

weillcornellmedicine



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

SUMMER 2010

A New Dawn

Weill Cornell
creates a
'front door'
for research

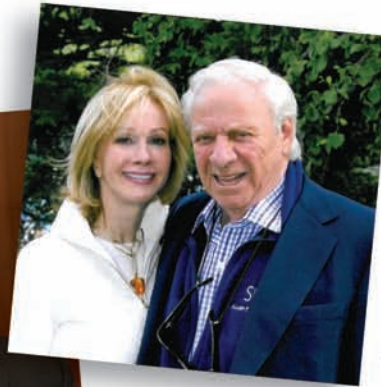
Making Dreams Come True

Two Stories – Scholarships that Make a Difference

Siegel Family Student Prizes

Satre Stuelke, new MD
Class of 2010

"Following my heart led me to medicine – and even more educational debt. I am grateful to receive a **Siegel Family Student Prize**, and for the generosity of the Siegel family in supporting my dream of becoming the best doctor I can be."



Jeanne and Herbert J. Siegel

Herbert J. Siegel

"It is the hope of myself and my wife, Jeanne, that, by alleviating some of the financial burdens inherent in a medical school education, these students will be more able to focus on their studies rather than on their debt."

The Libby and Richard P. Cohen Scholarship

Richard P. Cohen, MD '75, Professor
of Clinical Medicine

"What used to be known as 'family doctors' are disappearing and the reason is purely financial – primary care is not as high-paying a specialty. My wife Libby and I wanted to encourage young people to become primary care practitioners."



Libby and Richard P. Cohen



Danielle Acosta, new MD
Class of 2010

"It is in part thanks to generous support from **Dr. and Mrs. Cohen** that I am able to begin my residency by providing medical care to families in underserved communities – these are the ideals of service that had convinced me to go to medical school."

Some highlights from Weill Cornell's June **Salute to Scholarship** event celebrating donors and students.

You can help make a dream – and a healthier medical future – a reality by contributing to Weill Cornell's scholarship fund. To learn more, please contact Lucille Ferraro, Campaign Director for *Discoveries that Make a Difference*, at 646-962-8721, or visit our website: weill.cornell.edu/ways-to-give/scholarship-support



Weill Cornell Medical College

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

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

SUMMER 2010



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BETH SAULNIER

When the new Medical Research Building opens in spring 2014, it will double the amount of dedicated research space at Weill Cornell. Located on the north side of East 69th Street between First and York avenues, it will allow for the recruitment of thirty additional tenure-track faculty and promote collaboration across departments—and even campuses. A look ahead at the exciting new facility, which will finally offer a “front door to science” at Weill Cornell.

32 COMFORT ZONE

ANNA SOBKOWSKI

Last year, the Palliative Care Consult Service conducted some 550 inpatient and outpatient consultations—aiming to improve quality of life by relieving pain and minimizing symptoms. Launched in 2005, the service comprises physicians, nurse practitioners, and a social worker, who consult with families and caregivers to comfort patients at all stages of illness. Says nurse practitioner Sarah Townley: “Those of us who work in this field often feel that it’s more of a calling than a job.”

38 DELICATE OPERATION

BETH SAULNIER

Surgery professor Gerald Imber, MD, has long been fascinated by William Halsted, who pioneered modern surgical practices in the late nineteenth century. Last winter, Kaplan published *Genius on the Edge*, in which Imber chronicles Halsted’s “bizarre double life”: he was both a medical visionary and a chronic drug addict. In an excerpt from the book—which the *New York Times* praised as a “particularly expert and thought-provoking narrative”—Imber describes Halsted’s early adoption of antiseptic techniques.



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Cover painting by
Patti Mollica

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Light Box



AMELIA PANICO PHOTOGRAPHY

Helping hands: At the May groundbreaking ceremony for the new Medical Research Building, dignitaries made impressions of their handprints, which will be cast into bronze plaques and displayed in the lobby when the facility opens in 2014. From left are NewYork-Presbyterian Hospital CEO and president Herbert Pardes, Cornell Board of Trustees chairman Peter Meinig, Dean Antonio Gotto, New York City Mayor Michael Bloomberg, foremost benefactor and Board of Overseers chairman Sanford Weill, Cornell President David Skorton, and Robert Appel, chairman of the *Discoveries that Make a Difference* Campaign. For more on the new building, see page 26.

'Scholarship endowments have always been important to me, and they are essential for maintaining our status as a premier medical institution.'

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

Student Support—A Top Priority

Students are the pillar of Weill Cornell Medical College's mission, and the promise of excellence in health care and research for future generations. Today, they face tremendous financial pressures in coping with the increasing costs of a top-quality medical education amid a long economic downturn. Their debt burden is higher than ever before.

By the time they graduate, our students' average debt is now \$122,771—well below the national average for medical schools of \$160,000, but still daunting.

Knowing the critical importance of increasing the endowment funds for scholarships, Dean

Gotto has made this a top priority since he became dean in 1997. Under his leadership, Weill Cornell Medical College's scholarship endowment funds have more than doubled—from \$34.4 million to \$72.4 million.

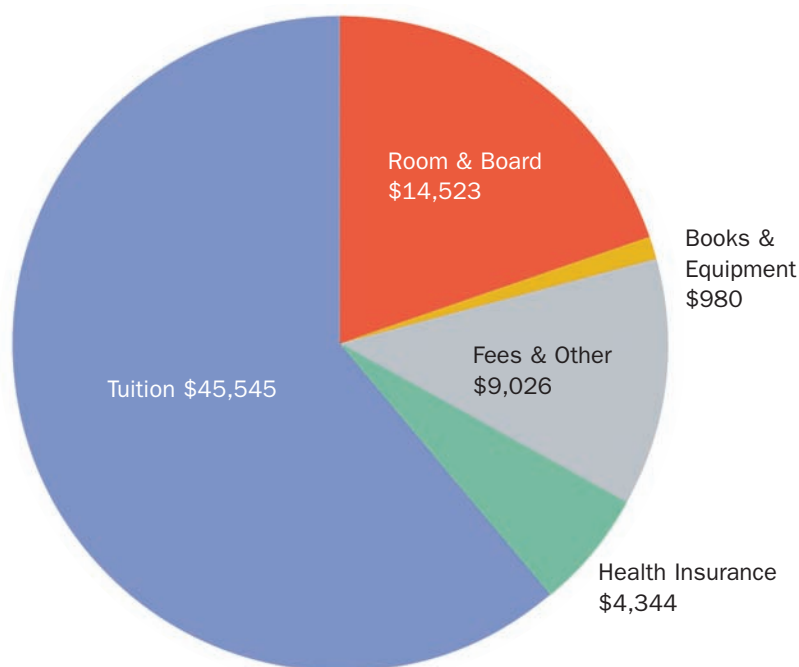
Weill Cornell has always been a good steward of controlling student costs while maintaining excellence. Our tuition this year is \$45,545—low compared with our peer institutions. Tuition revenues on Weill Cornell's New York City campus represent only 2 percent of total annual revenue, and the goal is to keep it low.

Despite our resources and careful stewardship, the average debt burden of a Weill Cornell graduate continues to rise. More than 50 percent of the incoming class qualified for scholarships—a record—and the numbers keep going up.

You can help make the future of health care happen now by joining our *Scholarships that Make a Difference* Campaign.

The Cost of Medical School Education

Average Student Budget for 2010-11
Academic Year (\$74,415)*



Our average annual scholarship award is now \$35,100—but with tuition and living expenses totaling nearly \$75,000 per year, we need to increase available scholarship funds.

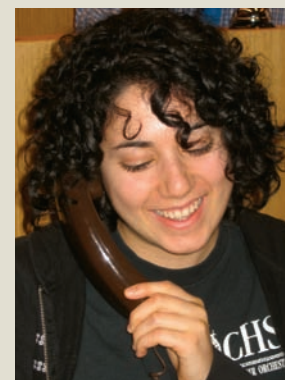
*The slight discrepancy between the pie chart numbers and the total budget is due to rounding of numbers.

Who's Calling?

Students Helping Students

Over the past three years, our medical students have raised more than \$153,000 in pledges from 822 alumni for scholarship

Julie Leviter
Class of 2013



Our Students—The Core of Our Many Strengths

Weill Cornell is fortunate in that our unique strengths draw the very best students. In 2009, 5,580 applicants applied for the 101 spots available, drawn by our excellent reputation, curriculum, and faculty. Weill Cornell is consistently ranked one of the most selective medical schools in admissions and maintains one of the most diverse student populations—25 percent of each class is from groups underrepresented in medicine. Scholarships help us recruit and accept all top students, regardless of their ability to pay.

funds. For three nights, students call alumni to ask for gifts to support their Class Scholarship fund.

These three students were among the many volunteers who made calls during the Spring 2010 Phonathon. The next phonathon will be Tuesday, November 30 through Thursday, December 2. Please say yes to their request for scholarship support.

Shaka Bahadu
Class of 2011



Jenna Devare
Class of 2013



'Our alumni can play a powerful role in assuring that we have a scholarship endowment robust enough to continue attracting and retaining the most promising physician-scientists of the next generation. Helping our students reduce debt and choose the specialty they want is the best contribution we can make to the future of medicine.'

Paul Miskovitz, MD '75
Clinical Professor of Medicine
Co-Chair of the Alumni
Campaign Committee



'I thought I would have to go into a well-compensated specialty like orthopaedic surgery, but my heart is in family medicine. With the Miskovitz Scholarship, I can now pursue my dream to specialize in this because my debt burden is more manageable thanks to the help I received.'

Michael Loeven, Class of 2011
Recipient of the Helen and
Frederick Miskovitz
Memorial Scholarship

To learn more about scholarships, please contact
Lucille Ferraro, Campaign Director,
at 646-962-8721 or luf2003@med.cornell.edu

Please visit our Web site at: weill.cornell.edu/ways-to-give/scholarship-support



Weill Cornell Medical College

Is It Time for Flexner 2.0?

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

"The student is to collect and evaluate facts. The facts are locked up in the patient. To the patient, therefore, he must go. Waiving the personal factor, always important, that method of clinical teaching will be excellent which brings the student into close and active relations with the patient: close, by removing all hindrance to immediate investigation; active, in the sense, not merely of offering opportunities, but of imposing responsibilities."

— Abraham Flexner



PROVIDED

Abraham Flexner

A century ago, an educator by the name of Abraham Flexner revolutionized the medical profession with the publication of a meticulous report entitled "Medical Education in the United States and Canada." Printed in 1910, the report was a catalyst for the improvement and standardization of medical education throughout North America.

Flexner's research, originally commissioned by the Carnegie Foundation for the Advancement of Teaching, included information gathered from his survey of the 155 medical schools then extant in the United States and Canada.

Using Johns Hopkins as a model of excellence, Flexner took a no-holds-barred approach to criticizing what he saw as a lack of professionalism and standardization within medical education in America. He passionately advocated for improvements to what was, he said, a hodgepodge of approaches. Ultimately Flexner's report provided a roadmap for upgrading medical education, state licensure, public health, and scientific research throughout the United States.

Although the reforms that came out of Flexner's report raised the quality of medical education in the United States, it simultaneously caused a reduction in the number of physicians serving disadvantaged communities: small, rural medical colleges and all but two African American medical colleges were forced to close, leaving an impoverished population with too few physicians. These effects led some to wonder whether the perceived need for higher standards was hurting, rather than helping, patient care.

Our world today would be unrecognizable to Abraham Flexner. Technology has inarguably had the greatest impact on our lives, improving the quality of life for billions of people while driving the advancement of medical education.

Information is now shared in the blink of an eye, research is more complex and interdisciplinary, and patient care is centered on a team-based approach, all of which fly in the face of Flexner's 1910 recommendations. Now, one hundred years later, the Carnegie Foundation has recently released an updated version of its original report to address such concerns. How long can one deny that we may be forcing the proverbial square peg into a round hole when it comes to standardizing learning outcomes and assessing competencies?

As educators, we are charged with cultivating a spirit of inquiry; this spirit supports innovations in daily practice that translate into better service to patients, system improvements, and improved patient outcomes, as well as the development of larger research agendas, new discoveries, and knowledge building. Yet modern university-based medicine does not always provide the opportunities for faculty and students to fully develop their other interests in research, teaching, and patient advocacy. In a race to master basic skills—while clearly important and necessary—our emphasis on lifelong learning has been pushed to the back burner.

So . . . is it time for Flexner 2.0?

We understand the importance of remaining true to our core values as we carry out our tripartite mission of education, research, and patient care. But with the recent passage of sweeping health-care legislation, our country faces unprecedented challenges—and as educators, we think it may be time to reimagine medical education for a new generation of students.

One thing is true: academic medicine cannot rest on its laurels. Our students deserve the best education we can provide, and our patients deserve consistent, compassionate, high-quality care, regardless of where they live or their socioeconomic status. Fundamental change in medical education will require new curricula, new pedagogies, and new forms of assessment.

Those who teach medical students and residents are at a crossroads. Should we continue in the direction established more than 100 years ago or take a fundamentally different course, guided by contemporary innovation and a new understanding about how people learn?

It's a difficult question—but in this case, Flexner 2.0 appears to be the answer.

A Promise to the World

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

"How do I distinguish myself within the scientific community, to prove that I belong there and that I'm capable of doing great things?"

That question is likely on the minds of thousands of young women and men who are surveying the landscape of graduate schools and considering an academic career. We expect students to think this way prior to making such an important decision—but I believe that it's equally important for academic institutions to adopt a similar line of self-exploration.

What can we do, as a school, to show the world's brightest young minds that Weill Cornell is where they need to be to kick off their research careers? Where else but here can their goal of advancing health care through science best be achieved?

Several years ago, Dean Gotto, the Medical College's Board of Overseers, and Cornell's Board of Trustees sat down to answer those very questions, and the result was a new strategic plan and the launch of a major capital campaign, the largest in our history. On May 26, Weill Cornell unequivocally made the answer public at the groundbreaking of the new Medical Research Building on 69th Street near York Avenue.

This new building is slated to include sixteen floors of programmed space with initiatives dedicated to translational bench-to-bedside research that targets some of our most daunting medical challenges, including cancer, cardiovascular disease, children's health, and neurodegenerative diseases such as Parkinson's and Alzheimer's, as well as global health and infectious disease. Equally important, more than \$250 million will go toward the recruitment of dozens of new researchers and the retention of our existing faculty.

This scenario will be a dream come true for a junior faculty member: new facilities, state-of-the-art equipment, like-minded colleagues, and faculty mentors to help shape and focus their potential into productive and globally important science. And, more than "bricks and mortar,"



JOHN ABBOTT

there is likely to be a new buzz in the air, an expectation that great things are about to happen at Weill Cornell that will one day benefit all humankind.

In many ways, the Medical Research Building is a promise that Weill Cornell is making to the scientific community: a pledge to train the next generation of leaders in biomedical research. We gladly take on the burden of making that promise, knowing that our students will hit those "home run" discoveries. Without them and our faculty, the new building would be just a 480,000-square-foot collection of vacant labs with pipettes and test tubes collecting dust.

Will our promise be kept? Check back with us in a few years, after the building has opened—and is alive with possibilities and filled with faculty ripe with new ideas. That's when you'll find your answer.

Mentor and student:
Assistant professor of neuroscience Chenjian Li, PhD (right), and postdoctoral researcher Yanping Li, PhD



AMELIA PANICO

Commencement Celebrated on Two Continents

In June, the ninety-eight members of Weill Cornell's Class of 2010 received their MDs in a ceremony in Carnegie Hall, along with thirteen MD-PhDs, fifty-four PhDs, and forty-nine masters of science. "Think creatively about how your skills can be used," President David Skorton, MD, told them, "not in isolation but in collaborative, cross-disciplinary teams to bring medical advances from bench to bedside to community and back again."

A month earlier and halfway around the world, seventeen graduates from nine nations received their MDs from WCMC-Q in the Qatar branch's third commencement. "As graduating physicians," said class speaker Anas Abou-Ismael, "we hope to help answer the questions of the twenty-first century and rekindle the flame of scientific innovation, medical discovery, and social justice in this part of the world."

