

weillcornellmedicine

THE MAGAZINE OF
WEILL CORNELL
MEDICAL COLLEGE AND
WEILL CORNELL
GRADUATE SCHOOL OF
MEDICAL SCIENCES

FALL 2010

Worlds to Discover

With the Medical Research
Building under construction
and applications on the rise,
the Graduate School is
reaching new heights



Great to See You!

Thanks for making Reunion 2010 a success! Nearly 500 Weill Cornell alumni traveled to the Medical College from near and far for the event, which included engaging and entertaining speakers, a Medical College update from Dean Gotto, delightful meals, nostalgia, and plenty of time to reconnect with classmates.

A few snapshots from the weekend:

Directors' cut: R. Ernest Sosa, MD '78, vice president of the Weill Cornell Medical College Alumni Association Board of Directors; Kathe Sosa; Adele Della Torre, DDS; and Spencer H. Kubo, MD '80, secretary of the WCMCAA Board of Directors



To the nines: Arlene Sussman, MD '90, and Christine Frissora, MD '90, share a laugh at the reunion gala.



Full circle: Young Kim, MD '60, Bette Hanauer, Lonnie Hanauer, MD '60, and other members of the Class of 1960 catch up over dinner at their 50-year reunion.



Passing the torch: Gene Resnick, MD '74, past WCMCAA president; Hazel Szeto, MD, PhD '77, outgoing WCMCAA president; and Michael Alexiades, MD '83, incoming WCMCAA president.



Kudos: Dean Gotto, who was named a WCMCAA Lifetime Honorary Fellow, congratulates Jean W. Pape, MD '75, on receiving the inaugural WCMCAA Special Achievement Award.



Out and about: Sandra Ahola, Saul Ahola, MD '69, C. Jan Dyke, MD '60, and fellow alumni enjoy a stroll around campus.

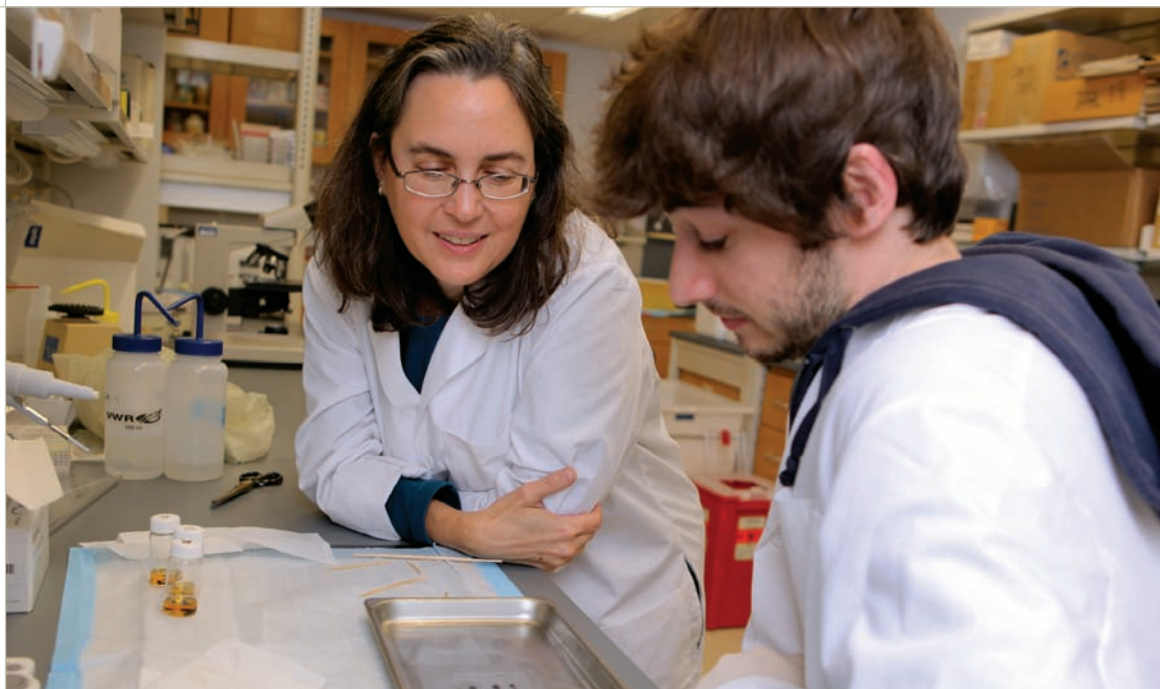


Weill Cornell Medical College

DISCOVERIES
THAT MAKE A DIFFERENCE
THE CAMPAIGN FOR WEILL CORNELL MEDICAL COLLEGE

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24 DISCOVERY ZONE

BETH SAULNIER

The Graduate School of Medical Sciences is a unique partnership between Weill Cornell and the Sloan-Kettering Institute, a research institution. With rankings and student metrics on the rise—and the new Medical Research Building under construction—the Graduate School is poised for another quantum leap in research and education. “We’re one of the biggest schools in New York in the biomedical sciences,” says Dean David Hajjar, PhD, “and people know we’re a school to be reckoned with.”



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32 MIND & BODY

BETH SAULNIER

Eating disorders are among the most intractable psychiatric illnesses—and the stakes are high. As psychiatrist Evelyn Attia, MD, puts it: “Anorexia nervosa is accompanied by a mortality rate as high as we see in any psychiatric illness.” After being closed for a year-long renovation, Weill Cornell’s eating disorders center has reopened in a new, custom-designed facility. Now under Attia’s leadership, it has joined forces with its sister program at Columbia, offering more options to patients struggling with anorexia nervosa, bulimia nervosa, and other food-related disorders.

38 EQUAL TREATMENT

SHARON TREGASKIS

In January, a division of the NIH awarded Weill Cornell an \$8 million grant to establish the Comprehensive Center of Excellence in Disparities Research and Community Engagement (CEDREC), a consortium of scientists at the Medical College and other health-care institutions in the metro area. The Center aims to dig at the roots of disparities in medical care through research and a variety of community-based programs—forging partnerships and targeting such ills as obesity and hypertension.

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Cover photograph of PhD student Crystal Darby by John Abbott

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Light Box



JOHN SAMPLES / WCMC-Q

The wonder years: This fall, seventh-graders from the American School of Doha visited the Qatar campus for lab tours, including this close encounter with a frog.

The Science Inside

Research Today, Better Health Tomorrow

"The Weill Cornell faculty and research programs that will transform health care in this century are the heart and soul of this Campaign."

Antonio M. Gotto Jr., MD, DPhil
Stephen and Suzanne Weiss Dean

Because of generous support from alumni and other friends, we continue to make progress in our ambitious \$1.3 billion *Discoveries that Make a Difference* Campaign. We have completed nearly 80 percent of our Campaign—hitting the \$1 billion mark this summer, which was celebrated at the groundbreaking of our new Medical Research Building rising on East 69th Street between York and First avenues. (See cover story, *Weill Cornell Medicine*, Summer 2010.)

That means we still have \$300 million to go.

Fortunately, the most exciting part is yet to come—supporting the science that will take place inside its walls.

Many naming opportunities remain in the research building—for labs, scientists' offices, conference rooms, and other spaces essential for operating this 480,000-square-foot translational research facility.

But it is the brain power, tenacity, and relentless passion of our world-renowned researchers inside that will unlock the mysteries of science and convert them into breakthroughs that will transform health care for our children, grandchildren, and future generations.

Support for this next phase of the Campaign—through endowed gifts for faculty, programs and scholarships, and through recruitment of 30 new scientists—will go directly to these researchers and their work.

Now is the opportunity to play a historic role in helping Weill Cornell deliver on the new possibilities for prevention, treatments, and cures for some of our most tenacious and deadly health problems.

Advancing Science, Enhancing Health

Weill Cornell is the birthplace of many medical advances including: the first clinical trial of gene therapy for Parkinson's disease; the first indication of bone marrow's critical role in tumor growth; breakthrough treatment that delivers chemotherapy directly into a malignant brain tumor; and advances in minimally invasive micro-surgery. It played a major role in the world's first successful use of deep brain stimulation to treat a minimally conscious brain-injured patient.



Laboratory

Science Priorities

- Cancer Research
- Cardiovascular Disease
- Children's Health
- Diabetes, Metabolic Disorders, and Obesity
- Global Health and Infectious Diseases
- Neurodegenerative-Neuropsychiatric Diseases and Aging
- Stem Cell, Developmental Biology, Reproductive and Regenerative Medicine



Research Suite

Weill Challenge A Matching Fund Opportunity

Joan and Sanford I. Weill in 2009 established the Weill Challenge — a \$135 million fund to encourage support for the new Medical Research Building on East 69th Street and the Gertrude and Louis Feil Family Research Building on East 61st Street.

How It Works: Gifts of \$90,000 and above to support the buildings are eligible for a match: every \$1.50 gift is matched with a \$1 gift from the Challenge Fund. For example, a laboratory in the Medical Research Building, which can be named for \$5 million, will require \$3 million from the donor, to be matched by \$2 million from the fund.



Weill Cornell Medical College

Endowment Opportunities

Endowed gifts live forever, honoring the donor and providing support in perpetuity for the Medical College and its students, faculty members, and programs.

Endowed Professorships

Recognize outstanding senior faculty members and provide financial support for research, teaching, and clinical medicine.
Minimum Endowment: *\$2 million*

Clinical Scholar Awards

Give promising junior faculty time and resources to balance their roles as physicians, scientists, and teachers.
Minimum Endowment: *\$1 million*

Research Scholar Awards

Recognize junior faculty who have exceptional research programs, helping them compete successfully for federal grants.
Minimum Endowment: *\$1 million*

Education Scholar Awards

Allow outstanding faculty to focus on educational innovation.
Minimum Endowment: *\$1 million*

Student Scholarships

Provide our top medical students with financial assistance, allowing the most promising future physicians and scientists to attend Weill Cornell regardless of ability to pay.
Minimum Endowment: *\$25,000*

Naming Opportunities

Naming opportunities for the state-of-the-art translational science building include (pictured) research suites, laboratories, and Principal Investigator offices, as well as (not pictured) conference rooms, a welcome lounge, and research floors, among others. Gifts to support recruitment of new scientists will also be recognized with naming opportunities in the building.



Principal Investigator Office

All Renderings © Ennead Architects
Please note: This is a representation of what the space may look like when building design and construction have been completed. It is not a precise depiction.

For more information and a detailed list of gift opportunities, please contact Lucille Ferraro, Campaign Director, at 646-962-8721 or luf2003@med.cornell.edu.

Please visit our website at: weill.cornell.edu/campaign.

The Future of Stem Cell Research

Antonio M. Gotto Jr., MD, DPhil,
Dean of the Medical College

Six years ago, Weill Cornell Medical College established the Ansary Stem Cell Institute. As an institution, we wanted to be in the forefront of science—and we knew that, to do so, we had to pursue this research without reliance upon federal funding. Launched with a \$15 million grant from Houston philanthropists Shahla and Hushang Ansary, the Institute is a facility where scientists across the biomedical disciplines can work together on stem cell research, whether embryonic or adult.

Since then, we have seen significant breakthroughs—including one discovery, published in a study that was led by Shahin Rafii, MD, the Arthur B. Belfer Professor in Genetic Medicine and co-director of the Ansary Stem Cell Institute, that endothelial cells have the potential to grow large amounts of adult stem cells, potentially offering therapeutic applications for organ regeneration and cancer cell inhibition. A more recent study by Rafii's team, published in November in the online edition of *Nature*, shows how endothelial cells influence the self-renewal of certain stem cells and have an “instructive role” in liver regeneration. This may open the door to treatments for healing damaged livers by transplanting endothelial cells.

Shahin Rafii, MD, Co-director,
Ansary Stem Cell Institute



PATRICIA KUHARIC

Of course, our physicians and scientists must abide by national guidelines for embryonic stem cell research—but these standards are often inconsistent and dependent upon political vagaries. As has been very much in evidence over the last several months, this inconsistency is one of the biggest challenges facing the medical and scientific community.

Current law holds that federal funds may be used to support embryonic stem cell research so long as embryos were destroyed using private funds. But in August, a U.S. district judge found otherwise and placed an injunction on federal funding for all human embryonic stem cell research. As a result, the National Institutes of Health announced that no new support would be available, and that current grants for research under way would not be renewed. In September, the U.S. Court of Appeals lifted the injunction but did not reverse the ruling, and funding remains uncertain while the court reviews the case.

In November, I joined the deans of medical schools and other directors of academic medicine around the country in sending a letter to leaders of the U.S. House and Senate. We urged them to pass legislation, known as the Stem Cell Research Advancement Act, to authorize and continue federal support for human embryonic stem cell research while adhering to strict federal oversight and standards. “In accordance with current law,” we wrote, “the legislation ensures that no federal funding shall be used to derive stem cells or destroy embryos.”

While we await the latest developments in the legal status of this complicated issue, three things remain clear. First, Weill Cornell must comply with whatever standards current legal opinion dictates. Second, we must seek creative solutions to support stem cell research by other mechanisms in order to continue the important work under way at the Ansary Center. And finally—no matter what the courts, Congress, or voters decide—all of us at Weill Cornell and in the broader medical community must continue to move forward in fulfilling our societal mandate: to find the causes of human diseases, seek the breakthroughs that advance knowledge, and develop the therapies that will improve all of our lives.

Strength in Numbers

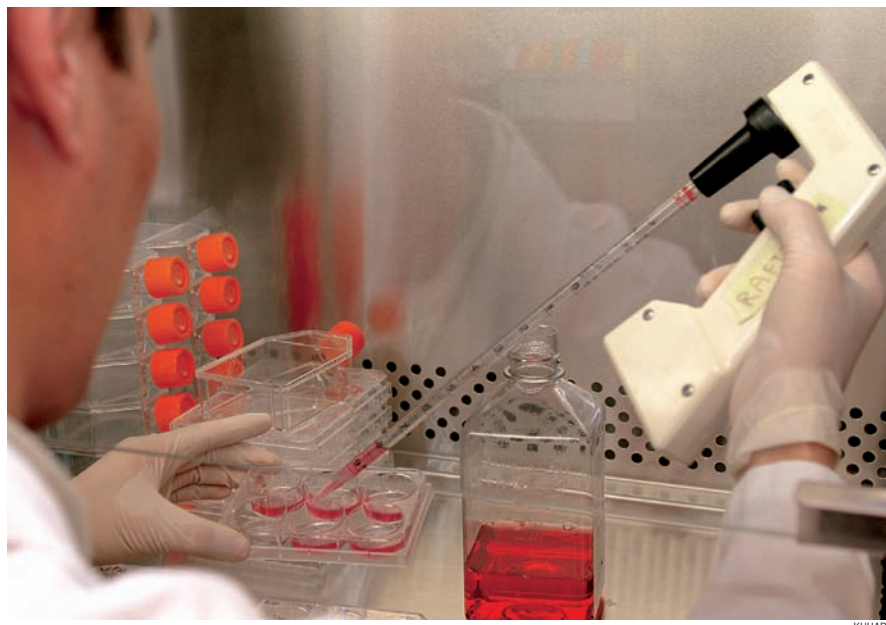
David P. Hajjar, PhD,
Dean of the Graduate
School of Medical Sciences

Those of us in the biomedical sciences are living in exciting times. As revolutions in genomic and proteomic sciences offer enormous opportunities for new pathways of research and the potential for significant medical breakthroughs, Weill Cornell is poised to double its laboratory space in New York City. The construction of the 480,000-square-foot Medical Research Building will allow us to greatly enhance translational bench-to-bedside research and recruit up to fifty new faculty members. At this significant juncture, the Graduate School of Medical Sciences must take the next important step and increase the size of its student body.

Each year, the Graduate School welcomes approximately fifty-five to sixty new students. In the past five years the number of applicants for these spots has risen by 40 percent. With seven doctoral programs, more than \$200 million in research funding, and 250 world-renowned, creative faculty members—half of whom are affiliated with Weill Cornell Medical College and half with the Sloan-Kettering Institute—it is no surprise that we are attracting more applicants than ever. But this increase is also due to our concerted efforts to improve recruitment.

Several years ago, we realized that we faced certain recruitment challenges. It was not uncommon for potential applicants to believe that all of Cornell's non-MD graduate programs were located in Ithaca—or, for example, for Cornell's own undergraduates to associate the Manhattan campus with the Medical College alone. To address such misperceptions, we instituted a number of initiatives. We visit undergraduate institutions to meet students from as close as Hunter College, right in our backyard, and as far away as Asia. In November, Randi Silver, PhD, associate dean of the Graduate School, and Francoise Freyre, PhD, assistant dean of students, visited nine top universities and institutes of technology in India, targeting schools from which current students have graduated or where faculty members have existing relationships. Last year, of the twenty-eight applications we received from Indian students, twenty-one were individuals we had met in person.

We have instituted recruitment days, in which



KUHARIC

we bring all admitted students to campus for a two-day event. We've built stronger intercampus relationships to draw undergraduates from Cornell. We host open houses for students from New York City colleges. We give presentations at the major national conferences, including the annual Biomedical Research Conference for Minority Students, where thousands of undergraduates present their research, and reach out to students in post-baccalaureate programs, such as those at the National Institutes for Health, which are growing in popularity. Faculty members help in recruitment as well; when they attend annual meetings, such as the American Meeting for Cell Biology, they are prepared to talk to undergraduates who attend or present research. Last but not least, we have launched a new website (<http://weill.cornell.edu/gradschool/>).

These efforts are paying off, and they have put us in an ideal position to increase the number of students while keeping selectivity high. Our state-of-the-art facilities have expanded, and our world-class faculty is growing. Now, the time is right to expand the number of outstanding doctoral students we bring into the Weill Cornell community.



CHARLES MANLEY



PROVIDED

Doing good: Jean Pape, MD '75 (second from left), with former President Bill Clinton and fellow award winners. Left: Clinton and Pape in Port-au-Prince after the earthquake.

GHESKIO's Pape Receives Clinton Global Citizen Award

In September, GHESKIO founder and medicine professor Jean Pape, MD '75, received the Clinton Global Citizen Award in a ceremony in New York City. "Your dedication to helping Haitians develop their public health system stands as a testament to your visionary leadership," said former President Bill Clinton, who praised Pape not only for his work on HIV/AIDS in Haiti, but also his emergency care efforts following the January earthquake that devastated Port-au-Prince.

Founded in 1982, GHESKIO runs two clinics in the Haitian capital, treating patients with HIV and other infectious diseases such as tuberculosis. After the earthquake, the organization found itself responsible for the 7,000 homeless Haitians camped on and near its grounds in downtown Port-au-Prince. It offered emergency surgery

and rehabilitation care to 3,000 trauma victims, provided TB screening and treatment for 2,000 people, and continued HIV services for 22,000 patients. More recently, it has dealt with outbreaks of cholera among local residents—many of whom remain in refugee camps—and the damaging effects of Hurricane Tomas.

Pape has received several high-profile honors, including the Carlos Slim Award for Global Health, the Bill and Melinda Gates Award for Global Health, and the Institut de France Prix Christophe Mérieux; he was also elected to the National Academy of Science's Institute of Medicine. The Clinton awards, established in 2007, recognize visionary leaders who address global challenges in innovative, sustainable ways. This year's winners included the president of the Dominican Republic and the CEO of Avon Products.

Skorton, Fins Elected to Institute of Medicine

Cornell President David Skorton, MD, who holds appointments in medicine and pediatrics, and Joseph Fins, MD '86, chief of the Division of Medical Ethics, have been elected to the Institute of Medicine (IOM) of the National Academies. The two are among sixty-five new members elected to the IOM in October. Membership is considered one of the highest honors in health and medicine. According to IOM President Harvey Fineberg, MD, PhD, each member "stands out as a professional whose research, knowledge, and skills have significantly advanced health and medicine and who has served as a model for others."

Comprehensive Autism Center Planned

In collaboration with the New York Center for Autism, NewYork-Presbyterian Hospital, Weill Cornell Medical College, and Columbia University Medical Center will establish an autism treatment center on the Hospital's White Plains campus. To open in 2012, the Institute for Brain Development will offer comprehensive care for people with autism and other developmental disorders throughout their lifetimes, and serve as a resource for community-based providers and families. According to the CDC, autism spectrum disorders strike one out of every 110 children, affecting more than a million Americans.

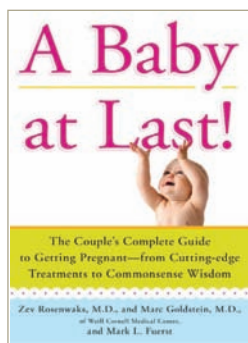
Interventional Cardiology Programs Team Up

The interventional cardiology programs at Weill Cornell and Columbia have joined forces to create a new integrated program. It will be led by Jeffrey Moses, MD, who has served as director of the Center for Interventional Vascular Therapy and of the Cardiac Catheterization Lab at NYP/Columbia since 2004. The combined program will be among the nation's largest, seeing more than 5,000 cases a year.

