARIS

BY MELISSA F. PHETERSON

Even as a student, Christopher Pappas jumped at the chance to teach. While a master's candidate at New York Medical College, he worked as a substitute teacher at a nearby high school, served as preceptor for the microbiology labs, and was a judge at local science fairs. While still a Ph.D. student, Pappas began to adjunct at Manhattanville College in nearby Purchase, N.Y. By the time he joined the faculty there in 2011, shortly after graduating with his Ph.D. in microbiology and immunology, the transition was so smooth, "it felt like a constant flow." Next year, thanks to a prestigious award conferred by the National Science Foundation (NSF), Dr. Pappas will spend two years conducting research at the renowned L'Institut Pasteur, in the heart of Paris, collaborating with leading scientists in Europe.

Dr. Pappas' research at the College, conducted in the lab of Ira Schwartz, Ph.D., professor and chairman of the Department of Microbiology and Immunology, focused on the biology of *Borrelia burgdorferi,* a bacterium that causes Lyme disease. Three years ago at a conference, Pappas met Dr. Mathieu Picardeau, who was studying at L'Institut Pasteur a bacterium similar to *Borrelia spp.* that causes leptospirosis, an infectious disease now posing an increased threat worldwide. Certain species of *Leptospira* can be spread by dog urine, which can contaminate both soil and water and severely sicken anyone exposed. In some cases, the disease is fatal. Dr. Pappas and Dr. Picardeau decided to apply for the NSF fellowship with a proposal to conduct joint research on leptospiral genes.

"It's a disease we haven't much regarded in the past, but research is now essential," he says. "With my Ph.D. and the huge amount of training it entails, I've always wanted to use my research skills to increase our knowledge of emerging infectious diseases affecting developing nations. This is an opportunity to do so."

Receiving word of the award in July was "exhilarating," he says. "Working with and learning from scientists like Dr. Picardeau will help me grow as a researcher."

While in Paris, Dr. Pappas hopes to forge a network of scientists that strengthens the ties between American labs and research centers abroad.

"By going abroad and learning new skills, creating a network on a global scale and observing how research is conducted abroad, we can translate those skills and ideas back to the United States," he says.

Dr. Pappas has also forged connections at Manhattanville, where he serves as director of laboratory management and safety. "I get animated about safety. It's the most important thing we can do in our labs, because if we don't take care of ourselves and protect our health, we can't focus on our research." Creating best practices for handling chemicals means spreading "a culture of safety" to other labs as students graduate. Pappas also took the initiative to plant a community garden on Manhattanville's lush campus, uniting faculty, staff, and students in tending the crops and donating food like Swiss chard and green beans to the Food Bank for Westchester. "We all get together, put our hands in the same dirt, and over the course of a season watch something grow," he says. "It's a great way to build a community."

In his lab at Manhattanville, Dr. Pappas pursues research on natural tick repellants that would offer less noxious alternatives to DEET products. This year he and his wife Lucia will also be brushing up on French and caring for their newborn daughter, Hera Sophia, and getting ready for their move to Paris in the spring.

"Next summer, I have visions of us playing with Hera on the lawn of the Eiffel Tower," he says. ■

MILESTONES
ALUMNI ACHIEVEMENTS

Class Notes should be brief, timely—and legible! Submit items online at www.nymc.edu/alumupdate, or mail them to Alumni Relations, New York Medical College, 40 Sunshine Cottage Road, Valhalla, NY 10595. Find us on Facebook and Twitter (@NYMC_tweets)!

THE 00S

Steven E. Kong, M.D. '11, and his wife Allison, are the proud new parents of a baby girl.

Rachael M. Thomason, D.P.T. '09, just moved back to California after spending two years in South Carolina and one year in Colorado. In August, she and husband Matthew celebrated the birth of their first child, Luke Douglas.

Roy Guerrero, M.D., Fifth Pathway '07, reports he is the sole pediatrician in a small clinic, which he owns, in Uvalde, a rural south Texas town.

Alicia M. Prater, Ph.D. '07, recently joined the board of Second Chance Animal Rescue (SCAR), an all-volunteer, no-kill shelter for cats and kittens, in Littleton, N.H.

Joshua D. Quick, M.D. '06, is currently in the second year of his anesthesiology residency at Massachusetts General Hospital. He was recently promoted to the rank of Lieutenant Commander in the U.S. Navy Reserve.

James Linhart, M.P.H. '05, was promoted to deputy corporate comptroller for the New York City Health and Hospitals Corporation. The corporate office in downtown Manhattan has been inaccessible since Superstorm Sandy and he has been temporarily relocated to other sites.

Addi Z. Rizvi, M.D. '00, is a vascular surgeon in practice for 4½ years in Minneapolis. He has three children, Ian, 6, Maya, 3½, and Luke, 13 months.

THE 90S

Domenic Visocchi, M.S. '99, currently owns his own practice, Precision Physical Therapy and Sports Medicine, in Medford, Mass., and has been in business for nine years.

Scot G. McAfee, M.D., '97, serves as vice chairman for education and program director for residency training in the Department of Psychiatry at Maimonides Medical Center in Brooklyn, N.Y.

John M. Abrahams, M.D. '95, associate professor of neurosurgery, is an inventor and entrepreneur, and has developed a medical hydrogel to reduce bleeding during surgery and an injection to treat back pain. His work has been honored by the Congress of Neurosurgeons and Pennsylvania Neurologic Society. He is also launching the Westchester Neuroscience Research Foundation for spinal cord injury, stroke recovery and brain tumor research.

