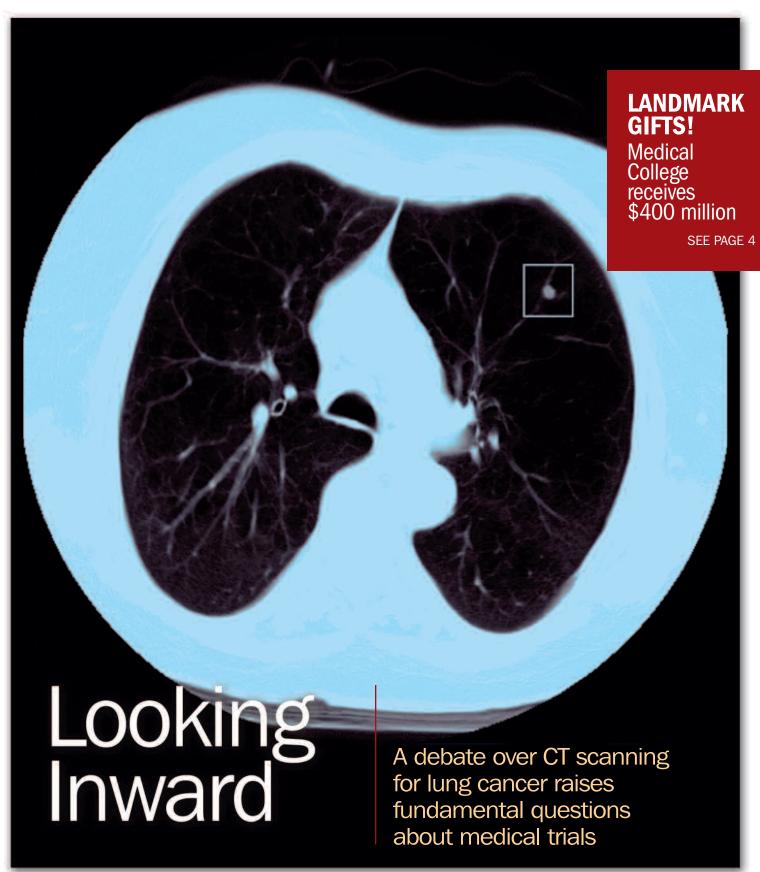
# weilcornelmedicine

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



# YESTERDAY, TODAY & TOMORROW





Photo above | Happy Reichert in 1951. Photo on right | Happy today.

 ${\it O}$  ver more than fifty years of marriage, Dr. Phillip and Mrs. Helen "Happy" Reichert built a rich legacy in New York City, one that included a strong commitment to Weill Cornell Medical College.

When the picture above was taken in 1951, Happy (Cornell '25) was the host of a popular television series called FYI. Dr. Reichert (Cornell Medical College '23) was an esteemed cardiologist and a founder of the American College of Cardiology. On their world travels, Dr. Phillip amassed an extensive collection of rare diagnostic medical instruments, which they donated to the Medical College in 1979. The collection is still on view in the Uris Conference Room, A-126.

Today, at the age of 105, Happy continues the Reichert legacy of support for the Medical College through multiple gift annuities. She established these gifts in loving memory of her husband and with fond appreciation of the physicians who provide her ongoing care. Through her charitable gift annuities, Happy receives an annual income while making a significant contribution to the Medical College.

To find out more about how you can establish a legacy at the Medical College that works for you, please contact the Office of Gift Planning in Institutional Advancement: 1-800-345-3015 vej2003@med.cornell.edu



Weill Cornell Medical College

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

#### 20 TRIAL BY FIRE

LAWRENCE LEVITT, MD '65

In an excerpt from *The Man with the Iron Tattoo*, a book of essays co-authored with a colleague at Penn State College of Medicine, Levitt recalls his first few weeks as a Bellevue intern. During those intense days—and long nights—Levitt's career almost ended before it started. But as he struggled with his new responsibilities, he learned something invaluable: how to be a doctor.



#### 26 DEEP BREATH

SHARON TREGASKIS

When Dr. Claudia Henschke announced that early CT scans of high-risk patients can dramatically improve lung cancer outcomes, the media flocked to the story—as did vocal critics of her findings. The ensuing controversy goes beyond the debate over the benefits of screening, raising fundamental questions about the experimental process itself.

#### 32 VITAL ORGANS

**BETH SAULNIER** 

Every thirteen minutes, a new patient is added to the list of Americans waiting for donor organs—a queue that is already some 95,000 names long—and each year 6,000 die without receiving a transplant. At Weill Cornell, physicians and students are working to improve those grim numbers by increasing donation rates through raised awareness and new policies. A look at how one family's decision to donate their daughter's organs gave a gravely ill doctor a new chance at life.

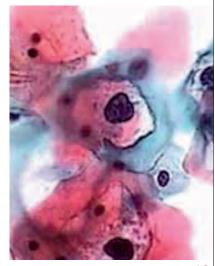


#### 2 DEANS MESSAGES

Comments from Dean Gotto & Dean Hajjar

#### 4 SCOPE

Weill and Greenberg give \$400 million to Medical College. *Plus*: Campuses collaborate, a center for reproductive genomics, the new tech transfer head, and kudos for faculty scholarship.



10

#### 10 TALK OF THE GOWN

Will the Pap smear become obsolete? *Plus*: Screening for suicide, burn unit kids go to camp, hats for tots, radio sponges, DNA and depression, and the fight against neglected diseases.

#### 40 NOTEBOOK

News of Medical College alumni and Graduate School alumni

#### 17 IN MEMORIAM

Alumni remembered

#### 48 POST-DOC

By the book

Cover image provided by Claudia Henschke

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# deans messages

#### Serving the Global Neighborhood

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

ACH YEAR, AS WE CONGRATULATE ANOTHER outstanding class of Weill Cornell Medical College graduates and I listen to the students' representative commencement speaker, I am reminded of the dedication these students have made to community service during their years with us.

Although our students graduate from one of the most prestigious medical colleges in the country and will go on to serve as residents and interns at many of the best U.S. hospitals, they carry from Weill Cornell a commitment to the community that was developed by working on projects related to such issues as teen pregnancy, homelessness, substance abuse, HIV/AIDS, illiteracy, and health care for the uninsured.



Aisha Bagai



Osamuede Folorunsho Edobor



Caroline Chang

Vinnie Kathpalia

Cornell medical student, and a surprising number make community service a central component of their experience. We recognize these students at commencement by conferring the degree of "MD with Honors in Service." Many of the students who receive this honor go on to highly productive and scholarly careers in health research, administration, and public policy. This spring, four graduates—Caroline Chang, Osamuede Folorunsho Edobor Osula, Aisha Baqai, and Vinnie Kathpalia—earned this honor. Students who receive this degree are not simply exceptional in

A period of community service is required of every Weill

their dedication to community service; they have also shown significant talent in leadership, innovation, and research. There are stringent requirements for the MD with Honors in Service degree, including both a long-standing commitment to community service and an original scholarly research paper. Students must also be approved for the honor by their peers on the Student Services Committee.

This year, Caroline Chang demonstrated excellence in all these areas while working on one of Weill Cornell's most important community service programs, Camp Phoenix. This camp runs day-long events and an annual weekend trip for former pediatric patients treated at the William Randolph Hearst Burn Center at Weill Cornell, with activities designed to build self-confidence and emphasize teamwork. During her four years, Caroline worked in many different capacities for Camp Phoenix, eventually coordinating the entire program. Her final research paper—an evaluation of the camp's strengths and weaknesses—will provide a roadmap for improving the program in the coming years. (For more on Camp Phoenix, see page 14.)

Osamuede Folorunsho Edobor Osula was a two-year co-chair of the Weill Cornell chapter of the Student National Medical Association. The chapter oversees multiple community health initiatives, including the annual Cornell Healthy People Community Health Fair in East Harlem. This event epitomizes Weill Cornell's community service goals by providing medical care and health information to disadvantaged populations who are often uninsured. It offers immunizations, HIV screenings, and activities for children, all of which require considerable administrative skill.

These examples are just two of the nearly three dozen Weill Cornell projects, programs, and groups that provide service to New York City communities. As we congratulate these four students on their dedication to the global neighborhood, we are reminded again that success at graduation can be measured in many ways.

— Dean Antonio Gotto

#### Planting the Seeds of Scientific Inquiry

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



UR STUDENTS SPEND MUCH OF THEIR AVAILable time working to solve today's biomedical problems, but they are also making time for future scientists and contributing to the community in important and meaningful ways. Although the national growth in graduate students in the biological sciences slowed during the 1990s, the National Science Foundation reports that growth has since rebounded—and students at the Weill Cornell Graduate School of Medical Sciences are doing their part to maintain and expand public school students' interest in science.

To help plant the seeds of scientific inquiry in the minds of young people, this spring the Graduate School hosted its tenth annual Cornell Science Challenge. More than just a science fair, the Science Challenge is an in-depth three-month program that introduces students at Manhattan's East Side Middle School to the core elements of the scientific method. Working with graduate student mentors, these young scientists-in-training develop original research projects that they then present to a panel of graduate student judges in Olin Hall. Over the past decade, the program has mentored nearly 1,400 seventh-graders and fully embodied the Graduate School's mission of education

and service to the community.

Our faculty has also made a major contribution. In April, five faculty members opened their labs to ninth-grade "Junior Fellows" from the New York Academy of Sciences, students who are very likely to pursue higher degrees in medicine in the future.

Other community service programs led by the student-run Graduate School Executive Committee have extended far beyond the classroom to help those in need. In May, the Graduate School held a successful clothing drive to benefit several local nonprofit agencies. And in this issue of Weill Cornell Medicine, you can read about a wonderful new program that provides warm hats for babies in the NewYork-Presbyterian Hospital/Weill Cornell Medical Center NICU-hats that are knit by our very own students, faculty, and staff (see page 13).

Each year we are graduating more and more students who have demonstrated during their graduate school careers that they are likely to become leaders in the field of medical research. But these students are also quietly demonstrating another passion contributing to their communities in unique ways and sparking scientific interest in the next generation of biomedical researchers.

— Dean David Hajjar





#### ICHARD LOBELL

#### **Landmark Gifts to Medical College Total \$400 Million**

N MID-JUNE, WEILL CORNELL ANNOUNCED THAT IT HAD RECEIVED the single largest gift ever given to a medical school: \$250 million from longtime benefactors and college namesakes Joan and Sanford Weill. The Weills also gave \$50 million to the Ithaca campus for research in genomics and other fields; in recognition of their generosity, the new life sciences building now under construction in Ithaca will be named Weill Hall. With the latest gifts, the Weills' lifetime contributions to Cornell University total more than \$500 million.

At the same press conference, the Medical College announced several other major gifts totaling \$150 million: \$25 million from the Maurice and Corinne Greenberg Family Foundation, \$25 million from the Starr Foundation, and \$100 million from a longtime supporter who wished to remain anonymous. Added to previous donations, the gifts put the Medical College's \$1.3 billion capital campaign halfway toward its goal, and Cornell University's comprehensive "Far Above" campaign at \$1.653 billion.

"We are grateful and humbled to be the recipient of such immense generosity," said Dean Antonio Gotto. "It is almost overwhelming." Gotto noted that the direct beneficiaries of the gifts—which will fund new facilities, increased faculty support, and collaborations with the Ithaca campus, among other efforts—will be Weill Cornell's physicians, researchers, students, and patients. Said Gotto: "This is the kind of day that a dean dreams about."