Expert Advice on Having a Baby

Fertility experts Zev Rosenwaks, MD, and Marc Goldstein, MD, have co-authored a new book with advice on reproductive medicine for a general audience. *A Baby At Last!: The Couple's Complete Guide to Getting Pregnant* presents information on common fertility problems, discusses treatment options, and offers advice on when to seek medical intervention. "The common misconception is that fertility is a woman's issue, but it happens just as frequently in men. This is why a couples-based solution is imperative," says Rosenwaks, director of the Ronald O. Perleman and Claudia Cohen Center for Reproductive Medicine and the Revlon Distinguished Professor of Reproductive Medicine in Obstetrics and Gynecology. "There are many reasons a couple may find it hard to get pregnant, and these reasons can stem from a problem with either or both partners."

The authors note that in about 40 percent of infertile couples the issue lies with the man, in another 40 percent it lies with the woman, and in the remainder both partners have a problem. "The good news," says Goldstein, director of the Center for Male Reproductive Medicine and Microsurgery and the Hardy Dis-



tinguished Professor of Reproductive Medicine and Urology, "is that couples have more treatment options than ever before."

First Liver Transplant at NYP/Weill Cornell

In late October, the first-ever liver transplant was performed at NYP/Weill Cornell. The patient, a sixty-three-year-old Vietnam veteran from Brooklyn, had been put on the transplant list eight months earlier, after being diagnosed with Stage II liver cancer; a donor organ became available after a transplant in Rochester was cancelled. The surgical team was led by Daniel Cherqui, MD, professor of surgery and the new chief of hepatobiliary surgery and liver transplantation at NYP/Weill Cornell. A veteran of more than 2,000



Daniel Cherqui, MD

procedures over the past two decades, Cherqui is an expert in the management of primary and secondary liver cancer and a pioneer in minimally invasive techniques in liver surgery. Prior to coming to Weill Cornell, Cherqui was chief of hepatobiliary surgery and liver transplantation and head of general surgery at the Hôpital Henri Mondor in Paris.

Paul to Head Alzheimer's Institute

A leading neuroscientist has been tapped to lead the new Helen & Robert Appel Institute for Alzheimer's Research. Steven Paul, MD, joined the faculty in September, with appointments in psychiatry and in neurology and neuroscience. He comes to Weill Cornell from senior research positions at Eli Lilly and Company and the National Institute of Mental Health.

To be located in the new Medical Research Building, the Appel Institute will include faculty in neurology, neurogenetics, biochemistry, cell biology, microbiology, pharmacology, and psychiatry. It has been funded with a \$15 million gift from longtime Medical College benefactors Helen and Robert Appel. "Helen and I are personally familiar with the devastating effect this disease has on individuals and their families," Robert Appel says. "We are confident that this intense research effort led by Dr. Paul will result in better ways of preventing, treating, and one day eradicating Alzheimer's." In September, the Appels announced an additional \$15 million gift toward the new \$650 million research facility, which broke ground in May and is scheduled to open in 2014.

TB Researchers Win Second Gates Grants

Two researchers investigating ways to combat tuberculosis have won \$100,000 grants from the Gates Foundation as part of its Grand Challenges Explorations program. The awards went to Carl Nathan, PhD, chairman of the Department of Microbiology and Immunology, and Kyu Rhee, PhD, assistant professor of microbiology and immunology. Nathan's lab is studying the genetic mechanism by which TB emerges from its latent state into infectious, symptomatic disease; Rhee is exploring the role of protein-based structures called metabolosomes in the latency process of *Mycobacterium tuberculosis*. Both scientists have received Grand Challenges grants in previous funding rounds, and these new awards represent "next stage" funding for research that has shown progress.

Schneider Named Vascular Surgery Chief

Darren Schneider, MD, has been appointed chief of vascular and endovascular surgery at NYP/Weill Cornell. One of only a handful of physicians trained in both vascular surgery and interventional radiology, he has expertise in performing minimally invasive procedures for carotid disease, aortic aneurysms and dissections, and peripheral artery disease. His research interests include developing new treatments for limb preservation in patients with advanced lower-extremity vascular disease.



Darren Schneider, MD

"Our cross-disciplinary approach will focus on early diagnosis, education, and intervention, as well as unique, advanced endovascular techniques and new bone marrow and stem cell therapies," he says. Schneider, who comes to Weill Cornell from the University of California, San Francisco, has also been named an associate professor of surgery and director of the Center for Vascular and Endovascular Surgery.

NYP/Weill Cornell Sponsors Europe's First Workshop on Metabolic Surgery

The Diabetes Surgery Center at NYP/Weill Cornell has sponsored the first European workshop on metabolic surgery. Held in Rome in September, the two-day event brought together international experts to discuss how the surgery may offer new treatment options for the disorder. "Given its dramatic clinical benefits, it is important that metabolic surgery becomes accessible to eligible patients," says Francesco Rubino, MD, director of the gastrointestinal metabolic surgery program at NYP/Weill Cornell. "At the same time, it is imperative to recognize the experimental nature of this phase and promote a scientific, safe, and orderly development of the field." The meeting was held in collaboration with London's Imperial College and Rome's Catholic University. In March 2011, the Diabetes Surgery Center will host its second World Congress on Interventional Therapies for Type 2 Diabetes in New York City.

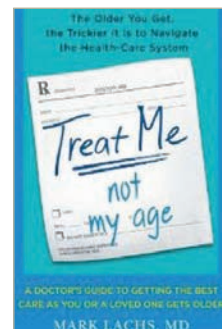
Research Building Named in Honor of Feil Family

The Feil family, longtime Weill Cornell benefactors, have been honored with the naming of a research facility. The Gertrude and Louis Feil Family Research Building, which houses the Division of Neurobiology and the Clinical and Translational Science Center, is located at 401 East 61st Street. "I know this institution can make a difference," Weill Cornell Overseer Jeffrey Feil said at the October ceremony,

whose attendees included his sisters—Judith Jaffe, Marilyn Barry, and Carole Feil—and their children. "We are on the cutting edge of many exciting breakthroughs in Alzheimer's, multiple sclerosis, and so many diseases that years ago we never thought we could cure or help." Since 1987, the Feils have made numerous gifts to the Medical College, including scholarships, endowed professorships, clinical scholar awards, and capital support for the Judith Jaffe Clinical Unit for Multiple Sclerosis and Peripheral Neuropathy Center, located in the Weill Greenberg Center.

New Book Explores 'Medical Ageism'

The growing phenomenon of medical ageism is the subject of a new book by gerontologist Mark Lachs, MD. In *Treat Me, Not My Age* Lachs, the Irene F. and I. Roy Psaty Distinguished Professor of Clinical Medicine and co-chief of the Division of Geriatrics and Gerontology, explains how the symptoms of older patients are sometimes dismissed as the inevitable results of aging. Such discrimination, he writes, extends throughout the health-care system—from hospitals to nursing homes to insurance companies—affecting quality of life for the elderly. In the book, written for a general audience, Lachs offers a comprehensive guide to avoiding such pitfalls and receiving the highest-quality care. "Sure, the book is about health," Lachs writes in the introduction, "but it's even more about how systems and environments collide with our aging bodies to influence health."



TIP OF THE CAP TO...

Gilbert Botvin, PhD, professor of psychology in public health and in psychiatry, winner of the Presidential Award from the Society for Prevention Research, in recognition of his lifetime contribution to the prevention sciences.

Urologist **Marc Goldstein, MD**, the Matthew P. Hardy Distinguished Professor of Reproductive Medicine, named one of SUNY Downstate College of Medicine's 150 most distinguished alumni.

Clinical assistant professor of surgery **Jerry Halpern, DDS**, winner of the Presidential Achievement Award from the American Association of Oral and Maxillofacial Surgeons.

John Leonard, MD, the Richard T. Silver Distinguished Professor of Hematology and Medical Oncology, elected the next

chairman of the Lymphoma Research Foundation's scientific advisory board. His term begins in July 2012.

Harvard Medical School psychiatry professor **Alvin Poussaint, MD '60**, winner of the AAMC's Herbert W. Nickens Award, given to individuals who increase diversity at medical schools and eliminate health-care disparities.

Biochemistry professor **Timothy Ryan, PhD '89**, winner of his second McKnight Technological Innovations in Neuroscience Award. It provides \$40,000 over two years to support his studies of synaptic activity.

Andrew Schafer, MD, chair of the Department of Medicine and physician-in-chief at NYP/Weill Cornell, elected president of the Association of Professors of Medicine.

FROM THE BENCH

Endothelials Aid Growth of Stem Cells

Researchers at the Ansary Stem Cell Institute have discovered that endothelial cells, the basic building blocks of the vascular system, produce growth factors that can not only create and sustain large numbers of adult stem cells but also instruct their formation. "This study will have a major impact on the treatment of any blood-related disorder that requires a stem cell transplant," says senior author Shahin Rafii, MD, co-director of the Ansary Stem Cell Institute and the Belfer Professor in Genetic Medicine. Scientists have long struggled with adult stem cells' brief lifespan—normally just a few days—but the study showed that endothelial cells can maintain them for more than three weeks. The findings, which also offer promise for fields from organ regeneration to tumor inhibition, were published in *Cell Stem Cell*.

Exploring a New Class of Cancer Drugs

A small molecule called macroketone may help prevent the spread of cancer, according to a study published in *Nature*. A team of researchers led by physiology and biophysics professor Xin-Yun Huang, PhD, has been investigating the molecule's ability to inhibit the movement of cancer cells away from an initial tumor, preventing metastasis. When mice were implanted with cancer cells, those that received macroketone treatment lived full lives with no spread of the disease, while those in a control group all died. "More than 90 percent of cancer patients die because their cancer has spread, so we desperately need a way to stop this metastasis," Huang says. "This study offers a paradigm shift in thinking and, potentially, a new direction in treatment."

WCMC-Q Students Explore Down Syndrome

In September, students at WCMC-Q attended a bioethics conference in Spain, where they reported results of a study on how people with Down syndrome are perceived in Qatar. With support from the Qatar National Research Fund, three medical students interviewed fifty families affected by Down as well as 250 residents of Doha. They found that while Qataris are gener-

ally aware of the cause of the syndrome, many believe that children who have it are apt to misbehave and can never lead independent lives. The study could offer guidance on public education efforts to integrate people with Down into the community, says Pablo Rodríguez del Pozo, MD, PhD, associate professor of public health.

Unraveling the Mysteries of Ubiquitination

Associate professor of pharmacology Samie Jaffrey, MD, PhD, and colleagues have made progress in understanding ubiquitination—the process by which proteins are tagged for disposal before being broken down and recycled within human cells. In a paper published in *Nature Biotechnology*, the team described a new method for clarifying the role that ubiquitination plays in such diseases as breast cancer and Parkinson's, using a monoclonal antibody that allows ubiquitinated proteins to be recovered from tissue extracts and quantified with high-throughput mass spectrometry. The researchers were not only able to identify several hundred ubiquitinated proteins but also to determine the specific part of the protein that was modified. "Ubiquitination has long been extremely difficult to study, but our method has opened the door to clarifying the role of ubiquitination in a variety of diseases," says Jaffrey, the study's lead author.



Samie Jaffrey, MD

Elevated Heart Rate: A Danger Sign

After studying outcomes in more than 9,000 patients, researchers at the Ronald O. Perleman Heart Institute have found that those who have an elevated resting heart rate over the course of years are at a significantly increased risk of death. The researchers, led by Peter Okin, MD '80, discovered that a rate of 84 or more beats per minute was linked to a 55 percent greater risk of cardiovascular death and a 79 percent greater risk of death from all causes. (A healthy rate is between 60 and 80.) "Heart rates can change day to day

and year to year," says Okin, director of clinical affairs and associate director of the Cardiac Graphics Laboratory in the Division of Cardiology. "It's like having a higher body temperature one day that goes away the next." But if heart rate remains elevated, he says, "some disorder is likely to blame."

Occasional Smoking Is Still Harmful, Study Shows

There may be no such thing as a safe level of cigarette smoke. According to a study published in the *American Journal of Respiratory and Critical Care Medicine*, being exposed to low levels of smoke—either second-hand or by having the occasional cigarette—still puts people at risk for diseases such as lung cancer and COPD. "Even at the lowest detectable levels of exposure, we found direct effects on the functioning of genes within the cells lining the airways," reports Ronald Crystal, MD, chief of the Division of Pulmonary and Critical Care Medicine and the study's senior author. "The genetic effect is much lower than those who are regular smokers, but this does not mean that there are no health consequences." The researchers tested 121 people, dividing them into three groups—nonsmokers, active smokers, and low-exposure smokers—according to the levels of nicotine and cotinine in their urine. They found that the levels of those chemicals correlated with genetic abnormalities, which Crystal calls a "canary in a coal mine" warning of potential disease. "The canary is chirping for low-level exposure patients," he says, "and screaming for active smokers."

GHESKIO Work Inspires New HIV Treatment Protocols

The World Health Organization has revised its treatment protocols for HIV patients, based on clinical research on the early initiation of antiretroviral therapies performed at the Weill Cornell-affiliated GHESKIO clinic in Haiti. Researchers found that administering antiretrovirals immediately—rather than waiting until a patient's CD4+ T cells fall below 200 per cubic millimeter, per the previous WHO guidelines—makes the drugs much more effective. It can also lower rates of TB, a common cause of death among HIV patients in the developing world. "These results further strengthen the assertion that the right therapies, initiated as soon as possible, can hold the virus at bay," says study co-author Warren Johnson, MD, the B. H. Kean professor of Tropical Medicine and director of Weill Cornell's Center for Global Health.

Mentor and Student

A surgeon and his former patient
reunite for research

Steve Deguirmendijian needed a research internship. That's what a friend, an emergency physician, told him over dinner one night last spring. But the thirty-six-year-old, who had only recently decided to pursue medicine, was in the throes of two med-school prerequisites at Hunter College while continuing his full-time career in IT. "I said, 'Do I have to think about it now?'" Deguirmendijian recalls. "I was thinking about midterms and finals." His friend told him not to worry, that he would take care of it.

Soon Deguirmendijian got a phone call from Roger Härtl, MD, chief of spinal surgery at Weill Cornell. He had heard about this aspiring MD with a decade's experience in computer technology, and after several interview questions he began to tell the prospective intern a little about himself. Deguirmendijian interrupted him. "Dr. Härtl, I already know who you are," he told him. "You operated on my back."

In November 2005, Deguirmendijian was riding home on his motorcycle after an evening class at NYU when a livery cab cut him off at the corner of 68th Street and York Avenue. He arrived in the emergency room of NewYork-Presbyterian/Weill Cornell with a broken clavicle, a shattered left wrist, and a "complete T4," or severely bruised spinal cord.

In consultation with Deguirmendijian's brother-in-law, a vascular surgeon, Härtl decided to operate immediately—a five-hour surgery. Deguirmendijian spent a month in an induced coma, waking to learn that he was paralyzed from the chest down and going on to spend three months in rehab. He remembers meeting his surgeon only later, in a follow-up appointment. But his mother had spent nearly every day at the hospital; when Deguirmendijian got the chance to work with Härtl, he was excited, he says, because "even though I didn't know him, she said he's a great doctor and a great gentleman."

This summer, the Montreal-born Deguirmendijian—who speaks fluent French, English,

Arabic, and Armenian—did his own kind of surgery for Härtl, overhauling a database of patient data and surgery outcomes. "He took the primitive system that we have been using and put it into a well-rounded, professional database," Härtl says. During his summer-long, twelve-hour-a-week internship, Deguirmendijian created a sophisticated repository of information, replacing the Excel spreadsheets Härtl's team had been using. The new system has a simpler user interface and allows for more accurate data entry, better analysis, and improved scalability as researchers add new parameters. While the internship ended in August, Deguirmendijian continues to help when questions arise. He loves using his expertise for the good of spinal research, he says; he also welcomed the opportunity to observe Härtl in the OR, as the surgeon performed a spinal fusion. "The closer I am to the spine, the better," Deguirmendijian says.

Ever since his accident, Deguirmendijian has read the medical literature and closely followed the researchers and biotech companies that are making breakthroughs and conducting the latest trials. His plan to attend medical school is a step toward his ultimate goal of improving treatment of spinal-cord injury. "That's part of what gives me hope that one day I'm going to get up and walk," he says.

A year after his accident, Deguirmendijian returned to his job, which he continues full-time from his apartment at York Avenue and 81st Street. He lives alone, with a housekeeper coming once a week, and in his free time he participates in a Mount Sinai program through which he has learned to swim and gone flying in a glider. Still, even with his self-sufficiency and sense of adventure, he knows his goal of earning an MD might seem daunting to many. "Day-to-day life is very, very difficult for me," he admits. "It's difficult to be in chronic pain, to be in a wheelchair and try to plan your life like that. I'm sure there are plenty of obstacles out there, but for now I'm just thinking about the next class."

It helps, too, that the effort is already paying



JOHN ABBOTT

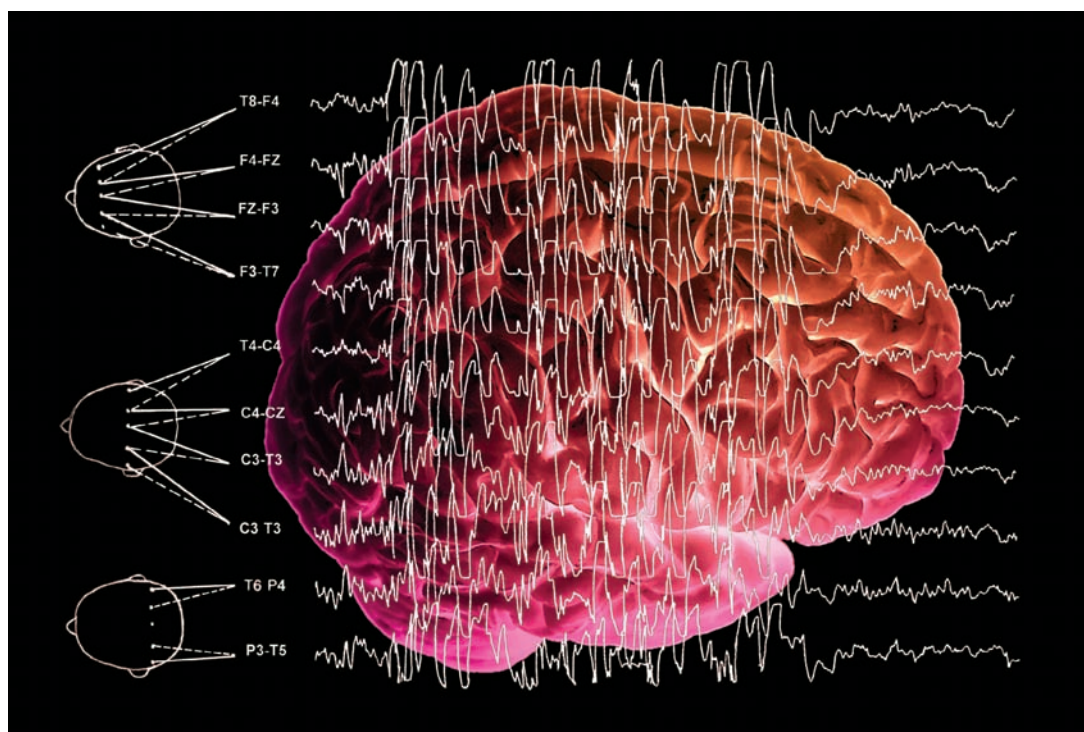
off—not only in the experience he’s gained, but also in how he might shape future research. One afternoon in Härtl’s office, for example, the surgeon asks his opinion about a theoretical drug that might give only minimal improvement in motor or sensory scores, while carrying a risk of side effects. “If I get a millimeter, it makes a huge difference,” Deguirmendijian tells him, offering a perspective that could be vital to researchers. “As surgeons, we have a rough grading scale,” Härtl explains. “We look at motor function and so forth, and we may dismiss a potential treatment because we don’t think it’s giving enough benefit. But that may not be the case.”

While his motivation is to improve research, Deguirmendijian knows that his experience and perspective could have an important direct effect on patients as well. “I am not oblivious to what seeing my wheelchair would do for a patient,” he says, slowly, thoughtfully. “I mean, I’ve noticed people’s reactions have changed toward me since my accident.” Some people, friends and strangers alike, now feel more comfortable opening up to him, telling him things they never would have shared before. In terms of helping others, he says, “I know it’s going to make a difference.”

— Andrea Crawford

Teaching case: Former patient Steve Deguirmendijian (left) got the chance to observe surgeon Roger Härtl, MD, in the OR during a summer internship.

Lightning strikes: An EEG chart of generalized epilepsy in a seventeen-year-old patient is superimposed over a 3-D MRI image of the brain.



SOVEREIGN/ISM/PHOTOTAKE

Brain Trust

Epilepsy center specializes in the toughest cases

When Stephen Neiley arrived at Weill Cornell's Comprehensive Epilepsy Center in 2003, he felt as if he had nothing left to lose. Neiley had once been a successful developer in the San Diego area who surfed and served on his local town council. But eighteen years ago, he was forced to give it all up when the first of what would become thousands of powerful and debilitating seizures left him speaking nonsense at a restaurant dinner. "My sons say that instead of ordering anything, I just started jabbering," Neiley says. "It rather scared me."