Carnegie Hall debut: President Skorton greets a graduate. Below: The Qatar branch's third class of MDs poses for a portrait.



WCMC-Q

NYP Is Top-Ranked Hospital in New York Metro Area

NewYork-Presbyterian Hospital has been listed among the top ten hospitals in the country—and top-ranked in the New York metro area—in the latest list of the best hospitals in *U.S. News & World Report*. It's the tenth consecutive year that the hospital has been named to the magazine's "honor roll." The hospital was also the only one in the tri-state area included on the magazine's list of America's Best Children's Hospitals, and one of eight nationwide to be ranked in all ten pediatric clinical specialties. Weill Cornell's chief clinical partner, NewYork-Presbyterian was one of three hospitals in the country to be listed on both the adult and pediatric honor rolls this year.

Student-Run Community Clinic Names First Director

The Weill Cornell Community Clinic has hired its first director—Anne Kastor, MD—and launched an outreach campaign. The student-led clinic offers free care to uninsured New Yorkers at its site on East 70th Street, where a volunteer staff of physicians and medical students sees patients each Monday evening, offering basic medical care and referrals to specialty services. In April, the clinic launched its "Heart to Heart" outreach campaign, offering free screenings for cardiovascular disease risk factors at community centers and faith-based organizations. Participants will be assessed for BMI, blood pressure, cholesterol, and more, and receive follow-up information and referrals when needed.

Interactive Website Aids Alzheimer's Caregivers

With Alzheimer's disease affecting some 5.3 million Americans—a number that is expected to double by 2050—Weill Cornell scientists have designed a website to aid caregivers. Four years in the making, ThisCaringHome.org is an interactive multimedia site offering tips on adapting residences to the special needs of Alzheimer's patients. With virtual tours of each type of room, the website addresses the varying safety and quality-of-life issues that can arise as dementia progresses. The site's social networking features allow caregivers to support each other and share information. "So often the caregiver feels that he or she is alone or that no one has encountered their particular problem before," says Ronald Adelman, MD, co-chief of the Division of Geriatrics and Gerontology. "The interactive nature of this site, and the very fact that it's visually engaging and easy to navigate, draws people into an extremely informative, online community that can help ease some of the caregiver burden."

High Honors

Sanford Weill Wins Oncology Award

Foremost benefactor and Board of Overseers chairman Sanford Weill has won the James Ewing Layman's Award from the Society of Surgical Oncology for his support of cancer care. The award was presented to Mr. Weill by Fabrizio Michelassi, MD, at the society's annual President's Banquet, held in St. Louis in March. Joan and Sanford Weill have given close to \$1 billion to nonprofit organizations including Weill Cornell, Sloan-Kettering, and Weill Bugando Medical Centre in Tanzania.

Greenberg Award for Gotto and Pardes

Weill Cornell dean Antonio Gotto, MD, and NewYork-Presbyterian president Herbert Pardes, MD, have shared the thirtieth annual Maurice Greenberg Distinguished Service Award. Instituted in 1980, the award is presented to senior medical staff who have given exceptional and long-standing service to NYP/Weill Cornell. The honor was presented at the annual awards dinner in May.

University of Pisa Honors Fabrizio Michelassi

Surgery chairman Fabrizio Michelassi, MD, has been awarded the Campano d'Oro medal from the University of Pisa, his alma mater. The highest award granted to University of Pisa alumni, the medal honors accomplishments in culture, science, industry, and teaching. A distinguished gastrointestinal surgeon, Michelassi is the Lewis Atterbury Stimson Professor of Surgery and surgeon-in-chief at NYP/Weill Cornell.



PROVIDED

Fabrizio Michelassi, MD

Lorich Wins Humanitarian Prize

For his work in treating combat casualties from Iraq and Afghanistan and victims of the Haiti earthquake, surgery professor Dean Lorich, MD, has earned the Roger Joseph Prize from Hebrew Union College. The award, which includes a \$10,000 prize to further Lorich's work in Haiti, recognizes lasting contributions to human rights causes. Past recipients have included Rosa Parks and Victor Kugler, who aided Anne Frank's family.

Pannullo Named to Women's Leadership Program

Associate professor of clinical neurological surgery Susan Pannullo '83, MD '87, has been selected for the Hedwig van Ameringen Executive Leadership in Academic Medicine Program for Women. Held at Drexel University, it is the nation's only program dedicated to preparing senior women for leadership positions at academic health centers. The 2010–11 class comprises fifty-four fellows from the U.S. and Canada.



DEPT. OF NEUROLOGICAL SURGERY

Susan Pannullo '83, MD '87

WCMC-Q Students Win Research Grants

Twenty-eight premedical students at the Qatar branch have been awarded grants for research with faculty members. The grants, totaling \$280,000, come from the Qatar National Research Fund. They will support eleven projects on topics ranging from safe drinking water to gene therapy.

Longtime Librarian Retires

Library director Carolyn Reid has retired after twenty-three years of service. Reid came to Weill Cornell as an associate librarian and was promoted to director in 2004. During her tenure, the library's physical space doubled. When she arrived in 1987, it carried 1,500 print journals; that has increased to more than 9,000 electronic journals and 12,000 e-books. Says Dean Gotto: "Carolyn brought the Medical College Library into the twentieth century."

New Faculty Orientation Program Launched

In July, Weill Cornell held its first faculty orientation to welcome new hires. The session—a two-hour introduction on college history, policies, and goals, followed by a campus tour and reception—was organized by Lisa Abbott, senior director of human resources. The orientation was created in response to faculty requests for a more formal, comprehensive welcome to the college. "Learning things second-hand was not necessarily the right way," Abbott says.

Promoting a Balance Between Work and Personal Life

Radiology chairman Robert Min, MD '90, said that when his daughters were small, he worked so much that they didn't include him in the family portraits they drew; associate dean of academic affairs Shari Midoneck, MD '89, discussed living so close to work that she barely has a commute. In March, they and three other Weill Cornell physicians spoke at an event promoting a work-life balance. They discussed the dangers of putting such single-minded focus on career that it precludes a fulfilling personal life—and detracts from the work. "It's very easy to find someone who is academically and clinically productive," surgical oncology professor Rache Simmons, MD, said. "What's hard is finding someone who is both, and has a life and is a happy person."



AMELIA PANICO

Matched pair: On Match Day, Amy Downing, MD '10, and Max Ma, MD '10, celebrate their placements at the University of Washington—she in pediatrics, he in neurology.

TIP OF THE CAP TO...

Assistant health policy professor **Yuhua Bao, PhD**, recipient of a five-year Mentored Research Scientist Career Development Award from the National Institute of Mental Health.

William Borden, MD, the Nanette Laitman Clinical Scholar in Public Health/Prevention, winner of the Young Hearts Award for Achievement in Cardiovascular Science and Medicine from the American Heart Association.

Obstetrics and gynecology chairman **Frank Chervenak, MD**, named an honorary fellow of the Royal College of Obstetrics and Gynecology at its yearly congress in Belfast, Ireland.

Soumitra Eachempati, MD, professor of surgery and public health, named presi-

dent of the New York State Chapter of the American College of Surgeons.

Brian Kelly, PhD, senior director of technology development at Weill Cornell, and **Nigel Mongan, PhD**, assistant research professor of pharmacology, named to the 2010 Irish Life Science 50, a list of Irish Americans who contribute to advances in medical treatment.

MD-PhD student **Sandeep Kishore**, featured as a "Hero of Global Health" in a June special issue of *Scientific American* for founding the Young Professionals Chronic Disease Working Group.

Associate professor of clinical surgery **Mia Talmor, MD '93**, named president of the New York Regional Society of Plastic Surgeons.

FROM THE BENCH

Trial Finds Promise in Alzheimer's Drug

An eighteen-month Phase II trial of the Alzheimer's drug IGIV has documented that it can slow brain shrinkage in patients with mild to moderate disease. "To the best of my knowledge, this is the first trial in which long-term clinical benefits in Alzheimer's patients were accompanied by objective signs of reduced brain degeneration," says Norman Relkin, MD, PhD, director of the Memory Disorders Program at NYP/Weill Cornell and the study's principal investigator. The trial, whose results were reported at the American Academy of Neurology meeting in Toronto in April, found that patients who responded best to the drug did not show measurable cognitive decline over the eighteen months, and their average rate of brain shrinkage was comparable to healthy individuals.

A Genetic Guide for Leukemia Treatment

Associate professor of medicine Ari Melnick, MD, and colleagues have shed light on why leukemia patients respond differently to the same therapy. In *Cancer Cell*, they reported the results of a study of 344 patients diagnosed with acute myeloid leukemia. They found that whether leukemia is lethal or treatable may depend on epigenetic differences among patients—distinctions in the chemical codes outside DNA sequences. The findings included the identification of one biomarker that seems highly predictive of overall survival. "The findings have the potential to tell physicians whether a patient has a relatively easy or difficult disease to treat and tailor the patient's therapy accordingly," Melnick says. "This saves time trying therapies that will eventually prove to have no effect."

Parkinson's Drugs Can Cause Cocaine-Like Withdrawal

A class of drugs known as dopamine agonists can be highly effective in Parkinson's patients, but discontinuing them can lead to withdrawal akin to that seen in cocaine addicts. As reported in *Archives of Neurology*, Weill Cornell researchers have defined this phenomenon for the first time: Dopamine Agonist Withdrawal Syndrome (DAWS). Symptoms include anxiety,

panic attacks, depression, and nausea.

Although dopamine agonists can spare patients the common side effects of L-DOPA—the "gold standard" treatment for Parkinson's—they have their own perils, such as impulse control disorders, and must sometimes be discontinued. The researchers, led by Melissa Nirenberg, PhD '96, MD '98, associate director of the Parkinson's Disease and Movement Disorders Institute at NYP/Weill Cornell, recommend that physicians be extremely vigilant when tapering patients off the drugs.



Melissa Nirenberg,
PhD '96, MD '98

OCD May Be in the DNA

Weill Cornell scientists have discovered a connection between a missing gene and obsessive-compulsive behavior in mice. Researchers at the Ansary Stem Cell Institute and the Department of Psychiatry stumbled on the link while studying the role of the gene *Slitrk5* in blood stem cells and vascular cells. They noticed that when *Slitrk5* was disabled, the mice would perform repetitive actions such as obsessive self-grooming and were extremely anxious. When given Prozac, the OCD-like symptoms dissipated. "Overall, our data suggest that *Slitrk5* may have a central role in the development of the core symptoms of OCD—self-injurious, repetitive behavior and increased anxiety," says study senior co-investigator Shahin Rafii, MD, professor of genetic medicine and the Institute's director. "Very few psychiatric disorders have been linked to a single gene, and it will be important to find out if patients with the disorder have an alteration of *Slitrk5*." The findings may lead to new therapies for OCD in humans.

Enzyme Offers TB Target

An enzyme known as PEPCCK may hold the key to treating tuberculosis. A team led by microbiology and immunology professor Sabine Ehrt, PhD, found that it plays an important role in the replication of *Mycobacterium tuberculosis* (Mtb). The findings could point the way to new drugs that can slow the growth of TB by targeting PEPCCK. "Although the current treatments we have to treat Mtb are

effective, the treatment times are too long and the regimens too complex," Ehrt says. "This leads to treatment failures, due to poor adherence and multi-drug resistance. We need new, safer drugs that work faster to eliminate tuberculosis." The researchers used a novel mass spectrometry-based metabolic profiling tool developed by assistant professor of microbiology and immunology Kyu Rhee, MD, PhD. The findings were published in the *Proceedings of the National Academy of Sciences*.

A Breakthrough in SSRIs

Scientists from Weill Cornell and Columbia are advancing understanding of how proteins change shape to regulate the movement of neurotransmitters. A study published in *Nature*, which outlines the molecular mechanism of membrane transport, has significant implications for the treatment of depression and substance abuse—potentially shedding light on why SSRIs like Zoloft and Prozac can be effective. "Our study is the start of understanding how SSRIs work at a mechanistic level," says co-author Harel Weinstein, DSc, chairman of physiology and biophysics, "and why they work in some people and not in others."

Self-Tanner Offers a Sticky Solution for Wound Closure

A collaboration between Weill Cornell plastic surgeons and biomedical engineers on the Ithaca campus has led to the development of an injectable gel—a compound called MPEG-pDHA, found in self-tanning spray—that can be used as a glue to close surgical wounds. It could also be inserted into cavities left by surgical procedures, which often fill with fluid, requiring the implantation of a temporary drain. Because the body naturally produces DHA while metabolizing glucose, the gel could be easily absorbed—unlike current, animal-based bio-glues. The researchers tested the compound on rats that had had breast tissue removed. Plastic surgeon Jason Spector, MD, and biomedical engineer David Putman, PhD, worked together on the project.



Jason Spector, MD



JASON KOSKI / CORNELL UNIVERSITY PHOTOGRAPHY

Pain reliever: Biomedical engineering grad student George Lewis demonstrates how the new device works.

Talk of the Gown

Insights & Viewpoints

Small Wonder

Shrunk to the size of an iPod, an ultrasound device offers relief for chronic pain

The accident happened five years ago, as Joanne was driving on Long Island. Waiting to make a left-hand turn, she was rear-ended by a car going more than sixty miles an hour. “A husband and wife were having an argument and didn’t see me,” she recalls. “What’s even more amazing is that after they got out of the car, they kept arguing.”

A former investment banker in her sixties who asked to be identified by only her first name,

Joanne has been plagued by back pain ever since the crash. Suffering from sciatica as well as episodic spasms of the trapezius muscle, she’d rate her discomfort at around six on a zero-to-ten pain scale. “When you’re in a lot of pain, you’re cranky,” says Joanne, who lives in Ithaca and manages four upstate surgical centers. “You don’t want to be around people. It affects your everyday life.”

But in late 2008, she heard about a new therapy being tested at Cornell—a compact, portable,

ultrasound pain relief device. A mutual friend put her in touch with George Lewis, the Ithaca-based graduate student in biomedical engineering in charge of the project. "I'd had ultrasound before in the doctor's office, but the problem is that you get it for fifteen to twenty minutes and it feels great, and then you leave and end up spasming again," she says. "The great thing about George's device is that you can wear it; I wear it for four hours at a time and get relief within twenty minutes, and it lasts for a day or longer. There's no pain, no irritation—you can palpate the muscle and see that it's no longer spasming. It's like a miracle to me."

Developed in collaboration with Weill Cornell medicine associate professor Cary Reid, MD, PhD—with initial funding from the Clinical Translational Science Center, which paired the two researchers in its role as intercampus matchmaker—the device bases its technology on a core patent Cornell filed in 2008. The pain reliever is just one application of the technology; Lewis is also working with Weill Cornell neurosurgeon Susan Cohen Pannullo '83, MD '87, on using it to enhance delivery of brain tumor drugs—the subject of his dissertation—and with vascular surgeon Jason Spector, MD, on non-invasive treatment of varicose veins. "Traditional ultrasound systems are about the size of a shoebox, but this is the size of a pager," Lewis says. "It produces a hundred times the energy of the traditional design, but it's about one-twentieth the size and the cost is substantially cheaper."

The pain-relief device comes in sizes ranging from petite to amazingly tiny, depending on battery capacity. The basic model is the size of an iPod and can run for more than six hours, while an even smaller one, akin to a few stacked quarters, lasts for about two. "It delivers ultrasound deep into your body just like physical therapy systems, except you wear it and it's a lower dose—you can think of it as slow-release ultrasound," says Lewis, who plans to stay at Cornell as a post-doc after defending his dissertation this summer. "The controls are simple—it's just on/off—and it delivers a set amount of power. You could pass out with this device on, and it would never hurt you." It has shown promise in initial pilot studies with patients like Joanne, with users reporting pain reductions from 15 to 100 percent. "There are some professors using it here at Cornell," says Lewis, "who won't give it back."