#### **Campuses Work Together on Global Health**

IN A JOINT EFFORT BETWEEN THE MEDICAL COLLEGE AND THE ITHACA campus, the University has established a new program in global health. The program will offer an undergraduate minor, professional and graduate programs, internships, new courses, and a lecture series. "Achieving global health will require new approaches and solutions to solving the burdens of poverty, malnutrition, and infectious disease, coupled with advances in sustainable agriculture, development, and genomics," says nutritional sciences professor Rebecca Stoltzfus, PhD '92, co-director of the program. Students minoring in global health will be eligible for internships at sites in Bangladesh, Ghana, Peru, Tanzania, and Brazil.

#### \$4 Million Grant Supports Study of Orthopaedic Devices

THE U.S. AGENCY FOR HEALTHCARE RESEARCH AND QUALITY HAS awarded Weill Cornell a major grant for public health research into the outcomes and cost-effectiveness of medical devices, work that will help guide decisions by the FDA and other agencies. The \$4 million Centers for Education and Research on Therapeutics (CERT) award will support research on such orthopaedic devices as shoulder prostheses and hip and knee replacements. "Despite their popularity, existing studies do not provide adequate data to evaluate long-term outcomes," says Dr. Mark Callahan, an associate professor of public health.

#### D'Amico Named Ophthalmology Chairman

DR. DONALD D'AMICO HAS BEEN NAMED chairman of ophthalmology at the Medical College and ophthalmologist-in-chief at NYPH/WCMC. D'Amico specializes in the treatment of macular degeneration, retinal disorders, and diabetes-related eye disease. Prior to his appointment, he was a professor at Harvard Medical School and director of the diabetic unit at the Massachusetts Eye and Ear Infirmary. D'Amico is president-elect of the Retina Society.



#### **Paau Leads Technology Transfer Efforts**

ALAN PAAU HAS BEEN NAMED TO THE NEWLY CREATED POSITION OF VICE provost for technology transfer and economic development at Cornell University and Weill Cornell Medical College. He has also been named executive director of the Cornell Center for Technology, Enterprise, and Commercialization, based in New York and Ithaca. "This new position is important to our efforts to expedite and realize the potential benefits of new medical discoveries made at Weill Cornell, taking breakthroughs made in the lab and translating them to new treatments for patients," says Dean Antonio Gotto.

Paau, who has a PhD in biological sciences as well as an MBA, holds eight U.S. and fifteen foreign patents and has published more than thirty scholarly articles. He comes to Cornell from the University of California, San Diego, where he was assistant vice chancellor for technology transfer and intellectual property services; at UCSD he developed a "Startup Boot Camp" program comprising faculty, lawyers, entrepreneurs, and venture capitalists.

ual parts through synergistic opportunities," says urology chairman Dr. Peter Schlegel, who led efforts at Weill Cornell to found the center. It now comprises fifteen faculty members, though the number is expected to grow to about 100. Its work will include both human and animal studies; results could benefit not only the treatment of human infertility—which affects 10 to 15 percent of couples of childbearing age—but wildlife conservation and livestock breeding.

#### **Haves Wins Greenberg Award**

DR. JOSEPH HAYES, THE HERBERT AND ANN SIEGEL DISTINGUISHED Professor of Clinical Medicine and director of clinical information systems at NYPH/WCMC, has won the annual Maurice R. Greenberg Distinguished Service Award. The honor, which includes a \$50,000 prize, recognizes his contributions both as a cardiologist and as a driving force behind the installation of Eclipsys, an inpatient medical record system. Hayes retired in May after forty-four years of service.

#### **Spotlight on Student Research**

IN MARCH, WEILL CORNELL HELD ITS FIFTH ANNUAL MEDICAL STUDENT Research Day—the largest such event so far, featuring sixty-five abstracts and three dozen research presentations. Topics ranged from delayed presentation after burn injury to increasing physical activity in Type II diabetes patients to the challenges of prolonged separation among Chinese immigrant families in New York. "We wanted to be open to all students," says Alex Pitts-Kiefer '10, one of the event's organizers. "We emphasized, particularly for first-year students, that projects didn't have to be related to science or clinical science. It could even be on the architecture of medical office buildings, as long as it was something related to the field of medicine."

#### **New Center Focuses on Reproductive Genomics**

THE UNIVERSITY HAS ESTABLISHED A CENTER for Reproductive Genomics, teaming faculty doing basic research in reproductive science on the Ithaca campus with the Medical College's fertility clinic. The new center will focus on the genetics of infertility, with an emphasis on meiosis—the specialized cell division that results in recombination of genetic material and the production of sperm and eggs. "This is an example of a collaborative translational research process that brings together the best of a world-renowned clinical research program in male and female infertility with strong basic research from Ithaca that is likely to grow beyond the sum of its individ-





Happy Birthday: In 1927, representatives from Cornell University and the Society of the New York Hospital signed an agreement to create the New York Hospital-Cornell Medical Center, now known as NewYork-Presbyterian Hospital/Weill Cornell Medical Center. The award-winning alabaster building is seen here circa 1932, the year it opened its doors to its first medical students and patients.

#### **Promoting Colon Cancer Screening for Women**

THE JAY MONAHAN CENTER FOR GASTROINTESTINAL HEALTH HAS PARTnered with the American College of Obstetricians and Gynecologists
to launch a campaign to educate women about the importance of
screening for colorectal cancer—aiming to debunk the myth that
women are at lower risk than men. "Most women are aware of the
importance of breast and cervical cancer screening, but less than
50 percent of women undergo the recommended screening for
colon cancer," says Dr. Mark Pochapin, MD '88, director of the
Monahan Center. Regular screenings are vital because colon cancer is often not diagnosed until it has progressed, but if detected
in its earliest stage has a five-year survival rate of 90 percent.
Nearly 154,000 people—an equal number of women and men—
are expected to be diagnosed with colorectal cancer in 2007.

#### **Gross Wins \$2.5 Million MERIT Award**

PHARMACOLOGY PROFESSOR STEVEN GROSS HAS BEEN CHOSEN BY the National Heart, Lung, and Blood Institute to receive a Method to Extend Research in Time (MERIT) Award—the fourth consecutive year in which Medical College faculty have received the honor. The five-year, \$2.5 million grant will provide long-term support for research into the nitric oxide-related trigger for vascular complications of diabetes, including the development of potential drug treatments for the condition. Gross, the director of Weill Cornell's mass spectrometer core facility, has been studying nitric oxide (NO) for nearly two decades; his work has led to more than a dozen patents. Currently, a Phase III clinical trial, funded by the NIH and based on his research, is studying whether an NO-inhibiting drug can save the lives of patients suffering from cardiogenic shock.

#### Wallace Fund Gives \$70 Million to Psychiatry

THE DEWITT WALLACE FUND OF THE NEW YORK COMMUNITY TRUST HAS given a grant of nearly \$70 million to NYPH/WCMC's Department of Psychiatry. The award—the largest in the Trust's history—will improve understanding and treatment of mental illness through bench science, clinical research, and training. "Going forward, the Wallace gift will fund fellows, instructors, assistant professors, and the continued development of more senior scholars," says psychiatry chairman Dr. Jack Barchas. "Additionally, the gift will support core programs and recruitment in and development of unique and innovative academic programs." When taken together with the \$40 million the Wallace Fund has awarded the Medical Center in the past, the gifts total one of the largest private donations for psychiatric research and patient care in the U.S.



Blast from the past: The Medical College honored its workers in March with a party styled after a Fifties sock hop, transforming the Garden Café into a retro diner. The annual Employee Appreciation Day included a DJ and lunch served by senior college leaders.

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#### from the bench

#### **Teens' Competency Skills Combat Drug Pressure**

Research has shown that one of the most powerful factors in a teenager's decision to smoke, drink, or use drugs is whether his or her friends do. However, the results of a three-year survey by Weill Cornell psychologists indicate that an adolescent's own competency skills can go a long way toward countering the effects of peer pressure. In an article published in the April issue of *Addictive Behaviors*, researchers reported that teens who have sound decision-making skills and high "refusal assertiveness"—the ability to say no—were less likely to be substance abusers. The study followed nearly 1,500 predominantly Hispanic students at twenty-two inner city schools; surveys were collected from members of a control group from a previous study on prevention efforts. The research, says assistant professor of public health Jennifer Epstein, "provides important support for drug-abuse prevention programs that include the teaching of competence skills."

#### **Biochemists Discover Key Protein in Glucose Uptake**

A protein called Rab10 plays an important role in cells' insulin-mediated uptake of glucose, Weill Cornell biochemists have found. The work could lead to new drug targets for the prevention and treatment of Type II diabetes. Lead author Timothy McGraw and colleagues in the U.S. and Japan found that the absence of Rab10 inhibits the ability of the key transporter GLUT4 to bring glucose to muscle and fat cells. "In healthy non-diabetics, insulin sets off a chain of biochemical signals that releases GLUT4 to the cell surface," McGraw says. "Once there, it forms a kind of 'gate' through which glucose can enter the cell." In experiments done in culture, the investigators found that cells engineered to lack Rab10 showed an immediate decline in insulin sensitivity. "This discovery gives us one more link in the cellular chain of events linking insulin signaling and the regulation of glucose transport," McGraw says.

#### 9/11 Losses Continue to Harm Children's Health

Children who lost a parent in the September 11 terrorist attacks have seen their rates of psychiatric illnesses more than double, says a study published in the April issue of *Biological Psychiatry*. A team led by Dr. Cynthia Pfeffer compared forty-five children who had lost a parent on 9/11 to a control group of similar age and socioeconomic status. They found that more than half



of the bereaved children suffered from anxiety, including post-traumatic stress disorder. In addition, many displayed chronic, heightened activity of the brain's stress-response system. "Continued activation of this system can lead to long-term hypersensitivity to stress as adults and even impact bone health, since the stress hormone cortisol can harm bone," Pfeffer says.

#### **Novel Peptide Offers Hope to Type I Diabetics**

An antioxidant peptide developed at Weill Cornell could offer hope to Type I diabetes patients, those with the inherited form of the disease in which the pancreas's islet cells fail to produce enough insulin. Such patients often require donations of the

#### from the bench

fragile cells from multiple donors; the cells themselves are often so weakened by the transplant that they eventually die. In mouse studies, lead researcher Dolca Thomas '92, MD '97, A recent study may help patients with degenerative spinal disfound that the novel peptide, called SS31, may help shield the cells, protecting them from damage and potentially obviating the need for more than one donor. SS31 stabilizes the mitochondrial membrane, an area key to the prevention of cell death. The researchers gave SS31 to diabetic mice, each of whom had received an islet cell transplant from just one donor; 50 percent became insulin-independent. "That's an incredible improvement over what we see in the usual human transplant model," Thomas says. The work was published in the Journal of the American Society of Nephrology.

#### **Comparing the Benefits of Spinal Surgeries**

ease decide which surgical treatment is best for them. Weill Cornell researchers compared five spinal fusion techniques used to correct the breakdown of spinal vertebrae by "welding" them together to create one bone and decreasing painful friction between them. The study concludes that one technique, called an anterior cervical plate system, has a higher rate of successful fusion. "Even though the scientific literature shows that plate systems more effectively promote spinal fusion, they are not the most widely used approach," says Dr. Roger Hartl, senior author of the study and director of spine programs at Weill Cornell,

#### tip of the cap to...

Dr. Robert Abrams, associate professor of clinical psychiatry, named 2007 Clinician of the Year by the American Association for Geriatric Psychiatry. The award acknowledges his commitment to ensuring access to mental health care for older adults.