Diagnosed with partial-onset seizures—minor convulsions that spread and become more severe—Neiley soon underwent surgery at a San Diego hospital to remove the part of his brain thought to be their source. But within nine months, the seizures returned, and doctors discovered that another section of his brain was generating them. Over the next eleven years they tried medications and even implanted a device,

called a vagus nerve stimulator (VNS), that sent electrical impulses to the nerves believed to be causing the seizures. By the time Neiley moved to his father's Pennsylvania farm in 2003, he was still suffering numerous weekly seizures, some so violent that a paramedic treating him once suffered a broken hand. When he got to Weill Cornell, he says, he was willing to try anything that might offer a cure.

Epilepsy affects an estimated three million Americans, according to the nonprofit Epilepsy Foundation. But the Weill Cornell center specializes in treating patients like Neiley—those who suffer from so-called "intractable" forms. While 10 percent of people suffer a seizure at some point in their lives, only 2 percent experience two or more, which defines their condition as epilepsy, says Douglas Labar, MD, PhD, director of the Division of Clinical Neurophysiology. The causes and symptoms of the disease vary, with about one-third of patients suffering from refractory epilepsy—the type that persists after trying

one medication. "Treating an illness like this, which is all about probabilities of recurrences, is a bit of a gamble," Labar says. "What is more likely to work? What is most likely to have side effects? What are the risks and benefits of more aggressive therapies?"

The Comprehensive Epilepsy Center's Level 4 designation means it provides a wide variety of treatment options—everything from drugs and surgery to sophisticated brain mapping using electrodes and imaging technologies that record and detect the location of seizures. The facility is an investigational hub: Labar previously tested the VNS, which was approved by the FDA in 1997, as well as a deep-brain stimulation device that is inserted into the chest and sends electrical pulses to the thalamus, the brain's nerve center, to reduce excess electrical activity. (That device, made by Medtronic, is FDA-approved to treat Parkinson's disease but is awaiting a final ruling for epilepsy. In about three months, it reduces seizures by 40 percent from medication alone—better than the 28 percent reduction using a VNS, Labar says.) Labar is now studying the effectiveness of a next-generation brain stimulator made by NeuroPace—a metal box implanted in the skull that detects seizures as they start and sends a counter-shock to stop them from taking hold. The Center's other trials are on new drugs hoped to be more effective than traditional therapies, with fewer side effects.

In addition to medical and surgical interventions, the Center offers counseling to patients and their families about the emotional aspects of epilepsy—depression and anxiety are three to four times as common among epileptics than in the general population—and practical advice on activities like driving, swimming, and bathing. "The care we provide is truly comprehensive," says Center director Paul Mullin, MD. "We're prepared to manage seizures throughout the lifespan."

That breadth of care is essential, Mullin says, because the disease poses different challenges depending on the patient's gender and age, and conditions such as pregnancy, HIV infection, or depression. "Each requires special management," he says. Women whose seizures are brought on by their menstrual cycle may need to take hormones—but how might they interact with anti-seizure medications? Will epilepsy drugs be secreted in breast milk? How can a new mother protect her baby if she convulses during a feeding or bath? In elderly patients, doctors must distinguish between falls and cognitive problems related to age versus those stemming from seizures, Mullin says, and monitor potential interactions between anti-seizure medicines and those used to control conditions like hypertension.

When Neiley first saw Labar, he was having three to four grand mal seizures (which cause loss of consciousness and violent muscle spasms) each week; every day, he was having two or three partial seizure attacks, which cause temporary

shudders. After having his VNS replaced with the Medtronic deep-brain stimulator, he's down to two mild seizures a week and one or two grand mal seizures a month. He's much less worried about accidentally harming someone during a seizure, and he's able to go fishing along the Susquehanna River. "It's changed my life," he says, "180 degrees."

— Jordan Lite

Call to Action

WCMC-Q professor urges new policies to face the threat of HIV

In 2008, nearly three million people worldwide were newly infected with HIV. But while the epidemic has spread to nearly every part of the globe, one region—the Middle East and North Africa—has long been thought to have been spared. There, the spread of HIV has been slower than in any other part of the world, with just 35,000 new cases in 2008—leading some researchers to believe that the region has successfully avoided the epidemic. However, a seven-year study led by WCMC-Q assistant professor of public health Laith Abu-Raddad, PhD, has documented that while the spread of HIV is rather limited in the region, there are nascent epidemics emerging among key populations at risk. "Unfortunately," says the Jordan-born Abu-Raddad, "policies have not changed to face the reality of HIV spread in this part of the world."



JOHN SAMPLES / WCMC-Q

Laith Abu-Raddad, PhD

Abu-Raddad and a team of researchers collected data from many sources, including the scientific literature, NGOs, country-level reports, and international-organization reports. They discovered that while the infection rate of the general population has indeed remained quite low, HIV is spreading among select populations. They include men who have sex with men, IV drug users, and female sex workers and their clients. Because of the region's socio-cultural fabric—and the association between high-risk behaviors and HIV infection—it has been difficult for governments to work with these groups and address HIV transmission among them. Cultural stigma also tends to make HIV-positive people reluctant to seek help or use protective measures like condoms, despite the fact that the virus is often passed on through socially acceptable behaviors such as marital sex. "The impression," says Abu-Raddad, "is that if someone has the infection, they must have engaged in some behavior that is not accepted by society." And since the general public has not yet been greatly affected, he notes, many governments have been reluctant to invest in large-scale prevention programs among the key populations exposed to HIV.

Abu-Raddad's report, "Characterizing the HIV/AIDS Epidemic in the Middle East and North Africa: Time for Strategic Action," was published in June. It calls on countries in the region to focus their resources on those at highest risk. "We need prevention programs for people who are facing the threat of HIV infection," says Abu-Raddad. "Let's put the money where the needs are."

— Adrienne Zable

Save the Children

Gene therapy offers promise in the battle against a rare, devastating pediatric brain disease



At the age of four, something strange started to happen to Nathan Milto. It was 1998 and Nathan, an active child who excelled in soccer and other sports, began to have vision problems and to regress in his motor skills. After a seemingly endless series of tests, his parents, Tricia and Phil Milto, were given terrible news: Nathan was suffering from a rare and fatal neurological disorder called Batten disease. The family was again devastated when they learned in 2001 that their son P.J., then about four, had the same illness. The Miltos were told that nothing could be done to save them.

Only about 200 children in the world are thought to have Batten disease, the most common form of a group of disorders called neuronal ceroid lipofuscinosis (NCLs). Patients develop in a seemingly

normal fashion during their first years, then slowly deteriorate. After enduring seizures, vision loss or blindness, impaired speech and coordination, and developmental regression, children with Batten disease—also known as late infantile neuronal ceroid lipofuscinosis (LINCL)—generally become wheelchair-bound. Most succumb by age twelve.

Batten is part of a category of disorders known as lysosomal storage diseases. Lysosomes, sometimes called the “garbage cans” of the cell, are organelles responsible for destroying cellular waste products. In Batten disease, the CLN2 gene, which codes for the enzyme tripeptidyl peptidase 1 (TTP-1), is mutated and thus malfunctions, causing waste products to build up and clog cells with toxic material, and neurons eventually die. Although the gene for Batten is known, newborn screening

for the disease is not routinely performed.

Ronald Crystal, MD, chairman of the Department of Genetic Medicine at NewYork-Presbyterian/Weill Cornell, is a pioneer in what he describes as the “use of genes as drugs.” In 1993, his team became the first to use an altered virus vector in a human subject, targeting the epithelial cells that carry the genetic mutations that cause cystic fibrosis. He began studying Batten about a decade ago, after an unusual encounter. “Phil Milto came to see us in August 2000, to try to galvanize us to start gene therapy research on the disease,” Crystal says, describing his first meeting with the boys’ father, who has worked tirelessly to raise awareness of Batten among scientists, the government, and industry. “After learning of our group’s work using viruses in gene therapy, he felt we were the ones most equipped to take on this disease.”

That meeting a decade ago launched a cascade of activity among the Weill Cornell scientists, and after some preliminary investigation, Crystal decided that Batten was a worthy foe. Years of subsequent animal study led to the first clinical trial, in June 2004, in which gene therapy successfully delivered CLN2 to patients. Ten children, among them Nathan, then ten, and P.J., seven, received the experimental therapy. Today, at sixteen, Nathan is the longest-living Batten patient in the world; the progression of his and P.J.’s symptoms appears to have slowed. “Although we still face tremendous challenges, stabilization of the disease was our main goal,” says Phil Milto, who launched a website, nathansbattle.com, to raise awareness about the disease.

In this first clinical trial, Crystal used a novel viral vector, adeno-associated virus, which, at 25 nanometers, is the smallest known virus and one that does not cause human disease. He and his team developed a unique delivery method, in which a half dozen tiny bore-holes were made in each child’s brain. (Due to the blood-brain barrier, it would not be effective if given intravenously.) Millions of virus particles

Dedicated dad: Phil Milto with his son, Nathan, then ten years old. Now sixteen, Nathan’s life has been prolonged by an experimental treatment for Batten disease.

infused with healthy, functional CLN2 genes that code for the TTP-1 enzyme were injected through flexible catheters. "The issue becomes: how do you deliver a missing enzyme directly to the brain?" Crystal muses. "These injections are showing the most promise." The approach appeared to be safe, and some of the children, who were monitored with MRIs and clinical exams, experienced slower-than-expected disease progression. "The results gave us the impetus to keep going with this line of therapy," Crystal says of the work, which was reported in the journal *Human Gene Therapy*.

In an effort to refine the treatment, Crystal has continued to screen potential adeno-associative viruses. In subsequent studies on knockout mice with symptoms similar to Batten, the lifespans of those treated with virus rh.10, derived from a non-human primate, were significantly extended. In August, Crystal and his team began a second clinical trial, this time with rh.10. While the 2004 trial treated severely affected children, the current trial will enroll those whose symptoms are mild to moderate, in an effort to help patients before their deterioration becomes irreversible.

This new trial addresses one of the challenges of viral gene therapy: how to deliver the greatest amount of virus given the constraints of how many holes can be made in the brain and how long children can be anesthetized. "The rh.10 virus is promising because it diffuses across the entire brain," Crystal says. "The enzymes are taken up by neighboring cells, so many cells are treated at once, not only those near the site of injection." Thirty-two children will be included: half will receive treatment, half will not. Due to ethical considerations, the trial will not be randomized; parents will choose whether they want their children to undergo treatment. "Some families may choose not to go forward," Crystal says. "After all, there are risks involved. We are taking the child into the operating room and infusing into the child's brain a virus that has never been used in a human before. Some parents may decide they don't want to put their child through this, and they will be asked if they are willing to act as controls."

If successful, the technology developed by Crystal and his team of pediatric neurologists, neurosurgeons, and neuroradiologists to treat Batten may eventually serve as a platform for the treatment of other brain diseases. "Batten is about as 'orphan' a disease as you can get, so most pharmaceutical and biotech companies are not readily interested in it," he says. "Because we in academia have the ability to form collaborations among doctors, regulators, philanthropists, and families, it falls to us to search for cures."

— Anna Sobkowski

Braking News

A psychiatrist and an engineer
build a better walker

The U.S. Census Bureau estimates that by 2020, the medical costs of falls by the elderly will approach \$32.4 billion a year. But Eli Einbinder, MD, hopes that his new invention can prevent some of those expensive and painful accidents. A clinical associate professor of psychiatry, Einbinder has developed the Smart Walker, a rolling walker that offers battery-powered braking and greater stability than the conventional model. "I started noticing people with their walkers and how clumsy they looked," he recalls, "so I thought about designing walkers differently."

Einbinder developed the walker with Ithaca-based biomedical engineering professor David Lipson, who assembled a student team to work on the project. "Traditional walkers use brake levers not that different from what you'd find on a bicycle," Lipson says, "but a large number of users no longer have the hand strength to pull the brake." Conventional walkers have active braking systems, in which the user must engage the brakes to lock the wheels. If users fail to activate the brake, they could lose control of the walker or fall when they try to use it as a support. To resolve these problems, Smart Walker employs a passive brake, which stays locked until the user grabs a handgrip and pushes a button. "If the user lets go of the handgrip for a second, it immediately brakes again," Einbinder explains. "The walker can't roll unless the person is holding the handgrips and walking."

Einbinder took up inventing about fifteen years ago, when an injury sidelined him from skiing and playing tennis. He patented a version of the walker's electric braking system in the late Nineties, but the motors and batteries available at the time were not practical for the device. After shelving the project for a while, Einbinder contacted Lipson in 2006 and they spent about two years developing the current model. Einbinder has obtained a patent on the invention and is currently in contact with medical equipment companies about marketing it.

Although the fields of psychiatry and geriatric mobility may seem unrelated, Einbinder says the walker is actually relevant to his medical practice. "Ultimately, what I'm doing is preventive psychiatry," he says. "Enhancing mobility is a great way to prevent depression and anxiety."

— Marc Campasano

LINDSAY FRANCE/UNIVERSITY PHOTOGRAPHY



Good grip: The Smart Walker's electronic braking system offers a safer way to help geriatric patients stay mobile.

Climb Every Mountain

Conquering the highest peaks puts an MD
in an elite fraternity



PROVIDED

Ice men: Richard Birrer, MD '75 (right), on Mount Everest with his son, Richard. The two posed near base camp in front of the Khumbu icefall.

In 2005, Richard Birrer, MD '75, was on a small platform known as “The Balcony,” a few hundred feet from the summit of Mount Everest, when he got a call on his satellite phone. His tent-mate on the expedition, climbing a few hours behind him, had collapsed. Birrer, who was serving as the expedition physician, pronounced him dead from a heart attack minutes later. “Having an experienced climber whom you have grown close to over the prior eight weeks die so quickly,” he observes, “really does a number on your head.” Then a snowstorm kicked up, forcing him and the remaining members of his expedition to retreat, leaving his friend’s body interred on the mountain. It wasn’t until five years later that Birrer returned to make a second attempt at the summit. Everest, he says, “felt like unfinished business.” This time, he made it to the summit after a seven-hour climb from high camp, only to spend fifteen minutes appreciating the view and then turn around for the long trek back to civilization and safety.

Reaching the top of the world closed what

Birrer calls “not just a chapter, but an entire volume of my life.” He began high-altitude climbing in 1986 when he summited Denali (Mt. McKinley) in Alaska, the highest peak in North America. Over the next twenty-four years, he climbed the highest peak on each of the seven continents, a feat fewer than 200 people have accomplished.

To prepare for climbs, Birrer dons more than fifty pounds of weights and repeatedly hikes up and down the six flights of stairs in his office building after work. Even with intense conditioning, though, climbing takes its toll. “On Everest, I was fortunate to lose only about eight pounds, probably of muscle,” he says. Some of his colleagues lost twenty to thirty pounds. But he notes that the physical tests were dwarfed by the mental challenges. “You’re sleeping on a glacier that is alive, moving constantly, and you wake up every morning to the inside of your tent coated with frost,” he says. “It’s hard to stay psychologically motivated—there are many dark nights of the soul when you wonder how you will pull it off.” Other summits have presented their own unique demands. In New Guinea, Birrer shimmied across a hundred feet of rope spanning a gap in the 16,000-foot-high ridge of the Carstensz Pyramid, climbing with barefoot natives wearing penile gourds. “I learned how to blow poison darts and eat whole roasted opossum,” he says. “You don’t do that every day.”

Originally from New Jersey, Birrer has taught and practiced family, emergency, sports, and geriatric medicine in the U.S. and abroad for three decades, eventually moving into management positions. Since 2009, he has served as executive director of the medical division of Saudi Aramco, the world’s largest oil company. Based in Saudi Arabia, he oversees the hospitals and clinics that serve the firm’s employees and their families. “For me, management and mountaineering have been like a lock and key,” he says. “Each enhances the other.”

Having completed the seven summits, Birrer has hung up his crampons and ice axe, at least for the time being. He doesn’t rule out the possibility of tackling the high peaks of the Adirondacks, or perhaps climbing a volcano with his sons. But for now, he’s focused on his job. “When I’m at work” he says, “that’s my Everest.”

— Mark Fischer



No Place Like Home

An interactive website offers tips for the overburdened caregivers of dementia patients

Rosemary Bakker is a research associate in the Division of Geriatrics and Gerontology, but her experience in aiding dementia patients is much more than just professional. For years, she was a caregiver to her mother, who suffered from Alzheimer's disease. "My mother lived alone, she was a widow, and she slowly started showing problems with her memory—she forgot to pay bills, started to let go of the house-keeping, lost things, had some environmental hallucinations, and once she got lost in her own neighborhood," Bakker recalls. "I became very concerned. What was going to happen to Mom? Would she be able to live on her own? Would she accept home care? What about safety? But I found it hard to get information on how to really, effectively deal with a person who has Alzheimer's."

Much of what Bakker found involved

checklists, which often resembled those for child-proofing a home—for example, putting locks on kitchen cabinets. "That did not work at all for my mother," Bakker says, noting that her mom—who, unlike a toddler, was long accustomed to opening and closing her own cabinets—found such restrictions deeply upsetting. "She became very agitated, and I started to see that there was a great need to look at not only how to make the home safer, but how to enter into the world of a person who has dementia, because you can't separate the environment from getting good care."

Bakker's mother passed away about four years ago—around the same time that Bakker began work on a comprehensive online resource for caregivers facing the same challenges. The interactive multimedia website, thiscaringhome.org, went live in January. Based around a "virtual home"—with a kitchen, bathroom, living

room, and bedroom—it offers detailed advice on making life safer and more comfortable for people with dementia. Along with tips on products, organizational layout, and strategies for everything from cooking to bathing, the site gives users an invaluable perspective on how common household scenarios look to someone with dementia. Bakker stresses that sensory issues can exacerbate symptoms, which are then conflated with cognitive problems. "People with dementia tend to have problems with depth perception," notes Bakker, who previously created Environmental Geriatrics, an online multimedia course that helps medical students understand the perspectives of older patients. "We don't quite know why this occurs—it's not that there's anything physically wrong with their eyes—but if there's a monotone environment, the world tends to flatten out to them."

For instance, a person might pace around a room rather than sitting down—but if the chair is brown and so is the floor, it could be because they simply can't see it. "Maybe if you put a white or red cushion on the chair, they would be able to see it and sit down. We have documentation of that from case studies," says Bakker, who holds a master's in gerontology and is a certified interior designer. "The same thing could happen in the bath. One woman said to her daughter, 'Are you trying to drown me?' She could not see where the bottom of the tub was, but if you put in a bright green mat, all of a sudden she gets into the tub without a problem. Or a person may be wandering around looking for the toilet because the toilet is on a white floor against a white wall." Similarly, a patient could be assumed to have no appetite—when the problem is just that the food blends in with the plate. "You put the white fish and the white mashed potatoes on a bright blue plate, and they immediately start eating," Bakker says. "Those kinds of things are simple to do, but people don't know about them."

The site, whose major funders include the Alzheimer's Association, addresses other environmental issues, like the importance of even, adequate lighting; in shadow, for example, a large plant or coat rack could be mistaken for an intruder. Many dementia patients dislike the sensation of having water poured on their heads—so caregivers could use a no-rinse shampoo. Noise can also cause agitation, and caregivers are advised to beware of loud appliances like a dishwasher or fan. "You even want to be careful about what TV shows you watch, because some people with dementia can't tell what's real from what's not," Bakker says. "If there's a violent show on, it can provoke a catastrophic reaction."

Thiscaringhome.org gets about 3,000 hits a month, and demand for such resources can only rise: Alzheimer's currently affects 5.3 million Americans, a number that's expected to double by 2050. In July, the site won the Alzheimer's Recognition Award and a National Family Caregiving Award, both from the National Alliance for Caregiving. "I wanted to create a website that caregivers could come to and feel inspired by," Bakker says. "If they can help the person function better, there's some hope for a better day."

— Beth Saulnier

DAVID POKRESS / THE DAILY NEWS



Gift of life: Brian De Vale and Evette Leavy with sons Brian (left) and Alan

Double Donation

Long Island parents give kidneys to their twin sons

When Brian De Vale and Evette Leavy learned that their twin sons, Brian and Alan, needed kidney transplants, the Long Island couple immediately volunteered as donors. "No one suggested it—we just figured that's what we had to do," says De Vale, a public school principal. "We just hoped we'd be compatible."

Alan's disease was more advanced, and De Vale gave him a kidney in March 2009. But due to a bout of gestational diabetes she'd suffered while pregnant with the boys, Leavy, a school guidance counselor, was initially ruled out as a donor. As Brian's kidneys also began to fail, she undertook a diet and exercise regimen in the hope of qualifying by reducing the risk of future diabetes. She dropped fifteen pounds, and this July she successfully donated a kidney to Brian. Weill Cornell surgeon Sandip Kapur, MD, who performed both operations at NewYork-Presbyterian/Weill Cornell, notes that while parents are the most common living donors to children in need of transplants, a mother and father both donating is unusual. "I hadn't seen that in fourteen years of practice," says Kapur, chief of the Division of Transplantation Surgery.