Some of that improvement, of course, could be due to a placebo effect; formal clinical trials at NYP/Weill Cornell, Sloan-Kettering, and Ithaca's Cayuga Medical Center are scheduled to begin this summer on patients with arthritis, chronic back pain, and tendonitis. "There is an epidemic of pain—as many as 50 percent of older adults over sixty-five will go on to develop some kind of chronic pain disorder," says Reid, the Joachim

Silberman Family Clinical Scholar in Geriatric Palliative Care. "One thing that has struck me is that whenever I go to meetings where we talk about the problem, somebody will share a story about how a family member has been negatively impacted by pain. The problem of pain touches the lives of many people."

Osteoarthritis affects some 60 million Americans, Lewis notes, with another 50 million enduring chronic lower-back pain. And the pain itself can cause further disability. Sufferers cope by limiting motion—for example, not walking on an arthritic knee—which then leads to muscle weakness, decreased endurance, and greater risk of falling. But Reid points out that the primary method of pain control, analgesic medications ranging from ibuprofen to opioids, are problematic. "Not only are many of them costly, but they have worrisome side effects," he says. "If the studies prove that this device can help reduce pain and improve mobility, it will give clinicians and patients a tool to address a common and disabling problem."

In July, the project got a major boost with the announcement that it had won the \$100,000 second prize in an annual competition, held by the Boston-based Center for Integration of Medicine and Innovative Technology, to fund creative solutions in primary health care. (The \$150,000 first prize went to a Cornell doctoral candidate in biological and environmental engineering for an instant, DNA-based throat test for strep and other maladies.) The award will support the building of the 200 additional devices needed for the trial—all assembled by hand in Lewis's lab—as well as collaborations with other Cornell departments including fiber science, where students are designing an ergonomic patch to secure the device on the body. The researchers hope that it will go on the market in about two years, first available by prescription but ultimately sold over the counter. "To really help patients, this needs to be on the shelves at CVS," Lewis says, "where instead of getting an analgesic patch you could get the ultrasound coin."

Joanne has been so pleased with her results—she says her pain is now down to three, which she calls "annoying but doable"—that she signed on to help market the device. She already has a customer lined up: her sixty-three-year-old sister, who tried it when she was visiting from abroad. "She has bad osteoarthritis in both her knees, and she walks with a cane," Joanne says. "She used it for the seven days that she was here, and she kept saying she was going to hide it in her luggage and take it home with her. She constantly e-mails me asking, 'Are they ready to sell this yet? I want the first one.'"

— Beth Saulnier

'There are some professors using it here at Cornell who won't give it back.'



BJ Casey, PhD

JOHN ABBOTT

Nervous Condition

Transgenic mice enable a breakthrough
in the DNA of anxiety

What does a mouse huddled at the edge of a field have in common with wallflowers at a school dance? More than you might think. A study published in *Science* last winter tested the behavior patterns of mice bred to have a human genetic variant associated with anxiety. Led by MD-PhD student Fatima Soliman, under the mentorship of Sackler Institute of Developmental Psychobiology director BJ Casey, PhD, and associate professor of psychiatry Francis Lee, MD, PhD, its results suggest that some people may be

neurologically predisposed to have trouble recovering from stressful experiences. Their findings may help clinicians determine which anxiety sufferers will respond to traditional therapies and which may require different, or simply longer-term, courses of treatment. “One genetic alteration isn’t the cause of the anxiety,” says Soliman, who recently completed her PhD, “but it may be a contributor.”

In 2006, Lee created the transgenic mouse model, which replicates a human variant of brain-derived neurotrophin factor, or BDNF. (The

BDNF-variant mice aren't born anxious, but—like many human patients—begin to develop nervous tendencies around adolescence.) The polymorphism, which is essentially a swap of two amino acids, has long been associated with anxiety disorders because of the major role neurotrophins play in development—but until now, no one has been able to pin down exactly how. The new study determined that rather than causing anxiety, the BDNF variant affects the ability to recover from traumatic events. "It's not really the learning of fear," says Casey. "It's the elimination of that fear."

For the experiment, the researchers set up a classic conditioning paradigm rooted in basic Pavlovian techniques. Both the mice and human volunteers were repeatedly exposed to a neutral stimulus (a color or inoffensive sound) paired with an aversive one. For mice, that meant an electric shock; for humans, a blaring noise. The animals' stress levels were measured by their tendency to freeze (anxious mice immobilize themselves, prompting Casey's wallflower analogy), while the humans' were monitored via sweat output. The ability of each individual to suppress the initial fear memory was evaluated by how long they continued to display anxious responses to the neutral stimulus after the unpleasant one was removed.

Finally, the researchers scanned the brains of human subjects as they underwent the tests. They discovered that those who carried the BDNF variant not only took longer to recover from the aversive stimulus but displayed unusual brain activity in the process. "They were not activating an area in the prefrontal cortex that's key to extinguishing fear memory," says Casey. "What they were doing instead was activating this deep structure in the brain, the amygdala, that's central to *learning* about fear."

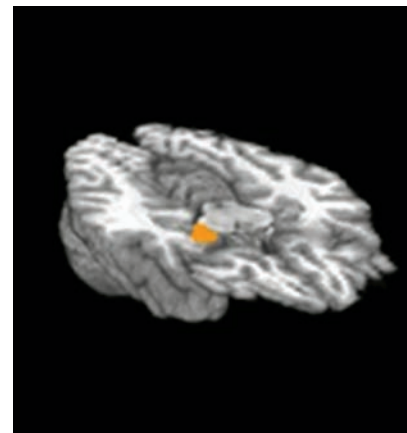
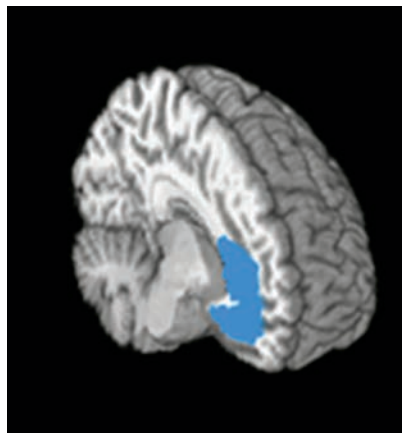
In other words, individuals with the variant didn't just have a harder time forgetting their fears, they triggered a portion of the brain that inhibits recovery—rendering conventional treatments ineffective. The discovery could change the way psychiatrists approach such disorders, perhaps pointing the way to treatments that could be tailored even to the youngest anxiety sufferers. "Some of the most difficult sessions I've experienced in my research have been with pediatric patients," Casey says. "When you hear how so many treatments have been tried for children experiencing anxiety, it's agonizing—not only for the child who's not getting better, but for the parent as well. This could offer a reliable prediction, so you could save them from going to physician

after physician and trying treatment after treatment. You could know in advance, 'This is not going to work, let's think of something else.' "

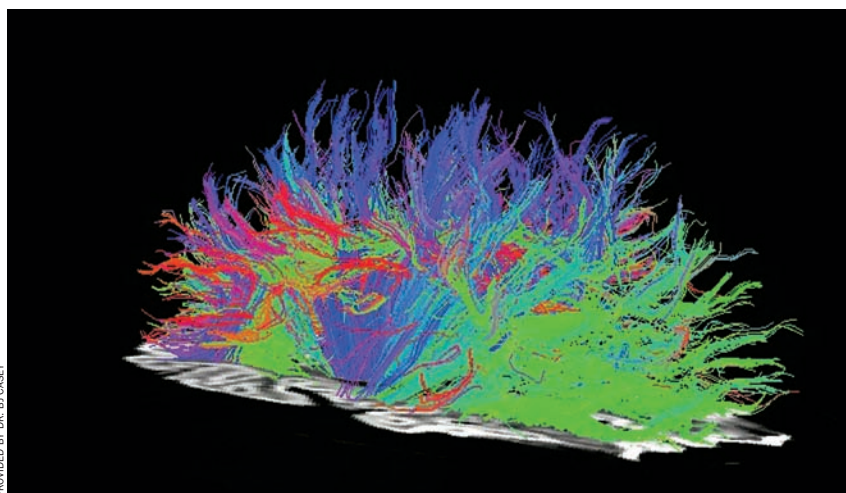
Further studies are under way on how the BDNF variant affects specific anxiety disorders, such as PTSD with severe burn trauma. Researchers are also looking at how the transgenic mice respond to different mood-altering medications, as well as exploring the potential to treat BDNF carriers even before they manifest anxiety. "If you can identify at-risk individuals, there's the possibility that one could intervene and prevent the disorder from emerging," Casey says. "Psychiatry should be as much about mental health as mental illness. When we wait until there's a diagnosis, we've waited too long."

—Liz Sheldon

Can't forget: Casey and her students have uncovered an imbalance between prefrontal cortical control regions (below left) and subcortical emotional regions (below right) in individuals with the BDNF genotype.



Brain power: Casey and colleagues are using diffusion tensor imaging (DTI) to examine the strength of connections between distal regions. The image below shows the direction of fiber tracts in the adult brain from superior to inferior (blue), right to left (green), and anterior to posterior (red).



PROVIDED BY DR. BJ CASEY

Everything in Its Place

Helping women rearrange the 'rooms' of their emotional lives

BETH PERKINS



Catherine Birndorf, MD

Most people have a mess lurking somewhere at home. But the idea of cleaning house takes on new meaning in *The Nine Rooms of Happiness*, a self-help guide co-authored by Catherine Birndorf, MD, a clinical associate professor of psychiatry and obstetrics/gynecology. Written with *Self* magazine editor-in-chief Lucy Danziger, the book aims to help women put the figurative “rooms” of their emotional lives in order. With a full-time private practice specializing in women’s issues and a regular advice column in *Self*, Birndorf knows how easy it can be for

women to let minor failures—say, gaining an extra ten pounds—derail them even when their lives are generally satisfying.

Each chapter features a symbolic room, from the basement (the past) to the bedroom (relationships and sex). The authors deconstruct the issues women face in each room, outline the psychological processes involved, and offer coping strategies. For example, in the social world of the living room, the duo outlines a tool called “A+B=C.” It’s designed to help women see that only by changing themselves (A) can they improve their relationships (C); there’s no point in waiting around for

other people (B) to behave differently. “We want people not just to identify problems but to solve them,” says Birndorf, founding director of the Payne Whitney Women’s Program. “My job was to come up with common patterns people get caught in and distill psychiatric concepts, like Freudian screening, into tools they can remember easily and use to keep from getting overwhelmed. It’s about getting therapy off the couch.”

Since the book’s publication in March, the pair has been featured on the “Today” show and earned a spot on the *New York Times* bestseller list. In a review, *Vogue*

praised the book for taking “a fresh approach to emotional problem solving, suggesting techniques to isolate the root causes of our dissatisfactions and help us put them in perspective.” The authors also host a companion website, nine-rooms.com, which features their blogs as well as discussion forums—including a Mess of the Day on such topics as “major body image issues” and “boys will be boys, what will men be?”

The seed for the book was planted when Danziger tapped Birndorf, who’d been writing for *Self* for about a year, for a dose of the advice she was dispensing to readers. “I have this constant running negative editorial in my head, which seems ridiculous because my life is so great,” Danziger told her. “Why am I beating up myself for waking up five minutes late?” She wanted to know if she was crazy—or if that kind of nagging self-doubt strikes everyone.

The answer was a resounding yes, and the pair set out to create a guide that would be accessible to women who don’t have the time or resources to visit a therapist to work on everyday troubles like a sisterly argument or disappointment over a child’s grades. Their research included interviewing more than a hundred women about the issues that were bedeviling them, from a husband avoiding dish duty to a stressful project at work. “We were clear as we formulated this idea that we’re not dealing with life and death, serious bankruptcy, or divorce—well, maybe divorce,” says Birndorf. “But mostly we wanted to focus on the little things that constantly bring you down.”

As with any dwelling, Birndorf says, the work begins at the foundation. She is particularly interested in how childhood failures and insults continue to affect women’s self-esteem as adults. “The basement underlies the entire structure of the house,” Birndorf says. “We reconstruct these memories so acutely, and they become the lens you see the world through. You’re trying to balance your checkbook and you feel like you’ve failed that third-grade math test all over again.” The book’s message: “You can’t live in the past. Now is it.” Such wisdom may sound obvious, but the authors say that it’s the kind of advice that women pay lip service to but rarely follow. “Women are generally caretakers, and when we look at our ‘house’ and see one room that’s a mess, we can’t enjoy the rest—we let problems seep into other rooms,” says Birndorf. “But we have to learn how to step away and prioritize.”

The authors also stress that their advice is not a cure-all—nor do they want it to be. “This is an anti-perfection book,” says Birndorf. “It’s not about getting all your rooms in order and then you’ll be happy. Happiness is not some destination you’re trying to get to. Our philosophy is about maximizing the moments of joy along the way.”

— Liz Sheldon

Raising Awareness

Student group advocates for lesbian, gay, bisexual, and transgender issues

Ask the leaders of Q! what their organization’s name means, and the answer is... complicated. On one hand, the letter is short for “queer”—a way to disarm a once-ubiquitous homophobic slur, co-opting it into a term of empowerment and topping it off with an exclamation point. But it also stands for “questioning,” to underscore the notion that sexuality can be fluid, ever evolving, and impossible to pigeonhole.

The group’s full title is Q! LGBT Students in Medicine; the acronym is short for Lesbian, Gay, Bisexual, and Transgender. An official student organization at Weill Cornell, Q! has a variety of aims: hosting social events, advocating for greater coverage of LGBT issues in the Medical College curriculum, and raising awareness of the population’s distinct health-care needs among future physicians. “A lot of people think, It’s

‘Fighting for the right to be in medical school—those battles have been done and won.’

AMELIA PANICO

Neal Parikh '13



2010, we're in New York City, being LGBT-identified is no longer an issue, there's no discrimination anymore," says Neal Parikh '13, one of the group's current co-chairs. "That may be true to some extent, but in the field of medicine I don't think it's completely true yet. That's why it's important to maintain this organization."

Q! was founded at least a decade ago; none of the current leaders, including faculty adviser Joseph Murray, MD, is quite sure when it started (or when it changed its name from something more conventional). But Murray notes that such groups on campuses nationwide have evolved with the times, becoming less overtly political and more focused on support and advocacy. "Fighting for the right to be in medical school—those battles have been done and won," says the psychiatry professor. "These groups were incredibly important twenty or thirty years ago. They were revolutionary for the time, but this generation of medical students is comfortable with their colleagues and patients being

gay men, lesbians, or bisexuals. I do think there are still some transgender-related issues, but in general it's much more open and accepting."

Combating lingering prejudice against transgender people and increasing understanding of the medical issues they face are among the group's current priorities. One basic problem, Parikh notes, can crop up when simply filling out a standard medical-intake form. "A lot of forms assume that patients are either male or female," he says. "The gender structure in medicine is rigid." The solution, he says, would be to make it less of an either/or question. "There would be boxes for male and female and then a blank line so people could write 'transmale' or 'transfemale' or whatever they want," he says. "There are so many different categories."

In terms of medical education, the group aims to expand coverage of LGBT issues in Weill Cornell's core curriculum—which, former Q! leader Marina Stasenکو '11 notes, currently consists of a brief presentation in the second

semester of first year, on the day of the Medicine, Patients, and Society course that is devoted to sexual health. "We had a lecture on the basics, like terminology, that doctors should be aware of," says Stasenکو, a Brooklyn native who plans to specialize in ob/gyn. "It was great, but fifteen to twenty minutes for 10 percent of the population is bad. One of our missions is to make everyone—not just the LGBT community—aware that these are things that we should all learn about and carry into our practices."

Membership in Q! is casual, with the group holding periodic events rather than formal meetings. They include mixers with other institutions—social events that have expanded to include not only other area medical colleges (NYU, Columbia, Albert Einstein, Mount Sinai, SUNY Downstate) but also students of law, dentistry, and other graduate fields. "Weill Cornell is so small, and we're so

far away from the undergraduate campus, that we don't have a very active LGBT population," says co-chair Kevin Johnson '11. "We have to branch out."