Joseph Fins, MD '86, chief of the Division of Medical Ethics, installed as governor of the New York Downstate Region I of the American College of Physicians, the national organization of internists.

Gaorav Gupta, PhD candidate in cell biology and genetics, named a recipient of the Harold M. Weintraub Graduate Student Award from the Fred Hutchinson Cancer Research Center. It recognizes outstanding achievement in the biological sciences.

Dr. Tong Joh, professor of neurobiology in neurology and neuroscience, given the Julius Axelrod Award in Pharmacology by the American Society for Pharmacology and Experimental Therapeutics. The award recognizes outstanding scientific contributions in research and mentoring.

Dr. K. Craig Kent, chief of vascular surgery at NewYork-Presbyterian Hospital/Weill Cornell Medical Center, named the first Greenberg-Starr professor. The position was endowed by a \$2 million gift from Maurice R. Greenberg and the Starr Foundation.

Dr. Davise Larone, professor of clinical pathology and laboratory medicine and clinical microbiology and immunology, reappointed to a three-year term as the Standards and Examination Chair of the Mycology Section of the American Board of Medical Microbiology.

Dr. Ehud Lavi, professor of pathology and laboratory medicine, elected to the board of directors of the International Society of Neurovirology.

Dr. Harvey Lincoff, professor emeritus of ophthalmology, honored by the ophthalmology faculty at University Hassan II in Casablanca, Morocco, for his contributions to the field.

Dr. David Lyden, associate professor of pediatrics and cell and developmental biology, cited with distinction for his work "The Genetic and Cellular Regulation of Adult Bone Marrow Stem Cells in Tumor Vasculogenesis and in the Formation of the Pre-Metastatic Niche" by the BIAL Foundation. The foundation, based in Portugal, recognizes intellectual written works on medical topics.

Dr. **Fabrizio Michelassi**. the Lewis Atterbury Stimson Professor of Surgery and chairman of the Department of Surgery, named vice president of the Society of Surgical Oncology for 2007-08.

William Muller, MD '82, professor of pathology and laboratory medicine, appointed to the editorial committee of the Annual Review of Pathology: Mechanisms of Disease, a new publication in the prestigious "Annual Reviews" series.

Jean Pape, MD '75, professor of medicine, winner of the Distinguished Service Award from the Global Health Education Consortium. The honor is given for outstanding leadership in expanding and enhancing the education of physicians in the field of global health.

Dr. Ellinor Peerschke, professor of pathology and laboratory medicine, installed as president of the Academy of Clinical Laboratory Physicians and Scientists.

Dr. Cynthia Pfeffer, professor of psychiatry, recipient of the Mortimer J. Blumenthal Memorial Award from the UJA Federation of New York's Mental Health Professionals Division. The award recognizes her clinical and research work with suicidal children and adolescents, and childhood bereavement.

Dr. Marcus Reidenberg, professor of medicine, public health, and pharmacology, elected chairman of the World Health Organization's Expert Committee on the Selection and Use of Essential Medicines.

noting that further trials are necessary. "Our research indicates that perhaps they should be." The study was published in the April issue of the Journal of Neurosurgery: Spine.

#### **Study Connects High Blood Pressure and Hot Flashes**

Hot flashes are linked to high blood pressure, says a study published in the journal Menopause. Public health professor Linda Gerber and colleagues found that women who get hot flashes tend to have higher blood pressure than those who don't. The study involved 154 women in New York City, with a mean age of forty-six, who wore portable blood pressure monitors. One-third reported the occurrence of hot flashes within the previous two



weeks. "Among these women, systolic blood pressure was significantly higher," Gerber says, "even after adjusting for whether they were pre-menopausal, menopausal, or post-menopausal." Future research, she says, will further explore the mechanisms underlying the relationship.

#### **Treatment Can Battle Aggressive Prostate Cancer**

Surgery and radiation can double the life expectancy of men with aggressive prostate cancer. A study led by Dr. Ashutosh Tewari, director of robotic prostatectomy and urologic oncology, found that patients with the most aggressive, non-metastatic cancers live an average of seven years with conservative treatment—and more than fourteen if treated with prostatectomy or radiation. "Unfortunately, pessimism abounds among many doctors, who believe that aggressive prostate cancers are beyond cure and should only be followed with watchful waiting, forestalling any immediate treatment," Tewari says. "This new study points to the fallacy of this outlook." Published in the March Journal of Urology, the study analyzed data from 453 cases.

#### **Personal Judgments Can Benefit—Not Bias—Research**

A recent paper on ethical value judgments made by medical research scientists in framing their investigations reached some surprising conclusions. The article, co-authored by ethics professor Dr. Inmaculada de Melo-Martín, finds that all elements of a study are affected by such personal judgments—but that they actually improve the quality of research. "In fact, many medical research scientists make these value judgments without being aware of it," de Melo-Martín says, "while at the same time wrongly believing any such value-laden distinctions automatically lead to bias." The article ran in the European Journal of Epidemiology.

#### "Virtual Iraq" Aims to Prevent PTSD

A 3-D simulation of combat called "Virtual Iraq" is being used by Weill Cornell researchers to study how symptoms of posttraumatic stress disorder (PTSD) develop. The simulation is designed to be a realistic reproduction of an urban combat scenario; participants interact with it using a keypad. Gulf and Iraq War veterans—some of whom have been diagnosed with PTSD view the simulations while researchers track whether heightened physiological responses affect the ability to recall or suppress memories of it. The researchers are testing the hypothesis that, by talking about their war experiences, patients can incorporate them into their conscious minds and avoid the effects of suppressed traumatic memories. The study is being led by Weill Cornell clinical psychologist Loretta Malta.



#### **Multiple Myeloma Drugs in Trials**

Two new treatments developed by Weill Cornell scientists may offer hope in the battle against multiple myeloma. The first, VEGF Trap, works by binding VEGF, a molecule vital to tumor blood-vessel growth; it is currently in a Phase II trial open to patients with relapse cases. The second—hLL1, now in a Phase I study—recognizes specific receptors on tumors, inducing apoptosis. Dr. Ruben Niesvizky, director of Weill Cornell's Multiple Myeloma Program, is the principal researcher on both studies. Multiple myeloma, a cancer that causes white blood cells to become malignant, affects some 40,000 Americans; for unknown reasons, there has been a 35 percent rise in deaths from the disease over the past three decades.

> Weill Cornell Medicine is available online. www.med.cornell.edu/publications

# talk of the gown

## From Pap to Papilloma

Will the HPV vaccine change women's health care?

N 1928, CORNELL MEDICAL College anatomist Dr. George Papanicolaou published his first findings on the cervical cancer screening technique that now bears his name. Days later, the New York World reported that while Papanicolaou himself declined to speculate, the editors anticipated that the new test would "prove valuable in determining cancer in the early stages of its growth when it can be more easily fought and treated." It would take Papanicolaou and collaborator Dr. Herbert Traut, a gynecological pathologist at Cornell, another decade to complete a clinical trial and collect the data that would convince the medical community of the newspaper's assessment, but by the mid-Forties the American Cancer Society had endorsed the Pap smear. In 1960, Papanicolaou was nominated for the Nobel Prize, and his cytological technique had become part of routine gynecological care.

When Papanicolaou started his research in 1925, nearly 40,000 American women died of cervical cancer each year. Back then, diagnosis was essentially a death sentence, as it generally came only when symptoms of advanced disease drove a woman to her doctor—long after surgery or other treatments might have improved her prognosis. Today, the survival rate is close to 90 percent. Fewer than 4,000 Americans die of cervical cancer annually, and 85 percent of them had never been screened. But worldwide the disease kills 275,000 women each year, making it the top cancer-related cause of death in much of the developing world. "You don't have to look that far—sub-Saharan Africa, Southeast Asia, India—to see what life would be like without the Pap smear," says gynecological oncologist Dr. Kevin Holcomb, an associate professor at Weill Cornell.

It took three decades for screening to become commonplace in the U.S., and over the years there has been plenty of fine-tuning. Papanicolaou's 1954 *Atlas of Exfoliative Cytology* detailed the basic characteristics of cells in the progression from abnormal



Historic achievement: Dr. George Papanicolaou's pioneering work on cervical cancer led to a Nobel Prize nomination and set the standard for gynecological screening.

cell growth to full-blown cancer, and in 1988 the Bethesda System defined five histological categories to standardize diagnosis and treatment. In Papanicolaou's day, vaginal fluids were examined under the microscope. Today, cytologists examine cervical cells, and a new thin-screen liquid cytology technique has improved the methods used to transfer cells to microscopic

Pharmaceutical giant Merck put cervical cancer in the national spotlight in the summer of 2006, when the FDA approved Gardasil, its vaccine against four subtypes of human papillomavirus (HPV), the sexually transmitted disease that causes cervical cancer. "We've been talking about HPV for years," says Holcomb, president of the Board of Advisors for the American Cancer Society's Upper Manhattan office, "and all of a sudden here's this private company, and through their marketing budget they raise awareness in a way we haven't been able to." Scrutiny of the vaccine only intensified as twenty states considered legislation man-

dating vaccination of school-age girls, and some parents and religious groups objected on the grounds that it would encourage promiscuity.

Close to 25 million American women aged fourteen to fifty-nine have HPV,

including almost 50 percent of women aged twenty to twenty-four. There are more than 100 subtypes of HPV; Gardasil protects against four, including HPV-16 and HPV-18, which together account for about 70 percent of cervical cancer cases. "That leaves

30 percent unaccounted for," says Holcomb.
"The vaccine isn't changing the recommendations for screening—the age at which to start, the frequency, or the age it's safe to stop. It's not a replacement for the Pap smear."

Papanicolaou wasn't trying to transform women's health care when he investigated the microscopic clues embedded in vaginal fluid; he was studying the reproductive cycle of the guinea pig for his analysis of the role of the X and Y chromosomes in sexual determination during embryonic development. But seeing the wealth of diverse cell forms under the microscope launched a new line of inquiry: what insights could be gained from similar analysis of the human female reproductive system?

That evening, Papanicolaou's wife, Andromarche, became his first human experimental subject. For the next twenty years, she served as her husband's research technician and provided daily samples for his analysis. By 1925, Papanicoloau had broad-

ened his sample to include female employees at New York Hospital, where he studied the cytology of staphylococcus, streptococcus, gonococcus, ovarian cysts, miscarriage, tumors, and more.

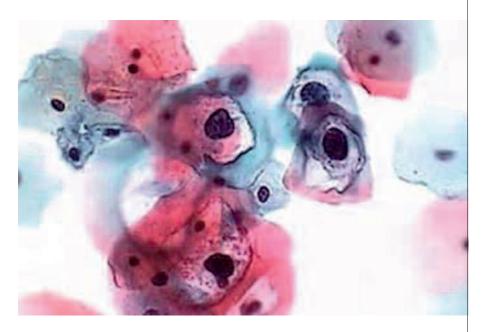
Eighty years later, it's hard to predict what role the HPV vaccine will play in women's health; the portion of the population that goes unscreened likely won't get the three-shot, \$400 vaccine unless it becomes mandatory—a policy recommendation that the CDC and the American College of Obstetricians and Gynecologists are still weighing. "Some people prefer abstinence," says Holcomb. "I support routine vaccination of girls aged nine to

Fewer than 4,000 Americans
die of cervical cancer annually,
and 85 percent of them had
never been screened.
But worldwide the disease kills
275,000 women each year,
making it the top cancerrelated cause of death in
much of the developing world.

eleven—but if you have strong objections, why should I tell you that you have to vaccinate your child?"