The twins have focal segmental glomerulosclerosis (FSGS), a debilitating, potentially fatal disease that scars the kidneys, stunting growth and eventually requiring dialysis several times a week unless a donor organ can be found. Diagnosed at age five, they were treated at a Queens hospital for eight years until their condition worsened and they were transferred to Weill Cornell's Division of Pediatric Nephrology. Now fourteen, they've had excellent recoveries and are growing to healthy heights and weights. The family, which also includes an older daughter, has become involved with kidney and organ donation causes, raising money through a kidney health walk and supporting living-donor transplants. "Life has gone on," De Vale says. "The twins can eat regular food again, they go to birthday parties, they have pizza. They're just regular kids."

— Marc Campesano

Soothing Sounds

Weill Cornell and Juilliard students team up
for a musical tribute to Haiti

On the afternoon of January 12, 2010, Patrice Severe, MD, a physician at Haiti's GHESKIO clinic, found himself dodging falling rubble as he crawled to a nearby soccer field. The Port-au-Prince clinic was just sixteen miles from the epicenter of a magnitude 7.0 earthquake that shook Haiti that afternoon, and the field would quickly become a refugee camp for roughly 7,000 Haitians who lost their homes. "Life, as we had known it, will never be the same," he says.

Severe recounted those haunting moments during A Tribute to Haiti, an event held in November at the Juilliard School to celebrate Haitian culture and honor the efforts of the Weill Cornell-affiliated clinic. The concert was sponsored by the Weill Cornell Music and Medicine Initiative, a partnership between Juilliard and the Medical College that explores the relationship between the two fields.

Featuring performances by Juilliard and Weill Cornell students, the evening served as both a tribute to Haitian culture and a fundraiser for the GHESKIO clinic—recalling the tragedy of January 12 while pointing toward a better future. A performance of Michael Tilson Thomas's "Street Song Movements I & II" featured a brass quintet playing in darkness against the backdrop of a photo montage. The images illustrated not only a society devastated by natural disaster—collapsed houses, disfigured survivors, orphaned children—but also signs that Haitians will rise from the rubble and rebuild, overcoming not only the earthquake but recent challenges like a hurricane and a cholera outbreak.

The tribute included performances by medical students Jenna Devare '13 and Paul Dossous '11, and MD-PhD students Lee Kiang, Curtis O'Neal, and Ankit Patel, as well as selections highlighting Haitian culture, including a reading from Haitian-American novelist Edwidge Danticat's *Create Dangerously: The Immigrant Artist at Work* and a performance by Kongo, a traditional Haitian music group based in New York City. "The reason this program happened was because there was a grassroots movement from the students," notes clinical professor of psychiatry



AMELIA PANICO



Benefit concert: A brass quintet (top) plays against a backdrop of images from earthquake-damaged Haiti. Bottom: The evening included a performance by dancers from Kongo, a traditional Haitian musical group based in New York City.

David Shapiro, MD, the Initiative's program director and a member of the Medical College's Board of Overseers. "These two groups of students are so exceptional that they can go off and do something like this on their own."

The event had its roots in a series of salons in which Weill Cornell students selected a discussion topic from the medical literature, and Juilliard students offered musical accompaniment appropriate to the theme. The series was so successful that the students began to plan a public performance—and those meetings happened to coincide with the Haitian earthquake and its aftermath. Because of the Medical College's close ties to the GHESKIO clinic, the earthquake "impacted the Cornell community quite significantly," says fifth-year MD-PhD student and violinist Curtis O'Neal. "We thought, Wow, this is something that we can contribute to."

The music and medicine program had been met with similar enthusiasm when it was proposed a couple of years ago, notes third-year MD-PhD candidate Jeff Russ. "There was a ton of student support for it," recalls Russ, a student representative on the Board of Overseers. Many of his peers, he says, "wanted an excuse to keep their musical interests up while they're in med school." Though the Initiative was founded to give Weill Cornell students opportunities to continue their musical training, there is no set limit to its activities, Shapiro says. In addition to salons and performances like the Haiti tribute, the program may contribute to research on the role of music in medicine and offer performances as therapy for patients.

Psychiatry professor and concert pianist Richard Kogan, MD, notes that music and medicine have a shared history that dates back thousands of years. Apollo is both the god of music and of medicine, and in traditional depictions he carries a lyre by his side. More literally, in traditional tribal cultures the role of healer and musician is often shared by one leader. "Music is an enormously underutilized modality in healing," says Kogan, who serves as the program's vice chairman and artistic director. "Intuitively we know that music can lift spirits, improve mood, reduce pain, and lower anxiety. And there is the potential for an explosion in the use of music as a force of healing. A lot of this program's intent is to bring back these two fields that were originally together."

— Gabriel Miller

Home Away From Home

The renovated Center for Sleep Medicine offers a comfortable, well-appointed place for patients to lay their heads

Burt Alimansky was exhausted. The CEO of a firm that hosts conferences for private equity investors, Alimansky had always kept up a vigorous lifestyle. But he just couldn't seem to get a good night's sleep. "I was tired all the time, bone-weary tired," says Alimansky, who is in his mid-sixties. "I'm very active in business and everything else I do, and it was dragging me down." It wasn't that Alimansky couldn't sleep; it was that even after a night's rest, he didn't feel *rested*. "I'd get to the middle of the afternoon and my eyes were closing," he recalls. "It was frustrating."

Alimansky's cardiologist referred him to a pulmonologist, who in turn referred him to the Weill Cornell Center for Sleep Medicine, a joint effort of the Department of Neurology and Neuroscience and the Department of Medicine, Division of Pulmonary and Critical Care Medicine. Located on East 61st Street between First and York avenues, the Center offers comprehensive care for a wide variety of sleep-related problems; its staff and consultants include specialists in neurology, internal medicine, pulmonary medicine, ENT, pediatrics, psychiatry, psychology, bariatric surgery, nutrition, and endocrinology.

At the Center, pulmonologist Ana Krieger, MD, recommended a sleep study, and in spring 2009 Alimansky spent a night hooked up to myriad monitors, under the watchful eye of a technician. He was diagnosed with hypopnea—abnormally low respiration—and an oxygen absorption rate some twenty points below normal. He was advised to use a CPAP machine, which improves ventilation through positive air pressure, and his sleep became much more restful. Late last summer, he had a follow-up study—and got his first look at Weill Cornell's luxurious new Center for Sleep Medicine. Unveiled in late March, the 8,000-square-foot facility has the aura of a high-end hotel: fresh flowers; sleek, white-tiled private bathrooms; chic gray-blue walls; complimentary TV and wifi; high-quality linens and toiletries. "It's extremely well thought out," Alimansky says. "The rooms are comfortable, it's in every way like a first-class hotel. I had a great night's sleep."

Since the new Center opened, its patient load has tripled to almost 100 outpatient visits a week, and additional staff has been hired. The Center is staffed by physicians, nurses, and technicians, the latter monitoring the sleep studies of only one or two patients each at any given time. "We've been booked solid—it has been quite impressive," says Krieger, who co-directs the Center with psychologist Arthur Spielman, PhD. "We had high demand from patients who knew the new Center was opening and were waiting to do their evaluation, so we had a huge wait list that we had to take care of." Plus, she says, the need for sleep studies seems to be on the rise. "In the economic downturn, we've seen several new requests for evaluations related to stress and work," she says, "or to insomnia because of the financial crisis."

Offering a panoramic view of the 59th Street Bridge, the Center now boasts twelve bedrooms. Some have Murphy beds, so they can transform into physician consult



CENTER FOR SLEEP MEDICINE



Deluxe accommodations: The new sleep center features (clockwise from top) a welcoming lobby, large bathrooms, bedrooms that convert into physician offices, and beds with good-quality linens.

offices during the day. There are dedicated facilities for pediatric patients and accommodations for their parents. One bedroom has no windows, for sleepers who are highly sensitive to light, while others have blackout shades. Since conditions like sleep apnea are associated with overweight and obesity, there are two bedrooms designed for bariatric patients, with larger furni-

ture and beds that can hold up to 1,000 pounds. "It has been fabulous," Krieger says of the new facility. "It makes the process much easier for patients. The stress and anxiety about sleeping in an unknown place has been removed from the equation. I've had patients say this is better than what they have at home."

— Beth Saulnier

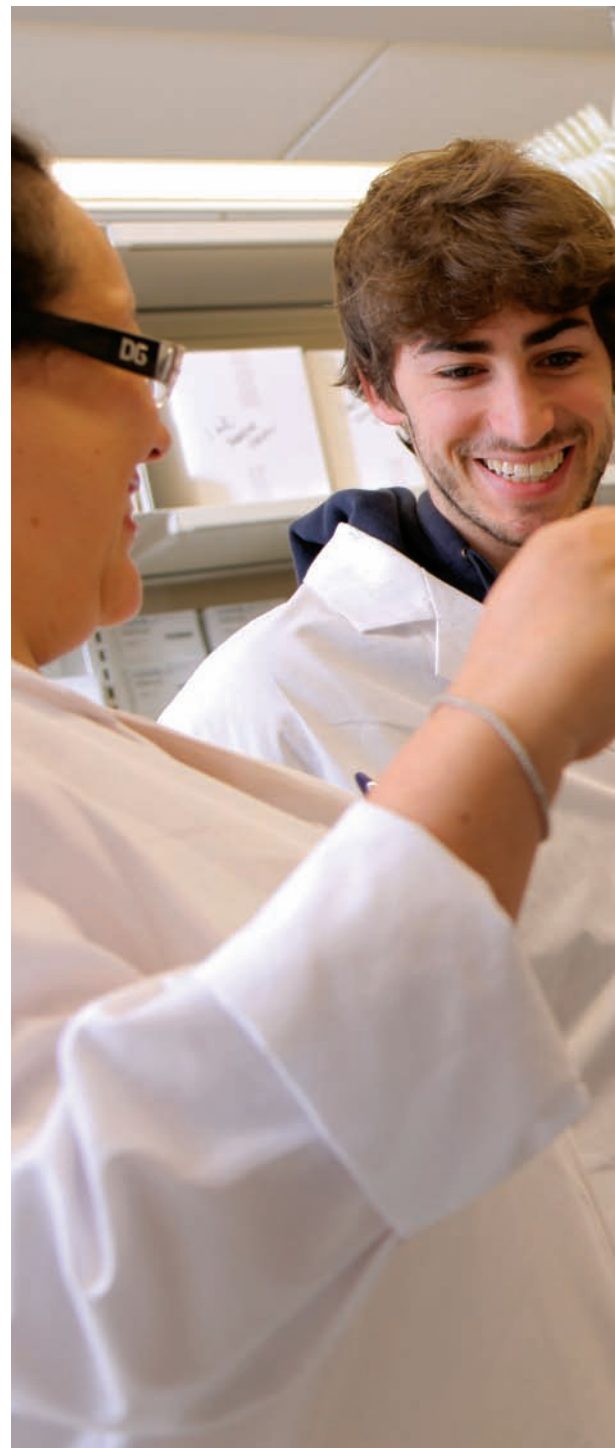
Discovery Zone

With rankings and student metrics on the rise—and the new Medical Research Building under construction—the Graduate School of Medical Sciences is poised for another quantum leap in research and education

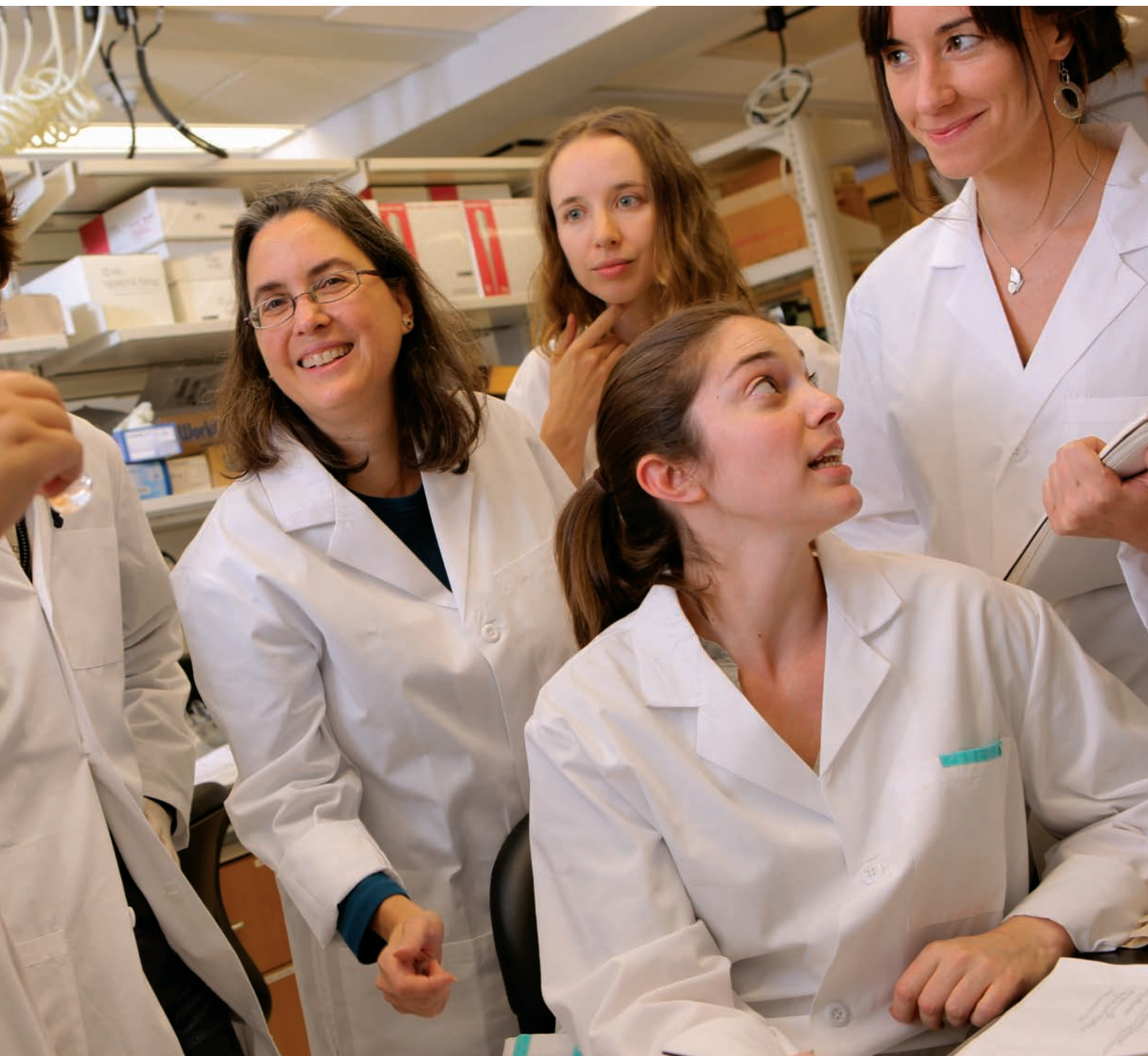
By Beth Saulnier

Photos by John Abbott

Fifth-year neuroscience graduate student Siobhan Pattwell is doing her PhD dissertation on how mice of varying ages remember painful stimuli—work that may offer insight into how humans process trauma. She is conducting her research under the mentorship of psychiatry and pharmacology professor Francis Lee, MD, PhD, but her focus has also been influenced by a rotation in the lab of professor BJ Casey, PhD, at Weill Cornell's Sackler Institute for Developmental Psychobiology. And when she needed a collaborator with particular expertise, she looked farther south in Manhattan, teaming up with an electrophysiologist at NYU who recorded synaptic activity in the mice's amygdala, the brain region responsible for fear behavior and learning.



Brain trust: Neuroscience professor Teresa Milner, PhD (center), with members of her lab (from left to right) Helaine De Brito Pereira, Eli Townsend-Shobin, Danielle Robinson, Megan Fitzgerald, and Tracey Van Kempen



"What I like the most about Weill Cornell is that it's a very collaborative environment," says Pattwell, a New Jersey native whose increasing interest in clinical topics has her pondering an MD. "I never feel secluded in my own little lab. If I have a question I just walk down the hall and ask someone—and it's not only within the walls of Cornell itself, but also in New York City. Plenty of my mice went for taxi rides down to NYU."

That sort of collaboration—both within Weill Cornell and with its peer institutions—is one of the hallmarks of the Graduate School of Medical Sciences. The school is itself a cooperative effort between Weill Cornell and the Sloan-Kettering Institute (SKI), a unique partnership between a medical school and a research institution that began in 1952. "I don't know any other pair of institutions in the country that functions quite this way," says

Thomas Kelly, MD, PhD, a molecular biologist and director of SKI. "It has been terrific for both institutions, and it's great for the students, who benefit enormously from having such a wide range of mentors to choose from. We want to teach people how to do creative, rigorous science—to educate students who are going to make a difference, who will do the kind of work that changes scientific directions."

Over the past decade and a half, the



Dean David Hajjar, PhD

Graduate School has been on the rise, both quantitatively and qualitatively. Dean David Hajjar, PhD, notes that when he took office in 1997, there were about 220 students; now there are more than 550. The average GPA of the incoming class has risen from 3.1 to 3.7, and GRE scores have increased from percentiles in the 60s and 70s to the mid- to high 80s. “We’re considered a hot school, and top students want to come here,” Hajjar says. “We’re one of the biggest schools in New York in the biomedical sciences, and people know we’re a school to be reckoned with.”

Nationally, the Graduate School now ranks Number 26 in *U.S. News & World Report*, up from Number 38 in 1997. Students apply from all over the world, and Dean Hajjar encourages these opportunities. Recently named a Fulbright Scholar/Specialist, he and Associate Dean Randi Silver, PhD, have made a concerted effort to reach out globally to recruit outstanding students.

The Graduate School is divided into seven programs of study for PhDs: biochemistry and structural biology; cell and developmental biology; molecular biology; immunology and microbial pathogenesis; neuroscience; pharmacology; and physiology, biophysics, and systems biology. In addition, it offers three master’s degrees: clinical investigation, clinical epidemiology and health services research, and health sciences for physician assistants. “You don’t apply to the Graduate School, you apply to a program,” explains Silver. “We don’t have a core curriculum—you specialize from the minute you come in the door. Although we have a lot of flexibility and you can work with any faculty member, your education is tailored to your scientific interests.”

Among the school’s strengths, Silver says, is a “superb” faculty-

student ratio, currently at 250 professors for 550 students. “Even though you’re working with world-class faculty here, they’re accessible,” says Silver, a professor of physiology and biophysics. “There’s great mentoring; you’re not a number. This is an intimate atmosphere and everyone’s door is always open. You see us in the lab—you don’t need to make an appointment three months in advance to see your P.I. And mentoring is a very important aspect of graduate education. Part of a student’s training is watching how a P.I. works, how you write grants, how you put a paper together.”

In addition to its cooperative efforts with peer institutions in New York City, the Graduate School has strengthened its ties to the Ithaca campus—a priority of President David Skorton, MD. Efforts include tri-institutional programs in computational biology and chemical biology among Cornell, SKI, and Rockefeller University; increased collaborations among Weill Cornell scientists and Ithaca-based biomedical engineers; and video-conferenced courses through the Clinical and Translational Science Center. Almost an entire floor of the new 480,000-square-foot Medical Research Building—which will double the dedicated research space at Weill Cornell—will be devoted to labs for visiting Ithaca faculty. “There has been a big move to link up the two campuses,” Silver says. “We’re all starting to collaborate more with each other.”

When the Medical Research Building opens in 2014, it will allow for the recruitment of up to fifty new faculty—many of whom will take on graduate students—and Dean Hajjar envisions a 25 percent increase in enrollment. The school has already stepped up recruitment efforts, including a revamped admissions website and increased efforts to draw underrepresented minorities and students from beyond the Northeast; Silver has visited campuses as close as Hunter College and as far away as India. “We prepare our students to be academic scientists in any realm in the world,” she says. “That’s a great thing to offer a young person. Being an academic scientist in this day and age is very competitive and very difficult. Every time you walk into the lab, it’s like an Olympic event. You need to hit home runs, and we prepare our students to be golden—to be the best.” Clearly, the vision of Dean Hajjar to develop the seven graduate programs from a small school to a major player in New York, if not the United States, is coming to fruition, as many leading scientists now recognize.



Associate Dean
Randi Silver, PhD

The following are profiles of eight scientists—four faculty and four PhD students—who exemplify the depth and breadth of research at the Graduate School of Medical Sciences.

In Formation

PhD student Jason Gray

Working in the lab of M. Elizabeth Ross, MD '79, PhD '82, professor of neurology and neuroscience, seventh-year PhD candidate Jason Gray is using mouse models to study the genes that cause birth defects—and how environmental factors, like levels of folic acid, can affect them. Gray is primarily focused on a gene called LRP6, encoding a receptor that plays a leading role in a developmental pathway important in cell proliferation and differentiation, known as Wnt signaling.

