

# Columbia Medicine

Columbia University College of Physicians & Surgeons

SPRING 2013

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## ONE RESEARCHER, TWO CAREERS

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When his sister came down with a rare disease, Tom Maniatis had no idea how it would change his life's work

### Prostate Cancer

More questions than answers in diagnosis and treatment of the second leading cause of death in American men

### Another Nobel

The Class of 1966 scored its second Nobel Prize when Robert Lefkowitz received 2012's Nobel Prize in Chemistry

## Dear Readers,

Articles in this issue of *Columbia Medicine* illustrate just some of the many ways we proudly carry out our education, research, patient care, and community outreach missions.

Education is highlighted by the scholarly projects completed by four members of the Class of 2013, the first class to fulfill

requirements of the new P&S curriculum. These scholarly projects—a global health study in Madagascar, a study of hospital readmissions after pancreatic resection, laboratory research into ways to improve mitochondrial function in lung failure, and development of digital resources to teach cultural competency—show how graduates in the Class of 2013 used this new requirement to expand their horizons beyond traditional lectures, books, and clinical rotations.

The subject of our cover story—Tom Maniatis—has invigorated our research in

amyotrophic lateral sclerosis during a second act in a remarkable research career that flourished at Harvard, continues at P&S, and was honored last year by the Lasker-Koshland Special Achievement Award in Medical Science. On the national level, he has accelerated the pace of ALS research and here at P&S he has joined a group of researchers making great strides in our understanding of ALS.

Our patient care mission was reinvigorated in January with the opening of ColumbiaDoctors Midtown, which expands our faculty practice organization and brings our renowned clinicians closer to where many of our patients work and live. ColumbiaDoctors Midtown is just part of the growth of our clinical practices throughout the New York metropolitan area.

In P&S News, read about faculty, students, and alumni near and far: our faculty and student response to last fall's Superstorm Sandy, one faculty member's role in a nonprofit that provides funding for genomic sequencing, a student's initiative in creating a health program in India, and a P&S graduate's trip to Sweden to receive a Nobel Prize.

The stories you will read on these pages portray the work of our students, faculty, and alumni—every day and throughout the year—and give us renewed reasons to be proud of being part of the P&S family.

With best wishes,



Lee Goldman, M.D., Dean  
lgoldman@columbia.edu



MANHATTAN TIMES / MIKE FITELSON

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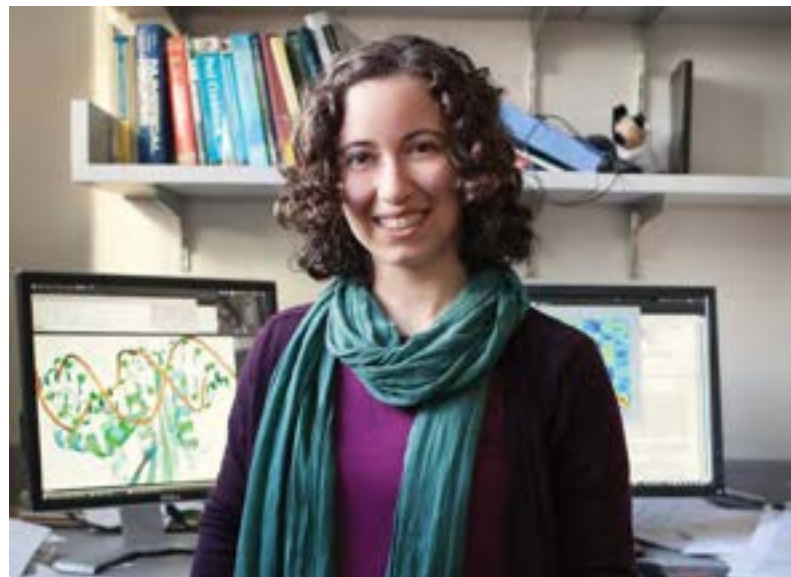
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By Aliyah Baruchin

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From Malnutrition in Madagascar to a Primer on Dominican Culture Close to Home

Students in the first class to graduate under the new P&S curriculum complete scholarly projects that allow them to explore their passions in depth.



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Alumni should update their addresses by writing the Alumni Association at the address above or calling the alumni office at 212-305-3498.

Faculty and staff should contact their departmental administrators to update their addresses, which are obtained through the Columbia University personnel system.

All others with address changes should contact P&S Communications at 212-305-3900.

## More Memories of Daniel N. Brown '32

The article by Mrs. Cynthia Brown Lloyd (Fall 2012 issue) about her father, the late Daniel N. Brown '32, led to my recall of many warm memories.

Dr. Brown's Mount Kisco Medical Group invited my fourth-year P&S class to a Saturday outing at a Bedford, N.Y., country club and an evening discussion about multi-specialty group medicine. I was impressed, and in 1961, with four others, I founded the Katonah Medical Group in the village adjacent to Mount Kisco. Dr. Brown couldn't have been nicer, or more helpful, to me, a young internist starting a group that would be competing with his. On several occasions he met with me at 7 p.m., or so, after he completed a long day's work, and he insisted that his group's business manager give me hours of help too. After my retirement, my former group merged with the Mount Kisco group in 2007.

Dan knew that the first requirement of effective patient care is caring and that the first rule of medicine, as Dr. Loeb taught, is "the Golden Rule." Careful, knowledgeable, ethical medicine was the hallmark of Dan's group, and he was known, affectionately, by his associates as "the Pope" for his encouragement that they practice medicine as he did. I have never met a finer physician, or person, than Dan Brown.

**James W. Hanway '54**  
*Hillsborough, N.C.*

## Another Sports (Medicine) Legend

Congratulations. Our alumni magazine just keeps getting better and better! The new format is excellent and the content is terrific. In the Fall 2012 issue author Michael Bradley hit one out of the park with his article on sports medicine, but I am afraid he didn't touch all the bases while doing his home run trot. As a proud member of the Class of 1966, I would like to call to your attention the distinguished career of our classmate, and my old friend, Barton Nisonson, director of the prestigious sports medicine program at Lenox Hill Hospital in New York City, who was not mentioned in the article. Let me take this opportunity to correct the oversight.

Bart is a true-blue son of Columbia, having performed his undergraduate work at Columbia College, his medical studies at P&S, and his surgery and orthopedic training at Presbyterian Hospital. At the college, while excelling academically, Bart captained the Ivy League championship fencing team and was an individual National Champion and an All-American. At P&S Bart risked life and limb playing with the medical school contingent on the Old Blue Rugby team. As a sports medicine specialist at Lenox Hill in New York, Bart was for a number of years the orthopedic surgeon for the NY Jets. After that he was team physician for the NY Rangers for many years, including their Stanley Cup season in 1994. In addition to his research and teaching, Bart has cared for, and operated on, many top-drawer athletes over the years, as well as any number of weekend warriors and duffers of all stripes.

These days, in addition to supervising the sports medicine fellowship, Bart continues to practice at Lenox Hill, and he continues to be an active, loyal, and devoted alumnus. I'm sure you will agree that his achievements have contributed to the legacy of P&S that *Columbia Medicine* celebrates.

**David Angstreich '66**  
*Berlin, Vt.*

## Bassett Memories

Dr. Davis' project to write a history of "Bassett" Hospital should be an interesting read for those of us who journeyed to Cooperstown during our third year at P&S.

It was early summer back in 1953 when I began a surgical "externship" in that bucolic setting—a lazy village, scenic surroundings with a lake and good people.

Excitement came early during my only ambulance ride. The young driver had siren sounding as we rapidly sped down country lanes to pick up a farmer injured weeks earlier but in need of the left leg cast change! It was a nice outing, with some "bare knuckle" moments.

Unfortunately I was "on call" late in July when major league baseball players were inducted into the Hall of Fame. There were eight being honored, including Dizzy Dean, the outstanding pitcher of the St. Louis Cardinals.

The satisfaction of working in Bassett, in a rural setting, remained with me and later, in 1958, my wife and I moved, along with our first son, to Nasawadox, Va., a village of 600 folks. Located at the bottom of the Delmarva Peninsula, with the Atlantic Ocean to the east, and the Chesapeake Bay to the west, it was an area rich in seafood, tomatoes, potatoes, and, again, good people. The Chamber of Commerce called it "The Land of Pleasant Living" and so it was, except for the night calls!

The 90-bed hospital was aging, and so were the two internists in charge. We stayed for 50 years; busy, yes, but plenty of time for sailing, fishing, and pickin' blue crabs.

**William F. Bernart'54**  
*Raleigh, N.C.*

The story about Bassett (Fall 2012 issue) brought back our two months there in the summer of 1969. It was blissful. And then came August, back in NYC for a rotation at St. Luke's—hot and sweaty and we couldn't even get away to Woodstock!

Our experience at Bassett led my wife and me to apply for rotating internships at the three Mary's (Bassett, Fletcher, and Hitchcock hospi-

## Correction

The 2012 P&S annual report research section, "Getting Personal with Stem Cells," described the work New York Stem Cell Foundation scientists published, in collaboration with Columbia researchers, that created personalized stem cells programmed to recapitulate the genetic code of an individual patient. The research, reported in the journal *Nature* in October 2011, was led and conducted by New York Stem Cell Foundation scientists Dieter Egli, PhD, and Scott Noggle, PhD. The research was conducted in the New York Stem Cell Foundation Laboratory but because of an editing error, the annual report article left the impression that Drs. Egli and Noggle conducted the research at Columbia instead of in collaboration with Columbia. *Columbia Medicine* regrets the missed opportunity to acknowledge the leadership role of Drs. Egli and Noggle and the New York Stem Cell Foundation in this research finding, which *Time* magazine called the No. 1 medical breakthrough of 2011.

tals) among others. We ended up at Hitchcock and often wonder how different our lives would be had we matched elsewhere.

We also enjoyed reading about our classmates Bill Tansey ("Reality Medicine for the Teen Set") and Barry Massie (Class Notes). We got a kick out of Bill's use of current technology and appreciated Barry's quote concerning the VA as an example of a single payer system.

**Candace'70 and Ted Walworth'70**  
*Lewiston, Maine*

## P&S Pride

Thank you so much for your feature on the cardiac classroom at Liberty Science Center (P&S News, Fall 2012 issue). Perhaps some of your readers will connect the inspirational power of mentorship with Peter Carmel's comment about the emerging workforce shortage in medicine.

I have always been proud to have had the luxury of medical education at Columbia P&S. The school continues to enjoy a reputation for emphasizing the humanistic side of the profession as was demonstrated in your feature about the Cooperstown connection. This theme makes me especially personally proud to have been included in the alumni magazine.

**William Tansey'70**  
*Via email*

## PhD Pride

I attended the College of Physicians & Surgeons from 1936 to 1940 and received a PhD in biochemistry in 1940. I have received *P&S* [magazine] for many years and have read much of the journal for those years.

In my time at P&S there were many distinguished scientists and students who became famous in their own time. None of these, Hans Clarke, O. Wintersteiner, E. Chargaff, R. Schoenheimer, M. Heidelberger, E. Kabat, D. Shemin, DeWitt Stetten, etc., are ever mentioned. Nor is there a PhD on your editorial board. Why does your otherwise carefully constructed journal omit such references? Certainly the Columbia University medical school teaches basic science and conducts research in this area of medicine with a carefully recruited faculty. Can you inform me of your policy?

**Seymour S. Cohen'40**

*Retired American Cancer Society  
Research Professor  
Woods Hole, Mass.*

*Editor's response: Dr. Cohen is correct. We did not have any faculty or alumni with PhDs on our editorial board. We have rectified that with the addition of Sankar Ghosh, PhD, chair of the Department of Microbiology & Immunology. We also asked Joanne Berdebes, P&S associate vice dean for research, to join the board to keep us informed of research.*

## Kudos

Your last issue (Fall 2012) was wonderful.

It keeps one on the "cutting edge" of research going on at Columbia University, as well as at other institutions.

I continue to read the *Columbia Medicine* journal from cover to cover, and enjoy it very much.

Keep up your good work.

**Stanley Edelman, MD**  
*Class Chair 1953*

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## P&S Lends a Hand After Sandy By Jen Uscher

**W**hen Superstorm Sandy, the largest Atlantic hurricane on record, struck New York City last October, NYU Langone Medical Center and NYU's medical school suffered devastating damage. Tisch Hospital and several other buildings on campus were shuttered for months because of flooding and power outages. In the days and weeks after the storm, the P&S community reached out to colleagues at NYU to offer help to minimize the disruption to NYU's education and research activities.

As soon as the storm passed, P&S colleagues of neuroscience investigators at NYU's Smilow Research Center, which lost power, rallied to coordinate donations of the dry ice needed to keep valuable biochemicals and molecular reagents in NYU freezers from thawing and spoiling. After requests from two former P&S graduate students, many P&S faculty members and their labs mobilized to donate hundreds of pounds of dry ice, but the dry ice was not needed (the existing NYU supplier was able to deliver dry ice the next day).

Robert S. Kass, PhD, vice dean for research and the Alumni and Hosack Professor and Chair of Pharmacology at P&S, assisted NYU researchers who needed to locate freezer space by contacting a company that sent a truck to NYU to collect frozen specimens for off-site storage.

Carol Mason, PhD, P&S professor of pathology & cell biology, neuroscience, and ophthalmic science, helped by connecting New York Times science reporter Ben Carey with her NYU colleague Gordon Fishell, PhD, associate director of the NYU Neuroscience Institute, where genetically altered mice that took years to breed drowned when the basement of the Smilow Research Center flooded. "Ben wrote an article that extended beyond the disaster because it discussed the fact that since Gordon had always shared his mice with other investigators, some were being housed and bred at other institutions," says Dr. Mason. "Those institutions are now sending mice back to him. People are being even more helpful because of that article. And it showed how sharing is so important for the scientific enterprise. It's something we teach to our students."

Adolfo Ferrando, MD, PhD, associate professor of pediatrics and of pathology, provided support to NYU colleagues who lost their mice. He hosted two researchers who are members of the lab of his collaborator, Iannis Aifantis, PhD, professor of pathology at NYU. Suffering from a major loss in their mouse colony and lack of access to their NYU lab facility, which lost power, they needed space to complete time-sensitive experiments. After securing Columbia IDs and completing safety training, the researchers used Dr. Ferrando's lab space and had access to primary patient samples, reagents, and Dr. Ferrando's mouse colony.

One of the researchers, Bryan King, is a PhD student in the cellular and molecular biology program at NYU's Sackler Institute. He uses mouse models of T-cell acute lymphoblastic leukemia to study the function of a mutation in a gene called *Fbxw7*, which encodes a tumor suppressor protein frequently mutated in T-ALL. Mr. King submitted a paper to a journal right before Sandy struck and the paper's reviewers asked him to do a number of additional experiments. "Because of Dr. Ferrando's help, we were able to answer the reviewer comments and do experiments we



NASA/NOAA

didn't have the resources to complete at NYU," he says. "It's also been nice to get additional feedback from Dr. Ferrando on my experiments."

With NYU medical students unable to use some of the buildings on their campus, P&S administrators offered access to facilities at Columbia. Anna Getselman, executive director of the Augustus C. Long Health Sciences Library, learned that the Ehrman Medical Library at NYU was closed after it was badly damaged in the storm. She reached out to NYU and arranged to let medical students there use Columbia's library starting in early November.

"These days health sciences libraries are used by students mostly as a study space," says Ms. Getselman. "Since NYU's facility was totally devastated, we thought offering an alternative study space was very important. The students who took advantage of it seemed to appreciate it."

Some NYU medical students could not complete psychiatry clerkships that were scheduled to take place in November and December at the teaching hospitals affiliated with NYU, such as Bellevue Hospital Center, Tisch Hospital, and VA New York Harbor Healthcare System. With these hospitals closed in the aftermath of the storm, NYU contacted colleagues at other New York-area medical schools to find alternative clerkship opportunities for students. Janis Cutler, MD, director of medical student education in psychiatry at P&S, helped make it possible for Asya Izraelit and David Beck to complete psychiatry rotations at New York State Psychiatric Institute.

Ms. Izraelit spent her six-week clerkship in a clinical unit of the Washington Heights Community Service, which provides inpatient and outpatient services for people with severe mental illness living in northern Manhattan.

"My experience was so overwhelmingly impressive," says Ms. Izraelit. "I had the opportunity to be on the inpatient unit, to go to Ward's Island for court proceedings, and to present at journal club and case conference. I'm really happy Columbia was so welcoming and that this opportunity existed."

Students did their part by volunteering in communities impacted by Sandy. In their "Health Education and Promotion in Physical Therapy Practice" class students in the PT doctoral degree program were allowed to use three hours of class time to volunteer. After voting unanimously to participate in hurricane clean-up efforts, the students helped in New York and New Jersey communities. Their volunteer time far exceeded the three hours of class time, with many of the 60 students devoting eight or more hours to activities that included shoveling sand, removing drywall, or collecting and distributing donations.

Ben Spoer, a student in the master of public health program at the Mailman School of Public Health, organized a bus trip to the Rockaways in December so more than 40 CUMC students could volunteer to clean up flood-damaged homes and distribute food.

First-year medical student Denise Johnson was part of a team of 10 students who removed walls, drywall, insulation, and appliances from a one-story house owned by a nurse who lost most of her possessions in the hurricane. Ms. Johnson's conversation with the owner gave her new insight into how people are still piecing their lives together after the storm and will continue to need support, even though less attention is being paid to their plight as the months go by.

"All of us students who have moved to New York from other places—we are all a part of this community now," says Ms. Johnson. "It meant a lot to be able to at least help one person and share in her struggle just for that one day. It was rewarding to contribute to this community that I'm now a part of."

## Goal of New Program: More Physician-Scientists

**Selected applicants** to a new P&S degree program—a three-year PhD to MD—were interviewed in early 2013 for entry this summer. Even though the new program was communicated mostly by word of mouth, more than 40 candidates applied, and 15 were interviewed for the accelerated pathway to an MD degree.

The size of the first class has not yet been determined.

The program seeks to recruit exceptional PhD scientists (a PhD in a biomedical science is required) to prepare the new MD/PhDs for a career in biomedical investigation. In addition to a PhD, applicants are asked to show scientific promise by submitting a C.V. and a one-page research proposal.

The program was created by Donald W. Landry'83, chair of the Department of Medicine at P&S, who earned a PhD in organic chemistry from Harvard before entering P&S. "The MD degree clearly provides the most compelling research platform for the PhD scientist," says Dr. Landry, "and our program is designed to leverage the new research-oriented P&S curriculum inspired by Dean Lee Goldman to draw in successful PhD investigators and transform them into physician-scientists."

The program is in addition to the combined MD/PhD degree, which has been offered at P&S since the early 1970s.

The three-year PhD-to-MD program is administered by the Department of Medicine with the P&S Office of Admissions. Nicholas H. Fiebach, MD, professor of clinical medicine and vice chair for graduate and continuing medical education in the Department of Medicine, directs the program with Jonathan Barasch'87 PhD/'88 MD, associate professor of medicine and scientific coordinator of the program. "We are looking for candidates who were initially drawn to science and have excelled in research but want to combine that with an MD degree so they can have a greater impact on patients through a research career informed by the clinical insight of medicine," says Dr. Fiebach.

Students in the new three-year program will progress alongside the incoming Class of 2017 during the 18-month preclinical curriculum, followed by the 12-month major clinical year and six months of subinternships and electives. The students will apply for residency during the major clinical year. The scholarly project requirement will be waived, so the first students will graduate in 2016 if they follow the planned curriculum. Graduates will be encouraged to pursue abbreviated residency training that some specialties offer to prospective physician-scientists.

Applicants must meet the same requirements as all P&S applicants to the MD program. A committee representing the PhD-to-MD program evaluates the applications and recommends candidates for the P&S Admissions Committee to interview. "Our supplemental committee will focus on the scientific achievement, research promise, and commitment of the applicant to a career as a physician-scientist," says Dr. Fiebach. "It is our explicit intent to find people who still want to pursue research careers but with the somewhat broader context of pursuing research questions as a physician-scientist."

## ColumbiaDoctors Expands to Midtown Manhattan

**ColumbiaDoctors Midtown**, part of a growing constellation of Columbia medical practices, opened its doors in January. Patients were welcomed Jan. 2, 2013, and a ceremonial ribbon-cutting on Jan. 24, 2013, allowed health care professionals, Columbia University and NewYork-Presbyterian Hospital trustees, medical school leadership, and hospital leadership to formally mark the opening of the facility at 51 W. 51st St. in New York City.

ColumbiaDoctors, Columbia's faculty practice organization, now has locations in several Manhattan neighborhoods, Riverdale in the Bronx, and multiple locations in Westchester, Rockland, and Orange counties north of the city.

The new ColumbiaDoctors Midtown, which includes more than 225 dentists, nurse practitioners, and physicians in more than 20 specialties and subspecialties, has extended hours (Monday-Friday from 6:45 a.m. to 10 p.m. and Saturdays from 8 a.m. to 5 p.m.). Formerly called ColumbiaDoctors Eastside, the practice relocated from East 60th Street to the larger Midtown location, where patient volume is expected to grow 20 percent each year. The facility has three floors, approximately 125,000 square feet, 125 exam rooms, and more than 30 rooms for procedures. In addition to comprehensive medical services, the facility offers specialists in executive health and travel medicine. The location has laboratory services; fully equipped physical therapy, occupational therapy, and sports therapy facilities; and an imaging suite that offers endoscopy, interven-



DIANE BONDAREFF

After the ribbon was cut, the cheering began for ColumbiaDoctors Midtown. The ribbon was cut by, from left, Philip Milstein, a NewYork-Presbyterian Hospital trustee; Robert Kelly, NYP president and COO; Steven J. Corwin, NYP CEO; Louis Bigliani, president of ColumbiaDoctors; Robyn Gmyrek, chair of the ColumbiaDoctors Midtown board of directors; Lee Goldman, CUMC EVP and dean; Kenneth Forde, a Columbia and NYP trustee; and Mark McDougle, CUMC COO.

tional radiology, X-ray, PET/CT, MRI, mammography, fluoroscopy, and other specialized tests.

Patients who see health care professionals at the Midtown location will continue to have access to the entire ColumbiaDoctors multi-specialty practice, and shuttle service is available between ColumbiaDoctors Midtown and the flagship ColumbiaDoctors practice in Washington Heights.

The Midtown location, between Fifth and Sixth avenues, is steps from public transportation, parking, and Rockefeller Center amenities. The practice offers valet parking and discounted self-parking.

“People come from throughout the tri-state area, and even beyond, to see Columbia doctors. The new ColumbiaDoctors Midtown makes it even easier—for both our existing patients and our new ones—to be cared for by our renowned experts,” says Lee Goldman, MD, P&S dean.