Assistant professor of obstetrics and gynecology Dr. Garrick Leonard says he's on the fence about the vaccine's role in

his practice. "I want to wait a little longer to make sure that there aren't complications," says Leonard, who treats patients at Weill Cornell's Iris Cantor Center for Women's Health. "I want to see how it plays out in the broad population."



Microscopic view: Magnified 400 times, this image from an abnormal Pap smear shows changes consistent with human papillomavirus.

Associate professor of obstetrics and gynecology Dr. Margaret Polaneczky offers Gardasil to her patients at the Cantor Center, but remains cautious about mandatory vaccination. "We may be preventing 16 and 18, but does that mean we're going to start seeing more of the other subtypes?" she asks. "Will there be cross-protection to the other subtypes? We don't know how long immunity is going to last and we don't know how that's going to translate into cervical cancer protection in the long term."

— Sharon Tregaskis

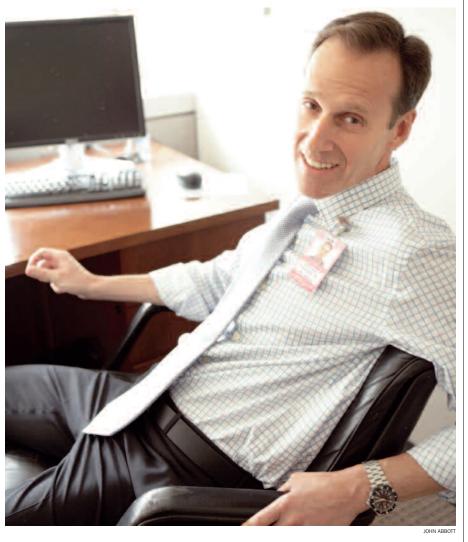
#### Mental Health Check

Can screening prevent teen suicide?

HEN A TEENAGER DIES, it's rarely from a disease. More often, they perish in an accident or from homicide. The third leading cause of death in young people, though, is suicide—a striking statistic that's often overlooked. At Weill Cornell, Dr. Richard Friedman, professor of clinical psychiatry, is advocating a potential solution: routine mental health screening for teens. "It seems like a nobrainer," says Friedman, who wrote about his views in the New England Journal of Medicine in December. "But apparently it is controversial—a lot of people have strong feelings about it."

Most experts in adolescent psychiatry agree that teen suicide has a strong correlation with mental illness. Ninety percent of teenagers who commit suicide have a diagnosable mental disorder. In 2005, almost 17 percent of U.S. high school students seriously considered suicide; more than 8 percent had attempted it once in the previous year. And after a decade of decline, rates are rising: suicides among Americans under twenty climbed 18 percent from 2003 to 2004—the only cause of death that increased for young people during that period, according to the Centers for Disease Control and Prevention. But little is being done to address or even diagnose the mental illnesses that often precede suicide, says Friedman, who directs Weill Cornell's Psychopharmacology Clinic. "It's a group of young people who are ill but underrecognized and under-treated-way more than adults."

Mental health screening for teens is a partial solution, he says. One of the first and better-known programs, TeenScreen, was developed at Columbia University in 1991; more than 400 communities are now using it. First, high school students who volunteer (and whose parents have consented) fill out a questionnaire about their moods, suicidal thinking, sleep, appetite, energy levels—all indicators of major psychiatric disorders. Then a social worker or



Dr. Richard Friedman

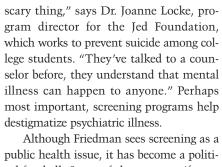
clinical psychologist interviews each participant. Should a student screen positive, the clinician recommends a more comprehensive evaluation. In his *NEJM* article, Friedman offered anecdotes about two such teens, including one who became suicidal after being molested by a cousin; the screening gave her an opening to tell her parents what had happened. "They were shocked," he quotes the girl as saying, "and had no idea what I had been going through."

Screens have other benefits besides early identification, Friedman says; in fact,

the screening itself can be therapeutic. "The first time some people are able to speak about a mental health problem is when they're asked." Screening also introduces teens to the mental health-care system, an important consideration given that half of all serious psychiatric illnesses start by age fourteen and most go undiagnosed. Untreated, those illnesses can become increasingly deadly as teens grow older: suicide is the number-one killer of collegeage adults. "You would hope that further down the line, if the student is struggling, mental health care is not such a foreign,

#### Hats On

Grad students knit caps for NICU preemies



cal football. Some of the most vociferous critics are parents who feel it invades their privacy and will result in their children being overmedicated. In 2005, Rep. Ron Paul, a Texas Republican and physician, unsuccessfully sponsored legislation (called the Let Parents Raise Their Kids Act) that would have prevented federally funded screening without parental permission. Some critics say that talking about suicide will only make teens more likely to commit it. Others, including some who sent Friedman and NEIM hate e-mail in response to his article, claim TeenScreen is a ploy by pharmaceutical companies to identify a target population for drug treatment. Friedman, a New York Times behavioral science columnist, responds that TeenScreen is funded by private donations and the federal government.

Advocates concede the programs aren't perfect. Screens are new enough that they lack the data—both in scope and duration—to demonstrate their efficacy. An annual screen alone cannot identify every at-risk child, and communities sometimes lack appropriate treatment resources. But perhaps the biggest problem, Friedman says, is a high rate of false positives. The current generation of questionnaires easily picks up indicators of mental health problems, but is not as good at identifying specific illnesses. That may lead to teens being falsely labeled, ushered into the mental health-care system, and stigmatized. Still, he says, such errors are fairly easy to correct with clinical follow-up, and they're worth the risk. "Stigma doesn't kill. Illness does—if it goes untreated."

— Susan Kellev



Heads of the class: Volunteer knitters present their creations to the NICU staff.

N VALENTINE'S DAY, AS TEMPERATURES HOVERED IN THE TWENTIES and heavy snow fell, a small group of Weill Cornell graduate students, faculty, and friends made the rounds with nurses in NewYork-Presbyterian Hospital/Weill Cornell Medical Center's Neonatal Intensive Care Unit, seeking out parents and giving their premature babies colorful hand-knit hats sized for tiny heads.

The group, known formally as the We Knit Because We Care Campaign, began in October, when Georgette "Charli" Yandolino, an administrative secretary in the Graduate School of Medical Sciences, proposed a knitting program modeled on one she had seen at Winthrop-University Hospital on Long Island. Her idea sparked about a dozen Weill Cornell graduate students to take up knitting, which has surged in popularity among people in their twenties and thirties over the past ten years. So far, the group—which includes Barbara Loughlin, wife of Pediatrician-in-Chief Dr. Gerald Loughlin, and Anita Gotto, wife of Dean Antonio Gotto—has handed out more than 100 caps, with the goal of knitting 500 and offering training and supplies to mothers in the unit.

Each hat takes about five hours to make; some of the knitters came into the group with previous experience, while others learned through hands-on lessons, written instructions, and how-to videos. Although the meetings of the knitting group are a social occasion for members, the little hats they create serve a clinical purpose. "A premature baby's head is disproportionately larger than a full-term baby's, and they tend to lose more heat through their heads," says Dr. Jeffrey Perlman, chief of the Division of Newborn Medicine. "These caps allow them to maintain warmth, particularly outside the incubators." And by getting out of the incubators, premature babies can spend more time with their mothers, strengthening physical and emotional connections.

As the snow continued to fall outside, one happy mother said she wouldn't need a hat; her baby would be leaving the NICU later that day. Pamela Wille, a pharmacology graduate student and the campaign's student coordinator, seized the opportunity: "I said, 'No, today is a *perfect* day—you definitely need one!' "

— Gabriel Miller



# Beyond the Burn Unit

Camp Phoenix helps young survivors transcend their injuries

N NEW YEAR'S EVE, IN THE WANING HOURS OF 2001, six-year-old Chelsea Crawford was staying with relatives while her mother worked and her father attended a funeral. Chelsea had a slight cold, so her teenage cousin made her a cup of tea and left it on a table to cool. The girl reached for the hot drink and spilled it on her lap, causing third-degree burns.

Five years later, Chelsea is a sixth grader, and the scars on her thighs continue to fade. Her parents, Victor and Tonya, credit the William Randolph Hearst Burn Center at NewYork-Presbyterian Hospital/Weill Cornell Medical Center with her physical healing—but Chelsea's emotional recovery, they say, owes a great deal to a free day camp run by Weill Cornell medical students. Camp Phoenix hosts events for children who have been treated at the burn unit, in the hope of sparking camaraderie among kids who may have endured traumatic injuries, long hospital stays, painful treatments, and permanent disfigurement. "Chelsea was worried about the appearance of her scars, and possibly getting teased,"

says Victor Crawford. "But through Camp Phoenix, she's gained confidence that 'these scars don't make me; my inner person makes me.' Chelsea's burns were severe, but at Camp Phoenix there are kids much worse off than she is. To bond with them and talk about her injuries helps her heal and realize how fortunate she was."

Founded in 2001 by Paul Mullan, MD '04, while in his first year at Weill Cornell, Camp Phoenix brings together burn unit alumni for outings and one-day events in New York, as well as an annual sleepaway weekend outside the city. About 150 kids have participated since the camp began, and a roughly equal number of medical students, burn unit staffers, and FDNY firefighters have volunteered as counselors. "A lot of times, kids who've been burned feel isolated from their peers," says Mullan, who still attends most Camp Phoenix events despite his heavy workload as a pediatrics resident at Philadelphia Children's Hospital. "Kids tend to think they're the only ones out there living with a burn. When they see other children who are thriving and overcoming

Seats on the floor: Camp Phoenix is trying to keep its teen members active through outings such as a New York Knicks game in Madison Square Garden, where they met NBA players like Channing Frye and received signed T-shirts.

obstacles, it really helps. We get a whole spectrum of kids at camp—the ones who are doing great and functioning as if nothing ever happened, and others who have really been emotionally struck. They learn from each other, and we help facilitate that."

The camp's activities, held at city parks and public schools on weekends throughout the year, are not specifically geared toward burn survivors. They're the things—sports, arts and crafts, games, scavenger hunts, "silly Olympics"—that most kids love, regardless of their medical status. "The main objective is just for the kids to have fun," says co-director Caroline Castillo '10, who has worked at Paul Newman's Hole in the Wall Gang Camp for sick children. "Secondarily it's for them to connect with other kids who've had a similar experience, and try to normalize what they've gone through."

The camp is geared toward children aged seven to twelve, though some older burn unit alumni continue to attend. To keep the teens involved, organizers are creating a counselor-in-training program and expanding the camp's offerings with occasional events like an April outing to a Knicks game at Madison Square Garden that was sponsored by the Starlight Starbright Children's Foundation and the stadium's Garden of Dreams Foundation. "If there's anyone who could be a role model and help guide kids through the healing process," Mullan says, "it's another burn survivor."