"Some of the genes that we study are important for development, because if they get turned off or mutated you end up with neural tube defects such as spina bifida," says the Baltimore native. "We particularly study several membrane receptors that allow cells to communicate with each other as the embryo develops. But if an embryo is carrying two defective copies of the gene, when the neural tube is supposed to close—in mice, around embryonic day nine—the folds won't properly appose in the embryo. They'll fail to curve and flip over correctly, and you end up with a defect like spina bifida." Gray is also studying how this gene is involved in patterning, telling the various cells of an embryo what they should become and where they should go, and how a simple nutrient—the vitamin folic acid—impacts LRP6 function to promote neural tube closure. "The embryo needs to know which end is up so that it can properly close the neural tube," says Gray, who plans to do a postdoc and then work in academia. "And it seems that may be getting disrupted when this gene is turned off."

Gray has recently reported striking evidence that folic acid influences Wnt signaling and that the optimal amount of folic acid for healthy birth outcome differs according to the gene variations carried by the embryo. "There's no one dose that fits all," he says, "and supplementation that is good for some genotypes can be too much for others." That's important, because currently prenatal folic acid is the only clinically effective



measure known to reduce the occurrence of spina bifida in humans.

Gray's research and stipend are funded through a National Research Service Award, an NIH grant that goes to less than 15 percent of applicants nationwide. In addition to his own work, he has hosted visiting medical students

from the Qatar campus, training them in tissue culture techniques. "I find this work exciting because it's directly translational," Gray says. "It has potential impact for developing genetic screens to help identify people at risk for neural tube defects, as well as offering possible treatments and enhancing prevention."

Gender Equality

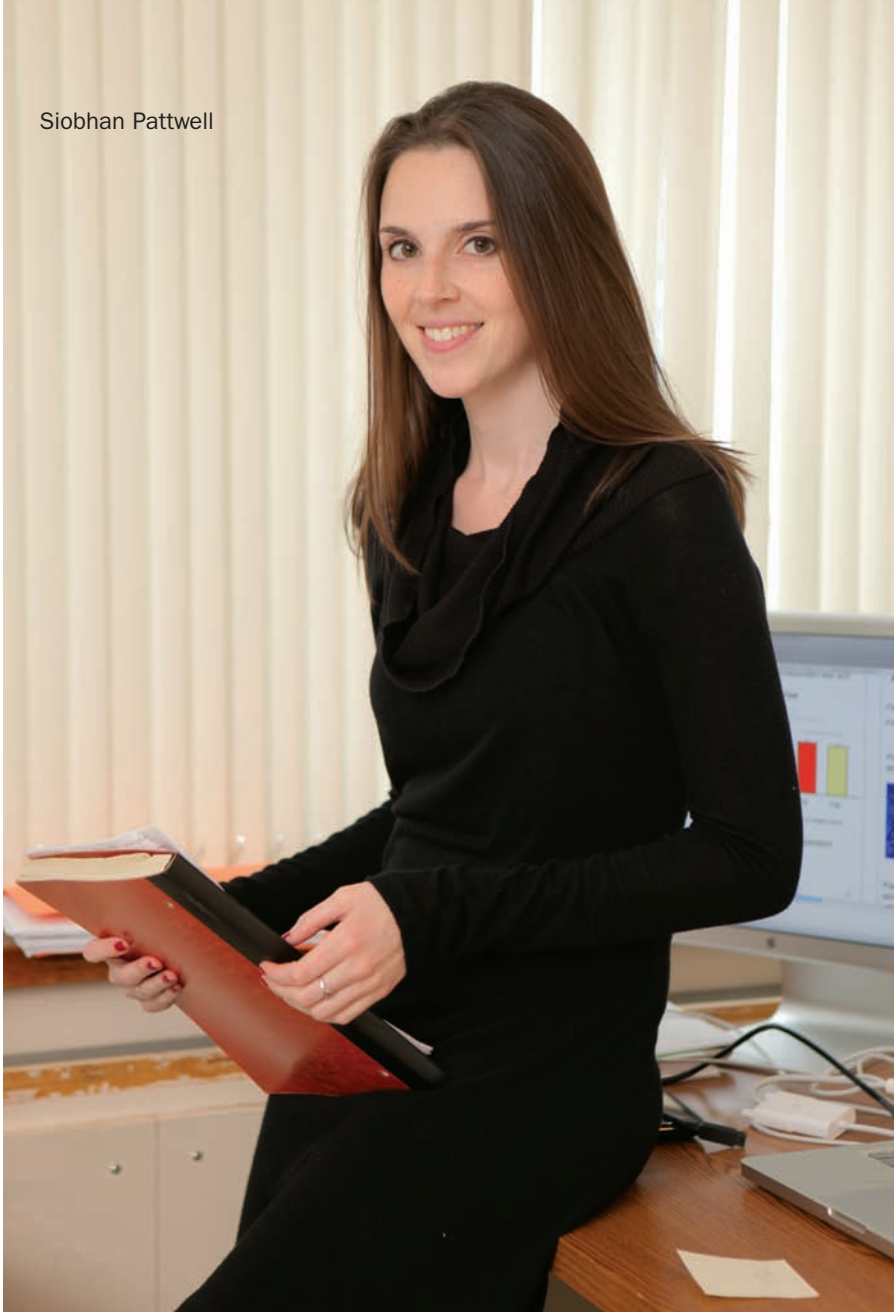
Teresa Milner, PhD, Professor of Neuroscience

Historically, pharmaceutical research has been skewed toward half the population—the male half. Neuroscience professor Teresa Milner aims to correct that. "Certain drugs work better in females than males, but most of the time it's the reverse—drugs work better in males than females. Most of the research that had been done up until the last fifteen years has been focused on males. But we're finally starting—not just in my lab but in many labs—to make headway in understanding what's different between males and females, so perhaps we can design better therapies."

Since women have higher rates of drug addiction than men, one focus of Milner's work is the role that the opioid system of the hippocampus plays in allowing an addiction to take root. "We're trying to understand the mechanisms, with the goal of designing therapies that would be helpful in preventing relapse," she says. Milner is also exploring the role of hormones in women's health—how they affect plasticity in the hippocampus, as well as their effects on the cardiovascular system. "We're particularly interested in what happens over the life cycle, when females hit menopause, so we've been developing mouse models of menopause," Milner says. "We're looking at changes in the brain that happen during menopause that could affect hypertension, depression, learning, and memory."

One goal is to develop improved hormone replacement therapies. To that end, Milner is exploring the window of opportunity—between the onset of menopause and five years after the final menstrual period—when hormone replacement is most effective. "We want to design therapies so we can get the positive effects of reducing depression and memory loss," she says, "but not the negative effects like hypertension and cancer." Her work encompasses myriad avenues of investigation, from electron microscopy to physiology and behavior. "I like that approach of understanding the whole body, but I like a lot of the technical aspects, too," she says. "I enjoy working with my hands, and it's a very hands-on type of science."

Siobhan Pattwell



Fear Factor

PhD student Siobhan Pattwell

Adolescents have one foot in childhood, the other in the adult world. Fifth-year neuroscience PhD candidate Siobhan Pattwell has been using animals with four paws to explore how the adolescent brain is designed to make the transition. Under the mentorship of Francis Lee, MD, PhD, associate professor of psychiatry and pharmacology, and BJ Casey, PhD, director of the Sackler Institute for Developmental Psychobiology, Pattwell has been studying fear learning in a mouse model through childhood, adolescence, and adulthood.

Using classical principles of Pavlovian conditioning, Pattwell puts the mice in a chamber and gives them an electric shock paired with an auditory tone, then studies the animals' subsequent fear of the box and tone, measured by how long they freeze. "If you fear-condition an adult mouse and test them the following day, their fear response is high," Pattwell says. "They're scared of being in the box; they remember it as being a bad place. But when I started looking at this across development, I realized that the adolescent mice showed no fear response at all. We wondered if they just weren't learning, because there was nothing about their

behavior that indicated they remembered even being in the box, let alone that they were shocked."

The researchers investigated various angles and ultimately discovered differences in molecular signaling in the hippocampus, the region of the brain known to be responsible

'Adolescence is a time when you're leaving your environment, your home, the safety of your mother.'

for picking up contextual clues inducing fear. The adult mice showed increased signaling when reintroduced to the chamber; the adolescents didn't. Then, during routine testing of some new software, Pattwell accidentally discovered something else: when those adolescent mice grew up, they *did* remember the shocks they'd received as teens. "So they did learn the memory," says Pattwell. "They were just not capable of retrieving it at the time."

Even when adolescents lacked the ability to retrieve these specific context-based fears, Pattwell says, they had normal responses to direct fear stimuli. In evolutionary terms, she says, that makes sense. "Adolescence is a time when you're leaving your environment, your home, the safety of your mother," says Pattwell. "You can't be afraid of everything, or you'll never leave—you won't find food or a mate. So you need this exploratory, thrill-seeking period where you venture out. But at the same time, in terms of the mouse world, you do need to be afraid if you hear a hawk overhead."

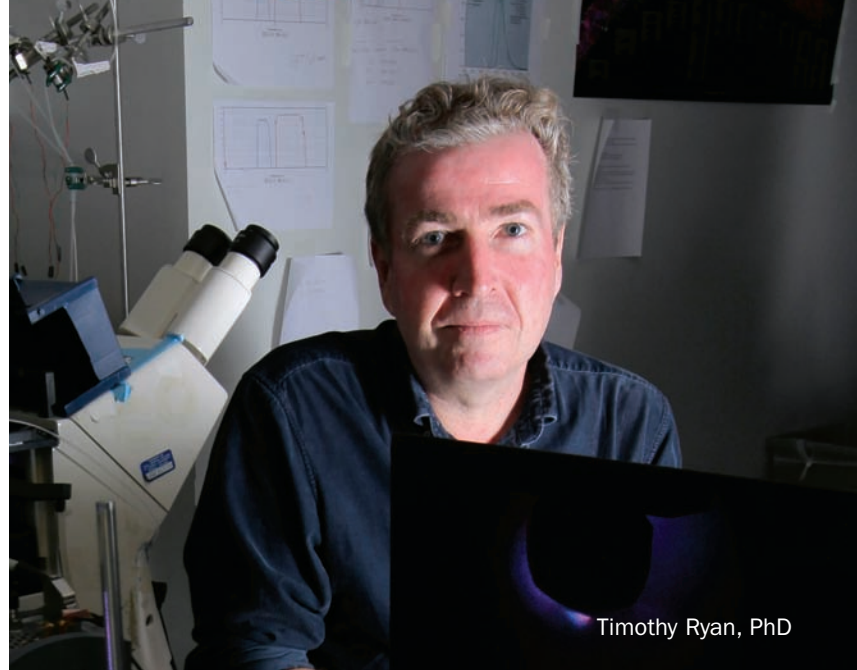
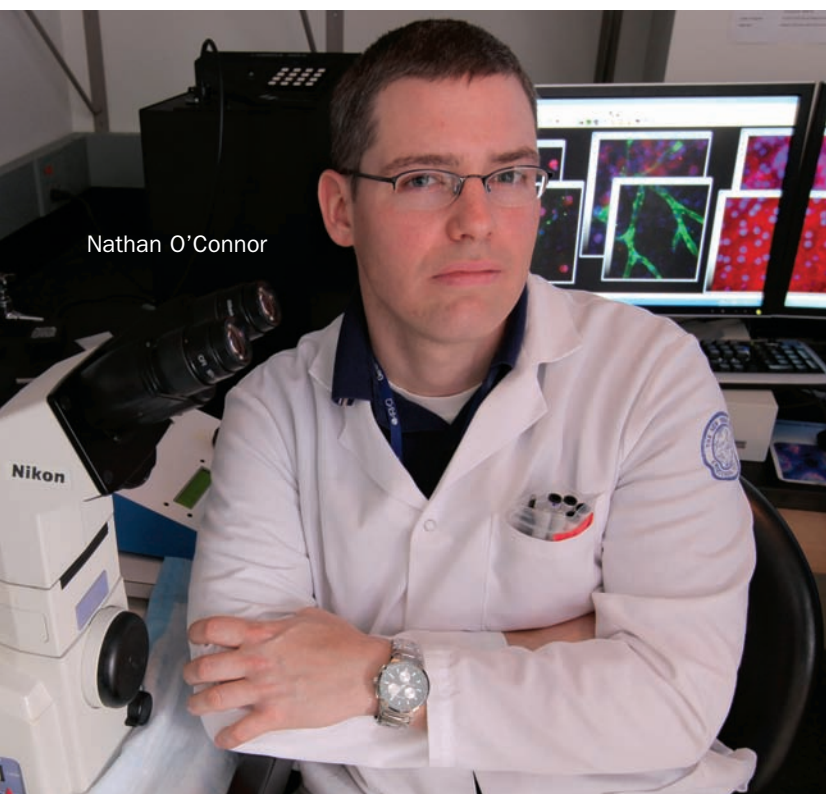
In addition to offering insight into the adolescent brain, the work underscores the importance of timely intervention; the developmental period in which fear is suppressed seems to double as a window in which treatment may be effective in keeping the memory from ever cropping up later in life. Says Pattwell: "The broad implications of these findings suggest that if children have experienced trauma, even if they seem OK at the time, they may benefit from treatment to prevent something bad from happening down the road."

At First Sight

PhD student Nathan O'Connor

As physiology and biophysics grad student Nathan O'Connor notes, the AMA has projected that within the next three or four decades, the number of people going blind or suffering vision loss due to diabetic retinopathy will triple—and that's a conservative estimate. In the lab of physiology and biophysics professor Randi Silver, PhD, O'Connor has been using a rodent model to study the early stages of the degenerative eye disease, when its most prominent characteristic is vascular leakage. "One of the first things that we discovered was that cells not normally found in retinal neuronal tissue, called mast cells, are showing up there," says O'Connor, who holds undergraduate and master's degrees in engineering from Rensselaer Polytechnic Institute. "That was striking. The next thing was that these cells are in close apposition to vessels, a potential hotspot for early diabetic retinopathy."

This discovery points the way to a potential—or even a preventive—treatment using an existing class of drugs, called mast cell stabilizers, used to treat asthma and conjunctivitis. But O'Connor notes that there are delivery issues; the medications are now available only in nebulized form or as eye drops. "The rats have a pump delivering the drug to the peritoneal space, but you can't do that with a person," says O'Connor, who's contemplating a career in industry. "You can give drops, but with humans most of the drug would drain into the nasal cavity." Ultimately, diabetic patients would likely get an injection, either directly into the eye or next to it; with a sustained-release formulation, it could be given annually as a preventive measure. "Diabetics know that even with tight glucose control, they're likely to develop some form of retinopathy after a given number of years—and it seems that once it starts, it's hard to get it under control," O'Connor says. "The idea that a simple drug that could save people from going blind—almost like aspirin therapy in the cardiovascular realm—is pretty exciting."



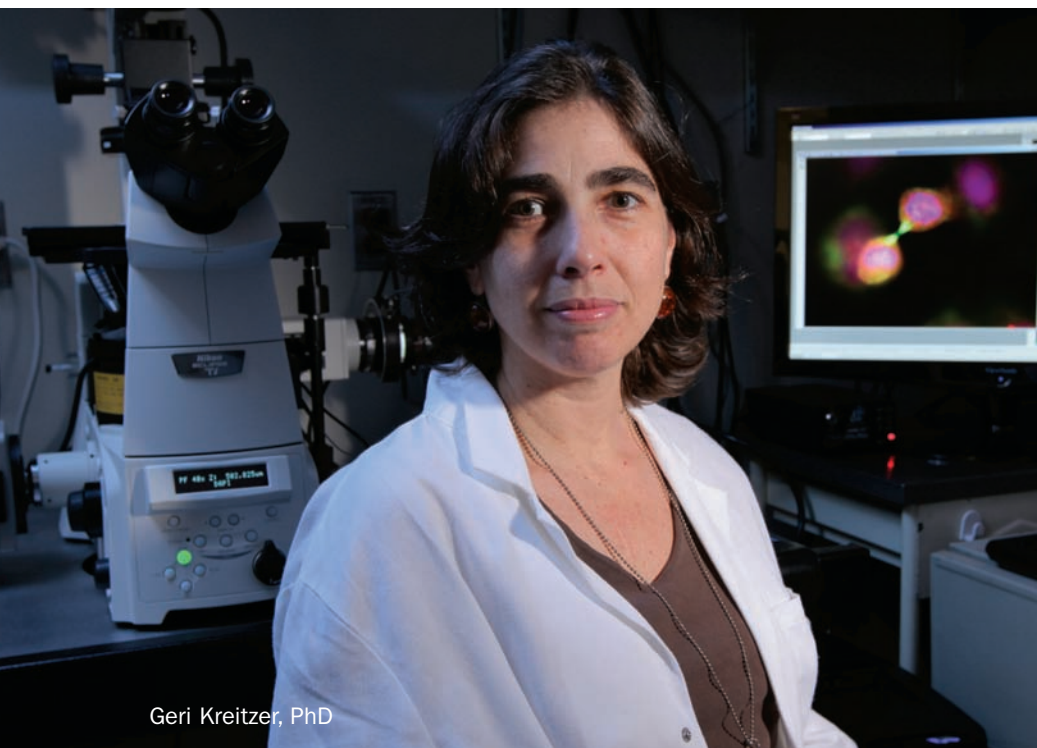
Great Communicator

Timothy Ryan, PhD '89, Professor of Biochemistry

For the past seventeen years, biochemist Timothy Ryan has been studying the synapse—the organelles that allow the brain's 10 billion neurons to communicate with each other. "What we do is pretty basic science," he says, "trying to understand how this machinery works." That basic work has broad implications—everything from treating depression to curbing drug abuse to preventing neurodegenerative diseases like Alzheimer's. "It behooves us to know what these proteins are normally doing and what the mutated state is—what is going wrong," he says. "In the long term we need a repair manual in place. We have to understand how these things work if we hope to fix them."

Ryan notes that the synapse is believed to have some 1,000 constituent parts. And while science has known about synaptic activity for decades, only recently have researchers begun to get a look inside. "It's as if you're trying to understand something like the combustion engine of a car, where you are handed a detailed parts list and everything is shrunk to tiny levels," says Ryan. "Now we have a parts list, and it's reasonably complete, but we know there are many things involved in this process. They're very complicated machines, and they're designed to last a lifetime. That alone is an incredible challenge—how these things are built and maintained and how they fix themselves, and also how this overlaps with disease processes."

About half of his lab's time is devoted to developing the technology to address those fundamental questions. "Neurons, of course, are already small things, and synapses are even smaller—individually, they occupy only a cubic micron, a volume of ten-to-the-minus-fifteen liters, or a femoliter. These small structures contain a huge number of parts, and we use optical approaches that allow us to reveal the function of the synaptic communication as it's going on, as well as tell us something about where and when a particular protein is participating. So we design optical tools that can work inside synapses and tell us about the biochemistry that is going on. In my lab, we know we always have to push the technology as far as possible, because you're only as good as the tools you use."



Geri Kreitzer, PhD

Motor Trends

Geri Kreitzer, PhD, Associate Professor of Cell and Developmental Biology

Many human diseases are associated with changes in the localization of one or several proteins on the surface of epithelial cells. In cystic fibrosis, for example, a chloride channel protein of the lungs' epithelial cells gets mislocalized—essentially, sending salt pumping in the wrong direction and leading to accumulation of thick mucus in the airway. "A minor change in the localization of one particular protein on the cell can affect the whole function of the organ and contribute to disease," says cell and developmental biology associate professor Geri Kreitzer. "What we study are nano-motors, known as kinesins, and how they carry these proteins to their appropriate destination in cells."

Kreitzer's lab is devoted to epithelial biology—exploring how epithelial cells become epithelial, how they develop their characteristic shape and function. "Epithelial cells cover all your body surfaces—your airway, gut, genital tract, kidney, colon—and when they stop functioning properly, you end up with severe physiological defects," Kreitzer explains. "Epithelial cells form the barrier between the outside world and the sterile environment inside your body. Ninety

percent of all cancers arise from either subtle or dramatic changes in epithelial cell shape and function, and it's thought that their contact with the environment makes them a prime target for numerous pathogenic agents."

Using cultured epithelial cells and high-resolution, time-lapse imaging, Kreitzer and her group are exploring how tiny nano-motors that move along the cells' cytoskeleton help form and maintain epithelial cell shape and function. "They literally are motors—they move around on these cytoskeletal networks that are like train tracks," she says. "We're trying to understand how they recognize and control the delivery of specific proteins to appropriate sites on the surface of these cells." Kreitzer studies both normal and pathologic cells, trying to understand how the protein-depositing system can go awry, leading to diseases like cancer and polycystic kidney disease. "Science gets me out of bed in the morning," Kreitzer says. "What I love about being a scientist is that every day you have to incorporate what you learned the day before into what you're going to do next. I find that constant intellectual stimulation very exciting."