The group holds occasional showings of movies with LGBT themes; past titles have included *Transamerica*, about a male-to-female transsexual whose psychiatrist insists that she make peace with her teenage son as a condition of approving her gender reassignment surgery, and *Ma Vie en Rose (My Life in Pink)*, in which Belgian parents cope with their seven-year-old son's desire to be female. It also sponsors guest speakers on topics from the subtleties of gender identity to treating transgender youth in mobile clinics to taking an appropriate sexual history. "Students and teachers need to be aware that a percentage of your patient population is going to be LGBT-identified, and it's important to ask questions in a way that doesn't alienate them or make them feel uncomfortable," says Parikh. "For example, you have to ask, 'Do you have sex with men, women, or both?' I've been to doctors who, when they ask if you're sexually active, really mean, 'Do you have sex with women?' I can tell that from the look on their faces when I say, 'I'm gay.'"

Unfortunately, Q! members say, stereotypes about LGBT issues persist on both ends of the stethoscope. Negative anecdotes—like lesbians being advised that they don't need Pap tests, or patients encountering overt hostility when they seek hormones for gender transitions—can fuel mistrust of the medical establishment. "These stories circulate all the time," says Johnson, a Detroit native pondering a specialty in psychiatry, "and whether they're exaggerated or not it discourages people who are LGBT-identified from even visiting the doctor."

Parikh, who grew up in Connecticut and earned an undergraduate degree from Yale, took a year off before applying to medical school. He notes that, for him, Q! was a powerful recruitment tool as he debated where to pursue his MD. "My perception was that medical school was a conservative place that's hostile to LGBT people," he recalls. "But when I came to Weill Cornell for a revisit weekend, Q! hosted a happy hour where current students took the applicants out for margaritas. It reinforced that for an openly gay medical student, this is a comfortable place to be."

— Beth Saulnier



Moving picture: Past Q! events include a screening of *Transamerica*, whose main character is transitioning from male to female.



STEFANIE GREEN

Robert Linden '71, MD '75

Country Doctor

An internist applies lessons learned from small-town practice to the challenges facing the U.S. health-care system

Robert Linden, MD '75, was an internist and geriatrician in a small Connecticut town for three decades before retiring in 2007. A 1971 graduate of the Ithaca campus, he is the son of a Cornell-educated veterinarian who liked to joke that his MD constituted “family evolution.” After years of eighty-hour workweeks, Linden didn’t slow down in retirement: his first order of business was to pen a memoir offering a front-line analysis of the challenges facing patients, physicians, and society.

The *Rise & Fall of the American Medical Empire: A Trench Doctor’s View of the Past, Present, and Future of the U.S. Healthcare System* came out in January from the medical-interest publisher Sunrise River Press. The book—a dense 300 pages including glossary and footnotes—focuses on

four general areas: insurance, the pharmaceutical industry, malpractice, and the crisis in primary care. “Patients are clamoring for more information about the health-care system, so I wrote the book as an educational tool,” Linden says, then admits to another motivator: guilt at having left medicine at fifty-eight. “I did retire at too early an age, because I wanted to get out before I burned out and became cynical,” he says. “But I wanted to impart the knowledge I had picked up along the way.”

Weill Cornell Medicine: How do you define a trench doctor?

Robert Linden: A trench doc is somebody who is available 24/7, who is the person that patients go to first. It’s someone who provides the bulk of basic medicine, whether that be internal medi-

'You're dealing with patients up close—their happiness and sadness, their financial woes, the problems they're having with the health-care system.'

cine, family practice, pediatrics, or general surgery. The trench doc is the caregiver for the majority of America.

WCM: So what's it like in the trenches?

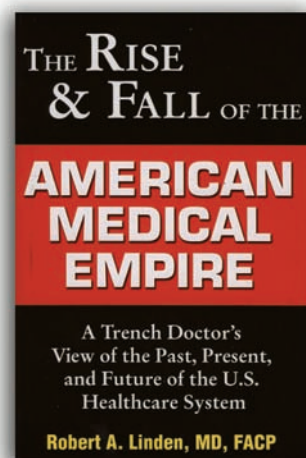
RL: From the standpoints of time and quality of life, it's difficult. You're frequently putting in seventy- or eighty-hour weeks, working nights and weekends. You're dealing with patients up close—their happiness and sadness, their financial woes, the problems they're having with the health-care system. The other issue is income. Physicians based in an academic medical center, or even a general hospital, are often subsidized by those institutions. Doctors in the trenches have to make it or break it on their own.

WCM: In your title, you refer to the American medical system as an "empire." Why?

RL: Because it has become a business model. Patients and physicians have become cogs in a system run by for-profits. As far as the "rise and fall," I feel that when I started med school in 1971 it was the beginning of the heyday of medicine. Beta-blockers were coming out for heart disease and high blood pressure, studies were being done better, technology was emerging. My first ten years of practice, it was still fee-for-service, and physicians were still happy. Then business people realized that there were large profits in medicine. Insurance became about avoiding risk, picking out the healthy and leaving the sick out of the pool. Malpractice premiums skyrocketed and the system started to unravel.

WCM: Can you give an example of the kind of challenges that trench doctors face?

RL: A patient from Ohio had just moved to Connecticut and changed insurance. When she came to me for an annual physical, she was healthy. She came back three months later complaining of a raspy voice, having problems speak-



ing. That's one of the beginning symptoms of ALS, Lou Gehrig's disease, which is terminal. I referred her to a neurologist who put her in the hospital for further testing. When she got out, her insurance company said they

weren't going to pay; they considered it a pre-existing condition. I wrote to the company, and said, "No, she bought this insurance in January, and she came to me in February for an exam without any signs of ALS." I continued to advocate for her and got nowhere. I finally turned it over to the Connecticut attorney general's office, which threatened to rescind the company's license. This went on for three or four years, and the patient had passed away when they finally paid. That was probably twenty years ago, but things aren't any different now.

WCM: How optimistic are you that the situation can improve?

RL: I'm somewhat optimistic, at least based on the part of the new health-care legislation that is going to help increase access and, I hope, quality of care for patients. Whether it's going to improve physician morale or control costs, I'm not sure. Overall, I think a lot more needs to be done—at the reimbursement level, at the medical school level, and for patient education. We need to get the public involved in the discussion. Until that happens, we're still going to be floundering.

WCM: What would you say to a student who asked for advice about entering primary care?

RL: That you have to go into it with open eyes. If you really care about people, you want a satisfying career, and you're not too worried about income, then yes. Also, you're guaranteed a job for life; I could get a primary care position tomorrow since there are so few people going into it. But if you're interested in a large income and a short work week, it's not for you.

— Beth Saulnier

Welcome Wagon

'Ambassadors' host
Qatari students
visiting Ithaca campus

It's a balmy eighty degrees under clear blue skies with a postcard sunset in the making. The Balch Hall Gate is dappled with gothic shadows and green-gold light as lush trees rock in a gentle breeze—all-in-all, a picture-perfect June afternoon in Ithaca.

"Just like a normal winter day in Qatar," observes Mohammed Al-Hajri, a cheery premedical student visiting Cornell for a six-week research program before returning to WCMC-Q for his first year of med school. On this Friday, Al-Hajri is among two dozen premed and high school students from the emirate gathered outside an ivy-covered residence hall for a fete of pizza and soda, sponsored by a student group called IthaQatar Ambassadors. "We get along well, we are having a wonderful time, and my research mentor is amazing," say Al-Hajri, studying a pizza crust before dispatching it. "This is a superb experience."

That was the aim when the ambassadors first organized on the Ithaca campus in 2007. With support from the University administration and the International Students and Scholars Office, the volunteer ambassadors host as many as thirty social and academic events over the six weeks that students from the Qatar branch visit Ithaca each summer. This student-driven "welcome wagon" has a counterpart at WCMC-Q, and there is talk of creating a formal exchange program between the two campuses. Last spring, four Ithaca ambassadors traveled to Doha to present their case for a program that would give three to five students the opportunity to swap campuses each semester, starting in 2011 or 2012; students at both sites are currently conducting surveys to assess interest.

For now, the Ithaca-based ambassadors focus on helping their new friends adjust to life in America. They host joint cultural tours to Boston and Niagara Falls with other international stu-



FRANKLIN CRAWFORD

dent groups. (The WCMC-Q students also travel to New York City to visit Weill Cornell.) There's a trip to the Carousel Mall in Syracuse and a foray to a low-ropes challenge course run by Cornell Outdoor Education, as well as classic Ithaca summertime pleasures like picnics in area parks, strawberry picking, and kayaking on Cayuga Lake. For students accustomed to temperatures that can reach 120 degrees in June and July, the mild Ithaca weather can be a relief—or, for some, even a bit of a letdown. "I wanted to see snow," laments Zahra Kamil, a premed from Sri Lanka. "I guess I will have to come back in the winter."

— Franklin Crawford

Home away from home:
Premed and high school
students from Qatar mingle
with Cornellians on the Ithaca
campus in June.

Calling for a Consult

Ronald Riner, MD '74, helps hospitals and physicians practice the business of medicine



Ronald Riner, MD '74

PROVIDED

When Hurricane Katrina hit in 2005, it crippled four clinics run by Coastal Family Health Center—destroying patient records and computer systems and forcing a third of the employees to relocate. Two years later, the Mississippi-based health-care consortium had yet to fully recover. So Coastal CEO Joe Dawsey tapped the Riner Group, a health-care management consulting firm, to survey the organization and help determine its future direction.

Firm president Ronald Riner, MD '74, sent a team to evaluate Coastal's eleven clinics, whose patients are mostly uninsured and whose rates are based on a sliding scale. Working *pro bono*, the Riner Group produced an operational assessment of the clinic's practices in the areas of human resources, finance, scheduling, and com-

munication. Ultimately it advised Dawsey to install a leadership team, hire a medical director, and make more consistent efforts to seek compensation from patients (staff had sometimes felt uncomfortable asking for payment in the wake of the disaster). Dawsey says that, as a result, his clinic has improved its training program, beefed up a central call center, and increased revenue. "It may seem like common sense to offer training to clinics that aren't doing well—but if you don't know what's going on, you can't catch it," Dawsey says. "They did."

Founded in 1981, the Florida-based Riner Group consults for hospitals, health systems, and medical practices, as well as pharmaceutical companies and medical device manufacturers. The firm also publishes *Mediscene*, a newsletter on topics of interest to practitioners; through its Riner College, it conducts seminars on such subjects as marketing, practice management, and physician-hospital relationships.

In their consulting work, Riner and his colleagues travel the country conducting site visits, reviewing compensation and billing rates, and surveying staff, among other activities. With the advent of health-care reform—and demographic changes such as a growing senior population—he says demand for such services will continue to rise. "It will be a test," says Riner, the son and nephew of physicians. "It is going to call for all facets of the health-care system to get innovative. We're going to have to seriously look at some of the things we take for granted in terms of our practice habits and ask, 'Can we do things differently?'"

Among the innovations Riner advocates is the creation of leadership groups comprising professionals from every aspect of a hospital or practice, from nurses and physician assistants to financial staff and chief medical officers. With their experience on the front lines, he says, such teams are best equipped to set rules and standards. Another key concept is the group visit, in which some fifteen to twenty patients with the same disease gather to receive follow-up information. Such visits generally take about half an hour—rather than ten or fifteen minutes for each person—yielding a huge saving of time and money.

When Riner earned his MD from Weill Cornell and went on to residency at New York Hospital and Sloan-Kettering and training in cardiovascular disease at the Mayo Clinic, he had no idea that he would one day hang up his stethoscope and help other doctors to improve their practices and navigate the maze of health-care regulations. After completing his training,

Riner held several positions, including program director and chief of medicine of a 600-bed hospital in St. Louis. He got into consulting after observing widespread confusion during the advent of managed care in the early Eighties, as a variety of new players—many from the business world rather than medicine—got into the game. “Physicians were being whipsawed by new payment requirements and insurance risk,” Riner says. “The milieu was ripe for heartache and bad outcomes.”

His client base grew and, after fifteen years of juggling his two careers, he turned to consulting

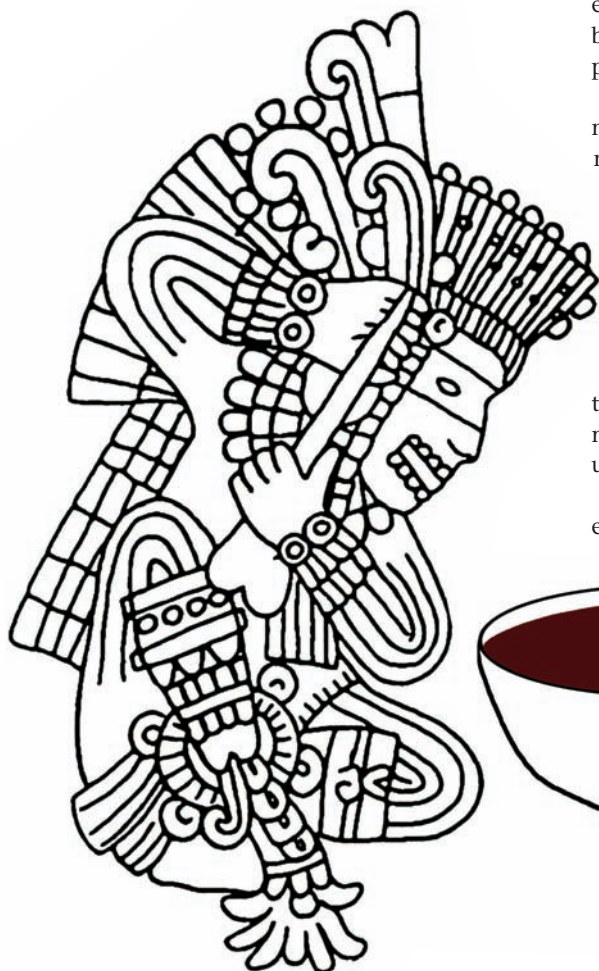
full-time. (In addition to his consulting work, Riner is chief medical officer of Health Management Associates, Inc., a publicly traded firm that acquires and operates hospitals, primarily in the Southeast and Southwest U.S.) For Riner, his career has seemed a natural progression. “Medicine remains the greatest profession a person can choose if they have an interest in helping others,” he says. “I saw a need on the business side, and I am now a physician to physicians and hospitals. Ultimately, I still help the patient.”

— Christine Gordon

‘I am now a physician to physicians and hospitals.’

Health by Chocolate

Tapping plant-based compounds to fight malaria



Chocolate lovers have celebrated as flavonoids have been hailed for their protective properties against ailments from cancer to cardiovascular disease. These compounds are found in cacao beans and many other plant-based foods, including green tea, shea nuts, and red wine—and Weill Cornell postdoc Steven Maranz, PhD, hopes they may help in the battle against another deadly disease: malaria. Since flavonoids affect the endothelial cells lining blood vessels and since malaria is caused by a blood-borne parasite, the compounds could be useful in treating the disease or even preventing it from taking hold.

Raised in Africa and South America, Maranz is familiar with the struggles of malaria-ridden communities. The mosquito-borne disease is responsible for more than 700,000 deaths each year, concentrated mostly in tropical regions like sub-Saharan Africa. Although a number of anti-malarials have been developed over the past century, many have become less effective as the parasite evolves and becomes resistant—and because many sufferers are so poor they are unable to afford treatment.

In 2009, Maranz won a \$100,000 Gates Foundation Grand Challenges Exploration Grant to support his work. These awards are given to researchers whose ideas show great promise but have not yet been proven in the lab. “It’s a blind review process, where people submit ideas without their name or institution attached, so only the idea and the testing methods are evaluated,” Maranz says. “It’s great for young researchers.”

Ultimately, Maranz hopes to design an anti-malarial that doesn’t require an expensive or inaccessible treatment regimen but can be taken as a daily beverage—one that might resemble the traditional cocoa-based drinks of the Mayas and Aztecs. Working in the lab of microbiology and immunology professor Kirk Deitsch, PhD, who studies the genetics of the malaria parasite, Maranz is currently testing the effect of flavonoids on malaria-infected mice. He stresses that although much of the early press coverage of his Gates award touted the promise of chocolate as a malaria cure, the average candy bar would not suffice. “Candy bars contain lots of other ingredients, sugars, and fats,” Maranz says, “and a lot less of the active compound.”