Camp Phoenix invites the brothers and sisters of former

patients to participate in its events—they may be coping with their own social and emotional issues after a sibling's injury—and offers an informal support network for parents struggling with the long-term after-care common in burn treatment. The camp also provides a morale boost for burn unit staff, some of whom attend its events. Vivian Youngblood, the unit's recreation specialist, recalls reconnecting with one former patient she'd treated at age three, fourteen years earlier. "When I saw him at Camp Phoenix, I was ecstatic. I have his photo as a three-year-old on my bulletin board, and I often wondered what happened to him," she says. "What has kept me at the burn center is that the children do get better. I like to see the progress."

The camp receives a small stipend from the Medical College, but most of its funding comes from private donors and philanthropies such as the New York Firefighters Burn Center Foundation. Feedback from families, Mullan says, has been overwhelmingly positive. "Medically, the children are stable," he says. "Their wounds have healed, so from a medical standpoint they're cured. But if they can get over the label of 'burn survivor' and return to the label of 'human being,' then you can truly have a 100 percent cure rate."

— Beth Saulnier

For more about Camp Phoenix, go to: www.campphoenix.org

#### Celluloid Dream

Student takes a break to pursue a passion

URING WHAT MIGHT HAVE BEEN HIS FIRST YEAR of medical school, Grant Aaker '10 found himself tromping through the sagebrush of southeastern Washington. He had deferred for a year to make a documentary film about the Hanford Nuclear Site, where plutonium



for the Trinity and Nagasaki bombs was produced. "We dumped more than two billion of our tax dollars there last year to try to clean it up," Aaker says of Hanford, now the nation's largest Superfund site. "It seemed that people ought to be more aware of it."

The result is *Arid Lands*, a 102-minute feature about the 670-acre site and how the region and its residents have affected each other. Massive abandoned reactors figure prominently in the film, but the real star is the surrounding dry

grassland of the Columbia River Basin. Remediated areas include one of the largest remaining blocks of shrub-steppe ecosystem and



important habitat reserves for native plants and wildlife. The region is also home to an expanding local economy of tourism, wineries, and golf courses fueled by cleanup dollars. Aaker and codirector Josh Wallaert interviewed more than fifty residents, from housing developers to tattoo artists and sports fishermen, each with differing views about the area's past and future. Aaker says he hopes the movie will make people more aware of how they affect their own surroundings.

Arid Lands is traveling the film-festival circuit, and with a year of medical school now under his belt, Aaker says he's glad he deferred. "I decided that if I didn't do this, I would kick myself forever for not having gone for it." But filmmaking isn't out of his system. This summer, Aaker hopes to travel to Peru to direct another documentary—this one on rural health.

— Susan Kelley

#### Model Student

Eugene Choi's year in Korea included intense research, personal loss, and a spread in *Men's Health* 

UGENE CHOI'S PASSION FOR academic radiology ignited when his interest in the field combined with some devastating personal news: in 2005 his beloved uncle was diagnosed with aggressive leukemia. Soon after, Choi was in Seoul, studying with two prominent radiologists at Asan Medical Center during a year-long leave from Weill Cornell-exploring, among other things, how radiology can help patients like his uncle. "Until the day my uncle died, I was constantly in close proximity, writing papers on the second floor of the same building, and he took great comfort in that," says Choi '07. "It was his inspiration that helped me realize the right career path."

This spring, Choi returned to Seoul to

continue his work, including research on imaging rare tumors—such as those of the gastrointestinal tract and liver, pancreatic, and biliary systems—that landed him first-author publications in *Radiology* and the *American Journal of Roentgenology*. (His interests have since expanded to include virtual colonoscopy and stenting of the GI, urinary, and lachrymal systems.)

Choi couldn't resist returning to both his research and the nation where he spent a year that proved to be life-changing. While there, not only did he author more than a dozen journal articles, many of which he's still in the process of revising and submitting, he spent time with famed Korean actor Byung Hun Lee—even accompanying him to a "fan club" meeting of 40,000

screaming girls at the Tokyo Dome—and did some professional modeling, including a spread for the Korean edition of *Men's Health*. He also finished his first marathon, the day after a blizzard. "Running in sub-zero weather was, in retrospect, not very intelligent," he says with a laugh. "I suffered the consequences: the feeling I was going to die at the race's end and a major flu for a week after."

Most dear to him, though, was the time he spent helping his uncle—who had served as a surrogate father during his previous stint in Korea, when he taught English at a rural high school while a Princeton undergrad on a Fulbright scholarship—through the final months of his leukemia battle. After learning of his uncle's illness, Choi took an elective rota-

Eugene Choi

tion with Memorial Sloan-Kettering Cancer Center's leukemia service, which helped him advise his uncle about treatment. "I saw him enduring the pain with an 'if it needs to be done, it will be done' attitude," says the twenty-eight-year-old. "Giving up was never an option, and he demanded to be treated, despite the dismal chances of success."

Choi's decision to go abroad has resonated beyond his own personal and professional growth: a group of Asan residents has since visited the Medical College, and one Weill Cornell student plans to follow Choi's lead, taking next year off to do research at Asan. "It has opened the door of bilateral exchange," says Dr. Yong Auh, chief of GI radiology services at Weill Cornell, who served at Asan for a decade

The additional time in Korea this spring allowed Choi to take advantage of Weill Cornell's new partnership with Yonsei University Medical Center in Seoul. where he did a clinical rotation with the Department of Family Medicine. He's now headed to UCLA's radiology program with more publications-and more life experience—than many doctors who are well past medical school. "When medical students become doctors, they enter into a closed and confined life," says Hyum Kwon Ha, professor and chief of the GI section in Asan's Department of Radiology. "But Eugene's combination of medical and non-medical experiences will make him a better doctor."

and coordinated Choi's trip.

— Jennifer Armstrong

### Matching Meds

DNA profiling could revolutionize depression treatment

LTHOUGH ALL OF THE ANTI-DEPRESSANTS currently available may alleviate symptoms, less than half of patients are helped by the first drug they're given. But what if, just by sampling a patient's DNA, a

psychiatrist could tell which one would work best? For the 20 million American adults—9.5 percent of the population—suffering from depression, such technology could make an enormous difference. Because it takes four to six weeks to know if a particular medication is effective, determining what works is often a long and arduous process during which the illness may worsen. And whether a patient tries one drug or a sampling of regimens, there's still only a 40 to 50 percent success rate.

Weill Cornell psychiatrist Dr. Francis Lee attributes that bleak statistic largely to a prevailing treatment strategy that's more about side effects than molecular absolutes. If, for example, one medication doesn't work for a patient because it causes insomnia, the doctor's decision about what to try next may have more to do with what's least likely to cause sleeplessness than with what's actually going on in the patient's brain. "You try to optimize medications based on whether your patient can tolerate them," says Lee, who also holds a PhD in pharmacology. "Without a clear understanding of the pathophysiology, the decision tree is quite vague."

One way to ameliorate this problem in the treatment process could be to identify biomarkers for drug efficacy. Working with a group of Weill Cornell researchers, Lee conducted a study of one likely marker for response to the most common type of anti-depressants; the results, published in *Science* last fall, may lead to the first diagnostic test to guide the treatment of depression.

The test would involve sampling the patient's DNA and looking for a variant of the gene coding a protein called brain-derived neurotrophic factor (BDNF), which alleviates stress. It is believed that a primary function of selective serotonin reuptake inhibitors (SSRIs)—the most commonly prescribed class of anti-depressants,

# Hide and Seek

A better way to find lost surgical sponges?



R. JEFFREY PORT WAS IN MEDICAL SCHOOL THE FIRST TIME HE SAW AN operating room spin into chaos because of a surgical sponge. He had scrubbed in on an open-heart case when a sponge appeared to be missing. Nurses pawed through a pile of bloody sponges trying to find the lost one while the surgeon searched the patient and then ordered an X-ray. "The patient was on a ventilator, with his chest wide open, for an extra hour-and-a-half," Port remembers. The film came back negative, so the surgeon closed. But a few days later, the missing sponge turned up—in the patient. It was a scene the associate professor of cardiothoracic surgery would see repeatedly. "I said to myself, There's got to be a better way."

Now he thinks he's got one. As chairman of RF Surgical Systems, Port has helped create a device that tracks sponges with radio waves. A tag that emits a signal is embedded in the sponge; when the patient is scanned with a hand-held wand, a beep and flashing lights indicate that a tagged sponge has been located. Port says about twenty medical centers are now evaluating the device, which won FDA clearance in November 2006. He expects FDA approval soon for instrument tags as well.

A "retained" sponge or instrument is a rare but dangerous error. A 2003 New England Journal of Medicine study estimated that it happens at least 1,500 times a year, or about one case annually for a large hospital. The consequences can be severe: organ damage, infection, even death. And searching for retained sponges increases the OR staff's potential exposure to HIV and hepatitis C. The device will decrease those risks—and make the OR a calmer place to work, Port says. "At critical moments, nurses are asked to do a sponge count. It's like asking a pilot who is about to land an airplane to inventory the coffee in the galley."

— Susan Kelley

which includes Prozac, Celexa, Paxil, and Zoloft—is to elevate a patient's BDNF level. However, if a patient has the variant, called a single-nucleotide polymorphism (SNP), there's a misprint in the "zip code" that helps direct delivery of BDNF. Because BDNF is essentially stuck inside the patient's neurons, the drugs may be less effective—or entirely ineffective. Such patients may need drugs that don't raise BDNF levels but focus on a different pathway altogether.

For Lee's study, funded by the National Institute of Mental Health and the National Institute of Neurological Disorders and Stroke, researchers engineered a transgenic mouse that carries the BDNF variant. (While variant genes are often inserted into

mice to study diseases such as sickle cell anemia and cystic fibrosis, this was the first time that a human genetic variant related to behavior had been inserted into an animal model.) For several weeks, a control group of conventional mice and those with the genetic variant were given therapeutic levels of Prozac in their drinking water. They were then placed in mildly stressful situations such as an open field—mice prefer to travel close to walls—to induce anxiety, one facet of depression. Although all the mice were given the drug, only the non-transgenic ones were less anxious during the stress tests, suggesting that the others were resistant to Prozac.

The findings are tentative, Lee stresses, because the relationship between the BDNF variant and drug efficacy has yet to be proven in humans. Even so, the successful creation of the mouse

While variant genes are
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model suggests that researchers studying depression and other psychiatric disorders may eventually be able to isolate genetic variables that have long been obstacles in human studies.

So how soon might DNA testing become a regular part of depression treatment? Dr. Francis McMahon, chief of the Genetic Basis of Mood and Anxiety Disorders Unit at the NIMH, believes that we're still a few years away. "Lee's work showed for the first time convincingly that, when it comes to drug response, serotonin might be only part of the picture—perhaps a superficial part—and that what's happening at a deeper level has to do with fundamental processes of growth and regulation in

the brain," says McMahon. "None of the currently available drugs directly target that mechanism. New drugs that could target, for example, BDNF, might be dramatically more effective than what we have now."

McMahon is confident that medicine is moving toward individualized treatment options for depression, but before Lee's findings can be translated to patient care, new classes of drugs must be developed—along with tools that clinicians can use to perform DNA tests in their offices. But for many depression patients, the future looks more promising: instead of enduring difficult weeks of trial and error, they could leave their first session with a prescription for relief.

— Tobin Levy

## **Orphan Ailments**

Battling the 'neglected diseases' of the developing world

HE CONVERGENCE OF THE "BIG three" diseases—HIV/AIDS, tuberculosis, and malaria—in sub-Saharan Africa is emerging as one of the great human tragedies of the twenty-first century. But in their shadow is a group of other diseases, largely forgotten in the West, that global health organizations believe may cause as much human suffering. These "neglected diseases" have not been the subject of widespread media attention, nor garnered nearly as many dollars from philanthropists.