Joseph E. Chase, M.D. '93, has enjoyed his solo practice on the south shore of Boston for the past year and a half. He specializes in sports medicine, particularly arthroscopic reconstructive procedures.

Photo courtesy of Naval Hospital Camp Pendleton

Mark Flynn, M.D. '93:
SERVING THE NAVY BY CARING FOR ITS FAMILIES

BY MELISSA F. PHETERSON

Touring battleships and meeting servicemen in his native Seattle, Captain Mark Flynn, M.D. '93, answered his inner call to join the Navy in his first year at New York Medical College. The decision served him well in his third year, when he enjoyed so many of his rotations, like pediatrics, OB/GYN and internal medicine, that he decided to pursue an interest in family medicine. At that time, with the closest clerkship opportunity located two hours away, it was actually easier to choose a rotation at the Naval Hospital in Bremerton, Washington. He continued there as a resident, delivering babies, caring for children and adults and performing minor operations.

"We family physicians have a little ADHD in us," he jokes. "We need variety to keep us going."

And variety ensued when, after his residency, the Navy sent Flynn to Naples, Italy, with his wife, Jenny, and his newborn son, Jonathan.

"We threw him in the back of our Honda Civic—gently, of course—and drove all over Europe," he recalls. "It was a wonderful place to get a taste of military life."

After three years, Dr. Flynn returned to the States to welcome a second son, Stephen, and join the teaching faculty at Bremerton. Three years later, the family moved to Spain, giving Flynn another three years to practice family medicine in remote settings that honed his skills.

"From a military standpoint, family medicine is the backbone of health care," he says. "Stationed in a small overseas hospital with no access to specialists, I needed to provide pretty broad coverage."

In 2005, Dr. Flynn was offered a residency faculty position at the naval hospital at Camp Pendleton in California, the largest U.S. Marine Corps base on the West Coast, where he now provides care for the families of 45,000 Marines. He became the residency program director in 2009. Next year, he will reach the milestone of having served in the Navy for 20 years.

"I call our training 'old-time family medicine,' and I try to instill that view as program director," he says.

Dr. Flynn also serves as vice president of the Uniformed Services Academy of Family Physicians, a chapter of the American Academy of Family Physicians. "It's the most diverse chapter, geographically, with doctors scattered around the world," he says. "It's a privilege to represent all these amazing people who have to do a tough job in austere settings."

At Camp Pendleton, Dr. Flynn has observed the repercussions of warfare, both physical and mental, on the servicemen, spouses, children and retirees he treats.

"We get to see firsthand how stressful the deployments are. It's no surprise—six, nine, twelve months at a time in a combat zone," says Dr. Flynn, who spent seven months away from his family while stationed in Kuwait in 2007. Flynn says he's constantly astounded by the stories of his patients, from Iwo Jima survivors in their nineties to today's Marines leading the fight in Afghanistan and Iraq.

"I ask myself: Could I do what these young Marines do? Carry heavy packs into combat, throw myself into harm's way?" he says. Taking care of their families is his way of supporting their mission.

His own family, now settled near San Diego, enjoys the culture and climate around the base. "Two teenage boys living near the California coast?" he jokes of his sons, now 16 and 13. "They like it." ■

Maj. Roger A. Gallup, M.D. '91, is now Deputy Commander for Clinical Services at the Carl R. Darnall Medical Center. He previously served as Chief of Critical Care Medicine at the facility.

Gabrielle Shapiro, M.D. '90, an associate clinical professor of psychiatry at The Mount Sinai Hospital and active in MSSNY, now has an empty nest!

THE 80S

Eugene A. Conrad, Ph.D., M.S., M.P.H. '89, is a leader of two all-male Alzheimer's Disease caregiver support groups, out of six in the U.S.

Alfonzo B. Owens III, D.M.D., M.P.H. '89, was honored as "Doctor of the Year" in 2010, from Cumberland Diagnostic and Treatment Center in Brooklyn, N.Y., by the New York City Health and Hospitals Corporation.

Robert M. Yacynych, M.D. '88, is looking forward to seeing all his classmates at the 25th Reunion in 2013! He reports that his son David joined his brother Eddie, a junior, at the University of Maryland College Park this fall as a freshman. Janette is a high school sophomore and Michael is in the eighth grade.

Shirley Salvatore, M.D. '87, is now a member of the Colorado Medical Board.

Judith J. Santini, M.D. '87, has been happily married for 22 years to the man she met at the ASA in Las Vegas. They have two wonderful kids and just sent their 16-year-old off to college. "Who ever thought this New York City girl would land up in Boise, Idaho? I just love it!" she writes.

Jay Y. Lee, M.D. '86, and his wife, Melissa, who got married just before med school started in 1982, recently celebrated their 30th anniversary.

Marc A. Berezin, M.D. '85, has been in orthopedic group practice for 22 years in Rockland County, N.Y., and writes, "I've been married for almost six years with three children. Only my four-year-old daughter wants to be a doctor—the others think I work too much."

Joseph S. Cervia, M.D. '84, is regional medical director for Healthcare Partners IPA and MSO, and clinical professor of medicine and pediatrics at Albert Einstein College of Medicine and Hofstra-North Shore LIJ School of Medicine.

Nicholas H. Hyde, M.D. '84, became a medical director for two Stanford plastic surgeons after finishing his hospital-based anesthesia practice in Berkeley, Calif. In 2001, he began a practice in vein medicine. He is double board certified and opened a second practice location in San Francisco three years ago. He has been featured on *ABC News Healthwatch* as a regional expert demonstrating endovenous laser ablation, a non-surgical alternative to surgical stripping and ligation. "It has been extremely fun to have 2 entirely different lives during my medical career—one hospital-based and the other my own practice. Life is very good and I love going to work everyday," he writes.