ColumbiaDoctors offers 1,200-plus clinicians in more than 80 specialties and subspecialties throughout multiple locations (see list). More information and links to all locations are available at [columbiadoctors.org](http://columbiadoctors.org). The new Midtown location can be reached at 212-326-8500.



### More ColumbiaDoctors locations throughout New York metropolitan area

(all are multidisciplinary unless noted):

- Columbia University Medical Center, Washington Heights, Manhattan
- ColumbiaDoctors Columbus Circle, Manhattan
- ColumbiaDoctors West 86th Street (pediatrics and pediatric subspecialties), Upper West Side, Manhattan
- ColumbiaDoctors Ophthalmology, Midtown East, Manhattan
- Allen Hospital, Inwood, Manhattan
- ColumbiaDoctors Riverdale, Bronx
- ColumbiaDoctors Orthopedics and ColumbiaDoctors Rehabilitation & Regenerative Medicine, Tarrytown, N.Y.
- ColumbiaDoctors of the Hudson Valley (cardiology), locations in Rockland and Orange counties
- ColumbiaDoctors Medical Group, multiple locations in Westchester and Rockland counties
- ColumbiaDoctors of Somers (cardiology), Westchester County
- ColumbiaDoctors Pediatric Cardiology, Nesconset, Long Island

[columbiadoctors.org](http://columbiadoctors.org) ↗





JÖRG MEYER

## New Cancer Center Director Contemplates ‘Nature’s Art’ By Sharon Tregaskis

**Hematologist/oncologist** Stephen Emerson, MD, PhD, became director of the Herbert Irving Comprehensive Cancer Center in April 2012. Formerly founding director of the University of Pennsylvania’s Institute for Stem Cell Biology and Regenerative Medicine and more recently president of Haverford College (his undergraduate alma mater), the physician-scientist also is the Clyde Wu Professor of Immunology and Medicine and chief of oncology services at NewYork-Presbyterian Hospital.

The new recruit was in his second year of an MD/PhD at Yale when he felt the first spark of what would become a lifelong passion: a quest to understand and combat bone marrow disorders. Nearly four decades later, he remains committed to sparking such passion among future physician-scientists, including the Columbia undergraduate and medical students he plans to host in his own laboratory. “One of the big reasons the pipeline of physician-scientists has shrunk in the U.S. is that we don’t attract our most talented young people into the field and show them how exciting, attractive, fun, and important it is,” says Dr. Emerson, who holds myriad patents for research devices and serves as a consulting editor for the *Journal of Clinical Investigation*. “If you don’t get students to the point where they can imagine those careers, they’ll never enter them in the first place.”

*Columbia Medicine* sat down with Dr. Emerson to learn more about the moment he fell in love with stem cells, his vision for the center he now leads, and what he describes as a tectonic shift under way in the world of cancer research.

### What is your vision for the Herbert Irving Comprehensive Cancer Center?

The HIRCCC will expand on the current outstanding work to become the nexus of cancer prevention, treatment, and life-saving research, serving local, regional, and national constituencies. We will serve as the hub for cancer awareness, prevention, screening, and treatment for citizens in a large catchment area spanning western Manhattan, Westchester, and northern New Jersey. In parallel, our scientists will make basic discoveries in cancer biology that we will directly translate into improved treatments for our local patients, and patients throughout the nation and beyond. To achieve these goals requires work on many levels from hiring the best physicians to taking advantage of genetics and protein chemistry by using DNA, RNA, and protein sequencing to make personalized medicine a reality.

### What’s your first impression of Columbia?

Everyone here loves Columbia, loves working here, loves working together. Literally to a person they are incredibly motivated to make their

careers matter, so that their efforts meaningfully increase the impact of our work to advance science and clinical care, sooner rather than later.

### Tell us about work in your own lab.

We’re interested in what makes bone marrow blood stem cells grow into mature, functional blood cells. We’re investigating how they respond to signals when you get sick that make them stop growing and how to fix that. And we’re very interested in the response of bone marrow stem cells to immune suppression.

### How did bone marrow stem cells capture your imagination?

Cells are beautiful. You can distinguish one from another by the way they look, stained pink and blue and purple. You’re looking at nature’s art, watching stem cells develop into mature cells. It’s like Picasso, or maybe a pointillist’s work. It was very compelling, the idea that you could study the cells and that what you could learn about the process would matter for patients.

### As a college president, you wrote about the cultural differences among generations. What are the implications for the scientific enterprise?

Young adults are used to having a lot of information at their fingertips. That’s a real asset. Getting information—learning something new or being exposed to it—has a much lower barrier than it did in my day. On the other hand, that information at first glance is superficial. One needs to dive in, own the information, and know how to take it farther. That’s where a deep research experience is so important. Until you go from ‘zero to hero’ and know most everything about a specific area of research, you’ll never be able to advance the field or move forward.

### How has cancer research changed during your time in the field?

What might be a paradigm shift in the Kuhnian sense—and I think we’re still getting our heads around this—comes from the stem cell field: Normal stem cells live forever and don’t die off. It’s a very rare cell in the tumor that has the ability to make more of itself and won’t die. Treating most of the cells in a tumor may not matter, since they are going to die anyway, without treatment. We don’t have to understand the biology of every cell; we have to understand the biology of the one cell in a thousand that gives rise to new cells. We don’t have to kill every cancer cell, just the minor fraction of a cancer, the cancer stem cell that matters. Imagine not treating patients with toxic blasts of chemotherapy, but just picking out the stem cells that matter most with a magic bullet. It’s a Copernican revolution.

## Rays of Hope

Anna Starikovsky Nordvig was an up-and-coming associate in the Goldman Sachs global banking group when a devastating ski injury early in 2009 sparked an interest that would evolve into a new career. “I was struck by how thin a sliver of the world I actually understood,” says Mrs. Nordvig, now a second-year medical student at P&S. “I had a craving to comprehend what had happened to my own body—to heal others as I’d been healed.”

Even as she signed up for volunteer shifts in a Manhattan emergency department to test her budding interest and applied for a postbaccalaureate degree at Columbia, Mrs. Nordvig continued with her day job and used her corporate network to search for mentors.

Among the connections she forged, Daniel Mollura, MD, a fellow Goldman Sachs alumnus who had graduated from Columbia’s postbaccalaureate program a decade earlier, would prove to be a kindred spirit. “It’s a pretty frightening leap and she and I connected through that commonality,” says Dr. Mollura, now deputy director for the Center for Infectious Disease Imaging at the NIH Clinical Center. They also found a shared



Anna Starikovsky Nordvig’15 inside a mobile van used to screen women in India for cervical and breast cancers and osteoporosis

passion for international health care. Dr. Mollura was in the early stages of founding an all-volunteer nonprofit called RAD-AID to promote access to radiological medicine in developing countries and invited Mrs. Nordvig to join the organization.

Now RAD-AID’s vice president of organizational strategy, Mrs. Nordvig began building RAD-AID’s India Program in 2010, deploying a radiology-readiness survey she helped develop soon after joining the organization. “We talked about it as a feasibility study,” says Dr. Mollura. “In the engineering world, you always go check out the site, understand the natural and

human resources. We wanted to do the same with RAD-AID.”

For assistance, Mrs. Nordvig recruited three aspiring Columbia MBAs to travel with her on one of her missions to India. “My approach was to treat it like a business—apply the organizational strategy that I had learned in my business career to a proposal that would really knock the socks off of donors—demonstrate that we thought through continuity of care and local sustainability.”

The result was Asha Jyoti, a three-way partnership among RAD-AID, Royal Philips Electronics

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## Rare Reassurance

Every year, 50,000 infants are born in the United States with a different constellation of symptoms but a common, simple explanation: a genetic glitch. For some, doctors can make a diagnosis, such as Tay-Sachs, neural tube defect, or metabolic disorder. Even when the diagnosis is not accompanied by treatment options, health care professionals can offer insight to help families prepare for what’s to come.

Then there are the conditions so rare and so poorly understood that doctors have difficulty even making the diagnosis. For those families, clinical and molecular geneticist Wendy Chung, MD, PhD, assistant professor of pediatrics, recommends a comprehensive genomic analysis.

“When we’ve exhausted the routine clinical diagnostics, we reach the edge of clinical care,”

says Dr. Chung, who directs the clinical genetics program at Columbia University Medical Center. “Whole genome sequencing, with the purpose of being comprehensive, uses the most advanced genomic tools to answer a very relevant clinical question. We go into it without preconceived notions about the etiology and just go where the biology takes us.”

Deploying that mindset, Dr. Chung has been able to counsel both couples whose family history suggests rare genetic conditions and patients seeking the most appropriate treatment for a murky diagnosis. “It’s about personal prognosis,” she explains. “There could be 50 different forms of heart failure, for example. If yours is form C, which is associated with rapid progression of heart failure and arrhythmias, we need to be aware of the hazard of sudden

cardiac arrest and prevent sudden death with medication or devices.”

The ability to toggle briskly between data gleaned from advanced sequencing technology and immediate clinical application has made Dr. Chung an ideal clinical research partner for the nonprofit Rare Genomics Institute. The all-volunteer charity connects patients who have rare, genetically based diseases to scientists investigating those conditions and helps cover the cost of comprehensive genomic analyses.

“She understands not only the clinical genetics aspect, but also the next-generation sequencing technology,” says computational geneticist Jimmy Lin, MD, PhD, a research instructor at Washington University in St. Louis who recruited Dr. Chung soon after founding Rare Genomics. “At a clinic site we need a clinical

(Philips Healthcare), and a public, government-run hospital in the capital city of Punjab. The pilot program was launched in April 2012. In its first six months, Asha Jyoti—the name means “ray of hope” in Hindi and Punjabi—screened 600 women for cervical and breast cancers and osteoporosis in a specially outfitted clinic van and built awareness for women’s health throughout the state. The program also trained 32 female mammogram technologists.

At its annual meeting in September 2012, the Clinton Global Initiative featured the project during the plenary session. “Anna has created a unique partnership structure among government, nonprofit, and private industry, and she negotiated for about a year and a half to get that done,” says Dr. Mollura. “It had to be done in parallel with designing the new mobile clinic. That’s an amazing form of multi-tasking, to spend a year and a half negotiating three partners at the same time and designing a program on an innovative piece of hardware. She’s a very talented leader and Asha Jyoti is a manifestation of that quality.”

— Sharon Tregaskis



geneticist willing to see the patient, researchers with capacity for whole-genome sequencing, and an existing protocol that patients can enroll in.” Dr. Chung, says Dr. Lin, embodies all three.

Perhaps even more important, he says, is Dr. Chung’s commitment to patient care, which has made Columbia unique among the 18 Rare Genomics patient sites. “Patients have been so grateful about the time Dr. Chung spends with them and how well she explains things,” says Dr. Lin, “and she fights for patients like no other.” Dr. Chung is committed to providing patients with clear information and championing insurance reimbursement. “I understand the value of a diagnosis for the patients and I understand how expensive it can be,” she says. “We make our patients a priority and partner with them.”

— Sharon Tregaskis

## Legacy Rugby Match

**Some traditions** just get better with time. So it was with the 30th annual John C. Wood Jr.’76 Tournament, held Nov. 3, 2012, at the Baker Athletic Complex under crisp, blue skies.

The P&S Rugby Football Club, celebrating its 40th anniversary, faced aspiring MBAs from the New York University Stern Rugby Club and Old Blue, a semi-professional team founded by undergraduate alumni of Columbia College.

“Rugby is a pretty big part of my life and the lives of a lot of the guys who come out and play,” says former rugby club president H. Paco Kang, a second-year student. “There’s a real camaraderie, a brotherhood among the guys who play.”

That brotherhood—among players on the only intercollegiate athletic team fielded by P&S—made honoring the late Dr. Wood all the more compelling, says Mr. Kang. “P&S Rugby was founded 40 years ago in 1972 by John Wood Jr., almost immediately upon his arrival at P&S,” Mr. Kang wrote in an e-mail he sent to the players a few weeks before the tournament. “Like any new team, they initially sucked, but by ’75 they were in full beast mode and won the Metropolitan New York Rugby Football Union championship. The Club has persisted since, in more or less the exact same way it was when it began—a bunch of dudes getting together for some good times and violent victories.”

In addition to myriad current students, those cheering the club to victory during the 2012 tournament included 1976-77 club captain Frank Lowe’79, now professor of clinical urology at P&S, who played with Dr. Wood during their medical school days. “John was out there having fun with the rest of us,” Dr. Lowe recalls of their mustachioed days on the paddock. “He was an accomplished musician. He had bad knees, so he wasn’t the best of athletes, but he certainly played hard.” Other VIPs on the sidelines for the tournament included Diana Wood’88, widow of the tournament’s namesake, her late husband’s father, John Chase Wood’49, her son, John Wood III, and her grandson, John Wood IV. “To have the family come out,” says Mr. Kang, “was a really big deal.”

Tristan Hunt’15, the club’s former vice president and match secretary, organized the tournament, held annually since Dr. Wood’s murder in 1981. John Wood III, born just a few months after his father’s death, had never attended a P&S rugby match; Mr. Hunt invited him to initiate play with the tournament kickoff and present the tournament trophy at its conclusion (to Old Blue). “Across P&S, there’s an idea that extracurricular activities and the interests you have beyond medicine complete the school and complete us as individuals,” says Mr. Hunt. “John Wood Jr. embodied that spirit of P&S as a student and emulated it as a doctor.”

Four generations of the family of the late John C. Wood Jr.’76: John Wood Sr.’49, Dee Wood (mother of John IV), John IV, John III, and Diana Newton Wood’88



HAL GILBERT

## News in Brief

### New IOM Members

Three P&S department chairs were named to the Institute of Medicine, one of the country's highest honors in the fields of health and medicine: **George Hripcsak**, MD, the Vivian



George Hripcsak

Beaumont Allen Professor of Biomedical Informatics and chair of the Department of Biomedical Informatics; **Tom Maniatis**, PhD, the Isidore S. Edelman Professor of Biochemistry and chair of the Department of Biochemistry & Molecular Biophysics; and **Steven A. Siegelbaum**, PhD, professor of neuroscience and of pharmacology, chair of the Department of Neuroscience,



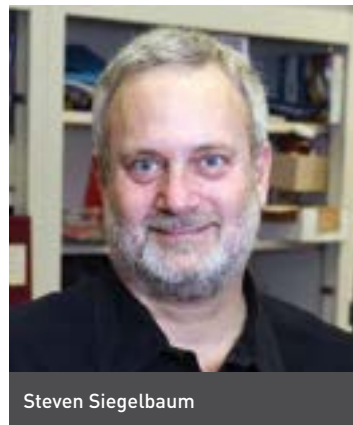
Tom Maniatis

and Howard Hughes Medical Institute investigator.

Dr. Hripcsak is a national leader in the creation and use of electronic health records. In the early 90s, he led the effort to create the Arden Syntax, a language for representing health knowledge in computer systems that has become a national standard.

Dr. Maniatis is one of the founders of molecular cloning, and the methods he pioneered for understanding gene expression have had a profound impact on biology, from advancing basic knowledge to creating new therapies to treat human genetic diseases.

Dr. Siegelbaum is a neuroscientist whose research is at the forefront of understanding the role of neural circuitry in learning, behavior, and memory. The focus



Steven Siegelbaum

of his research is to uncover how information flows through the brain's memory circuits and controls memory storage and recall.

### American Academy of Arts & Sciences

Steven A. Siegelbaum, PhD, professor of neuroscience and of pharmacology and chair of the



Steven Siegelbaum signing the American Academy of Arts & Sciences Book of Members, a tradition that dates back to 1780

Department of Neuroscience at P&S, was named a 2012 fellow of the American Academy of Arts & Sciences, an academy founded in 1780. The academy honors men and women of exceptional achievement from the fields of science, scholarship, business, public affairs, and the arts.

### Gifts Benefit Mind Brain Behavior Institute, ALS Research

Columbia's interdisciplinary Mind Brain Behavior Institute, co-directed by three P&S faculty members, has been endowed by a \$200 million pledge from Mortimer B. Zuckerman, publisher, editor, real estate investor, and philanthropist. The institute will be based in the 450,000-square-foot Jerome L. Greene Science Center, the centerpiece of the University's new Manhattanville campus. The building is expected to open in 2015.

The Mind Brain Behavior Institute will be the hub of cross-campus research on brain science, bringing together researchers from the medical center with researchers from other Columbia schools, particularly arts and sciences and engineering and applied sciences. Faculty

will collaborate on pioneering research in the neural sciences and a wide array of academic fields involving human behavior.

The **Mortimer B. Zuckerman Mind Brain Behavior Institute** will be directed by Thomas Jessell, PhD, the Claire Tow Professor of Motor Neuron Disorders in Neuroscience and professor of biochemistry & molecular biophysics, and Nobel laureates Richard Axel, MD, University Professor in Neuroscience, Pathology, and Biochemistry & Molecular Biophysics, and Eric Kandel, MD, University Professor and Kavli Professor of Brain Science in Neuroscience, Psychiatry, Biochemistry & Molecular Biophysics, and Physiology & Cellular Biophysics.

A \$25 million gift has launched **Target ALS**, a three-year initiative to streamline discovery of new approaches to treating amyotrophic lateral sclerosis. The initiative was created through a gift from Daniel L. Doctoroff, Bloomberg LP CEO and president; David M. Rubenstein, co-CEO of the Carlyle Group; and Bloomberg Philanthropies. The gift is intended to provide an organizational framework to help the world's

leading ALS researchers share and coordinate research.

Columbia's Christopher E. Henderson, PhD, is Target ALS scientific director and will manage the program with Manish Raisinghani, MD, PhD, executive director of Target ALS. Dr. Henderson is the Gurewitsch/Vidda Professor of Rehabilitation & Regenerative Medicine and co-director of the Motor Neuron Center and the Project A.L.S./Jenifer Estess Laboratory for Stem Cell Research at Columbia.

Target ALS is the next phase of an accelerated research initiative launched in January 2010 by Project A.L.S., a New York-based foundation focused on finding and funding a cure for ALS, and the Packard Center for ALS Research at Johns Hopkins University. The latest collaboration pools the efforts of dozens of scientists and laboratories to focus on new targets for effective ALS therapies.

### Exercising in Comfort

The first phase of a facelift for the Bard Athletic Center in Bard Hall was celebrated in January at an open house. Improvements in the athletic center include additional equipment, renovated squash courts, a new floor, and modifications to make the entire facility handicap-accessible. The Bard Athletic Center renovation project, which covers 5,000 square feet, added a new heating and air conditioning system, replaced two of the three squash courts, and added 20 new pieces of cardio equipment. The next phase of the project will replace windows, replace lights in the basketball court, and install a lift in the pool.



Robert Lefkowitz'66 receiving his Nobel Prize from Sweden's King Carl XVI Gustaf at the Stockholm Concert Hall in December 2012

ALEX LJUNGDAHL COURTESY OF THE NOBEL FOUNDATION © NOBEL MEDIA AB

## Alumnus and Nobelist Robert Lefkowitz

For years, Robert Lefkowitz'66 had heard rumors that he might win a Nobel Prize—in Medicine. So the early morning October phone call on a Wednesday, not the Monday when the Nobel in Medicine is announced, caught him by surprise. He and a former trainee in his lab received the 2012 Nobel Prize in Chemistry for elucidating G-protein-coupled receptors, the largest class of cellular receptors and the most common target of therapeutic drugs, such as opiates, beta blockers, and antihistamines.

By Nobel Week in mid-December, the surprise had worn off and Dr. Lefkowitz reveled in the activities: lectures, galas, dinners, interviews, ceremonies, toasts, and the traditional signing of a café chair at Bistro Nobel in the Nobel Museum. Nobel Week followed more than two months of in-person and phone interviews and photo ops, including one with President Obama in the Oval Office (just part of a whirlwind visit to Washington, D.C., that included a symposium and a black tie dinner at the Swedish embassy).

Although the surprise wore off, the satisfaction of the Nobel Prize will last a lifetime. In his Nobel banquet speech, Dr. Lefkowitz told of his increased pride in sharing the Nobel with Brian Kobilka, who worked

in the Lefkowitz lab at Duke University from 1984 to 1989. "I don't know how often a Nobel Prize is shared by a mentor and former trainee, but perusing the list of recent winners suggests that it is a reasonably common occurrence. This highlights an aspect of science which is very important to both Brian and me, the mentoring of young trainees. I have trained more than 200 students and fellows in my lab over the past 40 years. They are in a very real sense a second family. Many of our trainees are major leaders in our field of science, a source of enormous pride for both of us."

In an interview with the Howard Hughes Medical Institute (he has been an HHMI investigator since 1976), Dr. Lefkowitz spoke of his pride in being honored with Dr. Kobilka: "I cannot tell you how thrilled and proud I am. My 40-year career and his 30-year career tell one smooth, continuous story. Brian left my lab around 1989, and we kept in reasonable touch, as I do with many of my trainees. On Oct. 8, Brian and I Skyped for an hour and a half about a paper we are writing together. Thirty-six hours later we win the Nobel Prize. Back together again, in more ways than one."

A 2008 alumni profile in *P&S Journal* described Dr. Lefkowitz's belief in the importance of the mentor-mentee relationship—in his own career (he considers Paul Marks'49, Dickinson Richards'23, and Don Tapley mentors from his P&S days) and for the 200-plus trainees who have passed through his Duke lab: "Just as he learned the ropes by observing his own mentors in action," the profile explained, "so an important part of his life's work over the years has been demonstrating how it's done. 'In research, nobody can write down the rules. You can't explain it. You can only show it.'"

Dr. Lefkowitz is the James B. Duke Professor of Medicine and professor of biochemistry and chemistry at Duke University, where he has been a faculty member for 40 years.

Robert Lefkowitz'66 meeting President Barak Obama in November 2012



COURTESY OF ROBERT LEFKOWITZ



## Gross Anatomy 2.0

Traditional anatomy education may seem incongruous with iPads but three third-year students at P&S took an idea hatched in their first year to make iPads a ubiquitous addition to the cadaver table.

Dustin Tetzl'14, Justin Neira'14, and Jose Ramirez'14, along with Lily Grossmann, a SUNY Downstate College of Medicine student, created an innovative dissecting manual that received rave reviews from P&S students and generated interest from several publishers. An iPad application followed naturally from the manual's popularity.

The idea for a new manual came from Mr. Tetzl toward the end of his five-month anatomy course during first year. "The manuals have step-by-step instructions that show you what you're supposed to do in lab," he says, "but the manual we used had lots of line drawings and no photos. Your cadaver never looked like the idealized drawing. It was frustrating."

Students also complained that the manual contained too much extraneous information. "You would stand there and get bombarded with this peripheral information about the embryological origins of the structure and still not know where to start," Mr. Neira says.

Mr. Tetzl's idea was to provide photos of each step of the dissection. He recruited Mr. Neira and Mr. Ramirez to help, and the group approached Paulette Bernd, PhD, the course director, with the idea of creating a new manual during the summer after their first year, in time for the next anatomy class.