Acid Test

PhD student Crystal Darby

There are many fronts in the battle against tuberculosis. One tactic is to explore how *Mycobacterium tuberculosis* survives within the harsh environment of the human body—and try to devise ways to thwart it. Fifth-year biomedical sciences grad student Crystal Darby is focusing on *Mtb*'s ability to resist the acid stress it encounters within activated macrophages inside the host. Darby and her colleagues in the lab of Carl Nathan, MD, chairman of the Department of Microbiology and Immunology, have found that pH homeostasis is vital to *Mtb*'s survival—and they hope that knowledge could point the way to new drugs to combat the disease.

To that end, Darby designed a high-throughput screen to identify small molecule inhibitors of pH homeostasis in *Mtb*. In a collaboration with the Infectious Disease Research Institute sponsored by the Lilly TB Drug Discovery Initiative, she took the screen to Seattle and conducted successful experiments using the Institute's equipment. "Then they screened a collection of Lilly's compounds on their own, and the assay worked for them as it had for me," she says. "For me, that was an accomplishment."

Darby notes that when she started the project, little had been done on the effect of acid on tuberculosis, beyond the work of a previous graduate student jointly supervised by Nathan and professor Sabine Ehrt, PhD, who had identified several *Mtb* mutants unable to recover from acid stress. "There were so many open-ended questions that needed to be answered," she says. "It was exciting, because it could have taken any different turn and path." For Darby—living in a developed nation where TB is relatively rare—it has been challenging to make the connection between her work and the disease's global scope. "We don't often see the face of the disease here in America," she says. "Attending conferences where we meet doctors from China, Southeast Asia, Africa, Eastern Europe, and Haiti who work with TB patients all day has opened my eyes to how important this research is."



Anthony Sauve, PhD

Thin Is In

Anthony Sauve, PhD, Associate Professor of Pharmacology

Could severe calorie restriction offer a fountain of youth? In scientific studies of animals and other creatures, a calorie-restricted diet has been found to promote longevity. "If you put yeast on low glucose, they replicate more times," says pharmacology associate professor Anthony Sauve. "If you put worms like *C. elegans* or flies like *Drosophila* on low-calorie diets, they have longer life spans. Work done at Cornell in the Thirties showed that if you put mice and rats on low-calorie diets, they also live longer—and not just a little bit, but 50 percent longer." The same is thought to hold for primates; a study on rhesus monkeys has been going on at the University of Wisconsin for more than two decades. But, Sauve notes, "we don't know yet whether calorie restricting would work on humans, because it looks as if you would have to do it for a major part of a lifetime, so we don't have any data."

While researchers still have much to learn about how and why calorie restriction affects lifespan, they know that a class of enzymes called sirtuins plays a role. Sauve's lab is investi-

gating sirtuins, and their relationship to the metabolism of a form of vitamin B-3 known as NAD. "What it boils down to in the big-picture sense is that these enzymes look as if they control aging processes, or are fundamental to them," Sauve says. "We also know that things like low-calorie diets, which activate these enzymes and also up-regulate NAD metabolism, can improve health profiles in humans. So at the end of the day, we would like to understand how these enzymes and NAD metabolism slow down the aging process, confer longevity benefits, and improve health—and then take a pharmacologic approach, to give people therapeutics that tap an ancient pathway." Such a drug, known as a CR mimetic, could not only retard the aging process but protect against neurodegenerative diseases such as Alzheimer's. "What is really cool is that in 2000, we did not know sirtuins were enzymes—this is a whole new field that has blossomed in the last ten years," Sauve says. "It has exciting downstream implications, and every day there are new questions and discoveries." ●

' What it boils down to in the big-picture sense is that these enzymes look as if they control aging processes, or are fundamental to them.'

Mind and Body

With a renovated facility and newly integrated program with Columbia, the Westchester-based eating disorders center helps patients suffering from anorexia nervosa, bulimia nervosa, and related conditions regain a healthy relationship with food

By Beth Saulnier

Illustration by Vivienne Flesher

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n eating disorder is a very intimate thing,” George Nasser observes. “It’s hard to describe. There’s your soul, and then the next layer is the eating disorder. It’s subconscious and all-controlling.”

Now thirty-five, the Long Island native has struggled with unhealthy eating for more than two decades. He traces his food issues back to adolescence, when he watched his mother battle excess weight with a series of diets. “I was never overweight, but I had this connection where if she had to suffer, then I did too—it was only fair,” he recalls. “I started counting calories, and if anything was high-fat or high-calorie I avoided it. A regular person can diet and stop when they’re happy, but a person predisposed to an eating disorder can’t stop. It becomes an obsession.”

After earning an associate’s degree in physical science from Nassau Community College, Nasser entered SUNY Stony Brook, but his illness forced him to drop out. He joined the Navy—but a severely restricted diet alternating with episodes of bingeing and purging left him too weak to exercise, and he was discharged after a month. The experience finally prompted him to seek treatment; in 2000, he was diagnosed with anorexia nervosa and admitted to the inpatient eating disorders unit at NewYork-Presbyterian/Weill Cornell’s Westchester campus. But like many anorexia patients, Nasser suffered a relapse after he went home. “It’s like someone with depression who takes their medication and they feel better—so they don’t take it anymore,”





Evelyn Attia, MD

JOHN ABBOTT

Nasser says. “You gain weight, you feel better, but then you start to restrict your food and it slowly creeps back.”

Nasser returned to White Plains for another inpatient stay in 2003—and another two years later. By 2010 he was living in Las Vegas, working at a UPS Store, and at an all-time low, both physically and emotionally. At five-foot-nine, he weighed just ninety-four pounds. “Every night before I went to bed, I prayed I wouldn’t wake up—that’s how bad it got,” Nasser says. “I was just going to work, coming home, and either not eating or bingeing and purging. I had no life. There was nothing to look forward to, just a stalemate job and the eating disorder. On my days off I would sleep the whole day. I wouldn’t even get out of bed, because I didn’t want to deal with food.”

Nasser came back to Weill Cornell for a fourth stay. But this time he was in a different emotional state, so the experience felt different to him. The program had changed as well. After being closed for a year-long renovation, the eating disorders center reopened in December 2009 in a new, custom-designed facility. It had merged

with a sister program at Columbia—offering access to its research-oriented treatment center in Manhattan, among other resources. And it was under new leadership, with Evelyn Attia, MD, at the head of the integrated program. “This is the only specialized psychiatric inpatient unit for eating disorders in New York State,” Attia notes. “It is a tremendous luxury to have a renovated space where we’re able to address the specific needs of these patients. We have been full or near full since the day we opened, and that really demonstrates the need.”

After a stay on the Westchester campus, where Nasser concentrated on his acute issues and began to regain weight, he transferred to the Manhattan program where, for the first time, he was able to make meaningful progress on weight maintenance. As of early fall, his weight had stabilized at 150 pounds, and he was contemplating a return to Las Vegas and a career as a casino dealer. “I feel like a million dollars,” he says. “It’s like driving a new car.”

Nasser’s experience of coping with anorexia nervosa over the course of years is hardly atypical. Eating disorders are among

the most intractable psychiatric illnesses—and the stakes are high. “Anorexia nervosa is accompanied by a mortality rate as high as we see in any psychiatric illness,” says Attia, a professor of clinical psychiatry. “Schizophrenia and bipolar disorder are known to have high rates of death, and anorexia nervosa has rates just as high.”

As Attia and her colleagues note, eating disorders are the type of illnesses that mental health professionals call “ego-syntonic”—that is, for those in their grip, they seem not only normal but integral to one’s sense of self. “One of the challenges in treating this disorder is that, in part, patients feel in sync with their disorder, adhere with conviction to the symptoms—namely, behaviors that match their striving for thinness—and often resist professional help,” says assistant professor of psychiatry Alessia de Paola Gottlieb, MD. “On one level, patients with eating disorders are not bothered by their symptoms and may not be willing to give up those behaviors that they believe make them thin, such as restricting food, bingeing and purging, or using laxatives or diuretics. In many cases, it’s their medical compromise and their compromise in function at school or work that prompts them to treatment. This is a different model of clinical mental health presentation, unlike when patients seek help to treat the uncomfortable symptoms associated with anxiety, depression, or psychosis. It makes this group of patients a challenge to engage in treatment, as they often come to treatment with hesitancy and fear.”

Because patients with anorexia nervosa are more likely to be severely underweight than those with other eating disorders, and therefore often need hospital-based re-feeding, they make up the majority of the unit’s population—and they’re the most challenging. “With the physiologic and psychologic symptoms of anorexia nervosa, we often meet patients in the middle of a vicious cycle of behaviors that self-perpetuate,” Attia says. “Interrupting that—engaging them in why life can be richer and offer many more opportunities if they pull themselves out of it—is very hard.” Those with bulimia, by contrast, are often more open to treatment. “Bulimia nervosa patients are clearer about the fact that they want to stop the binge-purge behaviors,” Attia says. “They may be afraid of gaining weight, they may be overly concerned with body shape, but there’s part of the symptom package that they find ego-dystonic—uncomfortable and important to change—

so it's easier to help them."

The physicians note that for patients with other mental illnesses, an elevation in mood or a drop in anxiety is its own reward. But for those with anorexia nervosa, which strikes from one-half to 1 percent of females in the U.S., treatment leads to the very thing they fear most: gaining weight. "The mainstay of anorexia nervosa is the failure to maintain a minimally acceptable body weight, and the diagnostic criteria include the reluctance to normalize weight—the fear of fat and all of the body shape and weight concerns that accompany that," Attia says. "The criteria that define this disorder run right in the face of the goal of treating its primary symptom."

One way in which the staff tries to help patients understand the importance of reaching a normal weight is by stressing the damaging effects of malnutrition on physical health. While patients may not see how severely underweight they are when they look in the mirror, medical tests don't lie. "If they are severely malnourished, or if they're engaging in behavior like purging or laxative abuse or diuretic abuse, we show them what has happened to their bodies," says assistant professor of psychiatry Parinda Parikh, MD. "We share their labs with them—their electrolytes, EKG, liver, kidney, heart functions—and as they're progressing, we show them where they're going."

At the Westchester facility, known as "The Outlook," patients are supervised during and after meals; those who are unable or unwilling to eat may be fed through a nasogastric tube. All participate in individual, family, and group therapy, and some receive medication. Recreational activities are available, from movies to arts and crafts to yoga, and patients needing a break can relax in "comfort rooms" with soft furniture and calming décor. Of the seventeen beds, six are reserved for adolescents (aged thirteen to seventeen), who have separate facilities like a classroom for daily schoolwork. The unit is staffed by psychiatrists, psychologists, social workers, nurses, recreational therapists, and trainees such as child psychiatry fellows and occupational therapy students. But its atmosphere is more homey than many institutional settings, featuring hardwood floors, walls painted in soothing shades of light green and yellow, large curtained windows, and plush furniture with colorful upholstery. The walls are dominated

by huge nature photographs, which Nasser found particularly pleasant. "They're beautiful, crystal clear, almost like looking out a window," he recalls. "Being in treatment is not the easiest thing, and a nice environment lessens the stress and raises morale."

In addition to restoring weight—for an inpatient stay, the goal is to reach 90 percent of the weight recommended as normal for the patient's height—treatment is aimed at repairing a patient's dysfunctional relationship with food. Many of those with anorexia nervosa have elaborate rules about what and how they eat. "Many patients with these disorders develop a range of rules and rituals," Attia says. "There is often a whole set of eating behaviors that have gone awry: meals that take too long or are too short, cutting foods into many pieces and eating in a certain order, or only being willing to eat foods of certain colors or types. We introduce our patients to normal food from the day they arrive, so they're exposed to eating in a normative fashion—no matter how much they fear it. We want patients to realize that it's essential to treatment. Food is their medication." Those who've earned privileges by complying with treatment protocols can take part in "meal challenges," in which they leave the unit to eat in the campus cafeteria under

staff supervision. Patients also participate in supervised cooking, performing tasks that may seem mundane but are often challenging. Says Attia: "Preparing a school lunch—just taking sandwich meats and bread and grabbing what they need from the fridge and putting it in a brown bag—becomes an exercise."

Patients are also encouraged to tackle their "fear foods," most commonly those that are high-fat or high in carbohydrates like desserts, breads, pizza, or fried foods. "A lot of our patients benefit from these challenge experiences because, with this illness, they have slowly isolated themselves from family and friends, stopped going to restaurants," Parikh says. "With their distorted thinking, they cannot accept that eating one French fry will not make them gain five pounds." For Nasser—who'd been known to make batches of desserts and then binge and purge—one particularly loaded area was baked goods. "You look at a muffin, and you think if you eat it, you're going to gain fifty pounds," he says. "I can't look at a muffin like somebody else does. I think of how high-calorie it is—and if I eat it, I won't stop. I'll need another one, I'm going to gain weight, I'll be out of control. So your relationship with food is warped. It's not rational."

Calming atmosphere: The newly renovated unit features comfortable furniture, wood floors, pastel walls, plants, and large photos of nature scenes.



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Like many illnesses, eating disorders are a combination of nature and nurture—those predisposed can develop them if they're triggered by their environment. Western society, with its premium placed on thinness—along with an unprecedented availability of cheap, high-calorie foods and an increasingly sedentary lifestyle—offers a cauldron of mixed messages that foster unhealthy eating. “There’s no question that we’ve got an intense focus on body shape, weight, and dieting in our society,” Attia says. “What’s also interesting is that the numbers of dieters are at dramatic rates—you hear that 70 to 80 percent of junior high school kids have tried a diet—yet the numbers for anorexia nervosa are sitting at that one-half to 1 percent of females, so it’s not entirely about those messages, even if they set the stage for vulnerable individuals to develop the illness. Environmental factors may explain regional differences in rates of anorexia nervosa. Prevalence is higher in the U.S. and Europe than it is in developing countries such as the island of Fiji, where there are different norms of beauty. But even in Fiji, body dissatisfaction issues have been described as television and other global media have been introduced. So all parts of the world are not equally affected—but there’s no question that the world is shrinking in terms of cultural differences.”

Historically, the stereotypic patient with anorexia nervosa was a white, teenage girl from an upper-middle-class family, but the disease now affects a much broader population. Physicians are seeing more males and patients from diverse ethnic and racial backgrounds. In addition, patients are presenting across a broader range of the life cycle than what was considered typical, with some presenting in middle age and others prior to puberty. Recently, the Westchester center has noticed an up-tick in children of immigrants. “These children get one message in the U.S. about what are considered desirable signs of wealth and health,” says de Paola Gottlieb, “yet they’re living in a home with family members who

may have different ideas—perhaps more traditional culturally driven ideals about weight and shape. These kids often feel caught, psychologically and culturally, between these two worlds.”

Individuals with anorexia nervosa are still predominantly female, with males comprising about 10 percent of cases. Males are more heavily represented in other eating disorders, making up roughly 25 percent of people with bulimia and about 40 percent of those with binge-eating disorder, characterized by eating large amounts of food without compensatory purging. “There’s some evidence that the numbers have gone up in the last couple of decades, and that the ages at which we’re either seeing or willing to recognize these disorders are broader,” Attia says. “We’re hearing about younger and younger children who are affected. We’re hearing about individuals who are becoming ill, or are still ill, much later than had been previously thought. The numbers are going up, but just how much is hard to quantify.”

With its new collaboration with the

research-oriented Columbia program, the Westchester facility will be the site of more investigations into the causes of eating disorders and their potential treatments. Under a five-year grant from the National Institute of Mental Health, the integrated center is currently studying the effects of the antipsychotic medication olanzapine on outpatients with anorexia nervosa. Other possible research topics include the relationship between factors like length of stay and treatment methods on relapse rates, and the effect of disclosing (or withholding) the results of routine weigh-ins on a patient’s weight restoration. “Anorexia nervosa remains a challenging condition; we in the field are aware that there has not been as much progress as there has been for bulimia nervosa and that new treatment approaches are needed,” Attia says. “A number of new treatments are being developed, tested, and tried—no one is giving up on these patients. And just as interesting as the large numbers who relapse are the significant numbers who recover fully, live to tell the tale, and inspire us to keep working hard.”



Alessia de Paola
Gottlieb, MD

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Attia stresses that for many patients, the physical restoration of weight goes a long way toward normalizing mood—which then facilitates further improvements in eating habits. She cites a government-sponsored experiment on severe weight loss, conducted at the University of Minnesota toward the end of World War II, aimed at understanding the effects of starvation in postwar Europe. “When you read about the changes that these previously healthy men underwent from weight loss alone, you’d think you’re reading about a group of modern-day women with anorexia nervosa,” Attia says. “The subjects in this historic study started focusing on the recipes in local newspapers, cutting them out and thinking about what they might cook for family members. They became extremely obsessional and their eating practices became rigid. They would eat in a certain order, and some of them would cut food into small pieces and mix it up with unusual condiments to change the taste. Some would not eat early in the day and hoard everything so they had a large meal at dinner. They lost their libido and their sense of humor and became depressed and lethargic.”

For Attia, such evidence calls into question the traditional cause-and-effect relationship between eating disorders and certain personality types. “It used to be thought that traits like obsessiveness and rigidity somehow predisposed someone to having an eating disorder, when actually it seems that those symptoms either develop as a result of, or become exacerbated by, low weight and malnutrition,” she says. “Our patients are sure that they’re obsessional and depressed and anxious and that’s just the way it is. But we can say on good authority that the weight restoration itself is going to help them psychologically.”

That’s what has happened to Cathy. Trained as a make-up artist in her native Ireland, the twenty-two-year-old came to the U.S. in October 2009 to enter an inpatient eating disorders program in Pennsylvania for treatment of anorexia. She stayed for three weeks, but her family was unable to afford further inpatient care; she left without reaching 90 percent of normal weight and moved in with a sister who lives in New York. “I thought, I can do this myself, I’ll follow my meal plan,” she says. “I left with all good intentions, but I got obsessed with food, and if I didn’t eat set amounts at a certain time I got anxious.” Gaining some weight over Christmas prompted her to resume restricting food as

well as bingeing and purging. And when she got a job as a waitress and moved into her own apartment in the city, her symptoms worsened. “I would binge, purge, and sleep all day,” recalls Cathy, who asked to be identified only by her first name. “I knew I needed inpatient care, but I couldn’t afford it.”

Desperate for help, she took a handful of Klonopin and Tylenol and called 911. She was taken to a Queens ER, and after several transfers she was admitted to the Westchester eating disorders facility. “They

under her skin. At the time, she says, she thought she was beautiful. But in retrospect, she admits, “I looked like someone in a detention camp. I was so malnourished, like a skeleton. When I look at pictures now, my head seems massive, like it’s going to fall off my body, and my eyes just hang out of my head. All I see is a skull. My skin was yellow and my bones were sticking out. I couldn’t sit because my bum hurt. I was cold all the time, wearing three layers to bed. It was really bad.”

‘No one is giving up on these patients. And just as interesting as the large numbers who relapse are the significant numbers who recover fully, live to tell the tale, and inspire us to keep working hard.’

were absolutely fantastic,” she says. “They did everything they could. They were so understanding. I could take any staff aside and talk to them, they were so accommodating.” After two weeks she moved to the Columbia program, whose research focus allows for treatment at no cost to the patient. “I believe that nothing changes unless you make the change,” she says, “and you get only one chance in life.”

Cathy stands just over five-foot-six. At her lowest, she weighed eighty pounds and wore a size 00. “If my pants touched me, particularly on my bottom, I would think I had gained weight,” she recalls. “Nothing was allowed to be tight. Everything had to hang, and the more it hung the better. I loved going shopping and buying these tiny clothes. I still picture myself walking to work thinking, I am the coolest thing on this Earth. No one can touch me, no one can come into my world. It was like there was a bubble around me. When I was restricting, I felt powerful, in control. I wore the best of clothes, hair done, makeup, a smile upon my face. I thought everyone would love me. But at the end of the day, I was miserable.”

The only thing that got Cathy out of bed in the morning was the hope that the scale would show she’d lost more weight; she’d look in the mirror while getting dressed and revel at the bones protruding

Through treatment, Cathy’s weight has risen to 121 pounds. She has been practicing healthy eating with outings like trips to Starbucks with friends, and she hopes to return to school next year for a career in fashion journalism. “I feel like a totally different person,” she says. “When I have food I enjoy it, but I don’t obsess about it. I can eat until I’m full, but my day goes on. It’s not totally gone, but I’m in a much better place, and I definitely think of myself as a better person. People don’t judge me on how I look, they judge me on *me*, and that is so liberating.” Although she will likely return to Ireland for school, she says, “part of me wants to stay here, to see what it’s like to be healthy in New York.”