Jonathan Kunis, M.D. '82, has been medical director of Hazelden, a residential treatment facility for chemical dependence in Naples, Fla. He is returning to the Sarasota area in January 2013 to develop an office-based addiction medicine practice.

Alan H. Morelli, M.D. '82, reports he is working very hard at trying to practice good medicine in the age of electronic medical records!

Brian Solow, M.D. '82, is currently chief medical officer of OptumRx, a pharmacy benefits manager.

Robert P. Driscoll, M.D. '81, received the Fifth Annual Physician Partnership Award given by South Shore Hospital in South Weymouth, Mass.

Victor L. Modesto, M.D. '81, works as a general and colorectal surgeon for the Orlando (Fla.) VA Medical Center.

Steve Resnick, M.D. '81, was elected vice president of the New Jersey Psychiatric Association. He also chairs the IT committee.

David B. Southren, M.D. '81, was recognized as a V.I.P. member by Strathmore's *Who's Who Registry* for his outstanding contributions and achievements in health care. He is a founding partner of Advanced Cardiovascular Care of the Hudson Valley.

As of November 13, **Peter A. Galvin, M.D. '80,** still had no power, phones, cell phone service or heat at both his home and office in Rockaway, N.Y., from Superstorm Sandy. He was the chief medical officer at Peninsula Hospital Center in Queens until it closed last April and has since increased his office hours in Rockaway. "I am still employed by the NYPD as a police surgeon—20 years and counting," he writes.

Jill S. Hirsch, M.D. '80, and her husband Randolph are very proud of their three daughters. Larissa received her Master's of Education in secondary science with a specialty in chemistry from Marist College. Twins Allison and Jessica each received doctorates from the University of California Berkeley in chemistry. Allison is doing her post doctorate at Moffitt Cancer Center in Tampa and Jessica is doing her post doctorate at University of Massachusetts Medical Center.

James Walsh, M.D. '80, frequently works as a pediatric anesthesiologist at Maria Fareri Children's Hospital in Valhalla, N.Y. He writes that daughter **Pamela Walsh, M.D. '12,** graduated last May and is doing her internship at Greenwich Hospital, then radiology at North Shore LIJ.

THE 70S

Nicholas G. Bonvicino, M.D. '79, M.B.A., is a principal in a health care consulting practice, NB Healthcare Advisors, LLC, with expertise in managed care, integrated delivery networks, PCMH and accountable care, delivery system redesign and reimbursement innovation.

John T. Repke, M.D. '78, has been named to the editorial board of *Obstetrics and Gynecology,* the official journal of the American College of Obstetricians and Gynecologists. Dr. Repke is professor and chairman of OB/GYN at Penn State University College of Medicine.

Charles B. Slonim, M.D. '78, was elected president of the Florida Society of Ophthalmology.

Nicholas V. Polifroni, M.D. '77, chief of orthopedic surgery at Norwalk Hospital, received the hospital's Tracey Award for leadership, character, community service involvement and clinical skill.

Joanne Kurtzberg, M.D. '76, received an Alumna Award of Achievement from Sarah Lawrence College in June. She was also the keynote speaker at the NYMC Medical Student Research Forum held in February 2012.

Mark Mishkin, M.D. '76, is proud to announce his son, **Aaron Mishkin, M.D. '12,** graduated from NYMC in May.

Edward Moss, M.D. '76, left his solo practice five years ago and joined a 90-person urology group practice, Integrated Medical Professionals-Advanced Urology Centers of New York.

Richard C. Prokesch, M.D. '76, continues in the private practice of adult infectious diseases with two

Janet Herbold, M.P.H. '09:

A LIFELONG LEARNER WORKING TO IMPROVE REHABILITATION

BY CYNTHIA A. READ

During more than 20 years as a "hands-on" physical therapist for people with serious neurological, orthopedic, and cardiopulmonary challenges, Janet Herbold, M.P.H. '09, guided her patients in achieving goals that changed their lives. Now, as a Senior Administrator at the Burke Rehabilitation Hospital in White Plains, N.Y., she is using research and policy to effect change and receive satisfaction on a much larger scale.

While Herbold was an undergraduate at Providence College, a presentation on careers in physical therapy provided her "aha" moment, and she knew she'd found her path to helping people. After receiving her B.A. from Providence in 1985, she went on for a B.S. in physical therapy from SUNY Health Science Center at Syracuse and an M.A. in motor learning from Columbia University. She worked as a physical therapist at Columbia Presbyterian Medical Center and the Physical Therapy Center of Danbury, Conn., before joining Burke in 1992.

"Physical therapy and rehabilitation are usually a long-term process," says Herbold, "and give a therapist the opportunity to have an ongoing relationship with a patient—and frequently their families. Helping a person accomplish sometimes amazing goals is very rewarding." But, just like the rest of the medical world, rehabilitation operates within a complex and constantly changing regulatory environment. When Herbold received a promotion to senior management at Burke, she realized she needed to better understand the policies and requirements that govern her field. And with the increasing prevalence of electronic medical records, she wanted to know how take advantage of the data to ask and answer important questions about how to make rehabilitation most effective.