The neglected ailments are a collection of thirteen tropical diseases whose most common features are not biological but social; they affect the impoverished urban areas of low-income countries. They include protozoan infections (for example, leishmaniasis); bacterial infections (trachoma); and helminth infections (hookworm, guinea worm, schistosomiasis). At least 1 billion people—one-sixth of the world's population—suffer from one or more of them, according to the World Health Organization (WHO). Although some can be fatal, most often they impair physical development and limit productivity, feeding a cycle of poor health and economic stagnation. Many have been eradicated in the industrialized world, but in developing countries they remain deeply stigmatizing. Lymphatic filariasis, more commonly known as elephantiasis, causes swelling as dead parasites block the lymph system; infected, disfigured patients can't work because of the pain and are often ostracized from their communities.

In late January, global leaders in the fight against these diseases gathered at Weill Cornell. The Tri-Institutional Forum on Neglected Diseases was organized by MD-PhD student Sandeep Kishore, whose interest was sparked by personal experience: during a high school trip to his parents' native India, a close family friend serving as Kishore's guide died after a malarial infection traveled to his brain. "It

was a transformative experience," says Kishore, who knew he wanted to be a doctor but hadn't thought about global health or infectious disease. "It changed my line of investigation."

Epidemiologists measure the burden of non-fatal conditions in disability-adjusted life years (DALYs), an estimate of the number of healthy years lost across a select population at a given time; one DALY equals a lost year of healthy living for one person. Together, the thirteen diseases cost their sufferers nearly 60 million DALYs, according to the WHO's 2004 World Health Report. Only lower-respiratory infections, HIV/AIDS, and diarrheal diseases ranked higher. "Not many people are dying from these diseases so we don't have any metrics, but we can easily see the impact," says Peter Hotez, MD '87, chairman of the Department of Microbiology, Immunology, and Tropical Medicine at George Washington University, who spoke at the forum.

Because seven of the thirteen diseases could be eliminated with existing drugs—for an estimated 40 to 60 cents per person per year—the arguments for controlling them boil down to global health priorities. Hotez (along with global health leader Jeffrey Sachs, director of Columbia University's Earth Institute, who presented a follow-up lecture at Weill Cornell in late March) has proposed a comprehensive "rapid impact" package that would link treatments for malaria with efforts to control neglected diseases.

Although Weill Cornell has led efforts to fight tropical diseases in Haiti and Tanzania, the Medical College's longeststanding international collaboration is with the Federal University of Bahia in Brazil, a country where leishmaniasis remains endemic. Over the past forty-three years, some 175 Weill Cornell students and three dozen faculty have traveled to Brazil to provide clinical care and conduct research on tropical diseases, led by Dr. Warren Johnson, chief of the Division of International Medicine and Infectious Diseases. Most recently, the group has been studying and treating a newly emergent urban form of leishmaniasis. Associate professor of medicine Dr. Albert Ko has spent the last eight years in Salvador, Brazil, studying leptospirosis, mapping incidence levels in the local population, and developing vaccine candidates in animal models. Ko is current-



Sandeep Kishore

ly conducting NIH-sponsored global infectious disease research training; to date, he has trained more than fifty local laboratory and field staff.

Weill Cornell scientists have also been challenging current models of drug development and delivery to relieve the disease burden in the developing world. In a March editorial in Nature Medicine, as well as in scientific forums on neglected diseases and tuberculosis, microbiology and immunology chairman Dr. Carl Nathan has argued for the creation of open-access drug companies and a patent track that rewards innovators for products that reduce the global disease burden. "[The pharmaceutical] industry has little incentive to develop products for diseases that mainly afflict the poor," Nathan wrote, "and the poor cannot afford products that industry develops for wealthier customers."

Although there are treatment protocols for each of the diseases, many leaders in the field believe that eradicating them requires building economic infrastructure. "There is a bi-causal relationship between poverty and disease in these countries," says Sachs. "There needs to be a more holistic approach that includes clinical and public health interventions and also changes to the economic environment." Kishore hopes the interest sparked by the Weill Cornell forum will lead to partnerships that address the economic components of the neglected diseases, specifically with the Rockefeller University and the Earth Institute. "We have been floored by the response we've gotten from the global health community." says Kishore. "Global health is the issue of our time. This is our kickoff point for more conversations."

— Gabriel Miller

# trial by fire

In an excerpt from his book of essays, Lawrence Levitt, MD '65, recalls his first few weeks as a Bellevue intern. During those intense days and nights, when his career almost ended before it started, he learned something invaluable: how to be a doctor.



sat outside Dr. Scherr's office, trying to suppress my anxiety. Dr. Lawrence Scherr, director of interns and residents at Bellevue Hospital, was a very busy man, and he'd agreed to see me only after I'd persuaded his secretary that I had a matter of great urgency to discuss.

While I waited, I reflected on my first week on the job. I was a new intern at Bellevue, one of the most sought-after internships in New York City. With my two co-interns, Bill and

Harry, I had inherited thirty-six patients on Bellevue's Ground B, an all-women's ward in the basement of the hospital. The ward featured three rows of beds with curtains to separate patients from each other. The cavernous room was poorly lit, with a few fixtures dangling from the ceiling and weak sunlight struggling through narrow, barred windows.

No one came to Bellevue with a trivial complaint. Each patient suffered a serious illness and quite often a combination of illness-

es, such as pneumonia plus heart failure plus diabetes. In part, this was because Bellevue was a public hospital, utilized mainly by low-income patients who had no health insurance and whose conditions often became critical before they sought help. In addition, doctors in the city's private and nonprofit hospital emergency rooms often diverted patients to Bellevue—a process known as "dumping." This practice has since been declared illegal by federal law, but at the time it was business as usual.

My first day, July 1, was spent taking charge of the twelve patients assigned to me—patients with gastrointestinal bleeding, severe diabetes, kidney failure, advanced heart disease. A voice inside me asked: "What makes you think you can help these folks?" I tried to calm myself by remembering that my supervising resident, Dr. Ken Frish, would be available for help and counsel. It

was a measure of my sense of inadequacy that I thought of Dr. Frish, who had one year as an intern under his belt, as an experienced doctor.

In addition to learning about the problems of the patients I had inherited, I was expected to handle new admissions. My first was Betty Kelly, a sixty-year-old woman who'd had a 104-degree fever for three days, as well as pain whenever she urinated. Pale and shivering, she was admitted as an inpatient. "Tell me, Mrs. Kelly," I said in the most confident voice I could muster, "why are you here?" She repeated her symptoms and then added in a small voice, "I'm scared, Doctor."

After examining her, I surmised that she was suffering from a severe urinary tract infection, so I requested a urine specimen. In a small lab next to the ward, I peered into the microscope, where I saw a small army of white blood cells—a clear indication of infection. I sent out a specimen for culture, started Mrs. Kelly on an antibiotic, and thought: Gee, this won't be so hard after all.

Then the roof began to cave in. In the late afternoon, Helen Reilly, age seventy-two, came in with chest pain and upper GI bleeding. She was thin and pale, with low blood pressure and a rapid pulse. Nonetheless, I was surprised to hear her say, in a thick Irish brogue, "Doctor, I think I'm goin' to die." Smiling down at her, I said, "Now, now, I promise you, we won't let that happen!" A blood test showed that she was severely anemic, which was likely responsible for her chest pain. I did an EKG and could see that she showed signs of ischemia, or insufficient blood flow to the heart. I drew blood for a type and cross match. Then, without warning, Mrs. Reilly's blood pressure dropped precipitously. "My chest hurts!" she cried. Within seconds, she went into shock. Anxiously, I turned to Ken. "What

My heart thumped in my chest as we gave Mrs. Reilly blood in

hopes of stabilizing her. At Ken's direction, I gave her IV fluids and tipped the head of her bed downward, so blood could flow more quickly to her brain. Her vital signs continued to fade; her heart stopped. I tried to resuscitate her, but it was too late. Ken pronounced my patient dead. Numbly, I followed him out to the waiting room, where three people looked up expectantly—Mrs. Reilly's husband and two grown daughters. Ken took a deep breath. "I am very sorry," he said. "Despite everything we tried to do, Mrs. Reilly has passed away."

Mr. Reilly slumped into the chair. His daughters burst into tears. I stood by, stunned and guilt-stricken. Later, Ken tried to reassure me. "There was probably nothing we could have done differently that would have saved her," he said. I didn't believe him. I knew I had worked too slowly and should have given her the

blood sooner. I reflected on the way I'd chuckled and shushed Mrs. Reilly when she'd told me: "I think I'm goin' to die."

My next admission was Barbara Lazar. She was only fifty but looked older, with wrinkles lining her exhausted face. "I'm so cold," were her first words to me. between wracking coughs. Her temperature was 103. After I listened to her chest and heard crackles and wheezes, I suspected pneumonia, especially since she was coughing up thick, green sputum. "Please help me," Mrs. Lazar implored. This time, I made no easy promises. I took a sample of sputum and arranged for a chest X-ray. I wheeled her to X-ray, then raced over to the lab to examine the sputum, which was teeming with pneumococcus bacteria. Rushing back to X-ray. I learned that the bacteria had infiltrated four of the five lobes of Mrs. Lazar's lungs.

I gave my patient additional fluids, started her on penicillin, watched and waited. When Mrs.

Lazar's temperature began to come down, I breathed a sigh of relief. But no longer taking anything for granted, I continued to check on her frequently.

Late that afternoon my co-interns headed home. This meant I would be responsible for all thirty-six patients on the ward until the following morning—in addition to new admissions. I badly needed to rest, but there was no time. Around one a.m., the loud-speaker barked, "Dr. Levitt to the ER, stat!"

Bertha Goldberg, a plump, seventy-five-year-old woman, was sweating profusely. She had a high fever, a full-body rash, low blood pressure, and a rapid pulse. As I drew blood, she said weakly, "Doctor, I have a bad headache." When I felt the stiffness of her neck I suspected meningitis, and knew we had to do a spinal tap. I called Ken for help, and under his direction I carried out the pro-



Graduation Day: Levitt and his wife, Eva, in front of their apartment building after his commencement ceremony in 1965, shortly before his internship began.

'I'm really sorry to bother you, but I've had an awful first few days. Two patients of mine have died. I've hardly slept, and I feel upset way too much of the time. I really don't think I'm cut out to be a doctor. I've decided to resign.'

cedure. When the needle emerged full of pus, I was filled with dread. Throughout the night, Mrs. Goldberg became poorly responsive, and Ken and I wondered whether she would make it.

Pure, raw exhaustion was getting the better of me. By morning, I'd been working for twenty-four hours straight. Worse, I knew I'd be up for another twelve. These were the days before the Bell Commission recommended that interns and residents be permitted to work no more than twenty-four hours in a row, and no more than eighty hours a week (which became New York State law in 1989). Prior to that, interns were supposed to put one weary foot in front of the other for thirty-six hours straight, often working close to 100 hours per week.

I vividly remember leaving the hospital about 6:30 that evening. As I walked the fourteen blocks to our apartment in Union Square, I became aware of things I'd never noticed—the fragrance of the trees, the sun shimmering on windows. When I arrived home, my wife had my favorite dinner on the table—roast chicken and baked potatoes. I began to tell her about the events of the last day and a half, but after a few minutes I fell asleep at the dinner table. At six the next morning, the alarm rang. I remember the knot in my stomach that grew as I showered, gulped some breakfast, and raced back to the hospital. I was still dog-tired, and more anxious than ever. Did I really have what it took to be a doctor?