For professionals in the field, such cases exemplify the joys and challenges of treating patients with eating disorders. De Paola Gottlieb says she was drawn to the specialty because of the way it so intimately combines medicine and psychiatry—and the fact that it constantly tests her skills as a clinician. “The complexity of this disorder and the multimodal nature of treatment require us to jump into the trenches and think out of the box,” she says. “We see patients come out the other side—and in real time. When they come to the hospital, they are profoundly undernourished and ill, but with treatment you can see restoration of health before your eyes.” ●

equal treatment

CEDREC digs at the roots of disparities in medical care

By Sharon Tregaskis

Erica Phillips-Caesar's last patient that day would be her toughest. An African American woman in her late fifties, she arrived at her initial appointment forty-five minutes late, after having canceled three previous appointments, complaining that her legs were swollen. "I had a hard time pinning down the woman or her daughter for a history," recalls Phillips-Caesar, MD, an assistant professor of medicine at Weill Cornell. "I remember being frustrated and feeling bad: why can't you get your act together, show up on time, tell me your story, help me understand what the problem is?"

Finally, Phillips-Caesar concluded the interview and left the room while her patient undressed for a physical exam. When the young physician returned, it was immediately clear that her patient's leg symptoms were the least of her medical concerns. "There was a huge, cancerous mass in her breast," says the doctor. "It was visually apparent." The woman was in complete denial, as was the daughter who had accompanied her to the appointment—despite the fact that the woman's regular doctor had been advocating a biopsy for a year and the daughter had been aware of the mass for some time.

When she was finally diagnosed, the patient had Stage IV cancer. She had health insurance and access to doctors. Yet despite Phillips-Caesar's urging and the advice of her regular physician, the woman never took advantage of the care available to her. Often, she simply skipped her appointments. "How in the world does that happen?" asks Phillips-Caesar. "What

is it about our health-care system, us as providers? Did she understand, in no uncertain terms, that this was cancer? Was her health literacy or overall literacy so low she couldn't understand? Is it about her faith, her comfort with her death, that this was meant to be?"

Within six months, the woman was dead. With early intervention, her chances of survival would have been close to 90 percent.

Epidemiologists and policymakers have long known that minorities have reduced access to health care, take less advantage of screening, receive later diagnoses, and generally have poorer outcomes than their white counterparts. Black women like Phillips-Caesar's patient may be less prone to developing breast cancer, but their disease is more apt to be diagnosed at an advanced stage, and they are more likely to die of it within five years. African Americans, Mexican Americans, and Native Americans are all more likely to develop diabetes than their white counterparts and far more likely to develop complications or die from the condition. Minority nursing home residents are more likely to go without glasses or hearing aids. Non-whites are less likely to receive standard treatments for asthma during childhood, and they have worse outcomes and lower quality of life following a heart attack.

Financial considerations undeniably influence who gets medical care in the U.S. and how good that care is; to those without health insurance, such essentials as screening, preventive care, and treatment can seem equally unaffordable and inaccessible. Yet finances account for only part of the story. "What is particularly disturbing is that despite the economic explanations, there seem to be additional situations and

areas where our health care is not equal,” says Alvin Mushlin, MD, ScM, chair of Weill Cornell’s Department of Public Health. “When we adjust or equalize for economics, important differences remain in the degree and quality of health care that certain citizens in our country receive.”

Mushlin trained in the South, back when black hospital patients were admitted to segregated wards and only white physicians had full privileges. “Today what I see as a clinician in New York is a vastly different situation than was the case in Tennessee in the early and mid-Sixties,” he says. “Back then, the causes for racial and ethnic disparities were right in front of your eyes, part of the segregated South. Those overtly discriminatory practices have been removed, but we still see disparities that shouldn’t exist in what we all hope is a much more egalitarian society.”

In January, the National Center on Minority Health and Health Disparities, a division of the National Institutes of Health, awarded Weill Cornell an \$8 million grant to establish the Comprehensive Center of Excellence in Disparities Research and Community Engagement (CEDREC), a consortium of scientists at the Medical College and colleagues at the Hunter College School of Nursing, the City University of New York, Lincoln Medical and Mental Health Center, and the Center for Healthful Behavior Change at the New York University Langone Medical Center. Carla Boutin-Foster, MD, the Nanette Laitman Clinical Scholar in Public Health/Community Health and an associate professor of medicine at Weill Cornell, is the director. Mary Charlson, MD, the William T. Foley Distinguished Professor of



Carla Boutin-Foster, MD

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Medicine and chief of the Division of Clinical Epidemiology and Evaluative Sciences Research, is a co-director for CEDREC and director for the research training core; Mushlin co-directs the research core; and Phillips-Caesar co-directs the core for community engagement and outreach.

“In approaching disparities research, a lot of it is about cultural competency, understanding from a community standpoint how culture plays into disease,” says Phillips-Caesar. “If we have the answers to these community issues—if we help the communities build their capacity to get to the heart of the matter and articulate why these disparities exist—then we could eliminate them.” Understanding that dynamic might have boosted her own long-ago patient’s chances for survival, she says. “Often, minority patients come to a provider already having talked to

Sensitivity Training

Tips on connecting with patients from underserved communities

To insure that research tackles issues relevant to the people who are served by Weill Cornell's Comprehensive Center of Excellence in Disparities Research and Community Engagement (CEDREC), director Carla Boutin-Foster, MD, and her collaborators assembled a community advisory board. The membership includes adult literacy professional Estella Natal, a native of Puerto Rico who has worked for the New York City Department of Health teaching health literacy to immigrants and for CEDREC partner Lincoln Medical and Mental Health Center promoting cultural sensitivity. Natal offers these tips for working with underserved populations—both as patients and as study participants. Success, she says, boils down to a single concept: marketing. “Marketers know these things by heart,” she says. “People in health and education don’t.”

- **Use plain language.** “The key is to keep the sentences and paragraphs short and simple,” says Natal, to make materials accessible to those with limited English literacy. “Stay away from words with three or more syllables. Instead of ‘hypertension,’ say ‘high blood pressure.’ ”
- **Know your audience.** “Be careful with references like sports,” cautions Natal, who this summer rewrote a series of documents that had employed baseball as a metaphor. “Soccer is the most popular sport in the world,” she says. “Use baseball, you leave out some people.”
- **Be aware of symbolism.** Among some Asian cultures, for example, white represents death, mourning, and ghosts. “In some hospitals,” says Natal, “they’ve changed the sheets to beige.”
- **Think positive.** When tackling issues of obesity and weight loss, promote “healthy eating.” To connect with people suffering from domestic violence, who might be in denial or defensive about their situation, focus on “healthy relationships.” Says Natal: “Even if they’re a victim, they’ll say, ‘That’s not me.’ ”
- **Consider the context.** “You can’t tell someone who’s Latino, ‘Don’t eat rice and beans.’ They won’t listen,” says Natal. “You talk about smaller starch portions and encourage more fruits and vegetables.”
- **Don’t judge.** Says Natal: “You take a perspective of gently coaching, instead of telling people what to do.”

friends and family members they think of as authorities. They come in with a pre-determination of what’s going on and how to handle it,” she says. “If I’d been able to step back and talk with this woman, I could have understood how she let the cancer get to that point.”

CEDREC director Boutin-Foster has dedicated her research career to understanding the psychological and social determinants of health, especially effective treatment of coronary artery disease and high blood pressure in minority patients. As a Haitian immigrant who learned English as a second language, grew up in a single-parent family in New York, and now juggles roles as physician-researcher, wife, and mother, the forty-one-year-old has firsthand experience with some of the challenges her patients face in making their own health a priority. “I may be more sensitive to the plight of patients who are foreign born or under-

represented minorities,” she says.

And as Weill Cornell’s director of cultural diversity, an active participant in the student-run Community Clinic for the uninsured, and associate director of the Center for Multicultural and Minority Health, Boutin-Foster has seen the power of community partnerships to facilitate research. “Traditionally, when it comes to doing research, communities are seen as a place where you get subjects,” she says. “In CEDREC, we think of the community as part of the investigative team.” To insure clear channels of communication, CEDREC has an advisory board of community members. “It gives us tremendous insight into the problems we’re trying to address, gets the community involved in solving their own problems, and helps to enhance the level of trust and bridge the gap between the academic center and the community,” says Boutin-Foster.

For minority communities whose distrust of mainstream medical professionals traces its roots to the Tuskegee Institute’s studies of syphilis and the overt racism of America’s early history, such collaboration can be thorny. As a consequence, says Boutin-Foster, forging relationships with community partners can be slow going at first. Ultimately, however, time invested early on yields enhanced study participation and more relevant findings. “They’ll tell us if a question is offensive or doesn’t get at the information we’re trying to collect,” she says. “It may take longer. But just saying, ‘We’re recruiting patients,’ doesn’t always work. You can hang up a flyer and say, ‘Please come,’ but not many people will. You can’t recruit people without buy-in.”

If researchers don’t understand local priorities and concerns, says CEDREC co-director Mary Charlson, they can end up investigating problems of limited concern

to the people they're trying to help—or propose solutions that simply aren't feasible. “Nobody knows the problems in a given community better than the people who live and work there,” says Charlson, who is working with Phillips-Caesar on Small Changes and Lasting Effects (SCALE), a study to develop effective behavioral interventions and mindful eating strategies for overweight and obese black and Latino adults from the Harlem and South Bronx neighborhoods targeted by CEDREC. “The solutions that work in a homogeneous white population—for example, Rochester, Minnesota—are not necessarily applicable or relevant to people in the South Bronx.”

In the largely African American and Latino communities of Central Harlem and the South Bronx, poverty is endemic. So are obesity, diabetes, and hypertension. Thirty-two percent of residents lack a high school diploma, 15 percent go without health insurance, and 23 percent lack a primary care physician. In the two communities, the rates of hypertension—a major risk factor for cardiovascular disease, kidney disease, stroke, and heart attacks—are the highest in New York City. In a 2008 study, Boutin-Foster and longtime collaborator Gbenga Ogedegbe, MD, MPH, an associate professor of medicine at New York University and director of CEDREC's research core, reported that while 30 percent of African Americans nationwide keep their blood pressure under control through a combination of exercise, prescription medications, and a low-salt, low-fat diet, in Central Harlem and the South Bronx, it's just 5 percent.

To boost those numbers, Boutin-Foster launched a program called Trial Using Motivational Interviewing and Positive Affect and Self-Affirmation in Hypertension (TRIUMPH) while Ogedegbe serves as principal investigator of the Multibehavioral Intervention to Increase Screening and Enhance Risk Reduction in Black Men (MISTER-B). TRIUMPH recruited patients from the Renaissance Health System, a CEDREC partner. Half are assigned to a patient-education program that emphasizes improved diet, increased exercise, and consistent use of medication to control blood pressure. The test group participates in the same education program, supplemented with a motivational component. “We help people emphasize the positive, focus on their inner strengths,” says Boutin-Foster. “They know they have to control their blood pressure, yet they do not. Instead of saying, ‘If you don't control it, you'll get sick,’ you talk about ‘What are things you can do?’ and ‘What are ways you've been successful in the past?’ It's



Mary Charlson, MD

AMELIA PANICO

building a positive reserve in the patient and talking about the benefits.”

MISTER-B builds on a more fundamental challenge Ogedegbe encountered in his patient work. “Black men don't go to the clinic,” he says. So Ogedegbe and collaborator Joseph Ravenell, MD, an assistant professor of medicine at NYU, decided to stop waiting for them and instead send specially trained community members to meet prospective patients where they are—in barbershops—and facilitate the logistics of screening, follow-up, and case management. “Colon cancer and hypertension are the two killers of black men,” says Ogedegbe. “If we can capture men who are at high risk and use health-care navigators to get them to clinics, it can be good for the country.”

Perhaps even more important than the data that emerges from SCALE, TRIUMPH, and MISTER-B are the relationships being forged—among scientists at Weill Cornell, NYU, and the Center's other partners; among researchers and community representatives; and among established scientists and the graduate students they mentor. “People who grow up in a given cultural context are more likely to work in that area,” says Charlson. “If you want to study the Korean community as a white, middle-class woman, you could do that—but you'd have to immerse yourself in the community and learn the language. Otherwise, you're not going to be able to do effective behavioral intervention.” ●

‘Nobody knows the problems in a given community better than the people who live and work there.’

Notebook

News of Medical
College and Graduate
School Alumni

Dear fellow alumni:

This is my first correspondence with you as president of your Alumni Association. The years have passed quickly, with our schedules appearing to warp time, making it move faster and faster. It seems only a short while ago we were studying hard (and playing hard) in Olin Hall.

The Alumni Association has been quite busy this year. In June we held our 13th Annual Dean's Circle Dinner at the Cornell Club-New York. It was a most enjoyable evening for all and a gracious way for Dean Antonio Gotto, MD, to thank these incredibly supportive and generous alumni. This spring we held three more sessions of the wildly popular Alumni-to-Student Knowledge (ASK) series, in which students get to

ask alumni about life in their various specialties. A session in anesthesiology featured Miles Dinner, MD '78, and Jill Fong '79, MD '84. Bridget Carey, MD '00, Susan Cohen Pannullo '83, MD '87, and Michael Kaplitt, MD '95, hosted a session on neurology and neurosurgery. I was extremely excited to participate in the orthopaedic surgery session with fellow alumni and colleagues Robert Buly, MD '85, and Claudette Lajam, MD '99. Well over a hundred students have benefited from the knowledge shared during these sessions and more are planned for this academic year.

In June I was pleased to attend the annual WCMC-Q dinner held in honor of the Qatar graduates. It was held in New York and attended by Dean Gotto, WCMC-Q Dean Javaid Sheikh, MD, and many WCMC faculty members. We found the newly minted graduates to be energetic and intelligent. Many of them matched to top

residency programs throughout the United States.

If you've visited campus lately, you may have noticed a big hole where Livingston Farrand and Kips Bay used to stand. A new Medical Research Building will fill that hole. The building promises state-of-the-art space for research in key disease areas, including cancer, cardiac disease, and children's health. This space will allow Weill Cornell to compete for top researchers and enhance our status as a top institution for years to come. Occupancy is scheduled to begin in 2014. A ceremonial groundbreaking was held at the end of May; it was attended by many, including New York Mayor Michael Bloomberg, and covered heavily by the media.

More than 490 alumni and guests attended

Reunion 2010. The theme was "Medicine and the Arts: An Alumni Perspective." The speakers, who concentrated on the medical aspects of the fine and performing arts, were very well received. The two-day program included presentations from the 25th and 50th reunion classes as well as an Olin Hall picnic. In keeping with the theme, this reunion included, for the first time, an art gallery and an alumni arts journal cataloging alumni art and written works. The gala dinner dance at Cipriani 42nd Street was a night to remember.

The Alumni Association has been on tour this year! At the American Association of Medical Colleges' annual meeting in Washington, D.C., Carl Miller, MD '75, Alumni Association board member and associate dean of student affairs, and R. Ernest Sosa, MD '78, Alumni Association vice president, co-hosted a reception with Dean Gotto. We also went to the American Heart Association's annual scientific sessions in Chicago, where Dean Gotto and Hazel Szeto, MD '77, PhD '77, past Alumni Association president, hosted a reception for local alumni as well as those in cardiology who were in town for the meeting.

We hope that you can attend an event at one of the other stops we'll be making. In February 2011, I will be hosting a reception for Southern California alumni and those in town for the American Academy of Orthopaedic Surgeons' annual meeting. We plan stops in Houston, Boston, and Florida, too. Further details will be forthcoming.

Also of note, Amy Buick, who served as director of alumni relations since 2007, has taken a new position in Washington, D.C. We wish her all the best. In the meantime, Clara Cullen and Brian Schober remain in the Office of Alumni Relations and are working diligently to ensure a smooth transition as we search for a new director.

As your new president, I am pleased and honored to serve our membership for the next two years and look forward to your input and participation in the Alumni Association and its events. Meeting colleagues and old friends from Weill Cornell is always a pleasant and worthwhile endeavor. Our alumni serve as role models for the students who will soon be joining our ranks. Your active participation makes that possible!

Best and warmest wishes,

Michael Alexiades, MD '83

*President, WCMC Alumni Association
alexiadasm@hss.edu*



PROVIDED

Michael Alexiades, MD '83

1940s

Francis S. Greenspan '40, MD '43: "I retired after 60 years of clinical practice (endocrinology), teaching (clinical professor of medicine, UCSF), and research (thyroidology). We have moved into an excellent retirement center in Alameda, CA. I owe a lot to Cornell."

Herbert I. McCoy, MD '45: "Just back from Indonesia where I served as doctor to a scuba diving trip. Family joined to give me a three-day 90th birthday party. My mother made 100 years. Will I make it?"

Rees Pritchett, MD '48: "I gave up patient care as of June 30, 2010, after 57 years in practice. I retained my medical college appointment and benefits and have a nice office on the eighth floor of the Weill Greenberg Center."

David H. Sonabend, MD '49: "I was part of ASTP (Army Specialized Training Program, Navy V-12) sent from various pre-med schools to Cornell during World War II. I had no intention of being an MD, but at Cornell I found that I loved the study of pediatrics, especially when my wife gave birth to twins in my second year."

Edmund Welch, MD '49: "I'm retired in West Hartford, CT. No more tennis; now I have a cardiac pacemaker. I'm still interested in photography, computers, and reading."

1950s

Kenneth S. Thomson, MD '51: "Shirley and I have been living in a patio home on a retirement campus near Rochester, NY, since 2004. We are doing reasonably well—the best move ever."

Russel Patterson, MD '52: "Julie and I are in good shape, except for modest memory loss, muscle atrophy, and stiff joints. We go back and forth between New York City and Vermont regularly and travel to see children and visit old haunts. Daughter Ritchie '80 is now chair of the physics department at Cornell, son Hugh is active in computer matters in Silicon Valley, and son Xander is busy in Portland, OR. I'm still involved with neurosurgical societies, which keep me occupied with various odd jobs."

Bernard Yablin '48, MD '53: "I have had two recent hospitalizations with a final diagnosis of myelodysplastic syndrome, one in June marked by acute pyelonephritis, septicemia, bone marrow depression, and septic shock. I think that **Dick Silver '50, MD '53**, has specialized in this. Of my family, Adrian has finished two years at RIT, Dorian will be a senior at Fairport High School, and daughter Rachelle is a guidance counselor in the Greece, NY, school district."

Russel M. Barakat, MD '54: "I retired in July 2008 after 50 years."

Ralph C. Williams '50, MD '54: "I still live in New Mexico, but had to retire from my rheumatology practice last year to get ready for a knee replacement. It went well, but extended rehab over several months was necessary. My wife Mary '50 died unexpectedly while we were up in Ithaca at our 60th Reunion in June."

Cedric J. Priebe Jr., MD '55: retired from clinical pediatric surgery practice in 2007, but continues as a professor emeritus at Stony Brook University Medical Center as a part-time administrator in the Dept. of Surgery for quality and patient safety management.

Charles H. Beckmann, MD '56: "I recently completed another Caribbean cruise, but will probably have to stop cruising due to family health problems. It was fun while it lasted and totaled 20 cruises and two African safaris, visiting 71 countries. Still practicing cardiology part-time and active in medico-legal defense cases against doctors and hospitals."

Mildred D. Rust, MD '56: "**Dick Weiskopf, MD '56**, and I have made a few contacts for the past two or three years. Each of us has published a book—he of his poems, I of my autobiography, *A Unique Life*. I retired in 1998; now in assisted living because of Parkinson's (still mild), osteoarthritis, GERD, and fibromyalgia, but active in church, senior center, and Rutgers courses."

George C. Schussler, MD '56: retired from the practice of internal medicine and endocrinology at Downstate Medical Center.

Robert H. Stackpole, MD '56: "In 2008 I joined a urology group with six other urologists and now work only three days each week in the office. I have a good deal because **Cookie, MD '59**, is still practicing dermatology full-time. We spend many days at our beach home in Amagansett, NY, and still both play tennis. In August, we had all four of our daughters, including **Sarah Stackpole, MD '89**, and their families with us for a busy week of kayaking, swimming, playing games, and bonding. Our six grandchildren had a ball. In November, we are going to Egypt and Jordan. We have rented a large house in Provence for the entire family in June 2011."

Richard D. Wagoner, MD '56: "I had the fortunate opportunity, along with two other Mayo Clinic internists, to begin the institution's first nephrology division in 1963. This year *U.S. News & World Report* rated Mayo Clinic's nephrology subspecialty number one in their 'Kidney Disorders' ranking."

Hubert S. Bush Jr., MD '57: "Consuelo and I moved to Mystic, CT, in October."

Donald P. Goldstein, MD '57: "Still working full time at Harvard Medical School and Brigham and Women's Hospital, Division of

Just back from Indonesia where I served as doctor to a scuba diving trip. Family joined to give me a three-day 90th birthday party. My mother made 100 years. Will I make it?

Herbert I. McCoy,
MD '45

Gynecologic Oncology, running the Trophoblastic Disease Service and seeing oncology patients at Dana Farber Cancer Institute. Stopped doing major surgery in December 2006—all outpatient or day surgical minor cases at present. No immediate plans to retire.”

Bernard S. Siegel, MD '57: “Still writing books; the latest is *Faith, Hope & Healing*. Lecturing and running support groups for cancer patients to teach survivor personality and self-induced healing. Mind and body are a unit.”