They first tried working with a publishing template that provided drawings and text that could be tailored to different curricula, but the tool would not allow the photos that the group felt would be the strength of the planned manual.

"Basically, we had to start from scratch," Mr. Neira says.

Soon the students were in the anatomy lab 12 hours a day, every day, dissecting a cadaver and taking tens of thousands of photos.

The most challenging part of the project, the students say, was finishing before the incoming medical school class started anatomy. They completed the dissections, but the process of writing and editing continued throughout the fall. Dr. Bernd edited and revised the sequence and method of dissections to produce the final manual.

The pages of the first chapters rolled off the printer just hours before the class began and the manual became a hit. "The students gave it excellent reviews. The manual is more streamlined than most others out there, and the photos are beautiful," says Dr. Bernd, professor of clinical pathology.

The manual seemed to improve students' grasp of anatomy. "I thought their dissections came out better, with fewer errors. Also, their exam grades were significantly higher—and those scores have been stable for years."

Last year, the authors presented the manual at two conferences and were finalists in the Innovations in Anatomical Education competition held by the American Association of Anatomists. "We didn't win but we generated a lot of interest, including from a number of publishers," Mr. Ramirez says.

Jesse Koskey'15, Alison Levy'15, Tristan Hunt'15, Adam De Fazio'15, dental student Michelle Castro, and postbac student Stephen Cassidy joined the project last summer, working to fix problems in the first edition, make short instructional videos, and develop an iPad version of the manual. The iPad app prototype debuted with the Class of 2016. "First-year medical students used it as their primary in-lab dissection manual throughout the fall semester, with an iPad at each cadaver table as they did dissections," says Mr. Tetzl. "They expressed overwhelming satisfaction with the iPad version and scored even better than previous classes."

The students are writing an academic paper about the success of the manual and talking with publishers about distribution of the manual and iPad app to other schools. "We hope this will revolutionize the way anatomy is taught in the lab, making it much more interactive and modern, and we hope it will be a flexible model other schools can easily adopt," says Mr. Tetzl.

He hopes to spend this summer leading a group of first-year medical students in perfecting the app and adding chapter quizzes and interactive video. Dr. Bernd expects students to be involved in further development of the project for many summers to come.

Success is not just about the manual and its app. "The overarching theme here is that we, as students, saw something in our curriculum that could be improved," Mr. Neira says, "and instead of not doing anything about it, we worked with our faculty to fix it."

## For Concussion Patients, the Care They Need

By Keely Savoie

**I**t was a typical injury: During a Saturday soccer game, an opposing player's wayward shot smacks a youngster in the face and knocks her out of the game for several minutes. The player returns to the field, but seems slow and confused for the remainder of the game. Irritability and moodiness follow the day after, and by day two, dizziness, nausea, and headaches set in.

What was not typical, says Farah Hameed, MD, was how quickly she saw the patient—two days after the injury. Dr. Hameed, assistant clinical professor of rehabilitation & regenerative medicine and a sports medicine specialist with Columbia's new Concussion Clinic, says some concussed patients take weeks to find their way to the appropriate physician.

"Parents don't know if they should call their pediatrician, look for a neurologist, or seek neuropsychological testing," says James Noble, MD, assistant professor of clinical neurology. "We realized that Columbia has all this expertise, and we could make it easier for patients to find the right doctor." Parents who call a central number will be directed to the appropriate person based upon their child's age and symptoms.

"With concussions you want to see the patient as soon as possible after the injury because there can be disastrous consequences such as second impact syndrome if an athlete returns to play while still symptomatic and without adequate rest," says Dr. Hameed.

Although awareness about concussions among athletes, parents, and coaches has grown significantly over the past several years, the injury remains common in many sports, with approximately 300,000 concussions sustained each year in high school contact sports. In college, concussions are reported in more than one in three football players, with many players suffering multiple times. Most states—including New York, New Jersey, and Connecticut—have laws outlining specific protocols for young athletes who sustain concussions on public school teams.

Columbia's Concussion Clinic combines the experience of several neurologists, neuropsychologists, sports team physicians, and athletic trainers: Drs. Hameed and Noble; James Kirkland Roberts, MD, associate clinical professor of neurology; Jim Gossett, head athletic trainer for Columbia University varsity athletes; William Levine, MD, vice chair of orthopedic surgery and head team physician for Columbia athletics; Christopher S. Ahmad, MD, head team physician for the New York Yankees; Edwin R. Cadet, MD, head team physician for City College of New York; and Reet Sidhu, MD, assistant professor of clinical neurology and of clinical pediatrics.

Nothing can accelerate concussion recovery so rest is the most important treatment, including rest from the mental demands of daily life. "It takes 10 times more brain work to read a physics text than remember a football play," notes Dr. Levine. "So if a concussion is suspected, it is essential to identify the problem and get the patient to rest."

The Concussion Clinic uses a series of cognitive, balance, and neuropsychological tests to help determine when a patient is ready to return to play and school. In some cases the physicians can measure progress against a baseline score taken before the start of the season.

Despite growing interest in concussion treatment, however, few scientific studies exist to guide physicians to the best possible treatment. To improve concussion treatment, Dr. Noble is mining a clinical dataset



ISTOCKPHOTO

drawn from a group of accomplished collegiate athletes having serial neuropsychological measurements.

“We want to know if there are measurable differences between people with and without a concussion history, both at baseline as well as following recognized concussions,” says Dr. Noble. “Are there differences in how long it takes them to return to play? Are the conditions we use to deem an athlete ready to play acceptable?”

“I imagine that in time we will be able to develop protocols that allow us to determine whether players can be express-laned through recovery and return-to-play or whether they need to be monitored more closely,” says Dr. Levine. “I think the program will evolve as we collaborate more and learn from each other as well as from our athletes.”

*The Columbia Concussion Clinic can be reached at 212-305-3472.*

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## For Kids with Autism, Learning to Talk Starts with Reading **By Susan Conova**

A significant percentage of children with autism spectrum disorders—ASD—do not speak.

In the rush to develop programs to help children speak, says Marion Blank, PhD, a developmental psychologist in the Department of Psychiatry at Columbia University and a world-renowned expert in teaching children how to read and speak, little consideration has been given to what children should be speaking about.

Most current programs focus on teaching children to name objects and to make simple requests, so many programs aimed at children with autism result in language that is “severely limited and distorted,” she says.

In a published article, Dr. Blank recounted the story of a young boy who had been taught

how to describe the size, shape, and color of objects. His mother took him to a new place one day, and when he saw a toilet in the bathroom he exclaimed, “That is an O!”

“The child’s speech represented a reasonable sentence,” Dr. Blank wrote. “What is awry is the communication. What the child’s comment shows us is the disturbing and anomalous world of ‘language without communication.’”

Dr. Blank’s programs teach children how to speak and communicate by tapping into the unique way the brain develops in children with autism. “Typically developing kids learn to speak first and then to read. And their ability to speak helps them learn how to read. The converse is true for kids with ASD,” says Bradley

Peterson, MD, the Suzanne Crosby Murphy Professor of Psychiatry.

The first challenge is getting the children to be receptive to following the lead of an adult and to learn very fundamental impulse control. The skills need to be practiced, but Dr. Blank’s program shows that children with ASD are able to learn self-restraint.

Next come the learning programs, carried out by a parent one to two hours a day.

“The greatest strength of Marion Blank’s program is the way it evolves into the various developmental phases,” says a mother in a video series produced by the Department of Psychiatry. The mother’s child, now in her early teens, has participated in the program since 2003.

“You start with basic inhibition of inappropriate or disruptive behavior,” the mother explains. “Then you move to the non-verbal cognitive work. Next the verbal cognitive work, coupled with the reading. It’s a way to build language in a carefully sequenced, sophisticated manner.”

The mother of another child who started the program when he was 7 years old also is featured in the video series. “It can be hard, there are certain things you have to do, but it works,” his mother says. “I think he’s more receptive to learning. I think he’s teachable.”

“We knew because of some of his interests and some of his language that there was something more there, but you could never get at it. This almost feels like he’s being rewired. He’s happier and we’re all happier.”

*More information about the reading program is available on the Columbia Psychiatry YouTube channel, <http://www.youtube.com/user/ColumbiaPsych>, or [www.asdreading.com](http://www.asdreading.com).*



ISTOCKPHOTO



## For Forgotten Adults with Cerebral Palsy, a Center of Their Own By Susan Conova

After seeing several doctors for a torn hip ligament, Shoshana Kohr was discouraged. The 27-year-old social studies teacher was working at a Brooklyn middle school, climbing stairs several times a day to and from her classroom on the fourth floor. “Bending my hip that much was causing significant amounts of pain,” she says. “It affected my ability to do my job. I was coming home exhausted. And it was a hassle to walk 10 blocks to meet my friend for dinner or do the things I wanted to do.”

But none of the doctors who saw Ms. Kohr—who has cerebral palsy—was able or willing to help. “I went to several different surgeons, but they were reticent to fix the ligament. They didn’t know how my body would respond to the surgery or what physical therapy I would need to recover from the operation,” she says. “It was frustrating. You come in with a problem and expect to find a doctor to either help you or refer you to someone who can help.”

Through word of mouth, Ms. Kohr learned about the Weinberg Family Cerebral Palsy Center at Columbia, a new center that opened last fall to help adults with cerebral palsy get the medical care they need. The center was funded by gifts of more than \$7 million from Debby and Peter A. Weinberg and several of their family members and friends. The gift recognizes the support and care Columbia has given to Mr. and Mrs. Weinberg’s son, who was diagnosed at age 3 months with a rare form of cerebral palsy.



New York City Mayor Michael Bloomberg, left, with Peter A. and Debby Weinberg and P&S Dean Lee Goldman, right, at a celebration of the new Weinberg Family Cerebral Palsy Center

“The image that comes to mind when most people hear the words cerebral palsy is a child with braces, standing up with the support of a white-coated doctor,” says the center’s medical director, Joseph Dutkowsky, MD, associate clinical professor of orthopedic surgery.

“But half of all people living with cerebral palsy in the United States are now adults, and they get lost in the medical system. Providers don’t know what to do with a 35-year-old woman with CP who wants a checkup.”

That problem also became apparent to the center’s founder, David Roye, MD, the St. Giles Professor of Pediatric Orthopedic Surgery, when the young children he saw in the 1980s and 1990s started to return to him in desperation as adults.

“Cerebral palsy is not a rare disease. There are about 1 million patients in the U.S.,” says Dr. Roye, “but once you leave the pediatric age range, you enter what I call siloed specialty care, and the providers don’t have a lot of knowledge about cerebral palsy or much exposure to patients.”

Dr. Roye’s idea, now a reality in the center, is to provide a medical home for all patients, coordinate their care with specialists, and ease the transition of teenage patients into adult care. It’s the first such center in the country for cerebral palsy patients.

Finding physicians willing to see them is one of the biggest issues for adult patients with cerebral palsy, say Drs. Roye and Dutkowsky. Most patients have stiff and rigid muscles that make physical exams difficult and slow. “It’s not hard to care for these patients, but you can’t figure it out on your own. You need some training,” Dr. Dutkowsky says.

At the center, more than 40 physicians from 20 specialties have signed up to see center patients. “We have doctors in every specialty our patients need, including cardiology, dentistry, and psychiatry,” Dr. Roye says.

Ms. Kohr made her first appointment in April 2012 and by May had a plan for her care. “Dr. Roye is behind the scenes monitoring everything and that’s reassuring. I feel like I’m not seeing a separate doctor for my ankle, my spine, and my hip, even though I am.”

Adult patients with CP also encounter doctors who mistakenly believe that nothing can



Shoshana Kohr and David Roye

be done for an adult patient’s cerebral palsy. “The term static has been historically attached to the condition and it’s been a detriment to the field,” Dr. Dutkowsky says. “CP is non-progressive because the condition’s source in the brain doesn’t get worse with age, but people do change. We’re now realizing that problems that are almost unsolvable when patients come back to us in their 40s could have been averted if somebody had spotted them earlier.”

Early joint degeneration is one common problem for middle-aged CP patients, because high tension in patients’ muscles places excess stress on the joint. Dr. Roye says the problem can be delayed with Botox, physical therapy, and sometimes surgery, but most adult providers don’t know the options.

“We can provide specialists with information about common issues in CP and how other conditions like pregnancy will impact their CP,” Dr. Dutkowsky says.

For Ms. Kohr, the center has changed her outlook. “When you have CP, everything is connected and you need someone to look at the big picture. I’m so happy that I found a place where the doctors have experience with CP and are willing to provide the care. I feel like all of my health care needs are being taken care of now.”

*The Weinberg Family Cerebral Palsy Center at Columbia can be reached at 212-305-2700.*

Dr. Maniatis and graduate student  
Elena Kandror in the Maniatis lab



Tom Maniatis  
turns the  
loss of a loved  
one into a  
search for  
ways to save  
lives of others

# TWO CAREERS IN ONE

By Andrea Crawford

In the 1990s, Tom Maniatis was already well known as one of the world's experts on the mechanisms of gene regulation. He had pioneered gene-cloning methods two decades earlier and co-authored a 1982 three-volume manual still considered "the bible" of molecular cloning. He had been the first to isolate and clone a human gene and use it to find mutations that cause disease. He helped launch the biopharmaceutical industry by co-founding Genetics Institute, one of the first companies of its kind. The accomplished scientist was professor and chair of the Department of Molecular and Cellular Biology at Harvard.

But then something happened that would focus his research in a new direction. It would also set him on a path that led to P&S, where he is now the Isidore S. Edelman Professor and Chair of the Department of Biochemistry & Molecular Biophysics.

In 1996, Dr. Maniatis' sister, Carol, a grandmother, mother of four, and active 50-year-old who spent weekends in the mountains near her home in Colorado, where Dr. Maniatis also had been born and raised, began experiencing weakness in her legs. Soon, she was diagnosed with amyotrophic lateral sclerosis, the neurodegenerative disease that destroys motor neurons in the brain and spinal cord while leaving sensory and cortical neurons untouched. "Her next and final two years were an unimaginable nightmare for everyone close to her," he told a U.S. Senate subcommittee in 2000, just a year after her death. "She was ultimately reduced to a limp and lifeless body with a perfectly good mind inside ...

unable to express the complicated emotions one must feel while the most fundamental human activities are relentlessly taken from you day by day. At least with most other diseases, it is possible to express the feeling of sadness and the fear of dying and to be comforted in a meaningful way."

Soon after his sister's diagnosis, Dr. Maniatis was contacted by the ALS Association, which asked him to do something that was, at the time, rather unusual: Bring together a group of basic scientists who could identify new directions for ALS research. He was eager to do so, and for several years he chaired the committee and helped steer the research of others. But he did not immediately begin to work on ALS-related investigations in his lab, he says, "because I could not see how I could directly contribute. I'm not a neuroscientist—or wasn't."

With approximately 5,600 people diagnosed with ALS each year in the United States, its frequency of occurrence is similar to multiple sclerosis but its overall patient population is much lower, making the disease less well known. It is almost always fatal; most people diagnosed with ALS live, on average, only three to five years. When Dr. Maniatis' sister was diagnosed, that life expectancy had not changed since the disease was first mentioned in medical literature in 1869.

Joining the ALS Association's research committee came at a propitious time for a new focus on the disease. In 1993 scientists had identified the first gene, SOD1, the cause of a familial form of ALS, and the tools of genome sequencing, some of which were developed by Dr. Maniatis, were

Photographs by Jörg Meyer

becoming available. Since then, the committee has been and continues to be active and productive, says Dr. Maniatis. “It really did introduce into the ALS research community a different direction and a different way of thinking.” During the past decade, he adds, “ALS has risen from the backwater of neurological research to the forefront. In many ways, it’s a better defined disease than other neurodegenerative diseases such as Alzheimer’s and Parkinson’s.”

Genetic studies have now identified a dozen genes involved in ALS, and much progress has been made in the use of embryonic stem cells, due in large part to the work of Thomas M. Jessell, the Claire Tow Professor of Motor Neuron Disorders in Neuroscience and professor of biochemistry & molecular biophysics at P&S. In 2002 the Jessell lab developed methods for transforming embryonic stem cells into motor neurons, a milestone that proved important in Dr. Maniatis’ transition from ALS advocacy to ALS research.

“When we realized that we could use mouse embryonic stem cells to study ALS,” Dr. Maniatis says, “it provided an opening for me because now I could actually use the tools and the directions that I have always used in basic research to begin to understand ALS disease mechanisms.” He began working on ALS in his lab at Harvard in 2006 and in 2010 moved to P&S, drawn by what he calls Columbia’s “extraordinary commitment to ALS” through the recruitment of researchers, establishment of the Motor Neuron Center, and access to a large patient population.

At P&S, his lab compares motor neurons generated from mouse embryonic stem cells with those from induced pluripotent stem cells generated from fibroblasts, or skin cells, of patients with ALS, a technique used for the first time in 2008 in a collaboration between a team of scientists at Columbia’s Motor Neuron Center and Kevin Eggan, PhD, at the Harvard Stem Cell Institute. Taking advantage of revolutionary advances in sequencing technology, Dr. Maniatis and other researchers are collecting

massive amounts of RNA sequencing data from both mouse models and human patients and searching across the database for the hallmark commonality in ALS disease mechanism.

One of the early research goals the ALS Association research committee identified was the need to determine whether ALS was motor neuron specific or if other cells were factors. About five years ago, Dr. Maniatis (then collaborating with Dr. Eggan at Harvard) and Serge Przedborski, MD, PhD, co-director of the Motor Neuron Center at Columbia, determined that other cells do contribute to the disease. One such cell is the astrocyte—the star-shaped glial cells of the nervous system. “Astrocytes play an absolutely essential function in motor neuron viability,” says Dr. Maniatis. “They nurture the neurons, feed them, and control electrical activity.”

Both the Maniatis and Przedborski labs independently found that when astrocytes carrying mutant forms of SOD1 are co-cultured with normal motor neurons, the astrocytes release a toxic factor that kills the motor neurons. Last year, a team at Ohio State University showed the same results using human astrocytes generated from ALS patients with either the familial form of the disease, which makes up only about 5 percent to 10 percent of cases, and patients with the non-inherited sporadic form of ALS. “It’s now clear that in both the human disease and in the mouse model, the interplay between astrocyte and motor neurons is critical in the disease,” says Dr. Maniatis. Much of Dr. Maniatis’ work, and that of Dr. Przedborski at Columbia, is directed toward identifying the products astrocytes release that adversely affect motor neuron viability.

In searching for ways in which astrocytes trigger cell death in motor neurons, the Maniatis lab, in a study performed by Hemali Phatnani, PhD, associate research scientist, has found that astrocytes and motor neurons communicate with each other in a complex genetic interplay that is “profoundly disrupted” in ALS, as the team writes in a paper published in February in the Proceedings of the National Academy of Sciences. This



### Thomas P. Maniatis, PhD

**Title:** Isidore S. Edelman Professor and Chair, Department of Biochemistry & Molecular Biophysics

**Education:** PhD in molecular biology from Vanderbilt University, bachelor’s and master’s degrees from the University of Colorado

**Postdoc training:** Harvard and the Medical Research Council Laboratory of Molecular Biology in Cambridge, England

**Member:** Institute of Medicine, National Academy of Sciences, American Academy of Arts and

Sciences, American Academy of Microbiology, and American Association for the Advancement of Science

**Notable awards:** Lasker-Koshland Special Achievement Award in Medical Science, Donald Mulder Award for ALS research from the ALS Association, honorary PhDs from the Watson School of Biological Sciences at Cold Spring Harbor Laboratory and the University of Athens in Greece, Scientific Achievement Award from the American Medical Association, Eli Lilly Research Award

in Microbiology and Immunology from the American Society of Microbiology, Novartis Drew Award in Biomedical Research, and Richard Lounsbery Award for Biology and Medicine from the U.S. and French national academies of science

**Life before P&S:** Harvard department chair (Department of Molecular and Cellular Biology) for 25 years and professor for 30 years, research position at Cold Spring Harbor Laboratory, and faculty position at California Institute of Technology



occurred during human germ cell development, in the process of reproduction.) “That’s a central theme in ALS disease mechanism, the fact that you have these highly abundant, ubiquitous proteins that are prone to aggregation and the mutant proteins form large aggregates that are associated with the death of the motor neurons.”

This process of deregulated aggregation could explain the late onset of the disease, which is diagnosed in patients, on average, at age 55. “During the life of an individual, there’s a constant battle between the formation of aggregates and their dissolution,” he says. In fact, on the opposite end of the spectrum, a number of other genes implicated in familial ALS reside in proteins whose job it is to clear aggregates. “What’s emerging is a very complex picture of these two forces acting in a delicate balance over the course of a lifetime battle; in ALS the aggregates win.”

The second important theme associated with ALS is RNA metabolism. A number of genes implicated in the disease play a critical role in RNA transcription, processing, and transport, and a key goal now is to determine whether the effects of RNA metabolism are secondary to the aggregation or if the RNA metabolism effect itself is causing the disease. “That’s where most of the work in the field is headed right now,” says

**Many genes implicated in ALS play a critical role in RNA transcription, processing, and transport, so research is focused on determining whether RNA metabolism causes the disease or is a secondary effect.**

finding strengthens the case for the central role astrocytes play in the disease process and provides a catalog of aberrant cellular pathways to explore for new drug targets.

In other research, two members of the Maniatis lab, in collaboration with Dr. Jessell, have identified a new pathway that involves inflammation, a fortuitous connection to Dr. Maniatis’ longtime investigation into innate immunity and inflammation. “It’s made it possible to move quickly in this area, and we’ve identified a secreted molecule, a cytokine, from astrocytes that triggers the activation of a whole series of genes that lead to the death of motor neurons,” he says. Researchers are now at work to design ways to inhibit that molecule.

While no consensus yet exists about what the cellular mechanism for ALS might be, Dr. Maniatis sees two major themes emerging. One has to do with protein aggregation—like the plaques associated with Alzheimer’s disease. Two important genes, TDP-43 and FUS, which can form large aggregates, were identified about six years ago in patients with familial ALS. And last year, in what Dr. Maniatis calls a “major breakthrough,” researchers conducting genome-wide linkage analysis of individuals with sporadic ALS found *de novo*, or spontaneously occurring, mutations of TDP-43 and FUS, the same mutations seen in patients with the inherited form of the disease. (This trend is emerging across neuroscience, Dr. Maniatis notes, as it has become clear that individuals each carry as many as 200 mutations that are not shared among family members but that

Dr. Maniatis, who earlier in his career made major contributions to the RNA field.

The poignancy of the realization that the methods Dr. Maniatis himself pioneered and the work he has done over decades may hold keys to developing therapies to fight the disease that took his sister’s life resonates in the air, powerful but unspoken. Sitting in his office overlooking the Hudson River, he lowers his voice a bit as he explains that ALS is, truly, one of the worst diseases a person can succumb to.