So Herbold turned to New York Medical College and its School of Health Science and Practice. The College's program for a Masters in Public Health, with a concentration in health policy and management, attracted her because of its active faculty and its emphasis on applying the latest knowledge to projects out in the "real world," not just in the classroom. She received her M.P.H. in 2009 and immediately put what she'd learned to work at Burke, where her current title is Senior Administrator for Corporate Compliance, Network and Outcomes Research.

Among her diverse responsibilities, Herbold is the clinical project manager for software specifically geared to rehabilitation—in fact, she helped develop the Burke documentation program

and train the staff in its use. This software assures that Burke complies with the latest government and other regulations and provides a clear, ongoing picture of each patient's progress. Analyzing the data provides a new way for Burke to understand what treatments are most effective and how to achieve specific goals, such as lessening the frequency of falls, or sending patients home sooner. It has also led to Herbold's own research studies; the effectiveness of continuous passive motion on recovery from total knee replacement surgery is one current example.

Juggling her work at Burke, teaching as adjunct faculty for the College's M.P.H. program, and continued studies toward a Ph.D. in Physical Therapy and Rehabilitation Research can be a challenge. But swimming, tennis, and golf provide Herbold an outlet, and her family is very supportive. "It's good for my three children to see that asking questions and acquiring the knowledge to answer them is a lifelong process," she observes. Unfortunately, there will always be injuries and illnesses for which rehabilitation is necessary. Fortunately, constant questioners like Janet Herbold are seeking better and better ways to improve rehabilitation's outcomes. ■

other physicians. He is also on the board of directors of their primary hospital and for the past 2 years served as chair. His daughter is in her first year of an infectious diseases fellowship and plans to join the practice upon completion.

Robert A. Stern, M.D. '76, still practices OB/GYN in Poughkeepsie, N.Y. Wife Anita is well, and they have five grandchildren to keep them busy: Elijah, Judah, Lana Rose, Maxell and Nora Sophie. "Life is good!"

Vincent Vigorita, M.D. '76, sends his regards to all his classmates.

Allen Beals, M.D. '75, J.D., was appointed Commissioner of Health in Putnam County, N.Y.

Catherine Dunn, M.D. '75, writes that in 2012 she visited her med school roommates, **Nancy Roistacher, M.D. '75,** in NYC, **Rosemary LoCastro, M.D. '75** at her new home in Alvbemarle, N.C., and **Lynn Romano, M.D. '75,** at her unique farm in Delaware.

John Stinson, M.D. '75, has retired from clinical orthopedics and is working full-time as a medical officer for the FDA. He writes he is "enjoying the new challenges very much."

George Klafter, M.D. '74, is retired after completing two terms as chief of urology from 2006 to 2011 at Holy Name Hospital in Teaneck, N.J. He previously served as chief of the Department of Urology at St. Barnabas Hospital in the Bronx, N.Y., from 1986 to 1998.

Robert D. Restuccia, M.D. '72, writes that he is retiring from Rockford Health System in Rockford, Ill., at the end of the year, after serving as a pediatric critical care specialist since retiring from the U.S. Army in 1998. He plans to travel, bike, read and pursue his hobby—horology. He writes that his wife, Mary Elizabeth, passed away in July.

Phyllis Skolnik, M.D. '72, and her husband Marvin L. Sussman, Ph.D., are the proud grandparents of two boys, Simon and Nathaniel.

Kathleen Nelson, M.D. '71, remarried in November 2011 and retired as professor emerita at the University of Alabama School of Medicine in June. She is now clinical professor of pediatrics and associate chair for faculty development at Children's Hospital of Alabama. She is also chair of the Council of Academic Societies of the Association of American Medical Colleges (AAMC) and is on the AAMC Board of Directors.

Robert E. Crootof, M.D. '70, and his wife, Linda, are retired and officially live in Norwich, Conn., but spend summers at the lake in Wolfeboro, N.H. and winters in a condo in Sarasota, Fla. Son Matthew lives in Bozeman, Mont., daughter Sarah in the West Village, and daughter Martha in Los Angeles.

THE60S

Richard N. Hirsh, M.D. '69, retired from radiology group practice almost two years ago, and still conducts mammography teaching projects in developing countries and underserved regions. He has missions planned for Guatamala and Costa Rica in 2013. Visit his website at www.radiologymammography.org.

Norman A. Cagin, M.D. '67, retired, spent two weeks in Gondar, Ethiopia, checking out the health status of Ethiopian Jews (Felashas) before they go to Israel. He also gave lectures at the Gondar Medical College and did consult rounds at the government hospital where there is no cardiologist. Dr. Cagin writes, "More docs are needed to do this work over the next year so if you are interested, email me at cooldocnac@aol.com."

Jack J. Kleid, M.D. '65, is still in active cardiology practice in San Diego and is clinical professor of medicine at UCSD School of Medicine in LaJolla. He lectured at Sackler School of Medicine in Tel Aviv in April and was inducted into the Israel Heart Society. Dr. Kleid serves on the editorial board of the *Journal of Clinical Lipidology.* He has three children and three grandchildren. Visit his website at www.drkleid.com.

Leonard B. Krich, M.D. '65, retired from the United States Public Health Service after 20 years of active duty. He retired from full time work with the Cigna Medical Group in Phoenix, eight years ago but still works two days a month. His three children and eight (soon-to-be nine!) grandchildren, all live nearby. His eldest, **Mark Krich, M.D. '97,** is an NYMC graduate, specializing in emergency medicine.

Morton Meltzer, M.D. '65, practices psychiatry in a number of locations but gave up general medicine because of his distaste for electronic medical records.