— Adrienne Zable

Diabetic Shock

For its first major research effort, WCMC-Q tackles a disease that threatens many Qataris

In the U.S., where diabetes is considered to be at epidemic levels, about 4 percent of the adult population has the disease. But in Qatar, the life-limiting disorder is even more prevalent—upwards of an alarming 18 percent, with still more people suffering undiagnosed. “Diabetes is one of the most common chronic illnesses

has begun construction that will double its existing research space. Eventually, they will form what’s hoped to be a research hub for the region. “The concept is to develop basic, translational, and clinical scientists who are interested in working on problems that are important in Qatar,” says New York-based professor of genetic

medicine Ronald Crystal, MD, one of the initiative’s leaders, “not only diabetes and obesity but also cardiovascular disease, neurologic disorders, disorders of pregnancy, and problems of women and children.”

In 2009, researchers at WCMC-Q’s Genomics Laboratory made significant headway in mapping the DNA of a variety of the date palm, a key crop in the region. Building on that expertise, the diabetes initiative aims to explore the disease at a genetic level. With the help of Ithaca-based populations geneticist Andrew Clark, PhD,

scientists are studying the Qatari population in the hope of understanding why the disease has become so prevalent—and, ultimately, crafting personalized therapies. “We’ve been able to define the Qataris in three general genetic groups, depending on the patterns of migration,” says Crystal. “When human evolution came out of Africa, it went across the Arabian peninsula and moved into Europe and Asia and then came back with the trade routes, so the Middle East is a melting pot. We know that in the European population there are at least twenty genes that increase risk for diabetes. It will be important to find out whether they are the same as those in Qatar—whether they’re shared, whether they’re the same frequency.” In Qatar, he notes, the odds of inheriting such traits are increased by a cultural tradition of marry-

ing within families; Qataris commonly wed their first or second cousins, making it more likely that a predisposition to diabetes and obesity will be passed on.

According to Crystal, the standard hypothesis is that due to the climate in the Middle East, natural selection favored a “parsimonious” metabolism: people evolved to conserve fuel because food supplies were scarce. But in a time of abundance, that tendency has backfired. “As the societies of the Middle East have adopted more Westernized diets—you go there and see KFC, Pizza Hut, and McDonald’s—they have developed the same kinds of problems we have in the U.S. and Europe, but superimposed on different genetics.” Unfortunately, the same arid climate that nurtured those metabolically stingy genes also discourages everyday exercise. “In Manhattan, there is less obesity than in the Midwestern states or the South, and that relates to the fact that New Yorkers walk everywhere,” Crystal says. “But in Qatar, nobody walks anywhere. There are no sidewalks. Everybody drives.”

The problem is exacerbated by higher rates of smoking—39 percent of men use *shisha* water pipes—and a traditional diet that can stymie attempts at healthy eating. “The food typically consists of refined carbohydrates,” Sheikh says. “It’s high in sugars and starches like rice and flour, and sweets are very common. The other issue is portions, which tend to be quite big.”

Such risk factors—genetic, environmental, cultural—will be scrutinized during the project’s initial phase. Eventually, researchers hope to find markers to identify individuals most likely to become diabetic, so the disease can be staved off before it takes hold—for example, by preventing obesity in children with a strong genetic disposition. But as Sheikh admits, curbing diabetes in Qatar won’t be easy. “Human behavior is notoriously hard to change,” he says. “It’s no different here than in the U.S.”

— Beth Saulnier



FOTORESEARCH

in Qatar and the Arabian Coast in general,” says WCMC-Q dean Javaid Sheikh, MD. “It’s just about the most important public health problem here.”

In an initiative that brings together researchers from Doha, New York, and Ithaca, physicians and scientists are working to combat diabetes in the emirate. With a five-year grant from the Qatar Foundation, the Medical College has established the Center for Diabetes, Obesity, and Metabolic Disorders—which aims not only to curb those ills within the Qatari population, but to further WCMC-Q’s strategic plan by expanding the campus’s research capacity.

Recruitment is currently under way for a half-dozen principal investigators—the number will grow to fifteen or so, plus postdocs and support staff—and WCMC-Q

Hats On

Pediatric neurosurgery patients celebrate recovery in the first 'Lids for Kids' softball game



Some two dozen former pediatric neurosurgery patients aged six to seventeen played alongside their doctors in the first “Lids for Kids” softball game, held at Battery Park City Field in June. Sponsored by NYP/Weill Cornell’s Komansky Center for Children’s Health, the event was organized by Jeffrey Greenfield, PhD ’99, MD ’02, assistant professor of neurological surgery, and Mark Souweidane, MD, director of pediatric neurological surgery. The two also served as head coaches, with Team Greenfield clad in red T-shirts and Team Souweidane in grey. Conceived as a way to celebrate the patients’ recoveries from life-threatening diseases and injuries, it also promoted the importance of helmets in preventing head injury. The game is planned as an annual event.

Home run: Former patient Adrian Willis (left) runs the bases. Below left: Players practice helmet safety. Below right: Mark Souweidane, MD, coaches his team.



AMELIA PANICO PHOTOGRAPHY



Science Central

Weill Cornell breaks ground on a
'front door' for research

By Beth Saulnier

The building will rise eighteen stories. It will have 480,000 square feet of space, energy efficient systems, sixteen occupied floors, green terraces, an airy two-story lobby, an innovative double-paned glass curtain wall. But for Stephen Cohen, it's all about the front door. "There is a front door to our inpatient care with NewYork-Presbyterian Hospital," the chief operating officer observes. "There's a front door to our educational facilities at 1300 York Avenue. There's a front door to our outpatient clinics with the Weill Greenberg Center. But there's no front door to science at Weill Cornell. We have lots of research labs, but they're embedded in buildings that were constructed in the Thirties and retrofitted." Weill Cornell campus architect William Cunningham puts it more bluntly. "For the amount of activity and the caliber of people we have," he says, "our research facilities have been woefully inadequate."



Open space: The building will welcome visitors with an airy two-story lobby.

That will change in spring 2014, when the Medical Research Building opens. The initial \$650 million investment in the new facility, located on the north side of East 69th Street between First and York avenues, will nearly double the amount of dedicated research space at Weill Cornell, allowing for the initial recruitment of thirty additional tenure-track faculty. "This will be a great hub to do research at the Medical Center," says Cohen. "It's going to be all about science."

The building is the centerpiece of the \$1.3 billion *Discoveries that Make a Difference* Campaign, which marked the milestone of \$1 billion in gifts this spring. That achievement was announced at the building's groundbreaking ceremony in late May, an event on the Lasdon House terrace—which overlooks the construction site—attended by donors and dignitaries including New York Mayor Michael Bloomberg, as well as Weill Cornell faculty, staff, and students. "This new research center will play a central role in what is emerging as a new industry for New York City—the applied bioscience that turns lab research into lifesaving medical treatments and products," said Bloomberg, who noted the project would create 1,500 construction jobs over the next three years. "Our city already has a dazzling constellation of world-class medical research talent, and it will be made

even brighter by the star researchers that this center is sure to attract."

Front and center at the groundbreaking event were benefactors Joan and Sanford Weill, whose \$250 million pledge to the campaign in 2007 is believed to be the largest gift ever given to a medical school, and Corinne and Maurice Greenberg, who have given \$25 million to the campaign personally and \$75 million through the Starr Foundation. "We all know about the state of the economy," Sanford Weill said. "But to be able to say that we reached—and surpassed—our goal of raising \$1 billion in record time, that speaks to the level of commitment of every single donor to the Medical College, and it's very gratifying." The groundbreaking was emceed by Dean Antonio Gotto, who noted in his remarks that New York's medical schools and affiliated hospitals contribute \$85 billion a year to the state's economy. "This may not compare to the banks on Wall Street," he said, "but it's one out of thirteen dollars generated each year—and Weill Cornell generates about 10 percent of the total amount."

When the Medical Research Building is completed, it will have thirteen floors of laboratories; eight will be ready for occupancy on opening day, with the remaining floors completed over time. For the faculty and administrators who have spent decades wrestling with the space

crunch that has constrained research on campus, there's light at the end of the tunnel. "One of the hats I wear as research dean is trying to figure out where to put everybody," says David Hajjar, dean of the Graduate School of Medical Sciences and executive vice provost of the Medical College. "The faculty are so tightly packed, because we're currently landlocked. We've got Rockefeller University on one side and Hospital for Special Surgery on another and Memorial Sloan-Kettering across the street—and then we have NewYork-Presbyterian Hospital and a river. Many of our faculty are working in 1932 space that ranges from mediocre to dilapidated, and now we will turn that all around."

That vast improvement in facilities would present a quantum leap not just for Weill Cornell but for Cornell University as a whole. As President David Skorton said at the groundbreaking: "We are on a cusp of change in the prospects for research that cannot be exaggerated or overemphasized." (Introducing Skorton, the second medical doctor to serve as president of Cornell, Gotto got a laugh when he noted, "We had to drag him out of cardiology rounds to get him here.") Hajjar stresses that the increased space will also put Weill Cornell more in line with its peers, offering a powerful recruiting tool for attracting top-notch faculty and students. "It will place us in the middle of the amount of space that other Ivy League schools have," he says. "We'll never be the biggest institution in the country for biomedical research; however, with our new building, we will now have a critical mass of space to be competitive with the best medical schools in the U.S."

The *Discoveries that Make a Difference* Campaign aims to support bench-to-bedside research in several areas: cancer; cardiovascular disease; children's health; global health and infectious diseases; chemical biology; neurosciences; obesity, diabetes, and metabolic disorders; and stem cell, developmental biology, reproductive, and regenerative medicine. In the new building, each of those areas will have its own dedicated floor, with some—such as cancer and cardiovascular disease—occupying two floors connected by an open staircase. The building will also house core facilities in such areas as high-throughput cell screening, genomics, and imaging technology, as well as a tissue bank and an animal-care facility. "We will be able to hire a critical mass of people in those eight areas," says Hajjar. "Right now we have a paucity of people working on neurodegenerative diseases such as Parkinson's, senile dementia, and Alzheimer's. With this plan, we'll be able to make a significant dent into the etiology and pathogenesis of those diseases. We will be able to recruit outstanding scientists to study global health and



JOHN ABBOTT



ABBOTT

infectious diseases in a significant manner. Presently, we have good people in those areas, but we don't have enough. To make a difference in science, you need to have a critical mass of people covering all the specialty areas and working as a team."

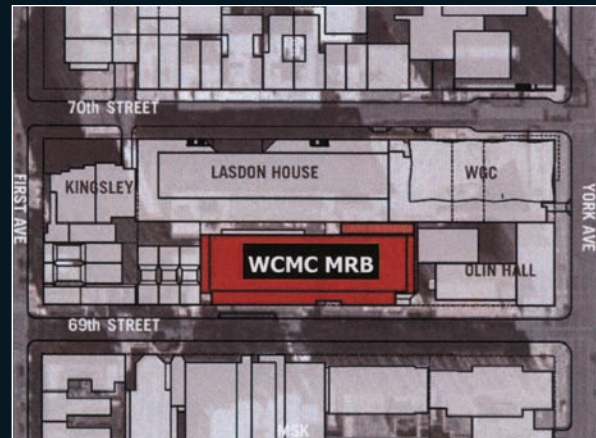
The building will be designed to reflect the way science is conducted today: rather than having fixed, individual labs, it will feature adaptable spaces with workbenches that can be easily uncoupled from utilities and relocated as scientists move around or priorities change. "The idea was to open up the interior so that everybody got a lot of natural light," says Todd Schliemann, the design partner at Ennead Architects (formerly Polshek Partnership) in charge of the project. "A research building can be a dense and isolating place, so we tried to open it up. We wanted to allow the researchers to see each other, because

Blank canvas: The construction site (top) viewed from the Lasdon House terrace. Bottom: Dignitaries at the groundbreaking ceremony included (from left) Sanford and Joan Weill, Dean Gotto, and Corinne and Maurice Greenberg.

Looking Ahead Planners ponder the campus of tomorrow

The Medical Research Building is the second major step toward modernizing the Weill Cornell campus—the first being the creation of the Weill Greenberg Center, the ambulatory care building that opened in January 2007. Located diagonally across from Weill Greenberg, the Medical Research Building will be in the middle of the block, with one student residence (Lasdon House) to the north and another (Olin Hall) to the east. With their similar design elements, the Medical Research Building and the Weill Greenberg Center will be thematically connected; ultimately, planners envision that Olin Hall would be razed and replaced with a third modern facility, whose program has yet to be established. “The three buildings will be part of a new campus for Weill Cornell,” says architect Todd Schliemann. “They’ll have a green—kind of a rear yard—to bind them together; it will be a green space that will connect to Lasdon House and eventually go out to York Avenue.”

Meanwhile, Medical College planners are looking beyond the reconfiguration of that single block. As the Medical Research Building rises—foundation and basement work is scheduled to be completed by this fall, with a dedication planned for December 2011—campus architect William Cunningham is heading an effort to study how the campus may be reshaped once it opens. Considering the logistical and geographical constraints, he says, the only practical direction for the Medical College to grow is west-



ward. The general feeling is that ambulatory care and education must remain close to the hospital, while more research-oriented functions could migrate further afield, with the “heart” of campus ultimately shifting to the west side of York Avenue. “We’re looking ahead ten, twenty, or even thirty years,” Cunningham says. “Once we have enough space for the first time in years, it will change our landscape. We need to think about how we can use our space more rationally and how we want to arrange our campus.”

Common ground: Spaces such as this skylit lounge are designed to encourage “productive collisions” by drawing researchers out of their laboratories. Opposite page: The rear terrace will offer green space within an urban landscape.



they spend a lot of time looking for very small things, and they have a tendency to focus all alone. We wanted to make sure they could share what they're working on and feel part of the larger community."

Fostering such "productive collisions" underpins the building's entire design, from the café in the lobby to the break rooms on each floor to the terraces out back. Such spaces are intended not only to coax the building's occupants out of their labs but also to draw faculty and students from elsewhere on campus—and beyond. One floor will be dedicated to intercampus collaborations, offering a home for Ithaca-based researchers working with Weill Cornell scientists. "Since President Skorton's arrival, there has been a significant increase in interactions between the Weill and Ithaca faculties, owing to the scientific administrative leadership," says Cohen. "However, most of those are ad hoc. They're worthwhile, and they're leading to fruitful collaborations, but the next step is to 'institutionalize' them and create a platform to address more complex problems, the investigation of which must be sustained over many years. To do that, you need dedicated space."

While the building will be primarily devoted to research, it will also enhance Weill Cornell's educational mission, featuring three floors of public space such as lounges and seminar rooms. And Cohen points out that it will further the clinical mission as well, as clinical research will also be conducted in the new building. "We are the doctor's doctor—the proverbial second opinion," he says. "For us to deliver that type of clinical care in certain areas, like cardiovascular disease or cancer, it needs to be informed by the latest advances in those fields."

The Medical Research Building will feature design touches rarely seen in academic research facilities, such as a limestone lobby, workbenches made of American cherry, and an urban garden with plantings, seating, and fountains. "Although I'm prejudiced about it, I must say that this will be the most beautiful and well-functioning research building on the Upper East Side if not in all New York," Hajjar says. "I think it will catalyze the faculty when they see this building and say, 'Wow, Weill Cornell takes its science as seriously as it does its clinical care.' " The building will undoubtedly draw top researchers to the institution—but, as campus architect Cunningham notes, that presented its own creative conundrums. "It has been a real challenge designing this building when the actual people who are going to

'This is an unusual building in that it's a high-rise laboratory, of which there are very few anywhere.'

move into it are unknown," says Cunningham, who earned an architecture degree from the Ithaca campus in 1973. "We've had faculty panels to advise us on the design and equipping of the laboratories, and we've been working with a generic-assumed program for each floor."