But when describing the numerous advances being made at Columbia and elsewhere in the effort to understand ALS, a joyful excitement returns to his demeanor. And it is no different from that he shows for other areas of research his lab pursues. He is particularly pleased, for example, about his lab’s work on the expression and function of protocadherin genes and their potential connection to autism. These genes are adhesion proteins on the cell surface, and his lab has discovered that they, in essence, “provide a bar code for every cell, so every neuron can distinguish itself from other neurons,” he explains. When these proteins are mutated, a neuron’s dendrites are unable to tell self from non-self, so instead of making the synaptic connection and repulsion with other dendrites that are crucial for proper functioning of the neural circuitry, the dendrites with mutated protocadherin proteins clump together. He turns to his computer and shows the remarkable image of this happening. And then he adds, with palpable excitement, that his lab just received its first grant to study the role of these genes in autism. ❖



BLOOD  
DRAWING  
SUITE

EXIT



# To Test *or* Not to Test? To Treat *or* Wait and See?



In prostate cancer, seeking two holy grails:  
better risk assessment and improved treatment

## *My back hurts.*

For Mitchell Benson’77, chair of urology at P&S, those three words are a touchstone. Twenty years ago, before the use of PSA screening for prostate cancer became routine, back pain was a common complaint of men walking in the door at Columbia Urology—and a terrible portent: It meant the men had prostate cancer that hadn’t been detected in its early stages and had metastasized to their bones, including the spine.

That the complaint of back pain is now virtually a thing of the past among newly diagnosed prostate cancer patients describes the evolution of prostate cancer care over the past two decades. Early detection has become the rule, delayed treatment should be common for men with low-risk cancers, and individualized risk assessment has become as crucial in care decisions as improved surgical and radiotherapy treatment techniques.

The medical community’s prevailing points of agreement about prostate cancer are grouped at two opposite poles. On the plus side, the disease is often so slow-growing and nonaggressive that a substantial percentage of patients will die of something else even if they never receive treatment. Where treatment is needed, prostate cancer benefits from a plethora of options, and it is often curable. On the minus side, despite prostate cancer’s reputation as one of the more “benevolent” cancers, treatment in the form of surgery and/or radiother-

apy can be worse than the disease, often resulting in incontinence or loss of sexual function or both, and prostate cancer remains the second leading cause of cancer death in men in the United States, claiming some 28,000 lives a year.

That tension between pluses and minuses feeds the central controversy in prostate cancer care today: whether screening asymptomatic men using the prostate-specific antigen test saves lives or increases the risk of harm. The PSA controversy exploded in May 2012, when the U.S. Preventive Services Task Force gave the test a resounding “D” grade, recommending against its use as a screening tool. The independent panel of experts in prevention and primary care (no urology or oncology experts were on the panel) found that the test led to “overdiagnosis” of prostate cancer and, consequently, overtreatment.

For Dr. Benson, as for many urologists across the United States, that line of thinking is unworkable on multiple levels. “There’s no such thing as overdiagnosis; there’s only overtreatment,” he says. “And you can’t decide whom to treat and whom not to treat, you can’t establish risk, without diagnosis. So the concept of overdiagnosis is dangerous, and it will preclude patients from getting life-saving therapy when it’s indicated.”

In essence, prostate cancer care is still bedeviled by the two most crucial things that remain unknowable—whether some elevated PSAs are a sign of cancer rather than a benign problem such as infection or inflammation and which detected can-

By Aliyah Baruchin | Illustrations by Daniel Bejar

cers will become aggressive. A man's PSA comes back high but not conclusively so, depending on age somewhere in the range of 2.5 to 10 ng/mL, and a biopsy is done, risking the kinds of complications, such as infection, that follow up to 5 percent of prostate biopsies. When the biopsy finds prostate cancer that appears to be indolent, or not at a high risk for progression, active surveillance—frequent monitoring of the prostate without cancer treatment—is often recommended. However, some patients request or even insist on treatment. As a result, the patient risks possible impotence or incontinence or both because of a cancer that might never have threatened his life—all, the logic seems to say, because he took a seemingly “unnecessary” test that found it in the first place.

But can it truly make more sense not even to inquire? Making sound decisions about screening involves a matrix of considerations, including a man's age and factors such as African-American race and first- or second-degree family history, which are known to increase risk.

Dr. Benson stresses that the overall boundaries are clear. “The goal for prostate cancer treatment is death from something else,” he says. “Prostate cancer is, in general, a slow-growing cancer, so to take an 85-year-old man with a PSA of less than 4 and say he needs ongoing PSA screening is insane. But to take an 85-year-old man who has never had a PSA ever in his life and say he shouldn't get one, just to see where he's

A test based on a PSA precursor co-discovered by Kevin Slawin'86 became the first new prostate cancer screening instrument since 1998 to receive FDA approval.

at, is also crazy. I think every man, regardless of age, deserves one PSA. If that one PSA places you in a category where the chance of your dying of prostate cancer is low, then you don't need to have biopsies and additional PSA testing. This is a \$15 blood test. The rub here is not in the PSA; the rub is in what people do with the data.”

The PSA's limits as a screening tool are part of the problem: Many men undergo unnecessary biopsies when their risk assessment is based on PSA alone. Because of this, improving the specificity of PSA remains an area of significant research. “PSA is prostate-specific, but not cancer-specific,” says Sven Wenske, MD, a urology resident at Columbia. “We use other tools as well, such as a fraction of the PSA which is called the free PSA, or other biomarkers, such as PCA3, a urinary marker which looks at RNA that comes from prostate cancer cells, recently FDA-approved for use in patients with an initial negative biopsy who are at a higher risk, based on their PSA, for prostate cancer.”

The effort to improve PSA screening is taking a range of forms. An August 2012 guideline from the American Society of Clinical Oncology suggests different parameters for the test's use, recommending that the PSA be used to screen for prostate cancer only in men with a life expectancy of more than 10 years and only after close consultation with their doctors about the possible risks and benefits of the test and its overall appropriateness for them. And a February 2013 study in the *Annals of Internal Medicine* looked at 35 “alternative screening strategies” for deploying the PSA more effectively, using different start and stop ages, screening intervals, and thresholds for referring patients for prostate biopsies.

Other researchers are working to develop entirely new screening tests that aim for greater specificity than the PSA. In June 2012, a new test based on a PSA precursor co-discovered by Kevin Slawin'86, director of the Vanguard Urologic Institute at Houston's Memorial Hermann-Texas Medical Center, became the first new prostate cancer screening instrument since 1998 to receive FDA approval. The test combines measurement of the precursor, [-2]proPSA—which is more elevated in prostate cancer patients and can more accurately identify the disease—with measurements of PSA and free PSA. The resulting “prostate health index,” or *phi*, can be used to help a man 50 years of age or older, with a borderline PSA level of between 4 and 10 ng/mL and a negative digital rectal exam, decide whether he should have a biopsy.

Results of the multi-center clinical study of the *phi* test showed a 31 percent reduction in unnecessary biopsies over standard PSA screening and preferential identification of more aggressive, potentially life-threatening cancers. “The FDA approval of *phi*—based on the discovery of [-2]proPSA—may have reopened the door on effective screening and offers hope to patients who may need treatment for a disease they otherwise wouldn't know they had,” says Dr. Slawin. “It represents a significant step forward in the prostate cancer screening debate and has the potential to rebalance the scale toward screening—preventing us from losing the considerable ground we've gained since PSA was first introduced.”

At the other end of the spectrum, one of the PSA's most ardent detractors is Anthony Horan'65, author of “The Big Scare: The Business of Prostate Cancer” (reissued in 2012 as “How to Avoid the Over-diagnosis and Over-treatment of Prostate Cancer”), who disagrees with much of the customary practice in screening, diagnosis, and treatment of prostate cancer. Dr. Horan, who has a urology practice in California, agrees with the U.S. Preventive Services Task Force's recommendation and leaves the PSA test last in his chain of diagnostic events. “Screening for prostate cancer with a blood test and treating the cancer, discovered in the absence of a palpable nodule, offer no measurable good that outweighs the measurable harm,” he wrote in a post on the Health Care Blog. “Prostate cancer is a very slow moving disease with estimates



showing that 94 percent of the cancers detected with the routine PSA blood test would not even cause death before the age of 85. More men die in accidents than of prostate cancer.”

Caught in the crossfire of the PSA screening controversy are African-American men, who are at greater risk than men of other ethnicities at every stage of the prostate cancer screening, diagnosis, and treatment process. African-American men are more likely to develop prostate cancer, more likely to be diagnosed with high-grade tumors, more likely to present with metastatic disease, less likely to receive aggressive treatment or to get care from high-volume surgeons at high-volume hospitals, and more likely to die of prostate cancer—twice as likely, in fact, as white men. Crucially, African-American men also are less likely than other men to be screened in the first place.

Brian A. Stone, MD, who served on the P&S urology faculty until returning to his native Alabama in 2009, was a resident at Jacobi Hospital and Montefiore Medical Center in the Bronx when he started a free prostate cancer screening program in partnership with local black churches after seeing the alarming disparities in death and advanced disease between low-income African-American patients at Jacobi and their better-insured, often white counterparts at Montefiore. “I remain very concerned about the poor and the underserved, men who are much less likely to seek out the care of a physician for PSA,” says Dr. Stone. “You’ve already got a reluctant group of individuals who don’t want to do this. We have made so much progress in educating high-risk men since my screening program started in 1993. And I think the position the task force took saying that PSA was a useless test could cause harm in this population.”

As a member of the legislative committee of the American Urological Association, Dr. Stone is working with members of Congress on legislation that would require the task force to retract the recommendation pending further study and limit Medicare’s ability to deny coverage for prostate cancer screening and care. In the meantime, he continues to recommend the PSA to his patients. “You should educate men about the PSA blood test, the implications of getting the test done, the implications of finding a cancer that may potentially not be one that’s going to pose a threat to you, and then proceed with the test so patients work from a position of knowledge. The alternative is to put your head in the ground like an ostrich, then you’ll have patients showing up like they did before PSA.”

Amid the discussion about overdiagnosis and overtreatment, urologists at Columbia have put a priority on active surveillance, in which men with low-risk prostate cancers are monitored and rebiopsied annually for the first two to three years and then biopsied at increasing intervals and moved into treatment if their cancer appears to become more aggressive. Active surveillance serves two simultaneous purposes: It insists on diagnosis to establish risk but fights overtreatment while still protecting patients and preserving the possibility of cure if treatment is ultimately needed. “Treating without



overtreating is exactly where active surveillance plays a very important role,” says Dr. Wenske. “Urologists need to learn how to interpret PSA values but also biopsy results in an intelligent way, look at the patient as a whole, then make an individual recommendation together with the patient about whether immediate treatment is necessary or whether it is safe for the patient to go on active surveillance.”

One of the department’s most interesting areas of current research is in confirmatory biopsies to decide eligibility for active surveillance among men who come to Columbia after being diagnosed elsewhere. “I have greater confidence in our ability to thoroughly biopsy the prostate,” says Dr. Benson, who performs biopsies with 24 to 30 cores rather than the more typical 12. To test the accuracy of initial biopsies at other facilities and consequent eligibility of patients for active surveillance, Dr. Benson selected 60 incoming patients and, before enrolling them in active surveillance, repeated their biopsies to be sure that the original tests hadn’t missed prostate cancer that might be of greater risk.

The results: 30 percent of the men had a more aggressive or higher-volume cancer than had first been diagnosed and, therefore, were not good candidates for active surveillance; by contrast, only 5 percent of Dr. Benson's own patients who underwent the 24-30 cores at initial diagnosis were failing surveillance at their first repeat biopsy. "The patients from the outside who were failing surveillance were not people whose cancer went from good to bad; they were people who always had bad cancer but it hadn't been found at the time of their initial diagnosis," says Dr. Benson. "The vast majority of people who fail surveillance never should have been on surveillance to begin with." The department now has an IRB-approved protocol to give confirmatory biopsies to all patients in active surveillance before their planned 12-month repeat biopsies.

Dr. Benson also stresses the importance of a multidisciplinary approach to detecting and accurately diagnosing prostate cancer, particularly with the use of advanced imaging. Columbia uses magnetic resonance imaging before each 12-month biopsy and often at the start of the process as well,

several weeks after the initial biopsy. "We believe that the selection of appropriate therapy is multidisciplinary," he says. "It involves expert pathologists, expert radiologists in prostate MR, and expert urologists. I wouldn't say we're unique, but we're a leader in that."

Advanced imaging, particularly functional imaging, can go far beyond pinpointing the location, volume, and extent of prostate cancer, says Lawrence Schwartz, MD, chair of radiology at P&S and a specialist in the imaging of pelvic malignancies. "With functional imaging techniques that look not only at anatomy but at biologic and cellular activity, we're able to potentially judge things like the aggressiveness of a tumor. We're able to evaluate the tumor micro-environment; we're able to look at a tumor's metabolism." Also, he says, the scope of imaging offers an implicit advantage over biopsy. "In a biopsy, you're sampling a small amount of the prostate. Imaging has the potential to be transformative in the sense that we can interrogate and evaluate the entire gland in a non-invasive manner."

This level of collaboration in diagnosing prostate cancer was not viable as recently as five years ago. "The clinical implications of the findings of these advanced imaging modalities are just now becoming evident," Dr. Schwartz says. "Expanding the clinically relevant role of functional imaging is going to be key, and this requires an intense multidisciplinary approach."

One persistent challenge in prostate cancer treatment is that some men with low-risk cancer will decline active surveillance and insist on treatment because they can't stand walking around with cancer inside their bodies. "Approximately a third of patients going off active surveillance do so because they are too anxious to pursue it. And they won't necessarily go off it because of their own anxiety, but it could be family-member anxiety," says Dr. Benson. "For that patient, therapy may be medically unnecessary but may be psychologically necessary in order to maintain a normal life. If you say to someone, 'You have cancer, you need to have your prostate removed,' they understand that, but if you say, 'You have cancer, you don't need to be treated,' they don't."

In the treatment arena, several issues—for doctors, for patients, and for residents—have accompanied the rise of minimally invasive prostatectomy, or surgical removal of all or part of the prostate. While some 90 percent of prostatectomies are done robotically at Columbia—a rate only slightly higher than in the United States as a whole—Ketan Badani, MD, director of robotic and minimally invasive surgery at NewYork-Presbyterian/Columbia, stresses that the type of operation should not be the deciding factor for patients weighing surgical options and trying to avoid possible postsurgical side effects such as incontinence or impotence.

"If you're comparing open and robotic prostatectomy and you're looking at outcome, you have to realize that the No. 1 determinant of outcome is not the tool you use; it's the experi-



ence you have doing it the way you're doing it," Dr. Badani says. "Because prostatectomy is such a technical operation, the more you do of a technical thing, the better you're going to be at it." He suggests that patients ask their surgeons not just what type of surgery they recommend, but how many surgeries of each type they have performed and their personal outcome experience.

One concern that has dogged robotic surgery is its cost/benefit ratio, but Dr. Badani sees little conflict there. "If you just look at operating room costs, a robotic operation is more expensive than the open procedure, hands down," he says. "But when you start looking at recovery time, faster return to normal activities, faster return to work, and you incorporate that, there are numerous studies recently that have shown that there's actually a cost benefit to doing it robotically."

As robotic surgery has become more popular and more widely available, concerns have arisen at medical schools about whether students and residents are receiving enough training in open procedures, to which they might have to convert at any time during robotic surgery. "The young urologists coming up now have become very adept at technology," says Nicholas Romas'62, chair of urology at St. Luke's-Roosevelt Hospital Center, a P&S affiliate. "But some patients have had multiple operations in the pelvic area, and the scar tissue is such that it's impossible to use a robot or laparoscopy. Are the younger urologists adept enough to go in and do the surgery with open techniques? Who's got the experience to do the open cases? The older generation is retiring, so what's going to happen to the new generation coming forward? All of us are concerned about that."

In fact, residents themselves are now concerned, says Dr. Badani. "A few years ago, when we were interviewing medical students for residencies, all the questions revolved around, 'Do you do robotics?'" Dr. Badani recalls. "Now, the question is the opposite: It's, 'How much open do you do? How much open experience is there?' The trainees are worried that they're not going to get enough open experience. I think that they realize that most big places are doing enough robotic surgery, but maybe they're not doing a lot of open—and that's true."

The issue of robotic surgery procedure volume also has implications for racial disparities in access to prostate cancer care. A recent study from the Mayo Clinic of nearly 30,000 men who had radical prostatectomy between 2006 and 2008 found that African-American and Latino men, as well as Medicaid patients, had lower odds of being treated at high-volume, high-experience hospitals offering robotic surgery than did their white or privately insured counterparts.

Benjamin Spencer'94, assistant professor of urology at P&S, focuses his research on racial disparities in prostate cancer, and he notes that prostate cancer care could also benefit, as the breast cancer community has, from greater use of patient navigation, in which trained nonclinician navigators

assist patients as they make their way through the logistics of cancer care—choosing providers and facilities, talking with insurers, making appointments, obtaining transportation, and getting information on diseases and treatment options. "Prostate cancer is a complicated disease for patients to understand, and I think patient navigation is an important area," he says. "The whole concept of trying to facilitate patients through the system and getting timely consults and treatment—you definitely need it for a disease like this that often involves

'If you could do a prostatectomy that had no side effects and you treated the cancer—whether you think the cancer was a threat to your life or not—we would hear fewer arguments about overtreating.'

multiple modalities and providers. There are more and more options for treatment, so it's going to get harder and more complicated for patients. I think that we're just starting to try to bring resources together to help men through what are complicated and difficult decisions that have a huge impact on quantity and quality of life."

Looking down the road, prostate cancer care is focused on pursuing both of the disease's holy grails at once—making risk assessment more accurate and continuing to refine and improve surgical technique to further minimize side effects. Dr. Badani approaches the overdiagnosis controversy from a surgeon's perspective. "The biggest concern is figuring out whom to treat and whom not to treat. That is what's happening now, and I think that is what's going to continue in the future," he says. "But if you could do a prostatectomy that had no side effects and you treated the cancer—whether you think the cancer was a threat to your life or not—we would hear fewer arguments about overtreating."

For Dr. Benson, his current touchstones show the way forward. "There are two telling statistics," he says. "One is that before PSA screening, the most common presentation was a patient with metastatic disease. And the second thing is that metastatic disease is now rare and the death rate has been reduced by 40 percent. What we have to do is find ways of continuing to have a death rate reduced by 40 percent while not treating people who don't need treatment. That has to be the goal." ❖

*As this issue was in production, findings of new genetic variants that increase risk for prostate, breast, and ovarian cancers were announced. Two resources for the latest developments in prostate cancer research and care are Prostate Cancer InfoLink, a website co-founded by Arnon Krongrad'84 (<http://prostatecancerinfolink.net/>), and the Prostate Cancer Foundation ([www.pcf.org](http://www.pcf.org)).*



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Dominican Culture  
Close to Home



The Class of 2013 is the first to graduate from P&S under a new curriculum that includes four months of protected time to complete a scholarly project. Students were paired with faculty mentors to immerse themselves in an area of medical practice or research with a goal of developing an individual professional or intellectual passion. Scholarly projects are required of all graduates, although students pursuing dual degrees may apply their second degree toward the scholarly project requirement, and students who take a year off for research also may opt to apply their research to the requirement.

“Students completing the scholarly project have the opportunity to ask innovative questions, deepen their experience of medicine, and contribute to the academic environment,” says Jonathan Amiel’07, assistant dean for curricular affairs, who oversees the scholarly project program.

Students selected projects from among six tracks: basic science, clinical research, global health, narrative and social medicine, medical education, and population health. They submitted a written summary of their work, which was reviewed and evaluated by faculty against track-specific standards.

Four projects, representing four of the six tracks, are described on the following pages.



Photographs by Jörg Meyer

## Madagascar: Giving the Smallest a Chance to Grow Global Health Scholarly Project of Kim Stanford'13

**Project title:** "Exploring Interventions to Reduce Maternal and Child Malnutrition in Madagascar"

**Mentor:** Martin Malachovsky, MD

**Global health track director:** Stephen Nicholas, MD

Kim Stanford'13 is no stranger to travel, logging visits to more than 60 countries. She combined her love of travel with her scholarly project to spend three months last summer working with a medical nongovernmental organization in Madagascar, which has the world's fifth highest rate of child stunting due to malnutrition. "The country has made essentially no progress towards eradicating malnutrition in the past 20 years," Ms. Stanford writes in her project summary, and as many as half of all deaths of children under age 5 are related to malnutrition.

Ms. Stanford used her project to compare malnutrition in two regions of the country and to suggest strategies for helping the NGO, Maventy Health International, expand its efforts from the northern region into the southern region.

The southern part of Madagascar is more challenging for relief efforts because it has the highest prevalence of poverty in the country, it sits in a desert suffering from a long-term drought, and 60 percent of women have no education, making it difficult to depend on maternal education strategies that have worked elsewhere

to improve childhood nutrition. Residents rely on foods with low nutritional value, spending 56 percent of their food budget, on average, on simple starches that provide calories but are not sufficient for healthy growth in children.

"Although governmental guidelines are in place for the treatment of malnutrition, a major problem that interferes greatly with the efficacy of the outpatient treatment regimen is the propensity of mothers to sell their packets of PlumpyNut, a nut-based protein and vitamin concoction designed for severely malnourished children, at the market rather than feeding them to their malnourished children," says Ms. Stanford. "There is a widespread belief among mothers that rice and rice water are the most appropriate food for children. Also, fathers dominate the household and physical abuse is widespread, thus mothers may feel that their priority is to provide for their husbands before their children. These beliefs and practices would at least partially explain a failure to improve even amongst children who faithfully attend screening events and receive PlumpyNut supplementation weekly."

Other challenges include the lack of a standardized record-keeping system to track all children and the widespread geographic distribution of families throughout the countryside, making it difficult for families that live hours from any kind of health care.

Ms. Stanford's paper outlines three broad strategies that could be implemented in the southern area of the country:

- **DIRECTLY OBSERVED THERAPY.** Rather than getting PlumpyNut once a week, children would be required to come to the office and eat it in the presence of staff. "This might dissuade some families from participating but likely would result in a greater number of children receiving the nutritional supplementation they require."

- **EXPAND ON THE STATUS QUO.** The model currently in place includes centralized screenings,

distribution of PlumpyNut only to "severely" malnourished children who attend screenings, and tracking of hospitalized children. Ms. Stanford recommends expanding screening and interventional programs into several villages. "This would potentially reach children who are being missed and also begin to identify and address the problems faced by children who are malnourished but do not yet qualify for hospitalization." She also suggested modifications to the electronic record system used to track malnourished children and suggested narrowing the focus of screenings and interventions to children 6 months to 23 months old, the time when children have been shown to be hardest hit by malnutrition so interventions would have the highest potential long-term benefit. (Programs now screen and treat all children under age 5.)