Harvey Weisslitz, M.D. '65, has been retired from an allergy practice since 2010 and resides in a 55+ complex in N.J. His eldest son Jeffrey is a clinical psychologist with two children, Ella, 4, and A.J., 18 months; son Michael is a lawyer; he and his wife Rachel have a daughter Milie, 11 months, and are expecting twins in April. Dr. Weisslitz's third son, Toby, is a professor of comparative literature at Georgia Southern University.

Andrew Roth, M.D. '64, still enjoys being in active practice and is busier than ever. He writes, "My only concession to age (74) is working four days a week." He enjoys travel and entertainment—plays, operas, symphonies and any interesting venue that comes to Los Angeles.

Howard Cooperman, M.D. '63, wishes fellow classmates all the best. He'll have to miss the 50th class reunion due to grandkids' graduations.

Steven F. Frier, M.D. '63, received an M.P.H. from Columbia University in 2003. Dr. Frier is an active instrument pilot and a recent president of the Bergen County Medical Society. He initiated and obtained passage by the Medical Society of New Jersey of a resolution advocating the nationwide abolition of capital punishment and replacing it with life in prison without the possibility of parole. He continues to practice internal medicine and nephrology full time and is blessed with four grandchildren.

John J. Healy, M.D. '63, is retired and lives on Cape Cod. He works one day a week at his previous pediatric practice with four partners.

Stuart Mackler, M.D. '63, is vice president of the Virginia Board of Medicine.

Jack D. Norman, M.D. '63, retired in 2011 after practicing plastic surgery for 40 years. He enjoys vacationing, playing golf and reading, and he and his wife Ann celebrated their 35th wedding anniversary in Paris. His daughter teaches reading at a KIPP school in Nashville and he is looking forward to the 50th reunion!

Gerald R. Schultz, M.D. '63, received the Distinguished Service Gold Medal from the Bombay Opthalmologists Association and the International Academy for Advances in Ophthalmology, marking 30 years of service and teaching eye surgery in India. Dr. Schultz is an associate clinical professor at Loma Linda University School of Medicine and chief of ophthalmology at Desert Regional Medical Center in Palm Springs, Calif.

John J. Bouvier, M.D. '61, is retired from the U.S. Navy and is enjoying family, life and "U.S.A. travel ad infinitum!"

Ira D. Glick, M.D. '61, writes he is still at Stanford, now emeritus but running the psychopharmacology courses for residents. He is medical director of a clinical research company in Oakland and sees private patients in San Francisco. His basketball career is winding down, although his "75s" team won the National Senior Championship in Houston last July. Dr. Glick does night photography and had two shows last year. Email him at iraglick@stanford.edu.

THE 50S

Justin Howland, M.D. '59, has authored three books and helped get two others published. They are listed in his blog, billhowlandmdblogspot.com.

Spencer R. Downs, M.D. '58, is retired from the U.S. Air Force Medical Service. He is an associate pastor at the Christian Fellowship Church in Evansville, Ind., where he teaches, counsels and conducts weddings and funerals. He has four children, eight grandchildren and three great-grandchildren.

Joseph Intile, M.D. '57, and his wife Juana "Annie" Intile, have been married since 2006 and have a son, Anthony, born in 2010. They spend half their time in Oregon and half at their home in the Philippines, north of Manila. He fully retired in 2002 after many years of private and administrative practice, his last job having been medical director of the Oregon Health Plan (Medicaid). He is also a retired military Colonel, having been a flight surgeon for ten years with a twilight-of-career course in learning to fly the Air Force F-16. "Annie and Anthony are dual citizens and complete a wonderful life for me," he writes.

George T. Hare, M.D. '56, received a Distinguished Alumnus Award from Gettysburg College and is emeritus medical director of long-term care at the Camden County Health Services Center in N.J.

Sanford Sherman, M.D. '56, is happily retired. His wife Jane died four years ago. "I am in relatively good health and active both physically and mentally...so far," he says.

James J. Finnerty, M.D. '55, is currently associate professor for medical education and OB/GYN at Albany Medical Center. He teaches at the Alden March Bioethics Institute there, working with students through all four years and conducts ethics lectures for the OB/GYN residents.

Roger C. Duvoisin, M.D. '54, retired in 1996 and resides in Chapel Hill, N.C. He is professor emeritus at Robert Wood Johnson Medical School of the University of Medicine and Dentistry of New Jersey. He served as professor and chairman of the Department of Neurology from 1980 to 1995. He writes that he led the team that established the first gene mutation in the etiology of Parkinson's disease and was a pioneer in the development of levodopa therapy.

Theodore Y. Rodgers III, M.D. '52, writes, "I retired to Shell Point Retirement Community in Fort Myers, Fla., a five star community!"

Paul D. Fuchs, M.D. '51, is retired and lives in New York City and Arizona. He is still active and travelled with his wife Rhoda to Spain and Holland this year. They have seven grandchildren and four great-grandchildren.

THE 40S

Norman M. Ackerman, M.D. '47, is happy to announce, "On November 8, 2012, my thirteenth grandchild, Nicholas, came into the world, saw the sunshine and smiled."

IN MEMORIAM

Alumni

Chad G. Wilde, M.D., Fifth Pathway '01, died January 7, 2012. He was 38.

John C. Sourby, M.S. '91, died May 17, 2012. He was 84.

Michael R. Spalding, M.D. '91, died October 24, 2012. He was 50.

Enriqueta Reilly, R.N., M.P.H. '88, died February 3, 2012. She was 77.