And then there's everything the building must provide behind the scenes—the infrastructure to eventually sustain some 130 principal investigators and their students, support staff, research animals, and equipment. For example, Cohen notes, in a conventional office building, the air must be turned over six times an hour, with 30 percent consisting of fresh outdoor air; in a laboratory facility, it's twelve to fifteen times an hour, and 100 percent of it must be fresh. With all the scientific equipment—plus the need to heat or cool that outside air to acceptable levels of indoor temperature and humidity—a lab's electrical load can easily be triple that of an office. "This is an unusual building in that it's a high-rise laboratory, of which there are very few anywhere," says Schliemann, a member of Cornell University's Architectural Advisory Committee who earned an architecture degree from the Ithaca campus in 1979. "A laboratory building has to be served by a complex array of mechanical and distribution systems to support the wet labs. And in a tall building, you have to run all this infrastructure vertically, so we had to be careful that we got our mechanical systems tightly arranged in shaft spaces that could make their way through different program layouts. It's a high-performance machine that had to be organized very carefully."

With a variety of sustainable elements—from incorporating locally sourced materials to collecting rainwater for irrigation to offering bicycle storage on site—the building will be eligible for Leadership in Energy and Environmental Design (LEED) certification at the silver or gold level. Its south-facing exterior curtain

wall, consisting of two layers of angled glass spaced eighteen to thirty inches apart, will lower temperature control costs by 25 percent compared to a building with a single-layered wall, Schliemann says. "It allows the air between the glass to heat up," he says. "Then, through natural convection, the air moves up and out of the cavity, and it reduces the temperature on the outside of the wall by a few degrees." (As Cohen puts it: "It's good for the environment, and it's good for our Con Ed bill.")



As in the Weill Greenberg Center, the curtain wall has a white ceramic coating known as a frit. "It gives the building a kind of lightness," Schliemann says. "It's a part of the identity of this campus, which we hope will distinguish our Medical Research Building from the other medical buildings in the neighborhood." Also like the Weill Greenberg Center, the glass is "water white," its low iron content preventing a greenish hue. "It's optically clear and you get lovely soft reflections," he says. "It makes the building feel more open and friendly." That echoes the fundamental mission of the building's design: to draw researchers in, encourage them to communicate, and facilitate discovery. "This isn't a place that people just pass through," Schliemann says. "It's a place where they'll want to stay." ●

Comfort Zone

By Anna Sobkowski

When doctors at NewYork-Presbyterian Hospital/Weill Cornell Medical Center told Judy David that her ninety-four-year-old father had inoperable liver cancer, she was devastated. “My sister and I thought he was having a gallbladder attack,” David says. “Since he was basically a healthy man, it was a shock to be told that he had a terminal disease—and that we would have to decide how we wanted to handle his care from that point on. I was so overwhelmed that I just broke down and cried.”

David and her sister, emotionally and physically exhausted from spending long days with their hospitalized father, knew they’d need help navigating the end of his life. That’s when the Palliative Care Consult Service at NYP/Weill Cornell was called in.

Social worker Dory Hottensen, a member of the palliative care team, was soon at the family’s side. She made it a point to get to know John David, who was fully aware of his diagnosis. Part of the “greatest generation,” David had been a surveyor during World War II, clearing runways in the Philippines and New Guinea for Allied aircraft. Back from the war, he began a fifty-year career at the bookseller Doubleday, starting as a delivery boy and working his way up to manager of the now-defunct Fifth Avenue store. A widower and lifelong New Yorker, David was a cheerful man who sang to the nurses from his hospital bed; “My Melancholy Baby” was a favorite.

Hottensen did her best to meet the family’s needs. Since David’s Catholic faith was extremely important to him, she reached out to his neighborhood priest, who gave

The Palliative Care Consult Service aims to control pain and maintain quality of life for all patients—not just those in the terminal stage of illness



NICHOLAS WILTON



JOHN ABBOTT

Dory Hottensen

communion at his bedside. Sensing that David's fourteen-year-old grandson, Matthew, was having a difficult time, she suggested he might feel better if he wrote a letter to his grandfather. "It was a beautiful letter," says Judy David. "It was very astute of Dory to look for a way to help my nephew express what he was feeling."

When the time came for David to move to a hospice, Hottensen guided the family through the difficult process of finding a facility they felt comfortable with; he passed away six days after being transferred there. Months later, Judy David still speaks movingly about the attention her family received from Hottensen and others on the palliative care team. "In the short time he was in the hospital, Dory made it a point to get to know our father and our family," she says. "He wasn't just another sick old man to her."

For Hottensen, this kind of close interaction is the essence of palliative care. She became a social worker with the goal of focusing on end-of-life issues, working with the hospital's HIV/AIDS and cancer patients for fifteen years before joining the palliative care team at its

inception in 2005. "My own father died of cancer when I was young, and I don't feel I got the support I needed; it just wasn't around then," she says. "Going through that experience was so tough emotionally that it made me want to do better for others."

Derived from the Latin word "palliare"—which means to cloak or to shield—palliative care aims to reduce the severity of symptoms, ease suffering, and improve the quality of life for seriously ill patients. "We are there to support whatever decisions the patient and family make as they struggle through a tough time," says nurse practitioner Robbie Altman, who is supported by the Altman Foundation's grant to advance medical resident education in palliative care. "It can be hard for a patient or family member to make a decision about whether or not to put a patient on kidney dialysis, for example. Most don't have medical backgrounds, and they need help understanding the permutations of their choices. But we don't have an agenda; we are there to help."

Palliative and hospice care are related in that

both share the philosophy of maintaining and managing a patient's quality of life through comprehensive symptom management. While any patient—regardless of life expectancy—can receive palliative care, hospice is reserved for patients who are in the final stages of an illness. While the goal of hospice is to minimize pain and suffering in terminally ill patients, practitioners stress that—contrary to common misconceptions—palliative care does not preclude aggressive curative treatment and is beneficial for patients who are at any stage of illness. “Palliative care is about carefully determining goals and listening to the wishes of patients and their families,” says Ronald Adelman, MD, co-chief of the Division of Geriatrics and Gerontology, under whose auspices the service operates. “It’s a myth that palliative care is only end-of-life care. In reality, it provides comprehensive symptom management for people going through life-prolonging treatment, such as radiation and chemotherapy. Palliative care can help ease the side effects of treatment for individuals who might reasonably live another twenty-five years.”

At NYP/Weill Cornell, palliative care is available to every patient who needs it. Last year, the service—whose core team comprises Adelman, assistant director Sonal Mehta, MD, several other physician faculty members in the Division of Geriatrics, nurse practitioners Altman and Sarah Townley, and social worker Hottensen—conducted about 550 inpatient and outpatient consultations. The number has increased steadily each year since the service was launched in 2005 by Adelman and Genie Siegler, MD, director of the Acute Care of the Elderly (ACE) unit, the hospital's inpatient geriatrics service. “Before palliative care was pioneered in the Eighties, patient-centered care for those with life-threatening illnesses was mostly catch-as-catch-can; some people in health care had an aptitude for it, others didn’t,” Adelman says. “In

the best possible world, all medical staff would be trained to provide palliative care, to interact closely with nurses and social workers focused on the patient and family, but the reality is that the hospital staff is extraordinarily busy and palliative care is time-intensive. That’s why it’s so important for our medical staff to be able to reach out to our service for this type of care.”

In 2005, Adelman and Mark Lachs, MD, co-chief of geriatrics and gerontology, hired Desiree Pardi, MD, to be the service's first director. Although Pardi was just in her mid-thirties at the time, she had a unique perspective on what it is like to struggle with life-altering illness, because she'd been battling aggressive breast cancer since medical school. Pardi, who died last September at age forty-one, believed passionately that treating the pain of sickness is as important as treating the condition itself. “Dr. Pardi felt strongly that our major goal was to relieve pain, but also that pain comes in different forms,” says Townley, who joined the team last summer. “She stressed that we needed to evaluate the different types of pain—that of fear, anxiety, and separation from loved ones.”

A large part of the team's work, then, involves holistic symptom management—treating not only physical pain but emotional pain as well. They may prescribe medication for depression and anxiety (in collaboration with the patient's primary care team), as well as non-traditional interventions such as Reiki, therapeutic touch, and guided imagery. Chaplains are often called in to address the spiritual aspects of care. In keeping with its mission to ease the pain of families as well as patients, a year ago the palliative care service launched a bereavement program that includes support groups, individual counseling, and phone sessions. “Part of medicine is learning how to make death as tolerable and comfortable as possible for both the patient and their loved ones,” Adelman says. “Why should medical care or social work stop when curative treatment is over? A fundamental part of being a doctor is caring for someone you can't fix.”

When ethical considerations arise in the course of treating very ill patients, the palliative

‘Why should medical care or social work stop when curative treatment is over? A fundamental part of being a doctor is caring for someone you can’t fix.’

Pain Relievers

Researchers
explore pain
management
from various
angles

Staff in the Division of Geriatrics and Gerontology are involved in a range of research projects geared toward understanding how best to manage pain, the central issue in palliative care. One of the most comprehensive is the Cornell-Columbia Translational Research Institute on Pain in Later Life (TRIPLL)—a multi-institutional, interdisciplinary collaboration that focuses on improving pain management among older adults, who make up the majority of those requiring palliative care. Nearly half of all people over sixty-five suffer frequent pain, according to associate professor Cary Reid, MD, PhD, who heads TRIPLL and serves as director of research in the Division of Geriatrics.

The goal of TRIPLL, Reid says, is to translate knowledge about pain management from basic behavioral and social science research into treatments, intervention programs, and policies. “So much of pain control in later life is really a palliative care function,” he says. “About 80 percent of people with osteoarthritis have pain as a predominant symptom. Many other conditions—such as cancer, diabetes, Parkinson’s, peripheral vascular disease, and ulcers—cause significant pain and are age-related. The consequences of untreated or under-treated pain include impaired quality of life and sleep as well as decreased immune function, cognition, and mobility.”

If pain in older adults is often insufficiently managed, the task is even more challenging among Alzheimer’s and dementia patients. Palliative care service assistant director Sonal Mehta’s research focuses on developing protocols for managing pain in this population. “Because of cognitive impairments, patients often can’t easily articulate that they are in pain, but there are signs if you know what to look for,” Mehta says. “We are trying to gain a better understanding of the behavior patterns, such as grimacing or emotional disturbances, that will help health-care providers better recognize pain signals.”

Another common risk factor for untreated pain is advanced age; the older the patient, the less likely that he or she will get adequate pain control. “A patient may feel, Well, I’m eighty-five; I’m supposed to have pain,” Reid says. “And doctors and other health-care providers may think, That patient is old; he or she needs to just get used to their pain.” Improving communication, then, is a vital aspect of pain control. “Research has shown that doctors are often uncomfortable communicating with very ill and dying patients,” he says, “but we are just at the beginning stages of understanding the communication deficiencies.” Over the summer, he has been conducting hospital focus groups to gain a better understanding of how to improve training and help nurses and doctors overcome communication barriers.

In a separate project, the palliative care service—recognizing the need for pain-management and related issues to be addressed earlier in medical training—received a grant of more than \$800,000 from the Altman Foundation to create a program focused on medical residents. Attendings and nurse practitioners have been training residents both informally—in “teachable moments” at the bedside during consults and rounds—and in more formal settings, such as role-playing exercises and discussions of case studies.



care service turns to Joseph Fins, MD '86, chief of the Division of Medical Ethics, director of medical ethics at NYP/Weill Cornell, and chair of the ethics committee. An expert in end-of-life care and the author of *A Palliative Ethic of Care: Clinical Wisdom at Life's End*, Fins says it's a "rare week" when he isn't asked to consult with the service's clinical staff. "My interest is in clarifying goals of care—to make sure the goals are what drive the therapy, not the other way around," says Fins, who directs a third- and fourth-year clerkship in clinical ethics and palliative care at the Medical College. "We want to help families understand what the patient would have wanted and use it as moral guidance."

With the approval of an attending, the palliative care service goes wherever patients need them—whether it is in neurology, surgery, oncology, or any other inpatient unit in the hospital besides pediatrics, which has its own team. The service is frequently contacted for consultations in the ICU, helping patients and their families make often wrenching treatment decisions. "There might be a situation where a patient receiving intensive chemotherapy is in the ICU because she has developed an infection that is not responding to antibiotics, her heart and kidneys are failing, and she is on a ventilator," says Altman. "The family says, 'She's going to make it, she's a fighter,' but the doctors feel otherwise. When there is an impasse like this we will set up a meeting between the family and the doctors. We'll gather in a quiet place. Everyone turns off their pagers. We ask the doctors to speak in lay language so the family understands all sides of the medical issues. We hold their hands as they walk down a path that's terrifying to go down alone."

Those involved in palliative care say the field can be emotionally wrenching, but the team makes a great effort to support one another. They also support medical colleagues who are struggling to cope with emotionally challenging clinical issues. And though the work can't easily be left at the office, providers universally



ABBOTT

Ronald Adelman, MD

describe what they do in passionate terms. "I've fallen in love with working with the elderly," says Townley, previously a member of the hospital's ACE unit. "So many have such grace and a wealth of history that it's inspiring to be around them. It's a privilege to try to enhance their quality of life." Hottensen describes being present as a patient nears the end of his or her life as a "gift." "This is often a time of healing of relationships, of coming to terms with difficult things that have happened in the past, of saying goodbye," she says. "To help facilitate that healing, to witness reconciliations, is a profound experience. That's why those of us who work in this field often feel that it's more of a calling than a job." ●

'We hold their hands as they walk down a path that's terrifying to go down alone.'

In a historical
biography,
a physician
chronicles the
'bizarre double life'
of the father of
modern surgery

A

few years ago, Gerald Imber, MD, went to Baltimore for a national meeting of plastic surgeons. He arrived a day early and, in a driving rain, made his way to the Welch

Medical Library at Johns Hopkins. There, in a reading room, hangs a John Singer Sargent painting called *The Four Doctors*—a 1906 work depicting a quartet of medical pioneers, all mustachioed and augustly clad in academic regalia before a giant globe. “It’s on the far wall, and all the young people in the room had their iPods on and were studying or dozing,” Imber recalls. “No one was looking at the picture; it was as if it didn’t exist. I looked up at these four men who made medicine possible—who made it possible to go into a hospital ill and come out well, instead of coming out dead—and I found it an emotional moment. We take so much for granted, but medicine as we know it is only a hundred years old. It was like a bolt from heaven when these four people showed up in the right place at the right time.”

Delicate Operation

By Beth Saulnier

Imber had long been pondering writing a biography of one of them: William Stewart Halsted (1852–1922), the father of modern surgery. The project appealed to him for myriad reasons—including the fact that, in the lineage of academic mentorship, Halsted was his direct ancestor. During Imber’s general surgery residency in California, his chief was a former student of Halsted’s favorite resident, George Heuer. “So he’d heard all the stories and he told them to me,” says Imber. “Then I did my plastic surgery residency at Cornell, and the senior people also were trained by Heuer or by people trained by him. Second and third hand, they also told Halsted stories in the coffee room.” Yes, a previous biography of Halsted had been published—but it was back in 1930. “He’s relatively unknown outside the world of general surgeons,” Imber says. “Periodically, articles about Halsted appear in the medical literature, but most doctors have never heard of him. And the public—which owes their lives to him in so many instances—knows nothing about him.” But in the end, Imber says, it was the Sargent



PHOTOS AND PAINTING: ALAN MASON CHESNEY MEDICAL ARCHIVES / JOHNS HOPKINS MEDICAL INSTITUTIONS

Great minds: John Singer Sargent's *The Four Doctors* depicts (from left) William Welch, William Halsted, William Osler, and Howard Kelly.