I did the best I could for the next two days. Then, the following night, Marie Harris arrived at the emergency room at three a.m. She was sixty-six, stockily built, and looked fairly healthy. She had suffered chest pain for the preceding two hours, which had convinced her husband to bring her to the ER. By the time I admitted her, an EKG had shown a "small" heart attack.

As I took Mrs. Harris's history, I learned that she had no other chronic medical conditions and got regular exercise. She did, however, smoke two packs of cigarettes a day. Her exam was normal except for her blood pressure, which was elevated at 150/95. I was writing up my notes when I heard a nurse yell: "Code Blue, cardiac arrest, stat!" I ran to Mrs. Harris's bedside and found her without pulse or respiration. I began giving her mouth-to-mouth and applying pressure on her heart. Within less than two minutes, the Code Blue team arrived, inserted a tube into her lungs and took over. After ten minutes, the leader announced: "Mrs. Marie Harris: Time of death, 4:03 a.m."

For the second time that week, I walked out to the waiting room with Ken to inform family members of a loved one's death. Once again, I felt responsible, guilty, and inadequate. After I'd expressed my condolences, I headed straight for Dr. Scherr's office.

r. Scherr will see you now," announced his secretary, startling me out of my trance-like state. She led me into his wood-paneled office. Just ten months earlier, I'd sat in this office full of nervous excitement as I interviewed for the intern position. After a moment's hesitation, I plunged in. "I'm really sorry to bother you, but I've had an awful first few days. Two patients of mine have died. I've hardly slept, and I feel upset way too much of the time. I really don't think I'm cut out to be a doctor." I looked down for a moment, gathering courage for

Dr. Scherr stared at me as though he were sizing me up. "Larry," he finally said, "you're the fourth intern who has come down to see me this week with a similar story." I was stunned: I'd assumed I was the only one who was having trouble. Then he said, matter-of-factly, "Look, I know you can do it. Just do the very best you can. Now turn around and get back to work."

what I was about to say next. "I am very, very sorry to disappoint

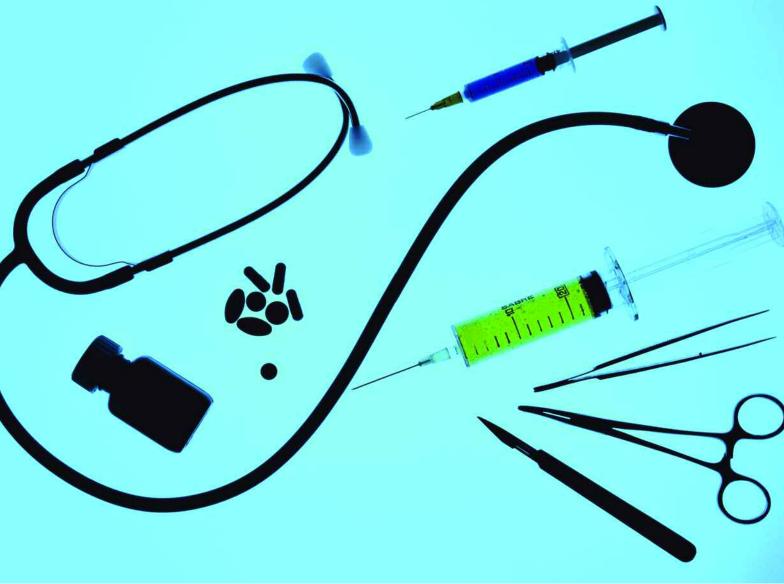
vou." I said, finally meeting his gaze, "I've decided to resign."

After that first week, I began to feel a bit better. I was becoming more used to the stress, and a little more efficient in my work. I also began to realize that I was learning more, per unit of time, than ever before. Then a remarkable thing happened that would shape my future.

Several weeks into my internship, I admitted Frank Preston, a fifty-four-year-old black laborer, who was accompanied by his wife, Rose. Frank was a heavy smoker who had puffed his way through more than two packs of cigarettes a day for thirty-five years. Tall and thin, he had strong, work-roughened hands and a neck marbled with prominent veins. He coughed almost constantly. On the morning that his cough produced a wad of bright red blood, he'd been scared enough to come to Bellevue.

When I approached his bedside, I immediately noticed the sadness in Frank's eyes. "Please help me, Doc," he said. "I've got to get back to work so I can support my wife and four kids." On examination, I realized that Frank wasn't just thin but emaciated; he'd lost some thirty pounds over the past few months. When I also noticed that his eyes were yellowish, my heart sank. After taking a history, I surmised that Frank's coughing up blood was due either to chronic lung disease or, more ominously, cancer related to smoking.

His chest X-ray confirmed the worst. Frank had a large, cancerous tumor in his hilum, the point at which the major bronchi divide. Even more serious, blood studies showed that he had abnormal liver function, which meant that the cancer had probably spread. The latter diagnosis was confirmed by a biopsy. When



FOTOSEARCH

I broke the news to Rose, she was stoic. She had one request: that I not share the news with her husband. "I want to save him from the pain of a death sentence," she said. I nodded my assent.

Two days afterward, all of the interns and residents, plus half a dozen medical students, gathered for Professor's Rounds. That week our visiting professor was Dr. Robert Loeb, a prominent internist who was known as a tough taskmaster. None of us knew who would be called on to present a case, and each of us prayed that it would be someone else.

Dr. Loeb surveyed the doctors and students and rested his sharp gaze on me. "Doctor," he ordered, "please present the next patient on the floor whom you know well." My heart pounding, I approached Frank Preston. His eyes were closed. Trying to keep my voice steady, I began: "Mr. Preston is a fifty-four-year-old, terminally ill gentleman who came to us earlier this week with a chief complaint of coughing up blood." As soon as I spoke, I knew from the look of outrage on Dr. Loeb's face that I had made some terrible mistake.

"Young man, you're through!" thundered Dr. Loeb. "Your internship is over! Now get out!" I froze. "Did you hear me?" he shouted. "Out! Now!" I began to shuffle away. "Next case, please," barked Dr. Loeb, and the train of students and young physicians moved to the next bedside. Somehow, I found myself at the exit

near the nurses' station, where I slumped into a chair.

After what seemed like weeks, Dr. Loeb and the others marched toward the exit, where I sat like a punished schoolboy. As fifteen doctors and students looked on, Dr. Loeb stopped in front of me, his blue eyes icy. "Dr. Levitt," he inquired sternly, "how did it feel to hear that you're through, that your internship is over?"

"Terrible," I whispered.

"Exactly," said Dr. Loeb. "Now, how do you think Mr. Preston felt when you announced that he was terminally ill?"

Oh my God. Had I been so nervous that I'd actually blurted out Frank's death sentence?

"I'm sure that he felt terrible, too," I finally said.

Dr. Loeb nodded emphatically. "Don't you ever call a patient 'terminally ill' in front of him. Now, get back to work." He was giving me another chance. But I felt no better; I'd screwed up again

The following day, Frank was discharged. As demoralized as I was, I was determined to do what I could to help him spend his last weeks in relative ease. On the next weekend I was off, I made a house call to see him. This was not usual practice for Bellevue doctors, and I can't quite explain why I did it. Rose ushered me into a tiny bedroom where Frank was lying comfortably, though short of breath. I took out my stethoscope and listened to his

I sat like a punished schoolboy. As fifteen doctors and students looked on, Dr. Loeb stopped in front of me, his blue eyes icy. 'Dr. Levitt,' he inquired sternly, 'how did it feel to hear that you're through, that your internship is over?'

lungs; I heard wheezing and rales. I examined his liver and found it enlarged, no doubt due to the growing tumor.

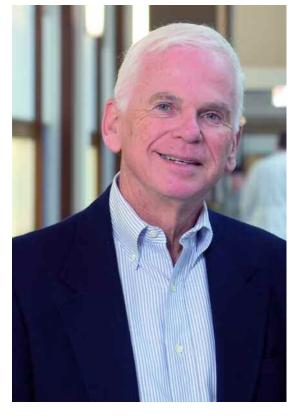
Two weeks later, I took a phone call from Rose. "Frank just didn't wake up this morning," she said.

I was the only white person at the funeral. I sat in the church, trying not to notice the stares. As the organ music swelled, Rose, her four children, and Frank's parents proceeded up the aisle and filed into the first row. The pastor described Frank's many kindnesses, such as fixing neighbors' plumbing problems without charge. The room erupted in Baptist spirituals. As the organ thundered, the congregation sang, swayed, clapped hands, and called out loudly to praise the Lord. I seemed to be the only one who didn't know the words, but it didn't matter: soon I was humming and clapping along with the others. I was well aware that this was a sorrowful event. But somehow, the atmosphere in that room—the heartfelt spirituals, the pulsing organ music—produced a warm, peaceful feeling in me. It was as close as I'd gotten to serenity in a long time.

don't remember making a decision to continue on in medicine. It was more an experience of knowing that I could be a good doctor someday—and that maybe I was already learning to be. For the rest of my year as an intern, I still often felt anxious, slept poorly, and sometimes nearly reeled with exhaustion. But never again did I want to quit.

At the end of the year, I got a happy surprise: of the twenty-four interns in my division, I was one of twelve chosen to be first-year residents at the hospital. I would now have more authority over patient care as well as responsibility for new interns. Amazingly, I would now be their "Ken," the calm, competent presence for interns who were just as green and scared as I'd been.

The truth was, I'd begun to feel like a real doctor. I felt reasonably confident and competent, able to handle most standard problems and eager to learn about the more complex ones. I can't



Veteran Doc: Levitt, now a senior neurologist

quite say I'd come to love Bellevue: it was too much like a war zone to embrace without ambivalence. But along with my "warbuddies," I'd just survived the most grueling part of my medical career—and I was proud. ■

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Excerpted and condensed with permission from *The Man with the Iron Tattoo and Other True Tales of Uncommon Wisdom* (BenBella Books, 2006) by Dr. John E. Castaldo and Dr. Lawrence P. Levitt. Patient names have been changed to protect privacy.

# deep breath

Dr. Claudia Henschke's finding that early CT scans dramatically improve lung cancer outcomes sparks controversy—and a fundamental debate about the experimental process.

by Sharon Tregaskis photographs by John Abbott

laudia Henschke was fourteen, maybe fifteen, the first time she lit up a cigarette. She was a competitive tennis player and barely managed a puff before the smoke irritated her eyes and the off-put-

ting smell overwhelmed her curiosity. That first cigarette was also the last, and Dr. Henschke never acquired the habit that would come to define her research career.