Robert L. McKee, MD '58: “Grace and I are in good health and enjoying our family. We have had wonderful trips to Russia, Sicily, and Ireland. My practice is limited to consultations and family and friends, and,

more, so I fund a Cornell student each year to go abroad. My family is well, and I look forward to our 50th Reunion. If anyone is coming to the Boston area, call me: 978-468-2141.”

Mark M. Sherman, MD '66: “Still working full-time in thoracic and vascular surgery. Son Keith earned an MA from Northern Arizona University and son Brian is almost done with his PhD at Columbia University Teachers College. Wife Jane works part time.”

Gerald Sydorak '63, MD '66, completed his training in general and vascular surgery at University of California Hospitals in San Francisco. He did an additional two years of surgery at the Public Health Hospital in Norfolk, VA. Dr. Sydorak is board certified

job as the chief medical officer at a hospital in Elmira, NY, and then a health system in Iowa. Last job was as chief medical officer/medical director for a health system in the Atlanta area. Retired from that and stayed put. Along the way, I have taught business admin programs and been a consultant for practice management and coding compliance. I travel about three months of the year. Been as far south as Antarctica, as far east as Israel, and as far west as Thailand. My next trip is to Myrtle Beach, followed by a cruise to the Arctic Circle. It is awfully nice to be near an airport with connections to everywhere.”

Jeffrey S. Borer, MD '69: “Almost two years ago, after 30 years at Cornell, I left for SUNY Downstate (across the street from the high school I attended many years ago), where I am professor of medicine, cell biology, radiology, and surgery, chairman of the Dept. of Medicine, chief of Cardiovascular Medicine, and director of the Cardiovascular Translational Research Institute and the Howard Gilman Institute for Heart Valve Diseases. Come and visit.”

1970s

Don Rubin, MD '74, is associate chief of staff for research at Veterans Administration Tennessee Valley Health System; a professor of medicine, microbiology, and immunology at Vanderbilt University; and the founder of Zirus, which “uses its gene trap discovery engine to provide the keys to conquer viruses.”

Matthew D. Gold, MD '75: “After Cornell and sojourns in Detroit and Durham, NC, I landed in the Boston area. Fellowship in cognitive neurology was a blast and also allowed me to co-found a community theater group and act and direct. I met my ex during a musical production. For a number of years I served as chief of neurology at a community hospital. (Still in practice. I'm open to alternatives.) I joined the Massachusetts Neurologic Association, eventually became president, and subsequently got involved in committee and legislative affairs at the American Academy of Neurology, the Massachusetts Medical Society, and lately the AMA. Tilting at windmills, I've gotten a few resolutions passed concerning the doctor-patient relationship and abuse of preauthorization, among other things. Life after divorce can be fun. I've watched my son marry, become a teacher, and return to the Boston



Past presidents: Former Alumni Association leaders Hazel Szeto, MD '77, PhD '77, and Gene Resnick, MD '74, at Reunion with new president Michael Alexiades, MD '83

recently, my fifth response to an ill passenger on a transoceanic flight.”

1960s

Bryant Barnard, MD '62: “I am active with my fourth pacemaker. Hurrah for modern medicine and Medicare! I fish a lot and go to Montana twice a year. I am not able to do my African urology visits any-

in general and vascular surgery. His special interests include minimally invasive endovascular stenting procedures, both peripheral and carotid, aortic aneurysm stent grafting, venous procedures, and peripheral re-vascularization operations.

Steven A. Muller '62, MD '67: “I live in Georgia, very close to Atlanta. I arrived here after retiring from the Navy, taking a

area buying a house and looking forward to life. My daughter wound up in Washington, DC, as a consultant to the Office of Management and Budget and recently joined a premier singing chorale whose home venue is the Kennedy Center. I've been able to indulge my interests in backpacking, tennis, photography, and singing. I participate in the Berkshire Choral Festival (including performances at the Salzburg and Canterbury cathedrals), Yale Alumni Choral Weekends, and my primary singing venue, Boston's Saengerfest Men's Chorus, where many other physicians and professionals have found an outlet for singing in glee-club style. This 65-voice men's chorus is always seeking singers, and Monday evening rehearsals are open. E-mail me at mdgold@massmed.org. Bring a friend. In addition to giving four to six performances a year in the Northeast, we travel overseas every two to four years. We're planning on singing in London with a massed chorus before the Olympics in July 2012. In 2009 we released our second CD, and our *a cappella* group, Sound Investment, released its tenth birthday CD in 2010. To harmony!"

Jean Pape, MD '75, was one of four recipients of this year's Clinton Global Citizen Awards. Dr. Pape is the founding and current director of GHESKIO and a professor of medicine at Weill Cornell Medical College. In 1983 he published the first comprehensive description of AIDS in the developing world. He is a leader in efforts to prevent and control AIDS and tuberculosis in Haiti and other countries and counsels international organizations on bioethics, health disparity, and global infectious disease.

Gerald B. Kolski, MD '76: "I moved to Montgomery, TX. Hope to work part-time in allergy and immunology. Retired as chairman of pediatrics at Crozer Chester Medical Center in Upland, PA."

Jeffrey Gold '74, MD '78, was recently named chancellor and executive vice president of Biosciences and Health Affairs at the University of Toledo. In this role, he is chief academic officer for all the life science colleges and dean of the college of medicine. He is responsible for the university hospital, ambulatory care systems, and community hospital and physician group relationships.

Martin Leopold, MD '78: "I retired from my ophthalmology group in the

Hudson Valley and have relocated to the Colorado foothills near my children and grandchildren."

Frederick P. Ognibene, MD '79: "I was recently elected to membership in the Association of American Physicians. I am currently deputy director for Educational Affairs and Strategic Partnerships at NIH Clinical Center."

1980s

David K. Emmel, MD '80: "Alive and well and starting my two-year term as president of the Connecticut Society of Eye Physicians."

Sharon A. Strong, MD '81: "My husband, **Phil Bossert, MD '81**, and I are almost empty nesters. Son Matt starts at Dartmouth this fall. Daughter Abby is a junior at Occidental College, and son Chris has moved back to Salt Lake City after finishing college in the Northwest. Phil continues at the University ER and I am currently enjoying home hospice work. We enjoy tennis, hiking, and travel."

Marla J. Onishi '78, MD '82: "Enjoying full-time practice in family medicine in West Des Moines, IA. Hoping to return to New York City when youngest graduates high school in two years."

Gary E. Eddey, MD '83: "Still the chief medical officer at Matheny Medical and Educational Center. Teaching medical students from UMDNJ-NJMS how to communicate with non-verbal patients with disabilities. Writing articles on medical education and working on my first novel, *The Weather House*."

David Houghton, MD '84: "With my three-year commitment to the politics of British Columbia medicine winding down, I have recently had time to turn my focus

to painting again. I've begun several new series of local landscapes and made a determined start on a new figurative series I'm calling 'A Short History of Greece.' This will be a large and complicated series of darker works. We shall see how much the gods allow me to finish."

Roger S. Blumenthal, MD '85: "I have had a fun time reconnecting with classmates to prepare for the 25th Reunion. I was able to track down and speak to several people who have never attended a prior reunion, such as **Joni Albrecht '81, MD '85**, and **Jim Checco, MD '85**. During the past year I have had a great time visiting with classmates **Troy Elander**, **Dave Blaustein**, and **Steve Berger**."

Sandra Silberman, MD '85, lives in Durham, NC, with her husband, George Williamson. She is vice president of Quintiles Inc. Innovation Oncology.

Joseph Fins, MD '86, chief of medical ethics at Weill Cornell Medical College, participated in a panel at the Cruzan Conference in November about persistent vegetative state, other states of altered consciousness, when nutrition and hydration should be withdrawn from such patients, and who decides.

Matthew J. Kates, MD '86: "Enjoying practice and life in Mamaroneck, NY, with my wife, Jen, son Brandon, 13, and daughter Sabrina, 12. Three years ago I joined ENT and Allergy Associates, a 110-doctor same-specialty group. Great not having to run a practice anymore. A shout out to all my classmates—see you at the 25th."

Lisa Nagy, MD '86: "I'm the director of Vineyard Personalized Medicine. I assist patients all over the country to find help from environmental, integrative, and autism physicians trained to get to the

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cause of disease. I just started working after a decade of being disabled by a condition no one acknowledged, chemical intolerance or sensitivity to toxic mold exposure, in my fancy California home/ aquarium shed. The Institute of Medicine has recently acknowledged the condition along with Gulf War Syndrome. I'm working on the AMA and government agencies to do more since so many are affected by mild to severe chemical intolerance, much of it due to mold exposure, if not chemical exposure. I would like to direct the operation of a large facility on the Vineyard that brings together all modalities under one roof for those with neurologic, immune, and endocrine conditions due in part to chemical exposure. I remember the anatomy lab and the effect of the smell of formaldehyde and fat on the first-year students—my first moment of chemical sensitivity. I want people to work together to take us closer to the medicine of the future, personalized

comprehensive medicine. I would also like to hear from **John Menniger, MD '85**, and have his help to be heard in the psychiatric arena. Doesn't anyone want to help me 'save the world' and advance knowledge to benefit individuals with chronic ailments modern medicine doesn't address? I'm working on the CDC National Conversation on Chemicals and Public Health, which is putting forth recommendations on the health effects of mold, the need for environmental medical units, and the need to use the Qeesi scale in research on chemical exposure."

Chris Plowe '82, MD '86, is an investigator at the Howard Hughes Medical Institute and professor of medicine at the University of Maryland School of Medicine. He and his wife, Myaing, recently took a two-week trip to South Dakota on their Harleys. He still spends a lot of time in Mali, West Africa, on malaria research, but is focusing more on drug-resistant malaria in Southeast Asia.

Nina M. Taggart, MD '88: "I continue in ophthalmology with Eye Care Specialists Northeastern Pennsylvania, but most of my time is devoted to the business side of medicine as corporate medical director for AllOne Health working alongside my husband, Mark, AllOne Health's vice president for

information and business operations.

1990s

Adam Dicker, PhD '91, MD '92, was appointed chairman of the Dept. of Radiation Oncology at Jefferson Medical College, Thomas Jefferson University. He is an expert in radiation oncology, drug development, and the treatment of prostate cancer and brain tumors. Dr. Dicker co-leads the Radiation Research and Translational Biology Program at the Kimmel Cancer Center and serves as director of the Christine Baxter Research Laboratory for Experimental Cancer Therapies.

Michael Frand, MD '93: "Karen and I moved to Colorado 12 years ago. We have two boys, Adam, 9, and Josh, 8. I work in general pediatrics. I'm coaching my kids' soccer team and renovating our house one room at a time. Working hard in the office saving lives, doing spelling tests with the kids, and making lunches every morning. What I'd rather be doing: living off a trust fund. This doctoring thing is hard. I remember most the smell of the gross anatomy lab. I'd loved to hear from anyone who wants to drop me an e-mail at mfrand@yahoo.com."

2000s

Michael Irwig, MD '00, is an assistant professor of medicine at George Washington University. "This summer I adopted two adorable kittens that I named Andro and Gen (the endocrinologist in me could not resist). I've been lecturing on male hypogonadism and the use and abuse of anabolic steroids and vitamin D. I'd rather be visiting my niece in Bologna, Italy, and I'd like to hear from **Ed Yu '96, MD '00**."

Jodi Accaria Chitwood, MD '01: "My husband, Brian, and I welcomed our second child, Connor Charles Chitwood, on June 23, 2010. He joins big sister Alison Brooke, who is 3-1/2."

Sidney T. Chang '99, MD '04: "I'm creating a center of excellence for eye care in Maui, Hawaii."

Jillian M. Ciocchetti, MD '05, and her husband, Corey, have just survived her general surgery residency. She will be joining Front Range Surgical Associates in Westminster, CO.

Marianna B. Ruzinova, PhD '04, MD '05, was appointed director of clinical hematology at Boston Medical Center and assistant professor of pathology and laboratory medicine at Boston University School of Medicine. She taught pathology at Harvard Medical School and served as senior resident in surgical pathology and chief resident in clinical pathology at Brigham and Women's. Her clinical interests include flow cytometry and hematopathology.



Social hour: Brian Rebolledo '11 and Alexiades at the Dean's Circle Dinner in June

In Memoriam

'35 MD—Charles E. Jacobson Jr. of Manchester, CT, May 25, 2010; urologist; urologist in chief, Manchester Memorial Hospital; Veterans Hospital, and Newington Children's Hospital; advocated water fluoridation in Connecticut; active in civic, community, and professional affairs.

'41 MD—S. Gilbert Blount Jr. of Englewood, CO, October 11, 2010; cardiologist; emeritus professor of cardiology, University of Colorado School of Medicine; founder, Division of Cardiology, developer of the Cardiac Catheterization Laboratory, and founder of the Cardiovascular Pulmonary Laboratory, University of Colorado Health Sciences Center; former chief, Cardiovascular Section at Oliver General Hospital in Augusta, GA; veteran; author; editor; former president, Association of University Cardiologists; president, American Clinical and Climatological Association; active in professional affairs.

'43 MD—William A. Dickson of South Orleans, MA, August 31, 2010; pediatrician and public health physician; senior associate, Bromley-Heath Health Center (now Martha Eliot Health Center); practiced at AIM Clinic; served on the Orleans Board of Health; veteran; skier; ham radio operator; active in civic, community, and professional affairs.

'43 MD—Earl J. Netzow of Thiensville, WI, October 24, 2010; family practitioner in Lake Mills, WI; served as a captain in the US Army Medical Corps in World War II.

'47 MD—William S. Montgomery of Newburgh, NY, September 18, 2010; family practitioner; chief of staff, St. Luke's Hospital; specialist in diabetes; served in the 4055th M*A*S*H Unit in the Korean War, the basis for the 4077th Unit of book, movie, and television fame; founder, Orange County Diabetes Association; active in com-

munity, professional, and religious affairs.

'49 MD—John A. Bell of Fishkill, NY, February 25, 2010; co-founder, Mid-Hudson Medical Group; veteran, US Navy Medical Corps; member, National Ski Patrol.

'49 MD—Wayne S. Rogers of Melbourne, FL, September 16, 2010; chief of ob/gyn and former chief of staff, Cedars of Lebanon Hospital in Miami, FL; clinical associate professor and chief of academic services, University of Miami School of Medicine; veteran; author; active in community and professional affairs.

'51 MD—Grayson B. Davis of West Lafayette, IN, August 20, 2010; general practitioner; Tippecanoe County coroner; veteran.

'51 MD—Oscar R. Kruesi of Fort Myers, FL, formerly of Bernardsville, NJ, June 27, 2010; internist; pioneer in preventive care; used nutritional supplements to treat mental and physical disorders; assistant clinical professor of medicine, Columbia University College of Physicians and Surgeons; founded the cardiac care unit and co-founded the Alcohol Service at Morristown Memorial Hospital; veteran; emeritus member of the Explorers Club; active in community and professional affairs.

'49 BA, '52 MD—Frank B. Throop of Indianapolis, IN, October 18, 2010; orthopaedic surgeon; partner, Winona Orthopaedics, Hoosier Orthopaedics, and Sports Medicine and Orthopaedics of Indianapolis; volunteer director of the Cerebral Palsy Clinic at Indiana University Medical Center; associate professor of orthopaedic surgery, Indiana University Medical School; served in the US Army Medical Corps during World War II; active in community and professional affairs.

'53 MD—Richard F. Porter of Alamosa, CO, August 13, 2010; radiologist, Alamosa Community Hospital, Monte Vista Community Hospital, St. Joseph Hospital, and Del Norte and Conejos County Hospital; veteran; mountaineer; active in community and professional affairs.

'54 MD—Douglas H. Barns of Coopers-town, NY, and Palm Coast, FL, August 4, 2010; department chair of ob/gyn, Mary Imogene Bassett Hospital; veteran; active in community and professional affairs.

'55 MD—John B. Sullivan of Fort Pierce, FL, January 9, 2010; active in

alumni affairs.

'56 MD—David B. Lyon of Roswell, GA, March 12, 2010.

'64 MD—Robert H. Knopp of Seattle, WA, May 30, 2010; Robert B. McMillen professor of lipid research, University of Washington Medical School; director of Northwest Lipid Research Clinic, Medical Specialties Clinics, and the Clinical Research Core of the Clinical Nutrition Research Unit, Harborview Medical Center, University of Washington; adjunct professor of obstetrics and gynecology, University of Washington; faculty member, Harvard Medical School; served in the Diabetes and Arthritis Field Research Unit, US Public Health Service; author; active in professional affairs.

'65 MD—Richard F. Greminger of Leesburg, FL, August 26, 2010; retired chief of plastic surgery at Memorial Hospital West, Pembroke Pines, FL; associate professor of plastic surgery, University of Albany; author; repaired cleft palates for the poor in South America; active in civic, community, professional, and religious affairs.

'67 MD—Christopher Saudek of Lutherville, MD, October 6, 2010; founder and director, Johns Hopkins Comprehensive Diabetes Center; pioneer in the development of the implantable insulin pump; Hugh P. McCormick Professor of Endocrinology and Metabolism, Johns Hopkins Medical School; faculty member, Johns Hopkins Bloomberg School of Public Health; program director, Johns Hopkins General Clinical Research Center; ABC News consultant for "OnCall+ Diabetes Center"; taught at Weill Cornell Medical College; fellow, Nat'l Institutes of Health and the Robert Wood Johnson Foundation; co-author, *The Complete Diabetes Prevention Plan*, *The Johns Hopkins Guide to Diabetes*, and *Diabetes*; veteran; active in professional and religious affairs.

'77 MD—Kenneth A. Brown of Colchester, VT, September 11, 2010; professor of medicine, University of Vermont College of Medicine; head of the Nuclear Cardiology Dept. at Fletcher Allen Health Care; expert in non-invasive cardiac imaging; clinical fellow, Harvard University hospitals; author; former president, American Society of Nuclear Cardiology; mountaineer; active in professional affairs.

'84 MD—Beverly Eskreis of Wynnewood, PA, February 10, 2005; dermatologist and surgeon.

Veterans Day

Chance brings two D-Day pilots to adjacent hospital beds

Like many elderly patients, ninety-year-old Benjamin Klein was admitted to the hospital the day before his heart valve replacement. When his surgeon, Leonard Girardi, MD '89, went to his room at NYP/Weill Cornell the next morning, Klein reported that he hadn't slept much. It wasn't that pre-surgical nerves had kept him awake; Klein had stayed up talking with his roommate, eighty-six-year-old Victor Allegritti, who was also awaiting valve surgery. "He said, 'Would you believe it, this guy landed on Normandy as a glider pilot hours after I did,'" recalls Girardi, the O. Wayne Isom Professor of Cardiothoracic Surgery, "'and we were up all night comparing notes.'"

Girardi marvels at the "complete coincidence" that two pilots who had flown in World War II's landmark D-Day invasion happened to be assigned to adjacent hospital beds. Both went on to have successful surgeries—Karl Krieger, MD, the Philip Geier Professor of Cardiothoracic Surgery and Girardi's colleague at the Ronald O. Perelman Heart Institute, operated on Allegritti—and before they were even discharged, the serendipitous meeting had attracted the attention of the *New York Times*. The paper sent a reporter to interview the men at their bedsides, running a human-interest piece on the front page of its Metro section in early October.

As the story noted, the similarities between the two went beyond flying gliders into the heat of battle. Both were members of



TINA FINEBERG / NY TIMES

Fast friends: Benjamin Klein (left) and Victor Allegritti swapped war stories while sharing a hospital room.

the Army's 82nd Airborne Division. Both grew up north of the city, served in the military from 1943 to 1945, and married their hometown sweethearts. On D-Day, both carried troops and equipment in their light, engineless aircraft, enduring rough landings as they dropped behind enemy lines. Both won medals: Klein got a Bronze Star, and Allegritti, who was shot in the knee, was awarded the Purple Heart. Allegritti went on to work as a construction worker, specializing in ceilings and drywall, while Klein was in wholesale jewelry, specializing in pearls.

Girardi has operated on numerous World War II veterans, and he has found a common theme among them: even in the face of open-heart surgery, they're rarely rattled. "Mr. Klein was as brave as could be about everything," Girardi says. "Nothing bothered him." Or, as Klein himself told the *Times*: "After getting out of World War II, I'm not afraid of nothing and I'm not impressed by nothing."

Sadly, Allegritti has since passed away. But Klein has made a good recovery, moving on to rehab after being discharged from the hospital. For Girardi, it's a reminder of how heart surgery can offer enormous benefits even for the oldest patients. "When these elderly patients get sick, whether it's aortic valve disease or coronary disease, they should at least explore the option of getting fixed," Girardi says. "Because we're so much better at taking care of them than we used to be, they have a high likelihood of getting through it, with a much longer life expectancy—and a *good* life expectancy, returning to full force, where they can do almost anything."



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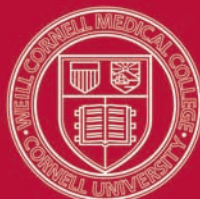
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