MARIO SORRENTI

Gerald Imber, MD

painting that clinched it. “I spent twenty minutes or so in front of it,” he says, “and it so inspired me that I said, ‘I’m going to go ahead and do this.’ ”

The result is *Genius on the Edge: The Bizarre Double Life of Dr. William Stewart Halsted*. Published in February by Kaplan, the book has been well reviewed; the *New York Times* called it a “particularly expert and thought-provoking narrative,” while the *Baltimore Sun* described it as an “unpredictable and unflappable biography, an intrigue-filled life story that’s also a sweeping pop medical history.” In it, Imber describes how Halsted—the son of a wealthy New York family and an indifferent student at Yale, where he captained the football team—pioneered modern surgical practices. During a brief stint at New York Hospital after earning his MD from Columbia, he devised a bedside chart that survives, only slightly altered, to this day; as the first chief of surgery at Johns Hopkins, he founded the modern surgical residency. In the operating room, he combined a precise knowledge of anatomy with a passion for antiseptic practices—designing his own instruments, devising groundbreaking procedures to treat conditions from hernias to breast cancer, and setting new standards to control bleeding, close wounds, and promote healing. “When we were emerging from the black hole of Civil War medicine, everybody had the chance of seeing it clearly and changing things, but he did it,” Imber says. “He was the right man at the right time.”

But there was another side to Halsted—the “double life” of Imber’s subtitle. As a young surgeon, Halsted and his colleagues were intrigued by a newly fashionable drug called cocaine, which showed promised as an anesthetic. The first subjects of their tests were the investigators themselves, and many became addicted. A stint in his era’s version of rehab weaned Halsted off it—and transferred his dependency to morphine. He took one or the other for the rest of his life, eventually in titanic doses, while building a distinguished career and remaining relatively functional, if increasingly eccentric. “He was considered the ultimate absent-minded professor,” says Imber, noting that many of Halsted’s contemporaries harbored the erroneous belief that he had kicked his drug habit. “He would leave patients on the ward at Hopkins, awaiting surgery for weeks at a time, and just forget they were there.” Ultimately, Imber says, “what I came away with was a heroic man living an epic life under the constant hammer of this awful torture of drug addiction. I look at it and say, ‘My God, if he could achieve more than the rest of us while hampered by drug addiction, can you imagine what he could have done if he were not addicted to drugs?’ ”

Imber worked on the book for two years, making research trips to Johns Hopkins as well as to the archives at NewYork-Presbyterian Hospital/Weill Cornell Medical Center, which house Heuer’s unpublished reminiscences of his mentor; he also visited Halsted’s grave, at Greenlawn Cemetery in Brooklyn. Still, his subject remains something of a mystery—as Halsted was during his lifetime. He could show both great generosity and immense indifference, often not even bothering to learn his residents’ names; presumably due to his addiction, he would vanish to Europe for months at a time. His marriage to Caroline Hampton, a former nurse who came from a prominent Southern family, may have been platonic; they had no children and spent little time together, and some have speculated that Halsted was homosexual. “I don’t think anyone really knew Halsted,” says Imber. “He was a puzzle wrapped in an enigma. He was very, very odd, and he was different things to different people. So you couldn’t pigeonhole him. You could see the multiple facets, but you couldn’t put them all together.”

A clinical assistant professor of surgery at Weill Cornell, Imber has a private practice in Manhattan and often serves as an on-camera plastic surgery expert in the media. So how did he manage to write a thoroughly researched historical biography without taking a sabbatical from his day job? “I don’t lie around too much,” Imber says. “I get up early and go to the gym before work. I’d write for an hour or two, then in the late afternoons I would do it again, and on weekends I’d put in full days. But there’s always something in my life that recharges my batteries. You can’t just be in the operating room all the time.”

Clean Room

By 1889, most leading surgeons were committed to antiseptic technique, and many sought to implement some level of aseptic surgery. Halsted's surgical service at the Johns Hopkins Hospital was dedicated to the concept of aseptic surgery from the very beginning, even while the goal remained out of reach. It had been easy, in fact a relief, to abandon the antiseptic precautions of Lister. Carbolic acid spray and dressings were unwieldy, irritating, and less than satisfactory for infection control. Halsted had rejected the Listerian idea of dangerous germs circulating in the air. The real threat were the bacteria harbored on instruments and on surgeons' hands, and all sorts of antiseptic solutions were employed in the effort to control the contamination.

Not long after it opened, the Johns Hopkins Hospital began sterilizing instruments by boiling them. But the withdrawal from carbolic was not complete. Following boiling, the sterile instruments were submerged in tubs of carbolic acid, awaiting use at the operating table. Bichloride of mercury and carbolic acid were still in favor for preparing the patient's skin for surgery. It was a thoroughly unpleasant experience for the patient. Preparation began the evening prior to surgery with shaving of the skin in the area of the incision and the application of antiseptic soaks, so that by the time of surgery the next morning the skin was uncomfortably, and sometimes painfully, irritated.

Carbolic acid, commonly known as phenol, was the primary antiseptic for maintaining the sterility of the surgical instruments. Its effectiveness as an antiseptic had been well known since its introduction by Joseph Lister. One of its advantages was that it did not corrode the surgical instruments, but it did not make for a safe, worker-friendly environment. Patients were only occasionally exposed to these agents, but the operating staff was in constant contact with potentially troublesome substances. Carbolic acid, even in dilute solution, is a very toxic agent. In addition to direct local toxicity in the form of irritation, burning, and ultimately coagulation and destruction of skin, it is toxic to the liver and can cause severe cardiac arrhythmias, and possibly death.

For the first fifteen years all surgical proce-

An excerpt from *Genius on the Edge* chronicles how Dr. William Halsted pioneered germ-fighting techniques



In the O.R.: In a 1904 "all-star" surgery to celebrate the opening of a new operating room, Halsted is seen at center left, leaning over the patient.

Excerpted from *Genius on the Edge: The Bizarre Double Life of Dr. William Stewart Halsted* by Gerald Imber, MD (Kaplan Publishing 2010). Used by permission.



Working together: Caroline Hampton, the surgical nurse who became Halsted's wife. Opposite: Halsted in 1922.

dures were performed in a makeshift area best described as functional. The single, small operating room was located in the basement under Ward G. Getting patients into the operating room was a considerable task. Patients were first placed on the removable operating tabletop at their bedside, then the long board and its heavy human cargo were wrestled down the outside stairwell and into the basement and the operating room. Adjoining the operating room was a still smaller room used for the induction of ether anesthesia. The initial plans for the Johns Hopkins Hospital were a reflection of the low regard in which surgery was held in the aftermath of the Civil War. Halsted made few demands, making do with what was easily available, knowing his needs would evolve over the first few years, as would his concepts of the proper surgical environment. The very basic suite had an open plan and was reasonably well lit. It had running water, which was not available on the wards; waxed hardwood floors; and adequate equipment storage in large wood cabinets in both the operating and anesthesia rooms—everything required for modern, aseptic surgery in the year 1889.

Halsted felt no need for so elaborate an exercise as the isolated tent he built at Bellevue to comply with the Listerian concepts of a decade earlier. The need for cleanliness at surgery was not debated at the new, forward-looking Johns Hopkins. The debate, if there was one, was within Halsted alone, for he had begun striving toward

true aseptic technique. It was the moment for an open mind, trial and error, and change.

In the center of the room was an old German operating table first used during the Franco-Prussian War. The design of the table accommodated the copious amounts of caustic solutions used in wound preparation. It consisted of a strong wood frame into which was set a shallow trough, two and a half feet wide and six feet long. On the wooden table sat a stretcher, two feet wide and eight feet long, which served as the actual operating surface. A drain within the basin could be opened to collect the antiseptic fluid in a bucket beneath the table. It was a messy operation, and the surgeons often wore rubber aprons over their white operating suits to keep from getting soaked by the splashing antiseptic.

For the surgeons, preparing their hands for surgery was an unpleasant but necessary evil. Orange sticks were used to clear debris from under their fingernails, after which they scrubbed their hands for five minutes with green soap and scalding water. Then they dipped their hands and arms up to the elbows in permanganate solution, an oxidizing agent, which turned the skin a dark brown color. This was followed by an oxalic acid soak, which neutralized the permanganate and decolorized the skin. The process was completed with a final five-minute dip, fingers to elbows, in corrosive sublimate, now known more commonly as mercuric chloride, the most toxic substance of the lot. Mercuric chloride has a health rating of "4-poison." It is potentially fatal if ingested, causes redness and pain when applied to the skin, may cause allergy, is readily absorbed through the skin, and can cause neurological damage and kidney failure. Otherwise, it was a safe and useful tool.

For a time open wounds were irrigated with corrosive sublimate as well, but observation of the toxic effects led to the discontinuation of its use. Sterile instruments were stored before use in a dish of carbolic acid beside the operating table. The combination of mercuric chloride and the carbolic acid in which the sterile instruments were stored caused frequent painful rashes and red pimples, which were often debilitating. Weaker solutions of corrosive sublimate were tried, and soon it was replaced entirely with less irritating substances and reduced rituals, but until the advent of sterile rubber gloves the process of preparing for aseptic surgery remained decidedly unpleasant.

Traditional black, fitted Prince Albert coats had been in favor as operating garb since the 1876 visit to America by Albert, consort to

Queen Victoria. Knee length, and with a full skirt, instead of being “cut away” the coats had notched velvet collars in single- or double-breasted styles. Before surgery they were pulled from pegs in the operating room where they hung, caked with old blood, tissue detritus, and pus from previous surgery. Using these filthy coats saved the surgeon’s street clothes from



becoming soiled, and the cumulative signs of battle on the coats became something of a badge of honor. In Halsted’s operating room they were shed in favor of white duck operating suits, consisting of short-sleeved shirts, trousers, and a little round skull cap. In the final touch, the traditional short, rubber boots worn over street shoes were replaced by white tennis shoes.

While steadfast in his belief in aseptic technique, Halsted was willing to experiment with any modality to improve operating conditions and patient safety. Nurse Caroline Hampton fell victim to severe dermatitis of her hands, assumed to be caused by constant contact with mercuric chloride. Halsted sought a solution for the painful rash, which threatened to drive her from his operating room. On a trip to New York he met with representatives of the Goodyear Rubber Company, and arranged for them to produce two pairs of fine rubber gloves with wrist gauntlets. The Goodyear gloves were thin enough to cause only modest loss of sensation, and after a bit of experience caused no appreciable tactile deficit. The gloves protecting Caroline’s hands were sterilized by boiling and dipped in carbolic solution. They were sturdy and reusable, and allowed Caroline to continue

to function as Halsted’s surgical nurse.

By the end of 1889, rubber gloves were regularly worn by the nurses who squeezed out the gauze sponges soaked in bichloride of mercury, as well as the intern who passed instruments and was constantly fishing them from the carbolic basin and threading carbolic-soaked needles. The introduction of rubber gloves to surgery began as simply and unremarkably as protecting a nurse’s skin from irritation. No one, it seems, saw this innovation as anything more than that. Halsted had inadvertently set into motion the single greatest advance in the history of sterile technique.

Several months later, when Caroline Hampton left the operating room, rubber gloves were abandoned other than for optional use by the intern. Over the next six years, sterile rubber gloves were worn only when surgeons opened clean joints, which required the utmost sterility. Once a joint was seeded with bacteria, the infection was almost impossible to uproot. Why the enormous potential of sterile rubber gloves was missed for so long after being introduced remains a mystery. Halsted’s seminal bacteriology work had proven the impossibility of sterilizing hands by scrubbing and immersion in bichloride of mercury, or other antiseptic solutions. The use of gloves by the nurse was ultimately ordered because Halsted felt that handling, dipping, and squeezing out sponges carried an additional risk of infection when done bare-handed. And yet he did not expand the use of gloves to include the surgeon. One would have expected a bell to go off long before 1896, when his resident, Joe Bloodgood, in a conversation about the gloves quipped, “What’s sauce for the gander is sauce for the goose,” and began wearing rubber gloves for every operation. Soon afterward, the entire team followed suit, and the days of bare-handed surgery came to a close as a sterile rubber barrier was placed between the surgeon’s hands and the wound.

Soon the rubber gloves were heat sterilized, too, and the circle of sterility was complete. With routine use of sterile operating gloves the story of aseptic surgery was changed forever. Prior to this, Halsted had established an admirable record of clean, infection-free wounds, which was justifiably attributed to his technique. He insisted on scrupulous asepsis, gentle handling of tissue, careful control of bleeding, the use of fine silk sutures to minimize tissue damage, and subcutaneous silver wire closure to eliminate contact with the unsterile skin by tunneling under, rather than piercing, it.

Halsted’s rate of infection after hernia repair was a very respectable 9 percent. After introducing the use of sterile surgical gloves, it dropped to less than one-half of 1 percent. ●

The introduction of rubber gloves began as simply as protecting a nurse’s skin. Halsted had inadvertently set into motion the single greatest advance in the history of sterile technique.

Notebook

News of Medical
College and Graduate
School Alumni

Dear fellow alumni:

I hope that all of you are finding some time to relax with your family and friends this summer. The Alumni Association has been busy these past three months, and there are a number of activities that I would like to share with you.

First, we welcome the Class of 2010. Commencement was held in Carnegie Hall in June, and we were treated to a musical recital performed by medical students. Imagine receiving a medical degree and having a Carnegie Hall debut on the same day! As is our tradition, we presented the Alumni Association Award of

Hazel Szeto,
MD '77, PhD '77



JANET CHARLES

Distinction at commencement. The awards committee selected William Schaffner, MD '62, for his exceptional achievement in education, research, and clinical care in the area of preventive medicine. Chairman of the Department of Preventive Medicine at Vanderbilt University, Dr. Schaffner is a national authority on hospital infection and vaccines.

I am proud to report that the association has continued to be a major contributor to student scholarships, and we achieved 100 percent participation from the Alumni Board. I am especially proud of the first gift of \$4,913 made by the Class of 2010, which reflects 50 percent participation. As is customary, this amount includes a dollar-for-dollar match by the Alumni Association. Alumni who have made significant finan-

cial commitments have been invited to join the Dean's Circle. At the Dean's Circle dinner held at the Cornell Club in June, Dean Gotto thanked the members for their commitment to ensure the excellence of our alma mater.

I cannot believe that I am already coming to the end of my term as the president of your Alumni Association. I was apprehensive taking on this role two years ago, and I wondered what I could contribute. In my first column, I said that I would work on three areas that were articulated by my predecessor, Gene Resnick '70, MD '74: alumni networking, alumni-student relationship-building, and fundraising efforts. I am not sure how well I did, but whatever I managed to accomplish was made possible with help from many of you. The past presidents—Gene Resnick, Thomas McGovern, MD '74, and Kenneth Swan, MD '60—were my role models. Lewis Drusin, MD '64, was invaluable in helping me with alumni networking. I believe that the small regional gatherings, such as the ones we had in Boston and Atlanta, were ideal for networking, and I hope they will continue. I know that Reunion 2010 is going to be a terrific event.

In terms of strengthening alumni-student relations, we have made great strides thanks to the enormous effort that Paul Miskovitz, MD '75, has put into the Alumni to Student Knowledge (ASK) and the Stethoscopes for Medical Students programs, and the support provided by Carlyle Miller, MD '75, and Lew Drusin for the Conversations on Tap (COT) program, where clinical faculty and students get to know each other through receptions at the Griffis Faculty Club. The association has supported a number of student-initiated activities as well, including the Weill Cornell Community Clinic and Camp Phoenix.

Last but not least, I must thank Amy Buick, Clara Cullen, and Brian Schober of the Office of Alumni Relations. This team has helped in our outreach to both alumni and students, and I am grateful for all the guidance that they have given me.

It has been a remarkable journey for me, and I will always treasure the friendships that I have made in the past two years.

With warmest regards,

Hazel Szeto, MD '77, PhD '77

President, CUWMC Alumni Association

hhszeto@alumni.med.cornell.edu

1970s

Tom Harbin, MD '70, chronicles 20 years at Emory University's Department of Ophthalmology in *Waking Up Blind: Lawsuits Over Eye Surgery* (Langdon Street Press). In a review of the book in *EyeNet*, Dr. Richard Mills, the magazine's chief medical editor, wrote, "For me, the lesson is that the culture of quality improvement to which we all aspire as individuals and as institutions is so easily subverted by an alternative culture of silence, cover-up, and deceit. In such a culture, and in this book, there are no winners and losers; no participant emerges as a hero." He added, "A little extra angst for [the ophthalmologists mentioned in the book] is a small price to pay for a history lesson learned well by the rest of us."