- **ATTACK THE PROBLEM FROM A NEW ANGLE.** "Some interventions not directly nutritional in nature have been shown to result in enormous impact on children's health with extraordinarily high benefit-to-cost ratios," says Ms. Stanford. These include deworming, distribution of iodized salt to pregnant mothers, and iron supplementation. "These kinds of indirect interventions may feel somewhat less satisfying to volunteers or to the families receiving them, as it is not as immediately obvious to someone not familiar with the literature that these may be as good as or better than food handouts in combating malnutrition."

*Ms. Stanford's work was supported through the new Sara and Arnold P. Friedman Awards program, which provides funding to allow students to pursue projects abroad and to travel to meetings to present their work. The Friedman Awards were created by Carol Ludwig'74 in honor of her parents. Her father, an internationally prominent neurologist specializing in migraine and past president of the American Board of Psychiatry and Neurology, was a member of the P&S faculty from 1944 through 1967.*



## Resources to Teach Cultural Competency

### Medical Education Scholarly Project of Camila Mateo'13

**Project title:** "Teaching Cultural Competency Through Community-Academic Partnership for Undergraduate Medical Students: A Digital Perspective"

**Mentor:** Dodi Meyer, MD

**Medical education track director:** Marc Dickstein, MD



Not too many years ago, new medical students went on a walking tour of Washington Heights and Inwood—WaHI—to familiarize themselves with all the neighborhood offers. How old school. Today, new students can take a virtual tour to learn about Dominican culture, explore health indicators, discover historical landmarks, and find local resources that will help students enrich their interactions with patients.

Camila Mateo'13 is one of two students in the class with Dominican roots. The daughter of two pediatricians, Ms. Mateo grew up in Florida and chose P&S largely because of the chance to live in Washington Heights.

Questions from her fellow students at first centered on food and entertainment in the neighborhood, but the nature of the questions changed when the class entered its second year and students started caring for patients. "There is a definite cultural distance between the university and the community, and my classmates were facing those issues on the wards for the first time," she says. "They were frustrated and would ask me questions such as, how come my Dominican patients are lost to follow-up for four months? I'd explain that Dominican culture is profoundly transnational and, for cultural and financial reasons, many people live part of the year in New York and the other part in the DR."

When the time came for Ms. Mateo to pick a scholarly project, she thought about what she could do to help future P&S students navigate cultural issues in the neighborhood and in the clinic. The result was a

website called VIDA! (for Virtual Introduction to Dominican Americans in Washington Heights and Inwood). The site can be found at <http://vida.wikischolars.columbia.edu/>.

The virtual tour starts with information about the historical significance of the neighborhood but quickly goes into details about common beliefs and characteristics of Dominican Americans.

"I wanted to create a safe space where people could learn about their neighbors, learn about their patients, and not be afraid to ask questions," says Ms. Mateo. "At the same time, I don't want people to feel they are on a cultural safari, which was one of the complaints of the walking tour."

To prepare the site, Ms. Mateo visited many of the neighborhood's community organizations, including Alianza Dominicana and the ARC XVI Senior Center, for advice. Her classmates helped her understand what kinds of information students need.

Launched in early February 2013, VIDA! includes a feedback survey that allows users to suggest improvements.

Ms. Mateo hopes the website also shows everyone how much the community has to offer. "We often think: How can we make Washington Heights and Inwood better? We look at the community in terms of its deficits," she says. "But what if we started looking at its assets? What does this community already have that we're missing because we're not looking hard enough?"

## Readmission as a Metric for Quality Clinical Research Scholarly Project of Irmina Gawlas'13

**Project title:** "Readmission After Pancreatic Resection is Not an Appropriate Indicator of Quality"

**Mentor:** John Allendorf, MD

**Clinical research track director:** Henry Spotnitz, MD

**H**ealth care reform includes new mandates for reporting readmission rates for certain conditions, suggesting that the quality of medical and surgical care can be measured by hospital readmission.

The Center for Medicare and Medicaid Services requires reporting of 30-day readmission rates for pneumonia, congestive heart failure, and myocardial infarction, and the Affordable Care Act provides for regulations that affect payment if a patient is readmitted because of a problem that could have been reasonably prevented "through the application of evidence-based guidelines." These regulations, says Irmina Gawlas'13, are being extended to postoperative complications. "Hospitals will not be reimbursed for the additional costs associated with surgical site infections after coronary artery bypass, bariatric surgery, and certain orthopedic procedures."

In anticipation that guidelines will be applied to complications and readmissions related to pancreatic surgery, Ms. Gawlas and the research team examined NewYork-Presbyterian's readmission rates after pancreatic resection to assess factors that predict readmission. She co-authored an article in *Annals of Surgical Oncology* about the research.

The team reviewed 787 pancreatic resections performed at NewYork-Presbyterian between 2006 and 2010. The 30-day readmission rate was 11.6 percent with the most common reason for readmission being leaks, fistulas, abscesses, and wound infections. Those accounted for 45.1 percent of readmissions. Other readmissions were caused by delayed gastric emptying (12.1 percent), venous thrombosis (7.7 percent), and gastrointestinal bleeding (7.7 percent).

"We found the vast majority of readmissions after pancreatic resection were to manage complications related to the operation and were not due to poor coordination of care or poor discharge planning," says Ms. Gawlas in the *Annals of Surgical Oncology* paper. "We find readmissions after pancreatic resections to be common,

multifactorial, and not readily predictable. Our data do not support previous suggestions that more cautious discharge or increased referral for skilled services could decrease readmission rates. In fact, we found that the majority of readmissions were for known and not unexpected complications of these complex procedures. The rates of such complications are widely reported to occur in approximately 50 percent of cases and have not been shown to be preventable by any perioperative measures.

"We conclude that readmissions after pancreatic surgery are a reflection of the com-

plexity of these procedures and represent an unfortunate but by and large inevitable part of the postoperative course for an unpredictable subset of patients. Thus, until there is consensus on evidence-based methods to decrease complication rate, we cannot support the use of readmission as a quality indicator after pancreatic surgery."

Ms. Gawlas' faculty co-authors of the paper were Monica Sethi'12, Megan Winner, MD, Irene Epelboym, MD, James L. Lee, MD, Beth A. Schrope, MD, PhD, John A. Chabot, MD, and John D. Allendorf'97.





## Using Stem Cells to Deliver New Healthy Mitochondria to Damaged Lung Cells

### Basic Science Scholarly Project of Robert Rogers'13

**Project title:** "Mitochondrial Transfer from Mesenchymal Stem Cells to Human Alveolar Epithelial Cells in vitro"

**Mentor:** Jahar Bhattacharya, MD, PhD

**Basic science track director:** Richard Kessin, PhD

Research over the past 15 years has shown that a major factor in lung failure during sepsis is the shutdown of the lung's mitochondria. And despite dozens of animal experiments targeting mitochondrial pathways, no medication has proved successful in treating patients with acute respiratory distress syndrome, or ARDS, which often complicates sepsis.

"The sheer variety of ways in which sepsis induces mitochondrial dysfunction suggests that an intervention focused on correcting just one of those pathways is unlikely to have clinical benefit," says Robert Rogers'13, who spent most of 2012 in the lab of Jahar Bhattacharya, MD, PhD, researching new ways to improve mitochondrial function.

The best way to "fix" the dysfunctional mitochondria in ARDS may be simply to provide lung cells with fresh, healthy organelles. "Delivery of whole mitochondria to cells is a big challenge, but mesenchymal stem cells may be the perfect delivery vehicle," says Mr. Rogers in the capstone paper he submitted for his scholarly project.

That stem cells can donate their mitochondria to other cells is a newly discovered phenomenon, observed for the first time in vitro in 2006. And based on recent work in Dr. Bhattacharya's lab, the transfer of mitochondria appears to be a major reason why mesenchymal stem cells, when delivered to lungs, help animals with ARDS recover.

Because Dr. Bhattacharya's studies found that stem cells donate mitochondria only to damaged lung cells, learning what signal stimulates transfer could be important in optimizing a stem cell therapy for ARDS.

To answer this question, a reliable in vitro model of mitochondria transfer from stem cells to lung cells must be established. Mr. Rogers set out to create such a system using mouse stem cells and human lung cells.

His work—like much of medical research—opened up more questions. Even though mitochondrial transfer is thought to occur at a low rate in uninjured cells, Mr. Rogers' results initially suggested it was very common, with more than 90 percent of lung cells receiving mitochondria from neighboring stem cells.

Yet what Mr. Rogers measured in these experiments was not mitochondria, but a dye meant to track mitochondria. "I am not confident that all these mitochondria are transferred during these experiments but maybe the dye is diffusing across cell membranes. It is not an ideal mitochondrial label."

At the end of his time in the lab, Mr. Rogers turned to another method of tracking mitochondria, this time genetically modifying a mitochondrial protein with a red fluorescent marker. With a red marker firmly attached to the mitochondria, this method should resolve the questions his first experiments posed: Is mitochondrial donation really so high? If so, are the cells used in the assay—mouse stem cells and human lung cells ini-



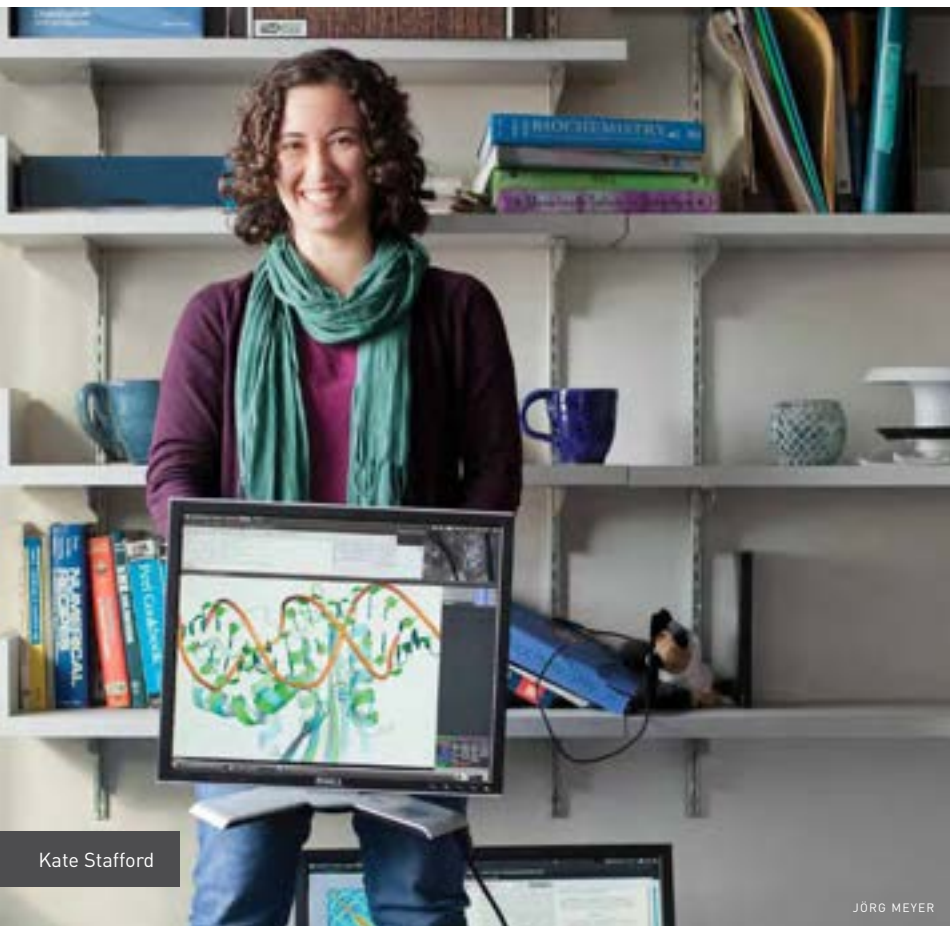
tially derived from human adenocarcinoma—the reason behind the high donation rate?

Mr. Rogers' careful observations of his cells also may suggest that in addition to reacting to a signal from the injured lung cells, mesenchymal stem cells may pick up signals from the bacterial toxin behind many cases of ARDS.

*The editor acknowledges the help of Andrew Vagelos in coordinating the selection of student projects for this article. Read about more scholarly projects in the 2012 P&S annual report, available online at <http://bit.ly/psannualreport>.*

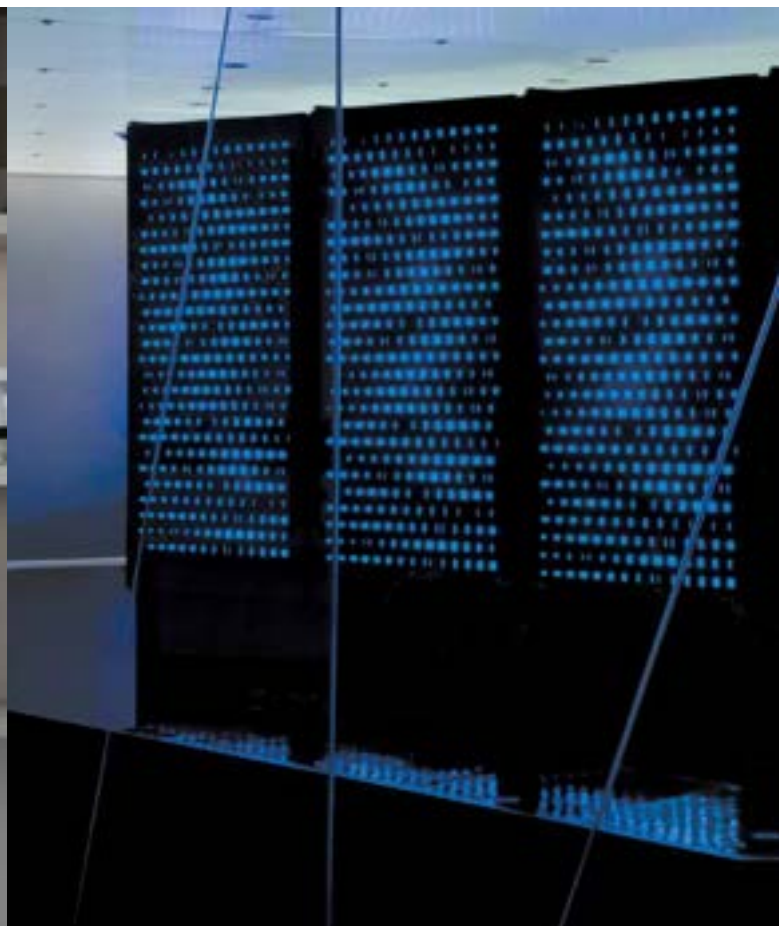
A look at work from the labs of CUMC's graduate programs

# Graduate School *life*



Kate Stafford

JÖRG MEYER



## Kate and Anton

**K**ate and Anton are a match made not in heaven but at the Pittsburgh Supercomputing Center. Kate is Kate Stafford, a fifth-year National Science Foundation predoctoral fellow in my laboratory in the Department of Biochemistry & Molecular Biophysics. Anton is a supercomputer specialized to perform molecular dynamics—MD—simulations of proteins and other biological macromolecules.

Anton was developed at D.E. Shaw Research, a Manhattan-based research institute headed by David E. Shaw, PhD (who is also senior research fellow at the Center for Computational Biology and Bioinformatics, or C2B2, at Columbia). Anton is made available

to the research community through a collaboration between the Pittsburgh Supercomputing Center and the Shaw institute with support from the NIH National Institute of General Medical Sciences.

Ms. Stafford uses Anton in her doctoral research through a grant titled “MD and NMR characterizations of psychrotrophic, mesophilic, and thermophilic enzymes” from the Pittsburgh Supercomputing Center.

Proteins perform myriad functions in biology, ranging from structural roles, to recognition and transport of other molecules, to catalysis of chemical reactions. Proteins are essential to infectivity and virulence of pathogens. Mutations, misfolding, and other malfunctions of proteins are implicated in numerous human

**By Arthur G. Palmer III**

Robert Wood Johnson Jr.  
Professor of Biochemistry &  
Molecular Biophysics and  
Associate Dean for Graduate Affairs

**Right:** Anton is a special-purpose supercomputer capable of performing atomically detailed simulations of protein motions over periods 100 times longer than the longest such simulations previously reported.

IMAGE COURTESY OF MATTHEW MONTEITH

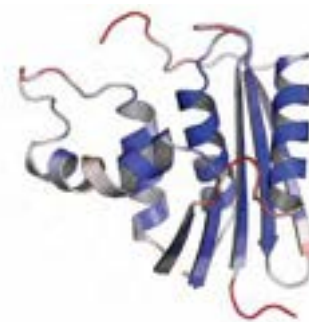


diseases so it is not surprising that proteins are the targets of most pharmaceutical agents and emerging treatments, such as gene therapy. Paradoxically, protein function depends upon two opposed constraints: The molecules must be sufficiently stable to maintain their active 3-D structures but sufficiently flexible to perform their biological and chemical actions. The interplay between stability and flexibility is exemplified by proteins isolated from bacteria adapted to live at very different temperatures, because atomic motions and, hence, flexibility of molecules increase with increasing temperature. Psychrotrophic, mesophilic, and thermophilic bacteria have been identified that thrive at low (in some cases less than 0 degrees C), moderate, and high (in some cases more than 100 C) tem-

peratures. Proteins isolated from thermophilic bacteria frequently are more stable but less biologically active at ambient temperatures. In contrast, proteins isolated from mesophilic bacteria lose activity at elevated temperatures owing to disruption of the proper 3-D structures.

Ms. Stafford's research is directed toward a fundamental understanding of how stability and flexibility of proteins are balanced to achieve the requisite biological activity. She has focused on the protein ribonuclease HI (RNaseH), an enzyme that is widespread in prokaryotes and eukaryotes (and also is found as a domain of the reverse transcriptase enzyme of retroviruses). The enzyme degrades the RNA strand of DNA:RNA hybrid molecules and is involved in numerous activities related to replication of DNA. RNaseH also is critical to efforts to develop "antisense" biotechnology in which specific RNA molecules are targeted for destruction. Ms. Stafford has chosen RNaseH homologs from the bacteria *Shewanella oneidensis* (soRNH), *Escherichia coli* (ecRNH), and *Thermus thermophilus* (ttRNH) for comparative investigations of the properties of the enzymes from organisms capable of growth from less than 10 C to more than 60 C.

My laboratory has used NMR spectroscopy to experimentally characterize the conformational flexibility of RNaseH enzymes over multiple time scales. However, distinguishing between different mechanisms of motion, which is critical for understanding biological function, is difficult using experimental data alone. MD simulations, provided that they are accurate over time scales comparable to the experimentally relevant ones, enable deep insights into mechanism. Hence, joint analysis of experimental NMR spectroscopy and MD simulations is a powerful approach to understanding functions of proteins (or other biomolecules). Previously, former graduate student Nikola Trbovic and Ms. Stafford performed extensive MD simulations of all three homologs for times up to 100 ns-1 ms over a temperature range from 0 C to 67 C. These MD simulations have been per-



Amplitudes of motion calculated from an MD simulation are mapped onto the 3-D structure of *E. coli* RNaseH. Blue and red regions indicate low and high local flexibility, respectively. Elements of secondary structure,  $\alpha$ -helices and  $\beta$ -sheets, are rigid, while peripheral loops, which are known to participate in binding the substrate and carrying out the protein's catalytic reaction, are more flexible.

formed on computer clusters in my laboratory and at C2B2 and represent the state of the art for conventional computer hardware. Nonetheless, the lengths of the MD simulations are still much less than necessary to allow full comparisons with the experiments.

Using Anton, Ms. Stafford is extending the length of the MD simulations of these proteins by one-to-two orders of magnitude. An example of some of the initial results for ecRNH are shown in the illustration that depicts the relative amplitudes of motion mapped onto a representation of the protein structure. Already, these simulations are suggesting ways in which the three proteins respond differentially to changes in temperature and are targeting amino acid residues critical for function. Ms. Stafford and other members of my group will then produce the mutated proteins and repeat the NMR experiments to test the predictions from the simulations. Ultimately, Ms. Stafford's work with Anton will provide an atomically detailed description of how one family of proteins has adapted to function in the diverse environments in which the host organisms live and, we hope, provide more general insights into the remarkable properties of proteins essential for life.

Kate and Anton illustrate a fundamental feature of biological, indeed all, science: New technologies drive new areas of research while quantitative improvements of technology eventually lead to qualitative transformations of applications. More than three centuries ago, Anton Van Leeuwenhoek revealed a dynamic sphere of microscopic bacteria and today his namesake computer reveals the dynamic behavior of their constituent molecules.

# Alumni News & Notes

Marianne Wolff'52, Alumni News Editor

Peter Wortsman, Alumni News Writer

Additional class notes by  
Bonita Eaton Enochs, Editor

## 1944

See Alumni in Print to read about a book by **Gene H. Stollerman**. Gene, professor emeritus of medicine and public health at Boston University, has contributed to the eradication of rheumatic heart disease in developed countries and, more recently, the creation of a vaccine against the cause of rheumatic fever—streptococcal sore throat—for developing countries. “I wrote this memoir entirely from memory as an exercise that I have long advocated as a gratifying way to celebrate one’s life,” Gene



Gene H. Stollerman'44

writes. “I adopted a conversational writing style to try to make the content clear to non-professionals, hopefully without distorting the historic medical science I included.” Gene, now 92 and living in New Hampshire, spent his career at four medical schools—the University of Tennessee, where he chaired the Department of Medicine for 17 years and where his students endowed a professorship in his name; Northwestern University; Boston University; and Dartmouth.

## 1953

**Jim Neely**, who spent 40 years as clinical professor of surgery at UCSF, writes from California: “Retired to bucolic Napa Valley 15 years ago to play tennis and

write poetry. A published author and poet. A fine full life of love and laughter.” Jim calls his son, **Robert'08**, “a wunderkind fourth-year cardiothoracic resident, learning inter alia to transplant human hearts, who calls me at odd hours, he says, just to keep my hand in.” Jim sent along this poem:

*Class Notes  
(for George Cahill)*

*Time comes when no longer  
the names are those you know  
moving through these pages*

*where those now  
appear doing nothing  
that you have not already done*

*and none of the names you do know  
that still land here*

*are not those you once were  
sure about*

*as it was always easier to live  
with certainty*

*among all the others  
who come and go that this one*

*or especially that one in truth  
for the life of me  
would live forever*

## 1958

See Alumni in Print to read about a book by **Lawrence W. Norton** that recounts stories during his training that range from colorful characters such as demanding medical professors and surgical bosses to indigent patients who frequented hospital emergency rooms. He trained at Cincinnati General Hospital, the University of Colorado, and the University of Kentucky. After becoming board-certified in surgery, Dr. Norton spent five years as a medical missionary in India.