Lawrence G. Sahler, M.D. '88, died July 20, 2012. He was 57.

Anne R. LeSher, M.D. '87, died May 5, 2012. She was 69.

Lawrence B. Klein, M.D. '79, died September 30, 2012.

Louise E. Friedman, M.D. '77, died April 12, 2012.

Peter I. Praeger, M.D. '74, died September 22, 2012.

Martin J. Frank, M.D. '70, died in August 2012. He was 67.

Ira Kasoff, M.D. '70, died June 21, 2012. He was 69.

Thomas B. Heflin, M.D. '67, died June 4, 2012.

Ronald J. Rooney, M.D. '67, died September 14, 2012. He was 72.

Richard M. Ball, M.D. '66, died June 15, 2012. He was 78.

Jacquelyn C. Trent, M.D. '63, died September 25, 2010.

Robert C. Crosson, M.D. '62, died June 16, 2012. He was 82.

Kirk K. Kazarian, M.D. '61, died September 29, 2012. He was 82.

R. Margarita De Santis, M.D. '59, died May 8, 2012. She was 79.

Myron E. Freund, M.D. '59, died June 3, 2012. He was 78.

Charles Kilhenny, M.D. '57, died October 12, 2012. He was 84.

William C. Bradley, M.D. '56, died October 26, 2012.

Martin E. Rose, M.D. '56, died August 6, 2012. He was 85.

Stanley Gould, M.D. '55, died September 8, 2012. He was 91.

C. Robert Meloni, M.D. '55, died August 6, 2012.

David N. Wicoff, M.D. '54, died May 7, 2012. He was 89.

Robert D. Brennan, M.D. '53, died August 3, 2012. He was 84.

George McVay, M.D. '51, died November 2, 2012. He was 89.

John W. Geoghegan, M.D. '50, died June 5, 2012. He was 90.

William H. Brown, M.D. '48, died November 11, 2012. He was 88.

William J. Blake, M.D. '47, died May 30, 2012. He was 87.

Alfred E. Greenwald, M.D. '47, died August 24, 2011. He was 91.

Russell C. Johnson, M.D. '47, died May 13, 2010. He was 87.

Martin L. Sumner, M.D. '47, died May 8, 2012. He was 88.

Theodore R. Brand, M.D. '46, died September 18, 2012. He was 92.

Albert L. Goodman, M.D. '46, died September 28, 2011. He was 90.

Sidney J. Peck, M.D. '46, died March 2, 2012. He was 93.

Philip J. Palazzo, M.D. '46, died October 12, 2012. He was 91.

John L. Tyler, M.D. '43, died September 22, 2012. He was 95.

Faculty

Dirk M. Berger, M.D., assistant professor of psychiatry and behavioral sciences, died October 8, 2012.

Elvio S. Conte, M.D., assistant professor of pediatrics, died October 22, 2012. He was 83.

Adila S. Goldman, M.D., former associate professor of clinical psychiatry from 1970 to 1996, died November 8, 2012. She was 82.

Anthony Janos Herp, Ph.D., former research associate professor of biochemistry and molecular biology, died September 25, 2012. He was 88.

William S. Rosenthal, M.D., professor emeritus of medicine, died June 9, 2012. A significant contributor to scientific advancement in the field of gastroenterology, Dr. Rosenthal joined the College in 1961. In 1969 he was named the Sarah C. Upham Professor of Gastroenterology, becoming the College's first endowed professor. During his tenure of nearly 30 years, he trained generations of physicians who have contributed to the field of gastroenterology through research, teaching and clinical care. In 2001 he and his wife Barbara established the Barbara and William Rosenthal Chair of Medicine, an endowment to support the sitting chairman of the Department of Medicine in perpetuity.

Martin L. Stone, M.D. '44, professor emeritus of obstetrics and gynecology, died November 1, 2012. He was 92. Dr. Stone was professor and chairman of the Department of Obstetrics and Gynecology from 1956 to 1978.

Geraldine Ann Zamoyski, M.D., former instructor of medicine, died July 29, 2012.

Trustees

John J. Phelan Jr., died August 4, 2012. He was 81. He was a member of the Board of Trustees from 1982 to 1991.

Alumni Association Board of Governors

Officers

Henry I. Saphier, M.D. '61
President

Charles W. Episalla, M.D. '88
Vice President

John R. Addrizzo, M.D. '64
Treasurer

Joseph L. Giamelli, M.D. '02
Secretary

Robert J. Furey, M.D. '62
Archivist

Eileen (Lee) M. Dieck, M.D. '86
Immediate Past President

Elected Governors

Class of 2015
Patricia A. Barry, M.D. '83
George C. Shapiro, M.D. '88

Class of 2014
Thomas D. Cerabona, M.D. '82
John M. Cosgrove, M.D. '83

Class of 2013
Roger S. Madris, M.D. '79
Thomas J. Pacicco, M.D. '85

Faculty Governor

Leonard J. Newman, M.D. '70

Past Presidents

Dennis J. Allendorf, M.D. '70
Michael A. Antonelle, M.D. '62
Saverio S. Bentivegna, M.D. '50
Joseph F. Dursi, M.D. '59
Louis E. Fierro, M.D. '60
Rita F. Girolamo, M.D. '51*
Cyrille R. Halkin, M.D. '45*
Henry P. Leis Jr., M.D. '41*
David T. Mininberg, M.D. '61
E. Edward Napp, M.D. '33*
Christopher F. X. Riegler, M.D. '88
Seymour Schlussel, M.D. '51*
Lawrence B. Slobody, M.D. '36*
Martin L. Stone, M.D. '44
Paul Tartell, M.D. '52*