Richard Lynn, MD '71: "Hello to all my classmates. All is well. I have been in Palm Beach since 1976 and am very active in vascular and general surgery, including—believe it or not—robotics with the DaVinci Si System on one hand and endovascular aortic stent grafting on the other. Still love being a physician and surgeon. My three sons are all Orthodox rabbis. Two live in Jerusalem and the third teaches at the University of Pennsylvania. They have blessed me with 16 grandchildren and they are not finished. Margrit and I are celebrating our tenth anniversary and are very happy. I see Toni and **Carl Sadowsky, MD '71**, often (I am their son's godfather). Also see Mollie and **Lou Rambler, MD '71**, when they are in Florida at their winter home. I see **Henry Pitt '67, MD '71**, along with Betty, at the major surgical meetings such as the American College and the Southern Surgical. I completed a six-year term on the board of governors of the American College of Surgeons and was president of the Florida chapter of the College from 2006–08. Would love to see you if you vacation here. Saw **John Perlmutter, MD '71**, this winter when he was here. Hope all is well with you. Our 40th Reunion is in 2011. Please try to attend."

Jean Pape, MD '75, professor of medicine at Weill Cornell Medical College, is the leader of GHESKIO, the institution that fights HIV/AIDS in Haiti. GHESKIO was awarded the 2010 Gates Award for Global Health for its groundbreaking clinical service, research, and training to help treat and prevent the spread of HIV/AIDS.

Frank Green, MD '78, practices non-invasive cardiology at the Care Group, affiliated with the St. Vincent Heart Center in Indianapolis, IN. Outside of work, he sings in the Sanctuary Choir of the Second Presbyterian Church, bikes, swims, and golfs. He remembers doing research with Dr. Levi in medical school.

1980s

Marc Rubin '76, MD '80, was appointed to the board of directors of Curis, Inc., a company that develops targeted small-molecule drugs for cancer treatment. Dr. Rubin served as executive chairman of the board of directors of Titan Pharmaceuticals, where he was also president and CEO. He was also head of global research and development for Bayer Schering Pharma and a member of the executive committee of Bayer Healthcare. Before Bayer Pharmaceuticals and Schering AG merged in 2006, Dr. Rubin was responsible for global development and the oncology business unit at Schering AG and was chairman of Schering Berlin and president of Berlex Pharmaceuticals, a division of Schering AG. From 1990 to 2003, he worked for GlaxoSmithKline in the U.S., Europe, Asia, and Latin America, and served as the company's senior vice president of global clinical pharmacology and discovery medicine from 2001 to 2003. Before his work in the pharmaceutical industry, Dr. Rubin was an investigator and senior staff member of the infectious diseases section of the National Cancer Institute. Currently, he also serves on the board of Surface Logix and the Rogosin Institute.

Marcia Sue Clever, MD '81, was elected vice-chair of the board of trustees of Monmouth University, Long Branch, NJ. She is the first woman to hold this position in the 77-year history of the university.

Mae Jemison, MD '81, participated in World Environment Days in Pittsburgh, PA, in early June. The first female African American astronaut conducted a workshop for middle school students at the Carnegie Science Center. Dr. Jemison is a national spokesperson for the Bayer Corporation's science education programs and an expert analyst for the company's research and sur-

veys about the lack of women and minorities in science and technology fields. After graduation from Weill Cornell, she worked as a general practitioner in California and spent two years as a Peace Corps medical officer in Sierra Leone and Liberia before joining NASA in 1987. Now living in Houston, she runs the Jemison Group, a technology design and consulting company, and is director of the Jemison Institute for Advancing Technologies in Developing Countries.

Gregg Hartman, MD '83, is an anesthesiologist and lives in Etna, NH. In his spare time he plays and coaches ice hockey, gardens, bikes, and does woodworking. He and wife Jinny have two children, Ben, 14, and Matti, 11. He fondly remembers dinners on the roof of Lasdon House.

Scott D. Hayworth, MD '84, president and CEO of the Mount Kisco Medical Group, was elected to the board of directors of Community Mutual Savings Bank.



JANET CHARLES

Honored grad: Outgoing Alumni Association president Hazel Szeto, MD '77, PhD '77, with William Schaffner, MD '62, winner of the association's Award of Distinction

Dr. Hayworth is also a clinical assistant professor of obstetrics, gynecology, and reproductive sciences at Mount Sinai School of Medicine. He is a consulting editor for *Contemporary OB/GYN*, and he has published in several magazines. He was awarded the American College of Obstetricians



CHARLES

Giving back: New MDs Sarah Lewis and Daniel Friedman present Dean Gotto with a ceremonial check for the 2010 class gift. Fifty percent of the class contributed.

and Gynecologists District Service Award in 2002 and has been included in the “Best Doctors” listings of *New York Magazine* and *Westchester Magazine*.

Cheryl Pegus, MD '88, was named the chief medical officer of Walgreens. She will focus on innovation, growth, and clinical outcomes. Dr. Pegus was general manager and chief medical officer for SymCare Personalized Health Solutions. Before she joined SymCare, she was the head of clinical products for Aetna's Medical Products division. Her former positions at Aetna include national medical director of clinical program development/design and marketing for Member Advantage programs, and national medical director for women's health. From 1996 to 2001 she was medical director for the Cardiovascular Risk Factors Group at Pfizer Pharmaceuticals.

Dean's Circle Recognition

Established in 1997 by the Weill Cornell Medical College Alumni Association Board of Directors, the Dean's Circle recognizes alumni who have made significant financial commitments to ensure the continued excellence of their alma mater. Dean's Circle members are listed on a donor plaque in the Weill Education Center. The following alumni are recognized for their outstanding generosity in 2009–10:

New Members

Bryant Barnard, MD '62
James C. Blankenship, MD '80
Anthony N. LaBruna, MD '90
Harlan B. Levine, MD '98
Natasha I. Liebel, MD '98
Harrison T. Mu, MD '93
David B. Rosenberg, MD '93
Dana K. Wong Yuen, MD '83

Second Circle Members

Paul F. Miskovitz, MD '75
Carol L. Storey-Johnson, MD '77

Third Circle Members

David S. Blumenthal, MD '75
Michael I. Jacobs, MD '77

To learn more about the Dean's Circle or to join, please contact Amy Buick, Director of WCMC Alumni Relations & Giving, at 646-962-6596 or visit: www.med.cornell.edu/alumni/alumni-giving.



CHARLES

Inner circle: Guests at the Dean's Circle dinner in June included (above) David Blumenthal, MD '75, and Richard Cohen, MD '75, and (right) Harlan Levine, MD '98, and Natasha Liebel, MD '98



CHARLES

She serves on the editorial advisory board of *Disease Management Advisor*.

1990s

Kaveh Alizadeh '88, MD '93, a plastic surgeon who lives in New York City, was selected for inclusion in the 13th edition of "Top Doctors: New York Metro Area." He is president of Long Island Plastic Surgical Group, with offices in Garden City, Manhattan, Brooklyn, West Islip, and Manhasset. Dr. Alizadeh has traveled to Afghanistan, Iraq, and Haiti to provide care for victims of war and natural disasters. He continues to study new methods of plastic and reconstructive surgery and recently won the top presentation prize at the National Plastic Surgery Conference in January.

2000s

Kenneth Swan '93, MD '00, received the 2009 Distinguished Career Award from the New Jersey Medical School at its annual faculty organization celebration on June 16, 2010.

In Memoriam

'37 MD—Arthur W. Seligmann of New York City, June 6, 2010; practiced internal medicine; associate professor of medicine, Weill Cornell Medical College; veteran; active in alumni affairs.

'41 MD—Alexander S. MacDonald Jr. of Lincoln, VT, May 2, 2010; pediatrician; partner, Beverly Pediatrics Group; chief of pediatrics, Beverly Hospital, where he pioneered a training program for international medical students; assistant clinical professor, Harvard University; staff member, Fletcher Allen Health Care; Navy veteran; active in community and professional affairs.

'43 MD—Charles F. Laycock of Beverly Hills, FL, June 9, 2010; worked as a general surgeon in Wilkes-Barre, PA, and Long Branch, NJ.

'47 MD—Harry M. DePan of Glens Falls, NY, May 26, 2010; general surgeon; veteran; after retirement, he assisted in surgery at Glens Falls Hospital and volun-

teered with the Glens Falls Medical Mission in Guatemala; he also volunteered in Somalia and Saipan.

'47 MD—Fred Plum of New York City, June 11, 2010; neurologist; helped coin the term "persistent vegetative state"; coined the term "locked-in state"; professor and former chairman of the Department of Neurology, Weill Cornell Medical College and NewYork-Presbyterian Hospital; treated former President Richard M. Nixon at the time of Nixon's death; became head of neurology at the University of Washington at age 29, the youngest chief at that time; in Seattle he developed a respiratory center for treatment of unconscious, paralyzed, and drug-overdose patients; co-wrote *The Diagnosis of Stupor and Coma*; research by Dr. Plum and Dr. Bryan Jennett led to the Glasgow Coma Score.

'48 BA, '51 MD—Peter T. Janulis of Delray Beach, FL, July 7, 2010; psychiatrist; associate clinical professor, Weill Cornell Medical College; veteran; active in alumni affairs.

'53 MD—George T. Conger of Akron, OH, and Cortez, CO, March 29, 2010; obstetrician/gynecologist; practiced at Akron City Hospital; veteran.

'59 MD—Vincent F. Guinee of Houston, TX, July 12, 2010; epidemiologist; professor, University of Texas MD Anderson Cancer Center, University of Texas Medical School, and University of Texas School of Public Health; chairman of Patient Studies, University of Texas MD Anderson Cancer Center; director of the Division of Pharmacovigilance and Epidemiology, US Food and Drug Administration; also worked with the Centers for Disease Control, the New York City Health Dept., Cornell Division of Bellevue Hospital, and St. Vincent's Hospital; organized the International Cancer Patient Data System for cancer centers in the US and Europe; author; active in community and professional affairs.

'64 MD—Otto G. Klein Jr. of Polson, MT, November 27, 2008; ophthalmologist; practiced at the Rocky Mountain Eye Center's three offices in Butte, Polson, and Missoula, MT; ophthalmologist, Mason Clinic in Seattle, WA; clinical professor of ophthalmology, University of Washington Medical School; also worked at an Anglican Mission Hospital in Africa; veteran, US Army Medical Corps; recipient of Bronze Star; boat builder, Chesapeake light craft;

active in civic and community affairs.

'72 MD—Jon A. Rothenberg of Riverdale, NY, May 7, 2010; practiced internal medicine; served as trustee and recently ran the Gurdjieff Foundation of New York.

'74 MD—V. Paul Addonizio of Newtown Square, PA, May 5, 2010; cardiac surgeon; performed rare auto-transplants; surgical director of the Porter Inst. for Valvular Heart Disease at Abington Memorial Hospital; chief of the division of cardiac surgery, Abington Memorial; former chief of cardiac and thoracic surgery, Temple University Hospital; associate professor of surgery, Pennsylvania School of Medicine.

Faculty

Mary E. Weber Goss of Piscataway, NJ, June 23, 2010; professor emerita of public health at Weill Cornell Medical College; pioneering medical sociologist; her work analyzed the organizational roles of physicians in *Physicians in Bureaucracy*; in the 1957 book *The Student Physician*, she described innovations in the Comprehensive Care and Teaching Program for fourth-year medical students at Weill Cornell; contributed to studies on the delivery and effectiveness of medical care; recipient of the Leo G. Reeder Award from the Section of Medical Sociology of the American Sociological Assn.; she also taught at Smith College and the University of Massachusetts, Amherst; book review editor, *American Journal of Sociology* and the *Journal of Medical Sociology* (now the *Journal of Health and Social Behavior*).

Ahmad Teebi of Qatar and Toronto, Ontario, July 22, 2010; professor of pediatrics and genetic medicine, and vice chair of pediatrics, Weill Cornell Medical College-Qatar; world-renowned pediatric geneticist with particular expertise in craniofacial and cleft lip and palate abnormalities; founding director, Arab Genetic Diseases Consortium; former professor of medical genetics, University of Toronto; also held faculty appointments in pediatrics and genetics at McGill University and Yale University; received his initial training in pediatrics and genetics at Al-Sabah Teaching Hospital in Kuwait and completed a fellowship in medical genetics at the University of British Columbia, followed by a fellowship at Yale University.

Out of the Attic

Weill Cornell bids farewell to its longtime archivist

Jim Gehrlich was Weill Cornell's head archivist for only ten years, but he was such an institution that it seemed like he'd been here for decades. That's partly because the job was such a perfect fit. A Maryknoll priest who got into archival management after falling ill during missionary work in Bangladesh, Gehrlich was well-suited to the post's monastic bent. When you work behind a locked door, with a single assistant, on the twenty-fifth floor of Baker Tower—accessed by a lone elevator run by an operator who must be coaxed to the top between patient transports—there isn't a lot of schmoozing around the water cooler. "Because more and more of our reference requests are done by e-mail," Gehrlich observes, "over time it's become quieter and quieter."

Gehrlich, who joined Weill Cornell as a senior archival assistant in 1994, retired in June; two days later he moved from Riverdale to Orlando, Florida, to care for his mother, who is recovering from a stroke. With a search under way for his permanent successor, he leaves behind a collection that includes some 6,000 linear feet of documents and more than 15,000 photographs, plus assorted ephemera: Civil War-era surgical instruments, old microscopes, various awards, the hulks of disused medical equipment. "We don't encourage it, but we get what people send," he says, touring the archives a few weeks before his retirement. "We've become the attic of an old house. If people don't know what to do with something, they say, 'Send it up to the archives.' "

In one corner is a stack of brass letters, discarded when the Greenberg Pavilion was built in 1993, that spell out the name of the Lying-In Hospital. "People didn't want to throw them away," Gehrlich explains. And what's that round thing? "It's an old wheel that was found on the site of the brewery that was here before this building was built."

Though such objects—like, say, the stack of vintage bedpans—may catch the visitor's eye, for Gehrlich they were mostly a space-hogging headache. Yes, some have curatorial value, such as the glass slides that anatomy professor George Papanicolaou used in creating the Pap smear. But the archives' real mission is to preserve photographs and documents—the most precious of which is the royal



JOHN ABBOTT

charter, dated June 13, 1771, and written on three map-sized sheets of sheepskin, that King George III granted to what would become New York Hospital. It resides in a custom-made box, which Gehrlich kept in his coat closet. "This document is older than the Declaration of Independence," he says. "The U.S. government has spent millions on preserving that, and we've spent maybe \$500 on this. It's hardly readable. Part of the reason is that for almost a hundred years, it hung over the fireplace in the Board of Governors room."

Gehrlich's favorite part of the archives is its collection of handwritten medical records. He takes a volume from a shelf and opens it to a random page, where flowery script describes the case of a twenty-one-year-old man who "was found in the street, lying upon the pavement, and was conveyed to the hospital" on June 1, 1836:

The stage of excitement was characterized by great prostration of strength, fretfulness, anxiety, and a constant desire for drink; the head heavy, confused, and vertiginous; face flushed; eyes congested; lips parched; . . . skin hot and dry; pulse feeble, rapid, and irregular; urine scanty and highly colored; abdomen distended and somewhat painful upon pressure; bowels free . . .

The diagnosis: typhoid fever. But this story, one of thousands safeguarded within the archives' walls, has a happy ending: on July 1 the patient was declared "cured" and discharged. "When you read these, you feel transported over time," Gehrlich says. "You almost feel it's a privilege—there is a holiness to it. The closest you can get to these people is to touch the paper. You can't actually see them, but these records give you a sense of their souls."

— Beth Saulnier



Student Scholarships — Planning Ahead

When Clare Pritchett wanted to honor her husband, R.A. Rees Pritchett, MD '48, on his birthday, she found the perfect gift: a charitable annuity dedicated to Weill Cornell student scholarships. "I was very surprised—and deeply touched," says Dr. Pritchett, a faculty member and graduate of Weill Cornell Medical College.

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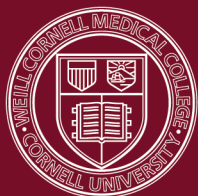
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