Returning home, he entered academic surgery, eventually becoming a professor at the University of Arizona and later the University of Colorado. Since his retirement, he and his wife, Ann, have traveled extensively and he has volunteered in developing nations as a visiting professor, lecturer, and volunteer surgeon in government and mission hospitals. Larry also wrote the book, “Doctor Sahib: Stories of an American Surgeon in India.”

## 1959

See Class of 1996 for a photo of **Ken Forde** with **Robyn Gmyrek**.

## 1960

**Bill Taylor** has emailed classmates whose addresses he could locate to describe a new project aimed at helping stressed health professionals. He invites all alumni to visit his blog—<http://stressedhealthprofessionals.blogspot.com/>—and consider taking part. The blog’s March 9, 2013, entry offers more information.

## 1961

See Alumni in Print to read about a book by **Alan Wanderer**. After graduating from P&S, Alan trained in internal medicine and pediatrics at Bellevue Hospital and Cornell. His book is set in Denver, where he completed a fellowship in allergy,



Alan Wanderer'61

asthma, and immunology at National Jewish Hospital-Health. He has conducted clinical research in inherited inflammatory disorders, asthma, cold hypersensitivity syndromes with anaphylaxis, sickle cell disease, and transplant organ viability. He has practiced in Denver and Bozeman, Mont., where he now lives with his family and is medical director of a clinical research drug study center.

## 1963

**Norma M.T. Braun** gave the Margaret Pfrommer Memorial Lecture at the American College of Chest Physicians annual scientific meeting in Atlanta in October 2012. The lecture award was established in 1999 to honor a polio survivor and patient advocate. Norma, who is clinical professor of medicine at P&S/St. Luke’s-Roosevelt, also was one of three faculty named Foundations in Clinical Medicine Teacher of the Year by the P&S Class of 2015.

## 1965

Having just returned from a meeting of the American Urological Association in Hawaii (at which he presented four posters and a paper), **Anthony H. Horan** advises young practitioners to send in abstracts of their work annually. Tony is a member of the nominating committee and was also invited to two social functions given by the president of the association.

## 1966

See P&S News in this issue to read about **Robert Lefkowitz’s** Nobel Prize in Chemistry.

## 1969

**Virginia A. LiVolsi** received the 2012 Harvey Goldman Master Teacher Award at the United States and Canadian Academy of Pathology’s

annual meeting in Vancouver in March 2012. Professor of pathology and laboratory medicine at the University of Pennsylvania, Virginia has clinical expertise in thyroid, parathyroid pathology, gynecological pathology, and head and neck pathology/salivary glands. The Goldman award was created to honor the memory of Harvey Goldman, professor of pathology at Harvard and an international leader in gastrointestinal pathology, who died in 2009. The award is given to a master educator and mentor in the field of pathology.

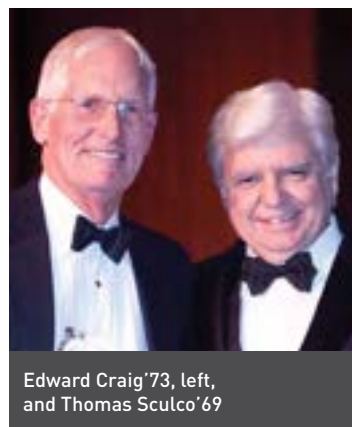
### 1970

**Karen Hein** received the 2012 Robert Wood Johnson Foundation Health Policy Fellows Lifetime Achievement Award in recognition of her career and her contributions to health policy at all levels. Karen was a Robert Wood Johnson Health Policy Fellow in 1993-94, serving on the U.S. Senate Finance Committee, where she worked on legislation related to health benefits, including mental health and substance abuse parity in the proposed health reform package of that era. She also worked on legislation that funds undergraduate and graduate medical education and academic health centers. Former president of the William T. Grant Foundation and former executive officer of the Institute of Medicine, Karen currently serves on the Vermont Green Mountain Care Board, appointed by Vermont's governor to oversee the state's comprehensive health care reform efforts. Her international work has included post-tsunami relief work in India. Karen is an adjunct professor at Dartmouth Medical School and a visiting fellow at the Feinstein International Center at Tufts University.

### 1973

**Edward Craig**, an orthopedic surgeon at the Hospital for Special

Surgery in New York City and professor of clinical orthopedic surgery at Weill Cornell Medical College, received a lifetime achievement award from the New York chapter of the Arthritis Foundation. The presentation was made by fellow P&S alumnus **Thomas Sculco '69**, surgeon-in-chief at Special Surgery. Ed is a pioneer in shoulder replacement. He designed both an anatomic and a reverse total shoulder replacement system for patients with severe arthritis in the shoulder. He also specializes in rotator cuff repair



Edward Craig '73, left, and Thomas Sculco '69

of the shoulder and has designed a rotator cuff repair system. His other specialties include arthroscopic surgery and sports medicine. He completed a residency in orthopedic surgery and two fellowships (shoulder and elbow surgery) at Columbia.

### 1974

**William Theodore** has written an essay about the P&S experience of multiple generations of his family—including his father (Frederick '31) and daughter (Deborah '14)—and curriculum changes over the past 100-plus years. Read his essay at the magazine's website at [www.columbiamedicinemagazine.org](http://www.columbiamedicinemagazine.org).

**Byron Thomashow** has been chosen to receive the 2013 Public Advisory

## LOG ON

More online at [www.columbiamedicinemagazine.org](http://www.columbiamedicinemagazine.org)

- Winter 2013 issue of e-News About and For Alumni, which includes recent deaths
- Alumni Association activities

Roundtable Excellence Award from the American Thoracic Society. Byron, who is clinical professor of medicine at P&S, will receive the award during the ATS 2013 international conference in Philadelphia. Byron was chosen for his exemplary service to patients with lung diseases and critical illnesses.

### 1975

Orthopedic surgeon **David Roye Jr.** has been named an inaugural Samberg Scholar in Children's Health, a newly endowed appointment at New York-Presbyterian/Morgan Stanley Children's Hospital. Hospital trustee Arthur Samberg and his wife, Rebecca, donated \$25 million for the program. The 10 Samberg Scholars, who were announced at a January ceremony, are pediatricians or pediatric subspecialists who demonstrate excellence in patient care and meet additional criteria, including leadership, expertise, community commitment, and teaching.

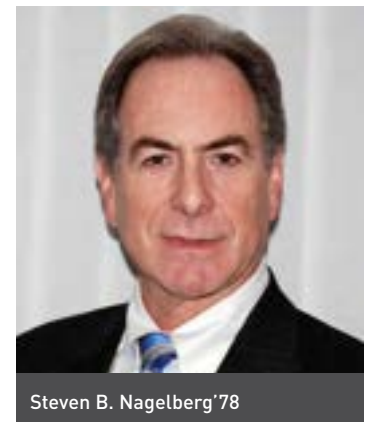
### 1976

**Peter K. Gregersen**, working out of the Feinstein Institute for Medical Research in Manhasset, Long Island, is one of three 2013 winners of the Crafoord Prize in Polyarthritis, to be presented in May 2013 by the Royal Swedish Academy of Sciences. This award recognizes work done on rheumatoid arthritis, identifying genetic (HLA) and environmental (smoking effects on the lungs) factors in its pathogenesis. One of the other winners is Robert

Winchester, professor of medicine (in rheumatology) at P&S; the third is a Swedish scientist.

### 1978

**Steven B. Nagelberg** will receive one of the Endocrine Society's 2013 Laureate Awards at the group's annual meeting in San Francisco in June. The awards were established in 1944 to recognize the highest achievements in endocrinology. Steven will receive the inaugural Outstanding Clinical Practitioner Award, established in 2012 to recognize extraordinary contributions by a practicing endocrinologist to the endocrine and/or medical community. "He is widely known in the Philadelphia medical community for his clinical expertise in endocrinology," says the Endocrine Society. Steven has built the largest private endocrinology group in the Delaware Valley. He lives in Cherry Hill, N.J., with Debra, his wife of 33 years.



Steven B. Nagelberg '78

## 1979

See Alumni in Print to read about a book by **Jeffrey P. Kahn**. Jeff is clinical associate professor of psychiatry at Weill Cornell Medical



Jeffrey P. Kahn '79

College. He completed a residency at Columbia in 1983 and served on the P&S faculty from 1983 to 1991. He has practices in New York City and Scarsdale.

## 1980

**Lisa DeAngelis** was elected to the Institute of Medicine of the National Academies, one of 70 new members announced in October 2012. Election to the IOM recognizes individuals who have demonstrated outstanding professional achievement and commitment to service. Lisa is chair and professor of neurology at Memorial Sloan-Kettering Cancer Center and professor of neurology at Weill Cornell Medical College.

See Alumni in Print to read about a book by **Julia Schlam Edelman**. Julia is clinical instructor at Har-

vard Medical School, a clinical consultant at Massachusetts General Hospital, and a practicing gynecologist. In 2010, the North American Menopause Society selected Julia as its Menopause Practitioner of the Year.

## 1984

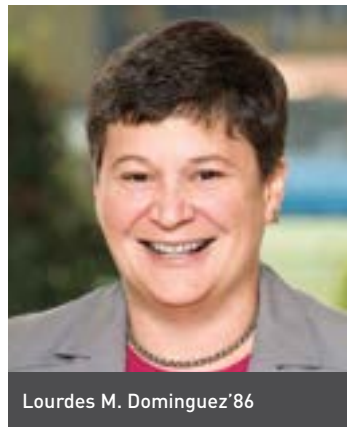
**Barbara Milrod** received the first Leon Kupferstein Memorial Award for Innovation in Psychoanalysis from the New York Psychoanalytic Society & Institute in January 2013. Barbara is professor of psychiatry at Weill Cornell Medical College and maintains a private practice specializing in panic disorder and agoraphobia, with expertise in anxiety and mood disorders in adults and children. She completed a residency in general psychiatry and a fellowship in child and adolescent psychiatry at the Payne Whitney Clinic in Manhattan and received her psychoanalytic training at New York Psychoanalytic Society & Institute.

## 1985

**George Hripcsak** was one of 70 new members elected to the Institute of Medicine in October 2012. IOM election recognizes individuals for their outstanding professional achievement and commitment to service. George is the Vivian Beaumont Allen Professor of Biomedical Informatics at P&S, where he chairs the Department of Biomedical Informatics.

## 1986

**Lourdes M. Dominguez** was named one of the 2012 Physicians of the



Lourdes M. Dominguez '86

Year by New York-Presbyterian Hospital's nursing department. The award honors physicians, fellows, house staff, and medical students who demonstrate collegiality and collaboration and who contribute to nursing practice. Lourdes is associate clinical professor of psychiatry at the Allen Hospital.

## 1992

Uniting Against Lung Cancer honored **Kwok-Kin Wong** in November 2012 for his leadership in lung cancer research. Kwok-Kin is associate professor of medicine at Harvard Medical School and attending medical oncologist at the Dana Farber Cancer Institute. He received a PhD from Columbia in 1996. He has been a member of the board of Uniting Against Lung Cancer since 2009. He was honored for his leadership, his contribution to advancement in the field of lung cancer, and his work in guiding the foundation's scientific program.

## 1993

**Jeffrey E. Rosen** chairs the Department of Orthopedics & Rehabilitation at New York Hospital Queens and is associate professor of orthopedic surgery at Weill Cornell Medical College.

**Elizabeth Tillinghast** has written a new "Stress Points" column for the *Columbia Medicine* website.

The column focuses on mid-life crises. Read all of her columns at [www.columbiamedicinemagazine.org](http://www.columbiamedicinemagazine.org).

## 1995

**Stephen Fealy** was recently named as orthopedic consultant to the Major League Baseball Players Association. He lives in New York City with his wife and three children and is a sports medicine/shoulder specialist at the Hospital for Special Surgery.

Two members of the Class of 1995—general pediatrician **Patricia Hametz** and orthopedic surgeon **Michael Vitale**—have been named inaugural Samberg Scholars in Children's Health, a newly endowed appointment at New York-Presbyterian/Morgan Stanley Children's Hospital. Hospital trustee Arthur Samberg and his wife, Rebecca, donated \$25 million for the program. The 10 Samberg Scholars, who were announced at a January ceremony, are pediatricians or pediatric subspecialists who demonstrate excellence in patient care and meet additional criteria, including leadership, expertise, community commitment, and teaching.

## 1996

**Robyn Gmyrek** and **Kenneth Forde '59** participated in the ribbon cutting that formally opened ColumbiaDoctors Midtown, the faculty practice organization's new



Ken Forde '59 with Robyn Gmyrek '96

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## NYC Health Department Alumni Chapter

The newest member of an unofficial P&S alumni club at the New York City Department of Health and Mental Hygiene is **Hillary Kunins'96**, who joined the department in July 2012 as assistant commissioner and head of the Bureau of Alcohol and Drug Use—Prevention, Care and Treatment.

Dr. Kunins joined the city after more than a decade at Montefiore Medical Center, where she was residency director for the primary care and social internal medicine programs. After a residency at Montefiore and Albert Einstein College of Medicine in the Bronx, she joined Montefiore/Einstein as medical director of a substance abuse treatment clinic. She also served as the Division of Substance Abuse's director of women's health. Dr. Kunins remains on the faculty of Einstein as clinical professor in three departments: medicine, psychiatry and behavioral sciences, and family and social medicine. She also has a master's degree in public health from Columbia.

Other members of the city health department alumni chapter are **Deborah Dowell'96** (director of special projects for Health Commissioner Tom Farley), **Ann Inglesby Winters'97** (medical specialist), and **Amanda Parsons'03** (deputy commissioner).

Dr. Dowell joined the city health department in 2011. Last year, Dr. Dowell and Commissioner Farley co-authored a viewpoint in *Lancet* that outlined New York City's efforts to solve problems that have an impact on New Yorkers' health (including the tobacco control campaign, restrictions on use of artificial trans fat in restaurants, and promotion of bicycling). After residency, Dr. Dowell joined NYU and remains on the faculty there as clinical assistant professor of medicine. She was a physician for Gouverneur Healthcare Services in the city's Health and Hospitals Corporation from 1999 to 2007. She joined the Centers for Disease Control and Prevention in Atlanta as an epidemic intelligence service officer in 2007 and stayed at CDC as a medical epidemiologist in the CDC's Division of Sexually Transmitted Disease Prevention until 2011.

After finishing a residency in internal medicine in 2000, Dr. Winters joined the health department as a clinician in the Bureau of Tuberculosis Control. She worked in the clinics and in the epidemiology office of the Bureau of Tuberculosis Control until 2007, when she joined the Bureau of Communicable Disease. As medical editor she develops reference materials, training programs,

and a monthly seminar series for health department physicians who respond to calls of public health urgency, including concerns about bio-threat agents and other acute infectious diseases.

Dr. Parsons joined the NYC health department in 2008. As deputy commissioner of health care access and improvement, she oversees the Primary Care Information Project, correctional health services, and primary care access and planning as well as legal, administration, IT, and operations for the division. Before becoming deputy commissioner, Dr. Parsons was assistant commissioner for the Primary Care Information Project, which seeks to improve population health through health information technology and data exchange, after serving as director of medical quality, during which she created and led quality improvement, billing consulting, and electronic medical record consulting teams sent to small physician offices as part of the Primary Care Information Project. Dr. Parsons, who also has an MBA from Columbia, started her career at McKinsey & Company, a management consulting firm, where her clients included global public health concerns and pharmaceutical and medical product companies.

site near Rockefeller Center. (See more in P&S News.) Robyn, assistant clinical professor of dermatology at P&S, is chair of the Board of Directors at ColumbiaDoctors Midtown. Ken participated in the ribbon cutting as a member of the Board of Trustees for both Columbia University and NewYork-Presbyterian Hospital. He is the Jose M. Ferrer Professor Emeritus of Clinical Surgery at P&S. Ken was Robyn's preceptor when she was in medical school.

See Alumni in Print to read about **Julie Wu's** debut novel. Julie received a BA degree in literature from Harvard University. She received a writing grant from the Vermont Studio Center and in 2012 received a Massachusetts Cultural Council fellowship. She



Julie Wu '96

NIERIKA NIMS

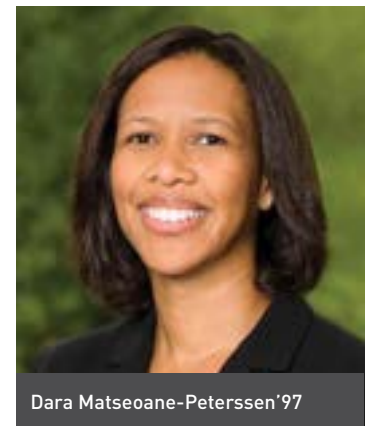
lives near Boston with her husband and children. Her website is [www.juliewuauthor.com](http://www.juliewuauthor.com).

### 1997

**Andrew Lassman** received the 2012 Gary Lichtenstein Humanitarian Award at the Voices

Against Brain Cancer's run/walk in Central Park on Dec. 2, 2012. Andy is director of neuro-oncology at P&S. Voices Against Brain Cancer was founded in memory of Gary Lichtenstein, who died in 2003. Its mission is to advance scientific research, increase awareness within the medical community, and support patients, families, and caregivers affected by brain cancer.

**Dara Matseoane-Peterssen** was named one of the 2012 Physicians of the Year by NewYork-Presbyterian Hospital's nursing department. The award honors physicians, fellows, house staff, and medical students who demonstrate collegiality and collaboration and who contribute to nursing practice. Dara is assistant clinical professor



Dara Matseoane-Peterssen '97

of obstetrics & gynecology at the Allen Hospital.

### 1998

**Stephen Tsang**, associate professor of ophthalmology and of pathology & cell biology at P&S, is editor of "Stem Cell Biology

and Regenerative Medicine in Ophthalmology.” The creator of a gene-targeting model for a recessive form of retinitis pigmentosa, he is working on embryonic stem cells as a possible replacement for diseased human retinal cells. In 2005 he received the Research to Prevent Blindness Award from the Association of University Professors in Ophthalmology. A member of the Macular Society, he was named as one of America’s Top Ophthalmologists in 2009. He teaches residents and directs the ophthalmology basic science course at Columbia.

## 1999

**Blanche Fung Liu** is in a four-person gastrointestinal group that recently partnered with NYU’s Langone Medical Center. She resides in Manhasset, N.Y.,

with her husband, Alan, and their two children.

## 2008

**Julia Iyasere** was named one of the 2012 Physicians of the Year by New York-Presbyterian Hospital’s nursing department. The award honors physicians, fellows, house



Julia Iyasere '08

staff, and medical students who demonstrate collegiality and collaboration and who contribute to nursing practice. Julia is instructor in clinical medicine at P&S.

## 2010

**Marc Pimentel** married Camilla Benedicto (a 2008 Columbia



Pimentel-Benedicto wedding

MPH graduate) in Boston on Aug. 25, 2012. Groomsmen included **George Eng '10**, **James Ji '10**, and **Eugene Tsai '10**. Several other P&S alumni attended.

## 2012

**Thomas Hickernell**: see below.

## House Staff Alumni

**Clifton K. Meador**, a medicine resident under Robert Loeb from 1955-1957, has published his 12th book, “True Medical Detective Stories.” The book chronicles 19 medical mysteries and the medical detectives who solved them. Clifton’s 2007 book, “Twentieth Century Men in Medicine: Personal Reflections,” includes a chapter about Dr. Loeb. His reflection of Dr. Loeb was adapted for a Fall 2007 article in *P&S Journal* (now *Columbia Medicine*).

## Graduate, Patient, Advocate



Tom Hickernell, under treatment for leukemia, participated in his May 2012 graduation via teleconference from Milstein Hospital Building.

**Thomas Hickernell '12** has been nominated by the New York chapter of the Leukemia & Lymphoma Society as 2013 Man of the Year. On April 26, 2012, the day he fulfilled his requirements for graduation from P&S, Tom was diagnosed with acute promyelocytic leukemia.

“I was set to begin a research fellowship followed by residency in orthopedic surgery at Columbia that June, so it was a devastating blow,” Tom says.

Determined to make something positive out of a negative situation, Tom’s sister, Katherine, set up “Team Tom,” a group of his dedicated and supportive family and friends, to support the LLS Light the Night fundraising event. While Tom underwent multiple rounds of intensive chemotherapy, he also helped the team raise more than \$18,000 for the October 2012 event. The total made Team Tom one of the top fundraising teams in New York City.

Now in remission and actively pursuing translational research projects in Columbia’s Center for Orthopedic Research, Tom has accepted the LLS nomination to participate in the Man and Woman of the Year competition. “I will be competing with several other men and women to see who can raise the most funds for the LLS research and patient support initiatives in a 10-week span this spring.”

The campaign kicked off March 27 and ends June 6. The man and woman who raise the most funds during this window will be named the Man and Woman of the Year. “Please consider joining ‘Team Tom’ to support my candidacy,” Tom says.

More information on the Leukemia & Lymphoma Society, the Man and Woman of the Year campaign, and Team Tom can be found at [www.GoTeamTom.org](http://www.GoTeamTom.org).



## Battling Invisibility

Harvey J. Makadon'77, Primary Care Clinician and Spokesperson for the Care of Lesbians, Gays, Bisexuals, and Transgender People

By Peter Wortsman



**H**arvey J. Makadon'77, clinical professor of medicine at Harvard Medical School and director of the National LGBT Education Center, is committed to a simple, seemingly self-evident truth: “Most doctors see LGBT people, but they don’t know it. Yet in order to provide good care you need to know whether your patients are lesbian, gay, bisexual, or transgender.”

He has devoted his professional life not only to providing care, but also to ending health care disparities. “The disparities are not due to complex biomedical issues,” he adds. “They’re really the result of stigma, discrimination, and ignorance.” Dr. Makadon is the lead editor of “The Fenway Guide to LGBT Health,” published by the American College of Physicians in 2008, the first textbook on LGBT health for clinicians. The National LGBT Education Center is a division of the Fenway Institute in Boston.

In October 2012 *Columbia Medicine* interviewed Dr. Makadon at his office in the Fenway Institute, on one of two floors devoted to LGBT research, education, and policy development at the headquarters of Fenway Health in Boston’s West Fens neighborhood.

### “AIDS Activated People.”

After earning his BA from Cornell University, Dr. Makadon briefly attended the University of Pennsylvania Law School before deciding that law was not for him. While figuring out what to do next, he took a job with the Health Law Project, lobbied for Medicaid reform while working for the National Welfare Rights Organization, and worked on a book on the history of Medicare. “I liked the work a lot, but I realized that what I really wanted was to be a doctor, a *real* doctor, i.e. primary care. I was drawn to primary care because I felt like it was a way of beginning to improve the quality of care and access to care for poor people.”