Member Emeritus

Phillip A. Marraccini, M.D. '50

**Deceased*

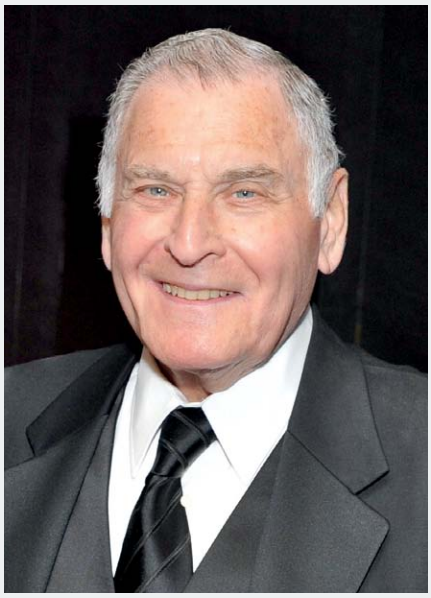
Henry I. Saphier, M.D. '61

Charting a New Course for the Alumni Association

Affable, outgoing, and deeply devoted to his alma mater, Henry I. Saphier, M.D. '61, is the newly elected president of the Alumni Association Board of Governors. Elected to a two-year term at the association's annual meeting last May, he will encourage activities that help deepen and expand connections between groups of alumni, and between the alums and New York Medical College—its faculty, administration, and students.

"I was born into the College," he likes to say, referring to the fact that he was born at Flower Hospital in Manhattan, delivered by an uncle (Carl C. Salzman, M.D. '24). The family connection goes even deeper: a brother, Albert Saphier, M.D. '65, was also born at Flower, as was that brother's daughter. He met his wife, Marieanna "Mickey" Saphier, R.N. '60, in the cafeteria at Flower Hospital when he was a medical student and she a nursing student at Flower Hospital School of Nursing. Their daughter, Arlene Saphier Horowitz, has been a student in the New York Medical College School of Health Sciences and Practice, and their youngest son, Douglas J. Saphier, earned his M.D. from the School of Medicine in 2010.

One of the earliest opportunities to chart a course for the Alumni Association arrived last fall when Dr. Saphier helped organize a meet-and-greet at a restaurant in his home town of Englewood, N.J., to introduce alumni to the new chancellor, Edward C. Halperin, M.D., M.A. Some 30 guests gathered for dinner and conversation with the new



leader, who has expressed keen interest in strengthening bonds with alumni all across the country.

Dr. Saphier is ebullient about this infusion of new energy and leadership. "As we are about to celebrate the 130th anniversary of the Alumni Association, we applaud the arrival of our new sponsor, Touro, coupled with the inspiring leadership of Drs. Halperin and Kadish that has invigorated our community," he says. "New York Medical College is clearly going to benefit from a new a sense of purpose and clarity that is already well in evidence from these two leaders. They are forging new bonds among students, alumni, faculty and administration that will help carry us into the next century and beyond. This is the *new* New York Medical College, and we are very optimistic for the future."

> *"[Drs. Halperin and Kadish] are forging new bonds among students, alumni, faculty and administration…This is the* new *New York Medical College, and we are very optimistic for the future."*
>
> *—Henry I. Saphier, M.D. '61*

Dr. Saphier is a noted obstetrician and gynecologist who still practices in Englewood. He works out of an airy and spacious home office in a large Victorian house, assisted by wife Mickey, daughter Arlene, and their eldest son, Carl Saphier, M.D., who is an OB/GYN like his father. Their second eldest son, Paul Saphier, M.D., practices endovascular neurosurgery in Phoenix, Ariz.

He has served as a member of the Alumni Association's Board of Governors since 1970 and became vice president in 1998, earning the association's Medal of Honor in 2010. He is a member of the American Medical Society, the American Society of Colposcopy and Colposcopy Surgery, and the American Society of Laser Surgeons. He is a fellow of the American College of Obstetrics and Gynecology and senior fellow of the American Institute of Ultrasound in Medicine. He is a certified diplomate of the American Board of Obstetrics and Gynecology and holds current medical licenses in New York, New Jersey, Texas, Arizona, and New Mexico. ■

—Donna E. Moriarty, M.P.H. '04

NYMC EVENTS

Photos by Paula Markowitz Wittlin

The 2012 Founder's Dinner. *More than 350 guests enjoyed an evening of fine dining, dancing and camaraderie at the Founder's Dinner held on June 14, 2012, at the Glen Island Harbour Club in New Rochelle, N.Y. The gala raised more than $425,000.*

Board Chairman Dr. Mark Hasten; honoree Karl P. Adler, M.D.; President Alan Kadish, M.D., and Trustee Ronald F. Poe.

President Alan Kadish, M.D., with his wife Connie.

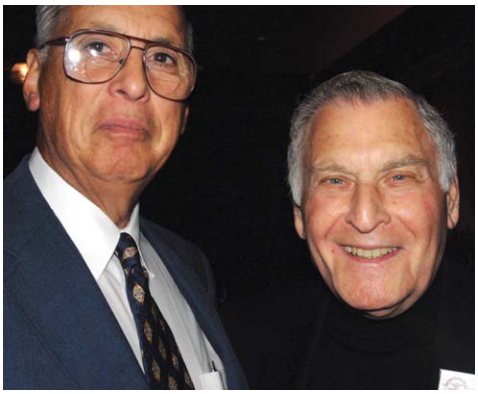
Sonia Velez, M.D., J.D., Saint Joseph's Medical Center, with Montgomery Douglas, M.D., chairman of the Department of Family and Community Medicine, and his wife Pearl.