He relished his time at P&S, in particular the experience of his clinical years, under such “compassionate, tough, and thorough” attendings as Thomas Q. Morris’58, then course director of the third-year medical clerkship who later became president and CEO of Presbyterian Hospital, and the late Glenda Garvey’69, a revered specialist in infectious diseases who took over the clerkship and ran it for 20 some years. Dr. Makadon says P&S “was an amazing place to learn how to be a doctor,” yet he faults the school for discouraging his interest in primary care and what he perceived as its lack of social commitment. “Even though the medical

school was located in the middle of one of the poorest parts of New York, social issues in medicine, such as disparities in American health care, were never really embraced at Columbia.”

The 60s and 70s were a turbulent time of change on campuses across the country, and some might argue that Columbia was no more or less responsive than other major universities. Specialization was then, and still is, held in high esteem at academic medical centers like Columbia, but such initiatives as the Columbia-Bassett program (in which students divide their time between classes on the P&S campus in Washington Heights and a rich primary care and rural medicine clinical experience at Bassett Medical Center in Cooperstown, N.Y.), the Center for Family and Community Medicine, and the Daniel Noyes Brown’32 Primary Care Scholars Program have reaffirmed an institutional commitment to primary care.

One of the most pressing social issues in medicine in recent times, the care of people suffering from AIDS, would become a catalyst for a profound shift of attitude in America and a focal point of Dr. Makadon’s own professional life. It was, as he recalled in an article, “Legacy of AIDS” (*Harvard Medical Alumni Bulletin*, Spring 1997), “an enormous catalyst in the renegotiation of the gay-straight social contract.” Looking back, Dr. Makadon says: “In much the same way that the Vietnam War changed a generation’s social thinking, AIDS activated people in the LGBT community, and for many of us that commitment still exists. I see it every day here at the Fenway Institute, where young people who could be very successful hedge fund managers are doing research and learning more about the health care needs of homosexual and transgender people.”

### Coming Out

The scourge of AIDS also prompted Dr. Makadon to address an unresolved issue in his personal life—coming out.

After training at Beth Israel Hospital in Boston, Dr. Makadon became a member of the clinical faculty in the Department of Medicine at Harvard Medical School and joined Beth Israel’s faculty primary care practice. In 1981, as he recalls in the Harvard article, “we began receiving disturbing reports of strange illnesses occurring mostly in gay men.” Although engaged in social issues and committed to caring for the underserved, he admits, “I was avoiding dealing with AIDS patients, because I felt like I did not want to be associated with the disease. I had internal-

ized my own homophobia. It was a fear of being identified as what I was and am: a gay physician working in a world where at that time I could not imagine acceptance.”

At institutions of higher learning, like Columbia and Harvard, and in particular at medical schools, the sexual orientation of faculty and students had long been a deep dark secret, addressed by a tacit “don’t ask, don’t tell” policy. As Lee Shapiro’77, a rheumatologist based in Saratoga Springs, N.Y., and a classmate of Dr. Makadon’s, recalls, “I had at least five gay classmates in medical school, but I knew none of them to be gay, nor did I have a strong sense of self-identity. Three of those classmates died within a few years of HIV. We had no network or support system of any sort. We were each in a state of insecure isolation, each believing we might be the only gay student there.” The Lambda Health Alliance, under the umbrella of the P&S Club, exists now to provide a supportive space for gay, lesbian, bisexual, transsexual, and queer people at the medical center campus and works to increase visibility of GLBTQ issues in medicine.

Dr. Makadon kept his sexual orientation a secret at P&S and at Harvard until, one day, a medical student said to him: “‘Why don’t you come out? Other medical students know you’re gay, and it would be much better if they knew you were comfortable with it.’ That student helped me to come out,” says Dr. Makadon, who was in his mid-30s at the time.

The self-realization led to a personal and professional turn-around: “That’s when I decided I needed to get myself reoriented, come out, and deal with my sexuality. Within a very short period of time I went from total avoidance to totally embracing the issues.”

#### First Hospital-based HIV Program

At Beth Israel Dr. Makadon set up the first hospital-based HIV program in the country integrated into a primary care practice. He helped establish a city-wide consortium, the Boston AIDS Consortium, to help people get AIDS services in the Boston area, and he founded the New England AIDS Education and Training Center. In addition to caring for and coordinating the care of countless people suffering the scourge of AIDS, Dr. Makadon

**‘I always connected with people as patients, now I am working to create change in how others care for LGBT people.’**

became an outspoken health activist, not only in the battle to beat the disease, but also in the resistance to the social stigma that restricts access to care for gays, lesbians, bisexuals, and transgender people. Combating the invisibility of the LGBT population became and remains a major thrust of his work.

Since 1985 Dr. Makadon has been active with Fenway Health in a number of capacities, including 14 years as a member of the board of directors and two years as chair. Fenway was founded in 1971 by students from Northeastern University as a nonprofit neighborhood health center for seniors, gays, low-income residents, and students. In collaboration with Harvard Medical School, Fenway became one of the first medical facili-

ties in the United States to culture HIV from blood and semen samples. In 1986 Fenway’s mission statement was revised to reflect a commitment to the health care needs of the gay and lesbian community. In 1990 it expanded its focus to include the care of transgender individuals. Dr. Makadon was one of the founding members of the Fenway Institute, an arm of Fenway Health devoted to research and evaluation, education and training, and public health advocacy on behalf of lesbian, gay, bisexual, and transgender people living with HIV/AIDS and the larger community. The institute is supported by government and foundation grants. He serves as director of the Fenway Institute’s National LGBT Health Education Center, which provides educational outreach and consultation for health care organizations throughout the country and around the world.

#### Teaching Doctors to Talk about Intimate Issues

While providing quality primary care to patients was and remains his primary concern, he has come to feel comfortable with his public role as a spokesperson for the health and wellness of LGBT people. “I always connected with people as patients, now I am working to create change in how others care for LGBT people. It’s a new role, but an important one as we enter the era of population health and meeting the needs of the underserved.”

At Harvard Medical School he was responsible for updating the HIV curriculum and for addressing sexual history aspects of the patient-doctor interview. He taught a section of the course on taking a sexual history. “Doctors aren’t taught to talk to patients about intimate issues. Often when they take a sexual history they don’t talk about sexual orientation,” he says. Dr. Makadon cites a study of doctors talking to people with HIV: “84 percent of the time they talked about whether patients were taking their medications, and only 14 percent of the time they talked to them about whether they were engaging in safer sex.” Last year, Dr. Makadon helped organize a meeting at the Institute of Medicine to discuss whether sexual orientation and gender identity should become standard issues addressed at a doctor’s visit.

Dr. Makadon believes that patients should routinely be asked about their sexual orientation, just as they are asked to identify their race and ethnicity, in hospital intake questionnaires. “A hospital can verify whether different racial and ethnic groups are getting the same standard of care, but they can’t say that about LGBT people. We can’t say, for instance, whether lesbians are getting pap smears to the same extent that heterosexual women are. In fact, a lot of doctors feel that lesbians don’t need pap smears, because they don’t think they have ever had sex with men. That’s just not true.”

Physicians, he believes, can help LGBT individuals feel comfortable by having LGBT literature prominently displayed in waiting rooms. But brochures are not enough. In his own search for a primary care physician some years ago, Dr. Makadon was dismayed that after telling the doctor that he was gay—information he considered relevant to his care—the doctor asked no follow-up questions. All health care professionals, including nurses and social workers, Dr. Makadon insists, need to be trained to be sensitive to issues of sexual orientation and gender identity. “It isn’t that complicated really. It just requires leadership and commitment to diversity.”

His educational outreach efforts have included a videotaped presentation on “Meeting the Health Care Needs of Lesbian, Gay, Bisexual and Transgender People” on the website of the American Medical Association.

tion. He has been invited to address issues relating to LGBT care around the country and around the world, most recently at the Primary Care Association in San Juan, Puerto Rico, and the University of Arkansas for Medical Sciences at Little Rock, Ark., where his remarks were well received. His grand rounds presentation on LGBT health at the Mayo Clinic in Rochester, Minn., drew an overflow crowd.

“I think that there is a real sense of awakening. The world has changed, but that doesn’t mean that everybody has changed,” Dr. Makadon says. “There are always going to be people who are biased, just like there are people who are racially biased. Society and the medical profession were biased against black people too, but we got over it. Or at least we got over it to the extent that doctors realize that they need to take care of everybody who comes to see them. And I think the same thing is true of lesbians, gays, bisexuals, and transgender people.”

### Homeless Youth and Aging Seniors

Society, Dr. Makadon says, has a duty to care for everyone. One of the groups he collaborates with is the National Health Care for the Homeless Council. Some 30 percent to 40 percent of homeless youth are thought to be LGBT. Either rejected by their families or in some cases not wanting to live at home, they are not always accepted into homeless shelters and are by the nature of their homeless status at greater health risk and less likely to find care.

Dr. Makadon also has addressed the needs of an aging population. “As baby boomers age there’s going to be a big increase in the number of seniors and there’s going to be a big increase in the number of gay, bisexual, and transgender seniors,” he said in an interview published on the website of the National Center for Health in Public Housing. “These seniors are of a generation that has been living openly. But some fear that, in order to get care and be accepted in nursing homes and other facilities, they may have to actually go back into the closet.”

### Private Man in a Public Role

In an article in the Los Angeles Times some years ago about an episode of the PBS special “The AIDS Quarterly,” which was devoted to Dr. Makadon and his practice at Beth Israel, he was cited as “the real article,” and lauded for “his genuine concern for patients, his optimism in the face of merciless sickness, and his faultless bedside manner.” But when the camera crew that had followed him all day for several days in his consultations with patients wanted to film him in his garden at home, he said: “No! This isn’t about me working in my garden at home. This is about me taking care of patients, what it’s like to care for AIDS patients.”

A private man, Dr. Makadon shuns the limelight. “I don’t see my work as being about me. It’s important for me to feel fulfilled in what I do and to feel that I might also serve as a support for others of the sort I didn’t have when I was a medical student.”

He is married to a fellow physician, Ray Powrie, an obstetric internist, associate professor of medicine at the Warren Alpert Medical School of Brown University, and senior vice president for quality and clinical effectiveness at Women & Infants Hospital in Providence, R.I. “We’re involved in what we do. We both work very hard and are deeply committed to our work.”

## • PROFILES IN GIVING

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**Attn: Laura Tenenbaum**

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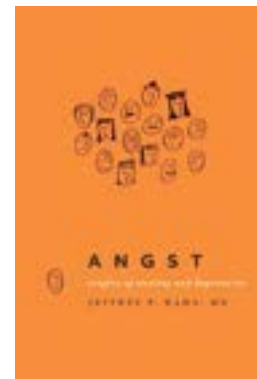
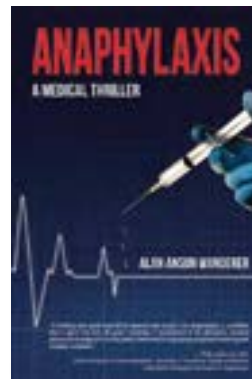
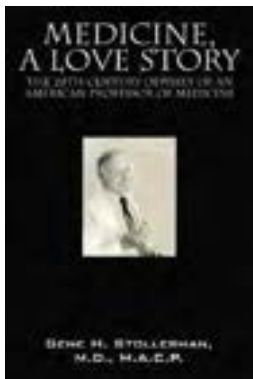
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## alumni *in print*

By Bonita Eaton Enochs, Editor

### **Medicine, a Love Story: The 20th Century Odyssey of an American Professor of Medicine**

**Gene H. Stollerman '44**

*Outskirts Press, 2012*

Dr. Stollerman, an internationally renowned researcher of rheumatic fever and streptococcal infection, has written about his career in medicine that has coincided with some of the greatest medical advances of the past century. His memoir has a chapter on P&S that describes the curriculum compressed by wartime, his daily commute from Queens (until he could afford to move into Bard Hall, where basketball was a favorite pastime), his memorable 21st birthday (Dec. 7, 1941), legendary faculty who taught him, clerkships, and the highlight of his P&S career—a sub-internship at Goldwater Hospital. “Despite my intensive specialization on streptococcal diseases,” he writes in the book’s foreword, “I have practiced as a pediatrician, internist and geriatrician trying to serve as ‘the whole person’s’ doctor.”

### **Masked & Gowned: The Making of a Surgeon**

**Lawrence W. Norton '58**

*Xulon Press, 2012*

While fulfilling his dream to become a surgeon, Dr. Norton collected many stories that trace his medical school and residency experiences, and this book explains it all in a way that demystifies the masked-and-gowned figures known as surgeons. The book includes his story about Robert Loeb, “The Silver Fox,” that appeared in the Winter/Spring 2010 issue of *P&S Journal*. “I want readers, including students interested in medicine, to appreciate what surgical training entails,” says Dr. Norton. “They should understand that surgical trainees begin as servants to their patients and, if they remain loyal to their calling, emerge as professionals with the same characteristic.”

### **Anaphylaxis: A Medical Thriller**

**Alan Wanderer '61**

*Anson Publishing, 2012 • www.alanwanderer.com*

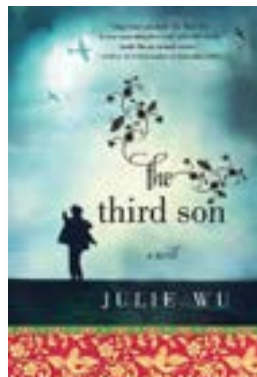
In Dr. Wanderer’s first novel, a Denver scientist dies from anaphylaxis after a routine injection in his allergist’s office. His death comes shortly after he discovered an effective vaccine for cocaine addiction. The cocaine vaccine’s specifications turn up missing, along with the technician who worked closely with the deceased scientist. The mysterious death of another scientist and a plot implicating organized crime place the allergist and his family in harm’s way. The Kirkus Review describes the book as a medical thriller that becomes a legal and procedural thriller too. “As the case builds and the suspense grows, Wanderer’s thriller commendably incorporates medical terminology without any dense, unwarranted complexity.”

### **Angst: Origins of Anxiety and Depression**

**Jeffrey P. Kahn '79**

*Oxford University Press, 2013*

In this book, Dr. Kahn, a psychiatrist, describes a novel theory about how five anxiety and depressive subtypes evolved from ancient herd instincts for social harmony. The syndromes emerge as the voices of instincts defied by our rational choices. He uses humor, cartoons, and more than 600 scientific references to explain, in lay language, his theory of our transformation, over tens of thousands of years, from biologically shaped, almost herd-like prehistoric tribes, to rational and independent individuals living in modern times. The book explores five types of modern-day angst—panic anxiety, social anxiety, OCD, atypical depression, and melancholic depression—and explains how each derives from primeval social instincts that once helped our ancestral herds survive. He also describes the interplay of instinct with the advance of civilization and how evolutionary perspective explains why modern treatments work.



## ● ALUMNI ASSOCIATION ACTIVITIES

### Council Dinners

At the Sept. 20, 2012, council meeting, Peter Carmel'70 MSD, a renowned pediatric neurosurgeon and immediate past president of the American Medical Association, spoke on "Advocacy in Medicine," offering an autobiographical account of his professional career. Dr. Carmel spoke of learning and practicing advocacy for medicine at the national level in his capacity as president of the American Medical Association. "It is pivotal for academic medical people to be involved in politics," he said. "It is important for every academician in this room to get up and speak his or her mind. This is the way we, the members of the academic medical community, get things done locally and nationally. Find a forum. Get involved and express your views."

The Nov. 14, 2012, speaker was Uzodinma Iweala'11, author of "Beasts of No Nation," a 2005 novel about child soldiers in West Africa, and 2012's "Our Kind of People," a work of nonfiction about people living with AIDS in his native Nigeria. Dr. Iweala is completing his second novel while working as a fellow at the Radcliffe Institute at Harvard. The idea for Dr. Iweala's latest book came when he was working for Columbia's Millennium Villages Project in Sub-Saharan Africa. After noting a difference in the way Americans spoke about people with HIV/AIDS in Africa and the way people in Nigeria spoke about the epidemic, he said, "I started following the stories that people in Nigeria were telling about AIDS."



### Dual Degree Program Events

Two doctors who pursued different professional paths shared their journeys with students gathered Sept. 11, 2012, for the first Grodman Dual Degree Scholars Program event of the academic year. The program was endowed by Marc Grodman'77, chairman, president, and CEO of Bio-Reference Laboratories Inc., who introduced the speakers, Paul J. Maddon'88 (MD and PhD) and Andrew Marks, MD. Dr. Maddon, a trustee of Columbia University, is a biotechnology entrepreneur and vice chair of the board of Progenics Pharmaceuticals, a company he founded in his dorm room. Dr. Marks, the Helen and Clyde Wu'56 Professor and director of the Wu Center for Molecular Cardiology, chairs the Department of Physiology & Cellular Biophysics at P&S. He also chairs the scientific advisory board of ARMGO Pharma, a company he founded to develop novel therapeutics for heart and muscle diseases.

At the second Grodman Program event in November, David J. Brailer told of his quest to shape the evolution of health care through his work as an entrepreneur, policymaker, researcher, educator, and investor. Dr. Brailer is chair and CEO of CareScience, a company he founded to develop and commercialize information technology designed to reduce medical errors and transform physician and hospital quality. In 2004 Dr. Brailer became the first "White House medical IT czar."

See photos and read more about these activities online at [www.columbiamedicinemagazine.org](http://www.columbiamedicinemagazine.org).



### Successful Sleep Strategies for Women

**Julia Schlam Edelman'80**

*Harvard Health Publications e-book, 2012*

Dr. Edelman's book, part of a new series of e-books from Harvard Health Publications, provides proven strategies for the millions of women who suffer from lack of sleep or poor sleep. Her practical guidance is based on scientific research and more than 25 years of experience as a gynecologist. More than 60 percent of women suffer from sleep problems during midlife, and insufficient or poor quality sleep also is experienced by younger women. Dr. Edelman presents stories followed by a discussion of what experts recommend, whether natural remedies, lifestyle modifications, or medications. The book is geared to general readers but includes information and references for their physicians.

### The Third Son

**Julie Wu'96**

*Algonquin Books, 2013*

"The Third Son," Dr. Wu's debut novel, is based on her father's struggle to leave Japanese-occupied Taiwan in the 1940s. The novel's protagonist, Saburo, has to fight for everything he wants: food, education, his lost first love, freedom in the United States, and a career in aerospace engineering. The book has been described as a richly textured saga of political upheaval, distanced lovers, and the American dream. "My parents, especially my mother, had always implied that my father had not been loved as a child," Dr. Wu says about the process of writing her book. "I changed many facts—major ones—to increase the unity and drama of the story. But the emotional journey remains my father's." Read more by Dr. Wu at the *Columbia Medicine* website, [www.columbiamedicinemagazine.org](http://www.columbiamedicinemagazine.org).

## **FACULTY**

### **Brian F. Hoffman, MD**

Brian F. Hoffman, MD, the Hosack Professor Emeritus of Pharmacology and chair of the P&S Department of Pharmacology for more than 30 years, died Feb. 11, 2013. Dr. Hoffman was an important figure in the growth and development of cardiac electrophysiology in both basic and clinical science, and experiments in his lab led to the creation of a new field of invasive cardiac electrophysiology.

In 2000 he received the P&S Distinguished Service Award, the college's highest honor, in recognition of his leadership in cardiovascular pharmacology research and for initiating a broad program of interdisciplinary studies in cardiovascular pharmacology and physiology by enlisting colleagues in physiology, pathology, medicine, surgery, and pediatrics. Columbia also honored him in 1986 with the Stevens Triennial Prize, given for meritorious original research.

In addition to chairing a department at Columbia, Dr. Hoffman served as the medical school's associate dean starting in 1988, responsible for the grants and contracts office and the animal care program. He played a leading role in

obtaining an NIH Medical Scientist Training Program grant for P&S and directed the program during its first six years. The program evolved into today's combined MD/PhD program.

He co-authored the seminal book in his discipline, "The Electrophysiology of the Heart," in 1960 with Paul F. Cranefield, his colleague at SUNY Downstate Medical Center, where Dr. Hoffman served on the faculty from 1949 until 1963. He received his MD degree from Long Island College of Medicine, now SUNY Downstate.

### **Seymour Lieberman, PhD**

Seymour Lieberman, professor emeritus of biochemistry & molecular biophysics, died Oct. 8, 2012. He was a P&S faculty member for more than 60 years, including several years at Roosevelt Hospital. Even at the time of his death at age 95, he continued to head a research laboratory and was funded for work exploring the role of steroids in hypertension.

Past president of the American Endocrine Society, Dr. Lieberman was a noted leader in endocrinology research. He pioneered the study of the metabolism of steroid hormones with work that ranged from reproductive endocrinology, the synthesis and breakdown of

steroid hormones, and the modeling of intracellular mechanisms of hormone formation and interconversion. He was elected to the National Academy of Sciences in 1977.

Dr. Lieberman earned a PhD from Stanford and conducted research at Harvard before traveling to Basel, Switzerland, to study with Nobelist Tadeus Reichstein. After returning to the United States he worked at Sloan-Kettering Institute before joining the Columbia faculty in 1951.

Besides his prolific research career, Dr. Lieberman will be remembered at Columbia as a mentor and educator, for a distinguished weekly journal club attended by physicians and scientists from around New York City, and for his advocacy for reproduction and population control. He received the P&S Distinguished Service Award, the college's highest honor, in 1991.

## **OTHER FACULTY DEATHS**

**William A. Bauman, MD**, clinical professor of pediatrics, died Nov. 28, 2012. See more in Alumni In Memoriam, Class of 1947.

**David Birkett, MD**, associate research scientist in psychiatry, died Feb. 27, 2012.

**James J. Elting, MD**, assistant clinical professor of orthopedic surgery at Bassett, died Aug. 10, 2012.

**John Wilson Espy, MD**, clinical professor emeritus of ophthalmology, died Dec. 22, 2012.

**Robert A. Fishman, MD**, former faculty member in neurology, died Dec. 4, 2012. Dr. Fishman was a prominent neurologist who led the neurology department at the University of California San Francisco for 26 years. As president of the American Academy of Neurology in the 1970s, he championed separation of neurology from psychiatry in the American boards. His second year of residency was spent at New York Neurological Institute with H. Houston Merritt, and he returned to Columbia after the Korean War to complete his residency. He served on the P&S faculty until he was recruited to UCSF in 1966.

**Frederick Allen Hensley Jr., MD**, former chief of anesthesia, clinical professor of anesthesiology, and director of perioperative services at Bassett, died Jan. 14, 2013.