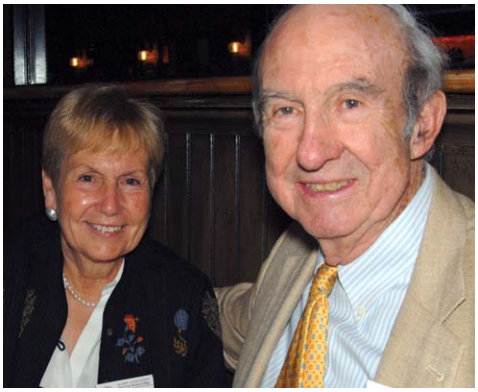
Sharon Halperin, P.T., M.P.H., wife of the new Chancellor, with Eileen Dieck, M.D. '86, and William Dieck, M.D. '83.

Richard McCarrick, M.D., vice dean for graduate medical education and affiliations, and Keith F. Safian, president and CEO, Phelps Memorial Hospital Center.

Honoree Ralph A. O'Connell, M.D.

GREAT THINGS ARE





Staff Photos

Alumni Dinner with the Chancellor. *Henry Saphier, M.D. '61, president of the Alumni Association, welcomed some 30 alumni and their guests who met and dined with the new chancellor and CEO, Edward C. Halperin, M.D., M.A., at a restaurant in Englewood, N.J.*

Standing: Eileen (Lee) Dieck, M.D. '86, and husband William Dieck, M.D. '83; Robert Furey, M.D. '62, and Joseph Dursi, M.D. '59. Seated: Rebecca and Louis Fierro, M.D. '60, John Addrizzio, M.D. '64 and wife Amy.

Jay Lee, M.D. '86, and wife Melissa.

Albert Pineda, M.D. '63, and Henry Saphier, M.D. '61.

Sylvia K. Fried, M.D. '47, and daughter Ruthellen Fried, M.D. '76.

Eugene Sweeney, M.D. '60, and wife Dianne.

HAPPENING HERE!

Photos by Roy Groething

Chancellor's Initiatives. *As part of the School of Medicine's orientation in August, students from the School of Medicine Class of 2016 visited an exhibit about smallpox vaccine at the New-York Historical Society in New York City. Led by faculty and grad student "docents," the visit was hosted by the new chancellor and CEO, Edward C. Halperin, M.D., M.A.*

Vaccine Distribution. *In the wake of Superstorm Sandy, a group of students, alumni and faculty physicians volunteered at a Health Department distribution center, helping administer tetanus vaccine to hurricane responders and others at risk for tetanus exposure.*

Ph.D. candidate Jennifer M. Arroyo, M.S. '06, discussed the impact of smallpox with the students.

Faculty docent Judith Ahronheim, M.D., engaged students after seeing the exhibit.

A student peered intently at a display case showing photos and models of the disease.

Dr. Halperin seized a teachable moment with students.

A fourth-year medical student administered a tetanus shot under the watchful eyes of Dean Robert Amler, M.D., and Roger S. Madris, M.D. '79. (Staff photo)

Chancellor Halperin (standing, third from left), Dean Amler (far right), Health Commissioner Dr. Sherlita Amler (standing, fifth from right), and numerous medical and public health students spent a half day devoting themselves to the effort. (Staff photo)

CHIRONIAN

New York Medical College

A Member of the Touro College and University System

Please direct all inquiries to:
New York Medical College/*Chironian,* Valhalla, NY 10595. We authorize the use of any material with attribution to New York Medical College. *Chironian* is published semi-annually by the Office of Public Relations. We welcome reader feedback. Contact us at (914) 594-4536 or at chironian@nymc.edu.

NEW YORK MEDICAL COLLEGE AFFILIATES

Academic Medical Center
Westchester Medical Center

University Hospital
Metropolitan Hospital Center

Specialty Hospital
The New York Eye and Ear Infirmary

Affiliated Hospitals
Benedictine Hospital
Calvary Hospital
Greenwich Hospital
Hoboken University Medical Center
Jamaica Hospital Medical Center
Keller Army Community Hospital, West Point
Lenox Hill Hospital
Montefiore Medical Center, North Division
Mount Vernon Hospital
Northern Westchester Hospital Center
Norwalk Hospital
Phelps Memorial Hospital Center
Richmond University Medical Center
Saint Joseph's Health Care System, Paterson (NJ)
Saint Joseph's Medical Center, Yonkers
Saint Vincent's Medical Center, Bridgeport (CT)
Sound Shore Medical Center of Westchester
Terence Cardinal Cooke Health Care Center
VA Hudson Valley Health Care System

Affiliated Ambulatory Care Programs
Center for Comprehensive Health Practice
Open Door Family Medical Centers
Westchester Institute for Human Development

Follow us on Twitter @NYMC_tweets

TABLE OF CONTENTS

ON THE COVER:
Meet the new President, Alan Kadish, M.D., and the new Chancellor and CEO, Edward C. Halperin, M.D., M.A. Hailing from different backgrounds—academic, clinical and personal—they are deploying their complementary strengths as leaders and visionaries to revitalize New York Medical College. (Photo by William Taufic.)

New York Medical College
A Member of the Touro College and University System
Office of Public Relations
40 Sunshine Cottage Road
Valhalla, NY 10595

CHIRONIAN

FALL/WINTER 2012