**Joseph Jaffe, MD**, professor of clinical psychiatry, died Aug. 2, 2012.

**Arthur Laidlaw, MD**, assistant professor of clinical pediatrics at Bassett, died Nov. 19, 2012.

**Robert B. Mellins, MD**, professor emeritus of pediatrics, died Dec. 12, 2012. Dr. Mellins, who had been associated with Columbia since his residency in 1955, was the first director of the pediatric pulmonary division of Babies Hospital and a leader in establishing pediatric pulmonology as a subspecialty. As an asthma expert, he served on local, national, and international committees to raise the standard of asthma care.

**Ethel Person, MD**, former professor of clinical psychiatry, died Oct. 16, 2012. See more in Alumni In Memoriam, Class of 1967 PSY.

**Edward E. Smith, PhD**, the William B. Ransford Professor of Psychology (in Psychiatry), died Aug. 17, 2012.

**P.R. Srinivasan, PhD**, professor emeritus of biochemistry & molecular biophysics, died Oct. 23, 2012.

**Bluma Swerdloff, DSW**, special lecturer in psychiatry, died Aug. 8, 2012.

**E. Donnell Thomas, MD**, former physician in chief at Mary Imogene Bassett Hospital and winner of the



Brian Hoffman



Seymour Lieberman



William A. Bauman'47

Nobel Prize in 1990, died Oct. 20, 2012. Dr. Thomas and others at Bassett completed the first bone marrow transplant in history in 1956 when bone marrow from a healthy twin was transfused to a twin with leukemia. He served as physician in chief at Bassett until 1963, when he moved to the University of Washington and further refined bone marrow transplantation.

**James A. Wolff, MD**, professor emeritus of pediatrics, died Dec. 24, 2012.

### ALUMNI 1939

**Robert G. Hyams**, a retired general surgeon, died Aug. 27, 2012. Dr. Hyams was affiliated with Mercy, South Miami,

Jackson Memorial, Variety Children's, and Cedars of Lebanon hospitals, all in Miami, Fla. He is survived by his wife, Doris, and a son.

### 1943M

**Joseph R. Kuh**, a retired internist, died Nov. 16, 2012. An attending physician at Lenox Hill Hospital, Dr. Kuh had a private practice in Manhattan until his retirement in 2005. He served in the U.S. Navy during World War II, participated in both the Normandy and Okinawa invasions, and returned to active duty as a lieutenant commander during the Korean conflict. Dr. Kuh was a past chairman of the Committee on Aging of the New York County Medical Society. He is survived by his wife, Nana.

### 1943D

**Celia White Tabor** died Dec. 2, 2012, in Bethesda, Md. She was internationally known for her research on the biochemistry of biologically important polyamines. After graduation from P&S, she was appointed as the first woman intern in internal medicine at Massachusetts General Hospital in 1944. She later spent 53 years conducting research in biochemistry at the NIH. She worked closely with her husband, Herbert Tabor, MD, in the laboratory, in publishing widely in the biochemical literature, and in editing three volumes of "Methods in Enzymology." Together they received the Rose Award for biochemical research from the American Society for

Biochemistry and Molecular Biology and the Hillebrand Award for original contributions to the science of chemistry from the Chemical Society of Washington. She is survived by her husband, three sons (including Edward Tabor'73), one daughter, 10 grandchildren, and four great-grandchildren.

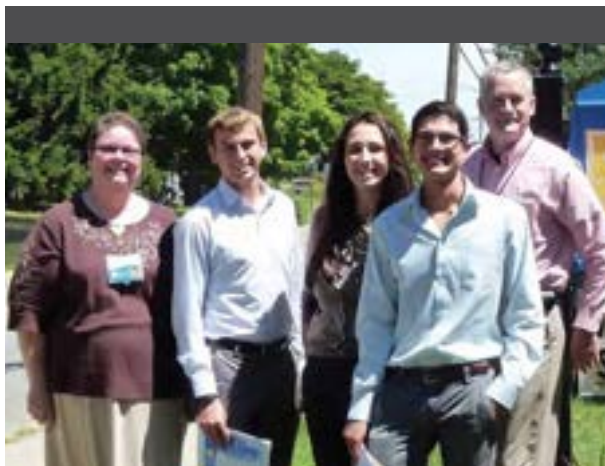
### 1946

**Robert Specht** died Jan. 6, 2013, in Falmouth, Mass., a day after turning 90. His undergraduate education at Princeton and medical education at P&S were accelerated by World War II, and he became a physician at age 25. After serving briefly as a stateside Army surgeon and finishing his training in Massachusetts, he settled with his family in Sum-

mit, N.J., joining Summit Medical Group and the staff of Overlook Hospital, where for a time he was president of the medical staff. Survivors include his wife, Nancy, four children, eight grandchildren, and six great-grandchildren.

### 1947

**William A. Bauman**, clinical professor of pediatrics at P&S and a pioneer in the field of medical informatics, died Nov. 28, 2012. Dr. Bauman served as captain in the U.S. Air Force during the Korean conflict. He pursued graduate work in biostatistics at Columbia and devoted much of his career to the advancement of computer technology in medicine. He started the computer-based medical informatics department at Presbyterian Hospital and was a founder of the American Association of Medical Systems and Informatics. Dr. Bauman served for many years as executive vice president of medical affairs at Danbury Hospital in Danbury, Conn. His research focused on the use of information technology in health care delivery. At P&S he also served as a faculty adviser to the P&S Club. He is survived by his wife, Joan, a daughter, and two sons, including Phillip Bauman'81.



Jimmy Watts, second from right, at orientation in Cooperstown last August

### James Watts'16

James Watts, a first-year student in the Columbia-Bassett program, died March 1, 2013, in an accident while mountain climbing in New Hampshire during spring break.

Lisa Mellman, MD, senior associate dean for student affairs, and Ron Drusin, MD, vice dean for education, informed P&S students and faculty of Mr. Watts' death. "With the death of James, known as Jimmy by friends on campus, we grieve the loss of a valued member of our community. Jimmy was a talented student, committed to the care of patients in medically underserved areas. He and his wife shared a love of the outdoors and were active members of their church community."

Survivors include his wife, Cassidy, his parents, James and Rosana Watts of Boise, Idaho, and a sister, Xochitl Watts.

**1948**

**Norman H. Horwitz**, professor emeritus of neurological surgery at George Washington University, died Oct. 2, 2012, at age 87. Dr. Horwitz served in the U.S. Air Force in the neurosurgical unit at Lackland Air Force Base in San Antonio during the Korean conflict. He was noted for successfully removing an explosive bullet from the neck of Thomas Delahanty, a police officer escorting President Reagan in 1981 when John W. Hinckley Jr. made his assassination attempt. Co-author of numerous scientific papers, Dr. Horwitz was also the co-author, with Hugo V. Rizzoli, of a highly regarded medical textbook, "Postoperative Complications in Neurosurgical Practice: Recognition, Prevention and Management." He is survived by his wife, Elinor, a daughter, and two sons.

**Lester Levy** died Feb. 24, 2012. Professor emeritus of nuclear medicine at SUNY Health Sciences Center in Stony Brook, N.Y., he served for many years as chief of the Division of Nuclear Medicine at Long Island Jewish-Hillside Medical Center. Dr. Levy served as a captain in the U.S. Army Medical Corps, pursuing research at the U.S.

Army Nutrition Laboratory in Denver, Colo. He is survived by two daughters.

**Jane West Magill** died Feb. 22, 2010. She was preceded in death by her first husband, Gordon Magill'46, and her second husband, Patrick Reddy. Dr. Magill, a retired internist, was formerly a physician with the New York State Department of Corrections, caring for inmates with AIDS and TB at Eastern Correctional Facility, a maximum security prison in Napanoch, N.Y. Earlier, she served for many years as director of the employee health service at Memorial Sloan-Kettering Cancer Center. She is survived by four daughters.

**1949**

**Joan E. Morgenthau**, former professor of clinical pediatrics and preventive medicine and associate dean for student affairs at Mount Sinai School of Medicine, died Oct. 1, 2012. Dr. Morgenthau was founding director of the Mount Sinai Adolescent Health Center and later served as director of health services and professor of psychology at Smith College. Dr. Morgenthau, who also taught professional responsibility at Yale School of Medicine, spent more than two decades

as surveyor for the Joint Commission on Accreditation of Healthcare Organizations and was the first woman elected to the board of the Henry J. Kaiser Family Foundation. Preceded in death by her husband, Fred Hirschhorn, she is survived by three daughters and seven grandchildren. Dr. Morgenthau was a loyal alumna and staunch supporter of P&S.

**1950**

**Richard Conroy**, a retired internist, died June 21, 2012, after a lengthy battle with Parkinson's disease. He served as a flight surgeon with Carrier Air Group 19 during the Korean conflict. Dr. Conroy pursued a private medical practice in Manhattan for more than a decade before accepting a position with the Scripps Clinic and Research Foundation, where he served for more than 36 years as head of the Division of General Internal Medicine. Survivors include his wife, Genevieve, a daughter, and two grandchildren.

**Gordon R. Meyerhoff**, a retired psychiatrist, died May 9, 2012. Dr. Meyerhoff had been acting medical director of the Hempstead Psychotherapy Service and consultant to the Brooklyn Society for Prevention of Cruelty to Children. He



Norman H. Horwitz '48



Joan E. Morgenthau '49

also served as staff psychiatrist at the Greenpoint Hospital in Brooklyn. He is survived by his wife, Eleanor, a daughter, a son, and three grandchildren.

**1952 PSY**

**Daniel Shapiro**, a retired clinical psychoanalyst, died Sept. 4, 2012. Dr. Shapiro was affiliated with the Columbia University Center for Psychoanalytic Training and Research, from which he received George Goldman and George Daniels merit awards.

**1954**

**Richard M. Hays**, professor emeritus of medicine at Albert Einstein College of Medicine in New York, died Nov. 22, 2012, at age 85. Dr. Hays served as director of the Division of Nephrology at Einstein and as director of the Mount Desert Island Biological Laboratory in Maine. He pursued research in water movement across the cell membrane. Using the toad urinary bladder, he was able to prove that water moved through channels so narrow as to exclude all but water and that the hormone vasopressin greatly increased the number of channels in the kidney collecting duct. Of the state of medicine at the present compared with the time of his graduation, Dr. Hays once wrote on an

alumni questionnaire: "As a science, the advances are breathtaking. As a social instrument, much still to be accomplished." He is survived by his wife, Susan Pope Hays, two daughters, two sons, and six grandchildren.

**1955**

**Burton J. Polansky**, associate professor of medicine at Boston University and chief of medicine and cardiology at Signature Healthcare Brockton Hospital in Brockton, Mass., died June 30, 2012. He is survived by his wife, Faye, two daughters, three sons, two stepdaughters, a stepson, and 10 grandchildren. Dr. Polansky was a loyal alumnus and a generous supporter of the medical school.

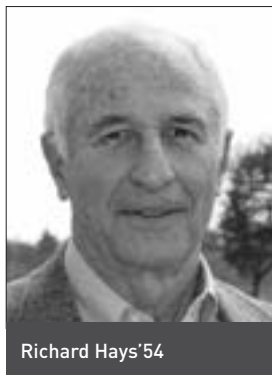
**1961**

**John F. Rosen**, a pediatrician and world-renowned expert on the health effects of lead exposure in children, died Dec. 7, 2012. Dr. Rosen was professor of pediatrics and head of the Division of Environmental Sciences at Children's Hospital at Montefiore Medical Center, an institution with which he was affiliated for more than three decades. He chaired the 1985 and 1991 CDC Committee on Preventing Childhood Lead Poisoning, which published national guidelines on the definition,





Richard Conroy '50



Richard Hays '54



Burton J. Polansky '55



John F. Rosen '61



Caroline Armistead Riely '70

treatment, and prevention of lead poisoning. As a result of this work, the threshold at which children were considered to be poisoned by lead was lowered in 1991. Dr. Rosen performed extensive research and published more than 100 scientific papers on the effects of lead poisoning in children and lead poisoning treatment and prevention. In 1991 he established the Safe House for Lead Poisoning Prevention, a temporary housing facility in which families affected by lead poisoning can stay while their homes are being made lead-safe. He was director of the Lead Poisoning Prevention Program at Children's Hospital at Montefiore, the largest lead clinic in the nation. Among his many accomplishments, Dr. Rosen exposed unsafe conditions in the New York City school system and in public housing projects and pursued research showing that children in inner city areas were suffering from high levels of lead contamination. He was also one of the pioneers of the use of X-ray fluorescence to measure bone lead levels, which is a better determinant of long-term lead exposure than blood levels. Since the effects of lead poisoning are not reversible, Dr. Rosen focused on prevention by leading the call to remove

lead paint from apartments and schools. He was instrumental in setting up lead poisoning monitoring programs nationally and internationally. He is survived by his wife, Margaret, a daughter, and two sons, including Carlo L. Rosen '91.

**Seth Harvey**, a retired general surgeon, died of a rare cancer Sept. 5, 2012. He was 79. His P&S lineage reached back to his father, Dr. Harold Dortic Harvey, a professor of surgery, and his godmother, the distinguished surgical pathologist, Virginia Kneeland Frantz '22. Dr. Harvey served as a captain in the U.S. Army Medical Corps, based in Grafenwohr, Germany, from 1963 to 1965. He pursued a private surgical practice and was a member of the staff at Falmouth Hospital, in Falmouth, Mass., where he also served as chief of surgery and chief of the medical staff. He is survived by a daughter and three sons.

#### 1963

**Susan M. Fisher**, a psychoanalytically trained psychiatrist, died June 21, 2012. Clinical professor of psychiatry at the University of Chicago Pritzker School of Medicine and a training and supervising analyst at the Chicago Institute for

Psychoanalysis, she pursued a private practice in child, adolescent, adult, and family psychiatry. Preceded in death by her husband, Herman Sinaiko, she is survived by a daughter and a son.

#### 1967 PSY

**Ethel Person**, a psychoanalytically trained psychiatrist and professor of clinical psychiatry at P&S who pursued landmark studies in sexuality and the role of sexual fantasy in people's lives, died Oct. 16, 2012, from complications of Alzheimer's disease. Dr. Person's research shed light on previously unexplored aspects of transsexuality and transgender behavior and the wide spectrum and powerful effect of sexual fantasy. She was the author of four books, notably "By Force of Fantasy: How We Make Our Lives," a work addressed to a general readership. She is survived by two sons, two step-daughters, a grandchild, and three step-grandchildren.

#### 1967

**Stephen Rosenblum**, clinical professor of psychiatry at George Washington University and former supervising psychoanalyst and past president of the Washington Center for Psychoanalysis, died Oct. 12, 2012, of lymphoma. Dr. Rosenblum

served in the U.S. Army. He was a recipient of the American Psychoanalytic Association's Edith Sabshin Teaching Award. Dr. Rosenblum's survivors include his wife, Carol, a daughter, a son, and five grandchildren.

#### 1969

**Robert J. Reza**, former medical director of the Respiratory Care Service at Brookhaven Memorial Hospital and a member of the Department of Medicine faculty at SUNY Stony Brook, died Sept. 18, 2012. He is survived by two daughters.

#### 1970

**Caroline Armistead Riely**, professor emerita of medicine and pediatrics and former chief of hepatology at the University of Tennessee, died Dec. 13, 2012, from complications of progressive supranuclear palsy. Co-author of more than 200 papers, abstracts, and book chapters, Dr. Riely was an authority on diseases of the liver during pregnancy. In 2003 she was honored with the Distinguished Clinician Award of the American College of Gastroenterology.

#### 1987

**Henry Davison Jr.**, a general surgeon and member of the surgical staff at the University Medical Center

of Princeton at Plainsboro, died of pneumonia Dec. 7, 2012, after a long battle with cancer. Dr. Davison grew up in Fort Smith, Ark., and graduated from Columbia College. He graduated from P&S with distinction, a member of Alpha Omega Alpha. In 1992, Dr. Davison completed a general surgery residency at Columbia-Presbyterian and entered surgical practice at Princeton, N.J., where he was a long-time clinical instructor in the Department of Surgery at UMDNJ-Robert Wood Johnson Medical School and served as president of the medical and dental staff. Dr. Davison founded "Soul to Soul," a program for the general public to provide speakers on health issues of concern to African-Americans, sponsored by the University Medical Center Community Education Outreach. With a colleague, Dr. Davison performed the first laparoscopic colon resection at University Medical Center, where he also pioneered the use of single-port access surgery. A surgeon through and through, he practiced until a week before he died. Among his extra-medical activities, Dr. Davison served for many years on the board of trustees of the Chapin School. He is survived by his wife, Oakley, and three teenage sons.

## Community Outreach



Top: 2012 5K run

Right: Participants in the 2012 5K Donor Dash to benefit organ transplantation, from left: Michael Steinhaus'15, Ross Ehmke'15, Rosa Cui'15, and Stephen Segadlo, a representative of the New York Organ Donor Network



### Raising Awareness of Organ Donation

S4GIFT—Students for Growing Interest For Transplantation—is a student movement in New York calling for greater awareness of organ donation among health professionals and education for individuals so they can make more informed decisions about donation. Our mission is to provide a platform at health care schools that gives students a chance to learn about organ donation and bone marrow donation and a chance to sign up on the registries. Ultimately, this movement will move students outside the bounds of the schools to engage with their local communities.

S4GIFT at Columbia hosts a lecture/training series put on by the nonprofit Delete Blood Cancer DKMS and the New York Organ Donor Network to educate students from the CUMC schools about the practices of organ and bone marrow transplantation. (The acronym used in the name of the nonprofit, Delete Blood Cancer DKMS, translates into *German Bone Marrow Donor Center*.) In addition to hosting the educational lecture series, S4GIFT functions as a student interest group for CUMC students interested in careers in transplantation, connecting students with transplant clinicians and researchers. We also host an annual 5K Donor Dash to benefit organ transplantation organizations (NY Organ Donor Network and DKMS) and raise awareness. This year's event was in April, but support for DKMS and the organ donor network is still being accepted by Yi Cai'16 at [yc2820@columbia.edu](mailto:yc2820@columbia.edu).

— Joshua Chalif'16

### Health for the Homeless

Since 2007, P&S students have tended to the health needs of the homeless, the uninsured, and the local community of West Harlem through the Columbia-Harlem Homeless Medical Partnership—CHHMP. The clinic, held every Tuesday night from 5:30 to 7:30 p.m. in the basement of St. Mary's Episcopal Church, is staffed by a dedicated group of 10 first-year medical students alongside second-, third-, and fourth-year medical student-clinician mentors and under the guidance of James Spears, MD.

In addition to volunteering at the clinic each week, the same 10 first-year students make up CHHMP's administration. In 2012, the students converted the clinic to operate using electronic medical records and spearheaded an initiative to provide HIV testing. In 2013, students hope to expand their collaborations beyond the already existing relationship with Columbia's College of Dental Medicine (which runs a free, biweekly

dental clinic at CHHMP) and recruit nursing and social work students to provide on-site lab services and establish a better system of referrals to community resources.

CHHMP students recently participated in New York City's Department of Homeless Services HOPE Survey and hosted six Chinese medical students from a student-run clinic at Peking University as they shadowed students at CHHMP and gave a presentation at CUMC.

More information about CHHMP is available at the program's website, [www.chhmp.org](http://www.chhmp.org), or by sending email to [CHHMPPartnership@gmail.com](mailto:CHHMPPartnership@gmail.com).

— Katie Hatch'16

Read about CoSMO, the 9-year-old Columbia Student Medical Outreach Clinic, at [www.columbiamedicinemagazine.org](http://www.columbiamedicinemagazine.org).



# COLUMBIA UNIVERSITY MEDICAL CENTER

## A PROMISE KEPT AND A PLEDGE TO HELP FUTURE GENERATIONS

**G**rowing up in a family of modest means, Ellen Pan, MD, had the ambition, intelligence, and dedication required for a successful career in medicine—as well as the foresight to understand the economic challenge presented by medical school. This is why she clearly remembers the promise made by the College of Physicians and Surgeons when she enrolled in 1973: the financial aspects of a medical education are daunting, but we'll make sure you get through this.

P&S kept its promise. After Dr. Pan graduated as a member of the Class of 1977, she established a thriving ophthalmology practice. Her success allowed her to pay off her student loans quickly while raising two children, who are now in college. Like so many of her fellow P&S alumni, Dr. Pan knows how crucial a medical education from Columbia has been to her life and career.

Now, Dr. Pan is helping P&S extend the same promise of an affordable medical education to other talented young people. By establishing a planned gift to support scholarships at P&S, Dr. Pan is using smart estate planning to provide for future generations of Columbia students—giving them the same opportunities that made her success possible. Moreover, by taking advantage of the P&S Legacy Challenge, she has greatly amplified the impact of her gift.

You too can make a Columbia medical education possible for the very brightest students. For more information about supporting scholarships through a planned gift to P&S, please contact:

**Laura R. Tenenbaum**  
Senior Director of Development  
212.342.2108  
lrt2113@columbia.edu



Ellen Pan, MD  
P&S Class of 1977

For additional information about Wills, Trusts, other Planned Giving options and Scholarship Support please send an email to [givingwell@columbia.edu](mailto:givingwell@columbia.edu) or call 212.342.2108.



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# quotable columbians



## Days of Wine and Roses *Excerpted from the 1963 P&S Yearbook*

The history of a class is a tenuous and fragile thing into which are interwoven 120 individual stories converging to form those palpable moods or events which may be designated, in retrospect, "landmarks." Here are some of those landmarks.

The first year was hectic and trying. We were bombarded with facts; bludgeoned by facts; titillated, amused, angered, wrought emotionless by facts. The second year may be remembered as the year the class turned from its books to other pursuits: marriage and politics. Acrimonious political debate threatened to burst class unity asunder; but we held together in the face of the common enemy—pathology, microbiology, pharmacology. By March a harried, haggard Class of '63 was ready to enter the clinical phase of medical education. The signs of our transformation into physicians were subtle. Chino pants were replaced by conventional slacks and even Krick donned a tie (until the Ben Casey shirt arrived on the scene).

Suddenly third year was upon us. Clinical clerks are a strange breed, more clerk than clinician. For most, the third year was

rewarding albeit an intense period of hard work and learning. Dr. Bradley's rounds were a baptism by fire. The chief of medicine seemed to have eyes in the back of his head as he would wheel around and fire a question at a sleepy student in the third row. We took a whirlwind tour of the specialties and browsed through a wide variety of electives.

**THE FOURTH YEAR:** Everything was coming up roses. The quest for internships dominated the year. By March the wheels of the IBM had ground out the answers and we were able to relax for the ensuing months (with the minor problem of National Boards still hovering overhead).

Memories flood the mind as landmarks pass in review. The future is hazy but we face it with confidence in the strength of our training. We have been enriched by facts, concepts, new reflexes. These are the memories.

— **Robert Burd'63, Editor**  
Class of 1963 Yearbook

<http://archive.org/details/psyearbookofcoll1963colu>