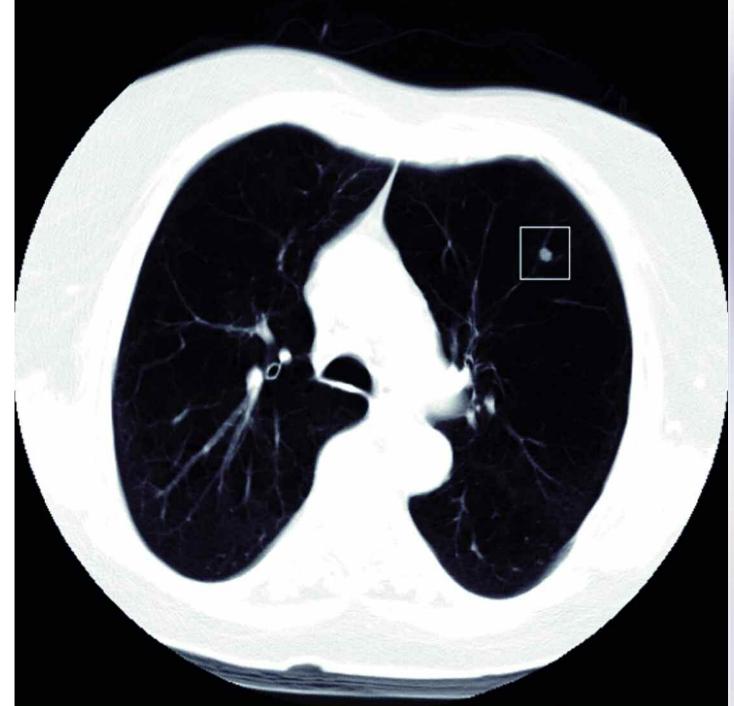
But it's no surprise she tried it in the first place. At the time, the strong-willed teen's mother was a radiologist at St. Vincent's, and her father, Dr. Ulrich Henschke, was director of radiology at Memorial Sloan-Kettering Cancer Center, where he had developed a low-cost, portable radiation machine known as Janus—and an aversion to smoking so strong he forbade any of his staff to light up. Almost a half-century later, his daughter's eyes still wrinkle with mirth as she recalls the sight of panicked employees tossing cigarettes out windows as her father strode down the hall.

If only the younger Henschke's battle against the effects of long-term exposure to smoking had been so straightforward. Now chief of the Division of Chest Imaging at NewYork-Presbyterian Hospital/Weill Cornell Medical Center and a professor of radiology at the Medical College, Henschke has spent close to twenty years investigating the benefits of lung cancer screening—specifically, the use of high-resolution computed tomography (CT)

images to reveal lung cancer at its earliest stages. The goal is to detect the disease before it has progressed to the point where a patient suffers clinical symptoms—chronic cough, chest pain, or unexplained weight loss and fatigue—and to treat it while intervention still yields the possibility of a cure. In October 2006, the New England Journal of Medicine published the landmark paper on the benefit of CT screening, which demonstrated that when cancer is found early, it is highly curable. Six months later, in April 2007, Radiology published Henschke's findings that annual CT scans identify a high percentage of early-stage lung cancers—before the disease has invaded nearby tissue or metastasized to other organs—when it can be treated with surgery rather than radiation and chemotherapy.

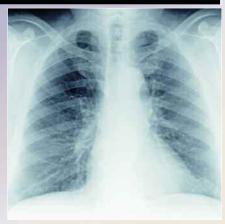
The NEJM and Radiology papers were the latest round in an ongoing debate that reaches to the core of medical research: the relevance of controlled, randomized experiments in the study of screening for a cancer—in this case, for lung cancer. Ultimately, the answer has profound implications for devising strategies to fight a disease that kills more than 160,000 Americans each year—more than breast, colon, and prostate cancers combined. "The battle now is a paradigm shift about how to assess diagnostic tests," says Henschke, co-author of Lung Cancer: Myths, Facts, Choices—and Hope. "It's very important and it's going to be passionate because people have made careers on doing it one way and we're suggesting another way."

Physicians generally agree that the earlier cancer is detected, the less invasive and more effective treatment will be, and the better a patient's chances for long-term survival. The bulk of the controversy revolves around two questions. The first is whether mortality actually decreases with early diagnosis and early intervention; the



PROVIDED BY DR. CLAUDIA HENSCHKE

Inner life: An annual CT screening (above) shows a new nodule, measuring 4 mm by 4 mm, that was not present the previous year. The patient was a seventy-five-year-old woman who had stopped smoking about a year before the scan was taken. Right: The chest radiograph of a sixty-three-year-old male smoker shows no abnormalities.



'We know people will be dying in the first five years because they already had late-stage cancers when the screening started,' Henschke says of the trials. 'They would die whether they were screened or not.'

second is whether screening leads to unnecessary procedures through false positives that prompt physicians to treat benign tumors and other lesions with surgeries that bear their own risks, and to aggressively treat nodules that, left alone, might self-heal.

Critics have argued that both questions could be answered through the use of controlled, randomized experiments, the gold standard for scientific evaluation, used for decades to evaluate everything from basic biochemistry to the efficacy of vaccines and Viagra. But since the launch of her Early Lung Cancer Action Project (ELCAP) in 1992, Henschke has advocated an alternative approach to assessing the value of screening. "It should not be screening versus no screening," she says. "It should be early treatment versus late treatment. That's really where the randomization—if any occurs—should be."

In fact, she has argued, a randomized screening trial for lung cancer is difficult to perform, as people would need to be randomly placed in either a "CT screening" arm or a "no screening" control arm. As only 5 percent of lung cancer patients diagnosed after symptoms emerge will survive, it would be problematic to recruit heavy smokers and not allow them to have even a chest X-ray. This was recognized, and thus the National Lung Screening Trial used "chest X-ray" for the control arm. As Henschke told the *Journal of the National Cancer Institute* soon after the *Lancet* published initial findings from the ELCAP study in 1999, "If you really believe that spiral CT inverts the usual pyramid and picks up mainly early-stage cancers, how could you possibly enroll patients into a randomized trial? How would you write the informed consent?"

Controversy and debate have been a reality of randomized screening trials for forty years. In the late Nineties and again in 2002 and 2006, controversy erupted over the benefit of mammography screening, as scientists and policy makers grappled with inconclusive data and the public sought clear answers on the role of mammography in women's health care. It's an example Henschke and her colleagues frequently invoke as they make their case about the validity of lung cancer screening. After several largescale, randomized trials revealed conflicting findings on the value of mammography, Henschke and her colleagues weighed in with a letter to the Lancet suggesting that part of the problem was flawed analysis. "There were eight randomized trials done on half a million people, and they were still saying in 2002 that there's no evidence that screening works," Henschke says. "Then Congressional hearings were held and it was decided to continue mammography screening, as the clinicians all agreed that it finds breast cancer early and early treatment is better than late treatment."

The *Lancet* letter explained that the evidence from randomized screening trials is only seen years after screening starts—and most studies don't collect data over a long enough period to reveal the divergence between those who receive regular screening and those who are treated only after they develop symptoms. "We know people will be dying in the first five years because they already had late-stage cancers when the screening started," says Henschke. "They would die whether they were screened or not." The benefits of screening show up later, as individuals in the control group develop symptoms and succumb to disease, while those in the screening group get early treatment. That means that a screening program—not just the follow-up to track outcomes—should last at least ten years.

For much the same reason, Henschke separated her baseline data from that of the subsequent repeat screenings. "In the baseline round of screening," says Henschke, "you have many more diagnoses—four or five times the number—than you do in any of the subsequent rounds of screening." And the more sensitive screening becomes, the higher the number of diagnoses in the baseline round. "The subsequent rounds should reflect the frequency of lung cancer diagnoses found in the absence of screening, so not segregating out the first round of screening provides misleading information."

The challenges of data analysis in CT screening extend beyond these philosophical issues to strategies for analyzing the huge volume of data on each patient. In twenty seconds, a chest CT scan generates 300 images of a person's lungs—each an ultrathin slice of information. To make the most of the data her team has collected, Henschke forged a partnership with Ithaca-based electrical engineering professor Anthony Reeves to develop computer algorithms to assess the scans, distinguishing the relatively slow growth rate of benign tumors from fast-growing pneumonia and cancerous lesions, which grow at an intermediate pace. "As we learn more about the characteristics of small cancers and as the CT techniques get better, we can assess growth better and better," says Henschke.

Refining detection and analysis also makes it easier to design appropriate clinical protocols. By following the growth rate of a particular lesion, physicians could be more confident about how aggressive the treatment should be. "If you follow the recommended workup, there aren't many who have unnecessary interventions," says Henschke. "Most get another CT and if no growth is seen, they go directly into the annual follow-up program. If we do it right, we can be very cost-effective."



Dr. Claudia Henschke

enschkeresearch minted worked Science the role It was a numbe

enschke is no stranger to controversy in research. In the late Sixties, as a newly minted PhD in computer science, she worked for the National Academy of Sciences, analyzing heroin addiction and the role of narcotic receptors in the brain. It was a hot topic at the time, due to the number of Vietnam veterans who

returned home with drug dependencies. "There were fierce debates about whether there were narcotic receptors and, if so, how many," recalls Henschke. "In science there's always controversy, because that's how science moves forward."

Yet science was not high on Henschke's list of career prospects early in life. She was six when her family emigrated from Germany so her father could work on the American space program; Henschke remembers sighting whales while traversing the stormy winter Atlantic on a Navy ship. And despite his exhortations that she pursue a career in radiology, her father also introduced her to

the joys of flying, keeping a seaplane in the Bronx. When she graduated high school at sixteen, Henschke enrolled in Hunter College. She also attended the University of Geneva and the University of Munich and earned her flight instructor certification. She completed her bachelor's degree at Dallas's Southern Methodist University, where she had flight-friendly weather and an opportunity to fly multi-engine airplanes. She spent her early twenties balancing professional piloting with graduate classes in math and working on a computer system for a blood bank. On the door of her office in the basement of the Starr building hangs a framed "Kentucky Colonel Award" bestowed by the state's governor, a memento from the year she spent ferrying him around the country.

By 1966, Henschke had received a master's in mathematical statistics from SMU and followed her advisor to the University of Georgia, where she earned a PhD in the field. In Atlanta, she juggled classes with work as a computer programmer, consulting for industry, military, and medical interests. Henschke then headed for Washington, D.C., to care for her father, who had contracted

#### It can be daunting for patients to decide whether to undergo a scan. Wondered one former smoker: 'Will I ever again begin my day free of any concerns about a serious health issue?'

hepatitis while establishing cancer clinics in Africa. She also honed her expertise in medical statistics, and in 1973 one of Henschke's first peer-reviewed papers—a collaboration with her father—was published in Cancer. The landmark study analyzed racial disparities in cancer survival and laid the groundwork for the NIH's Office of Minorities. At the time, Ulrich Henschke served as chairman of Howard University's radiation oncology department; Claudia Henschke's sister was enrolled in the medical school there, and soon so was she, earning an MD in an accelerated program.

A residency in radiology at Brigham and Women's Hospital followed. At the time, women were rare in the field: there were concerns about birth defects caused by fetal exposure to the radiation in fluoroscopy, so most young women chose other specialties. "Once CT and MRI came in [in the Seventies]," says Henschke, "you had a marked increase in women."

Soon after accepting an appointment in radiology at Cornell in 1983, Henschke met David Yankelevitz, then a postdoctoral fellow. The first longitudinal studies of chest X-ray for cancer detection were being published, and while their findings were negative, both Henschke and Yankelevitz wondered whether the more refined CT technology—and more statistically rigorous data analysis—might yield more reliable answers. They established ELCAP in 1993, joining forces with like-minded researchers in New York City; the Lancet published their findings in 1999. This study led to worldwide interest in CT screening and eventually the collaborative efforts became international in scope, comprising thirty-eight institutions in eight countries. The October 2006 NEJM paper reported

data from annual scans of 31,567 patients; the participants were all forty or over and at risk for lung cancer due to smoking, secondhand exposure, or occupational hazards such as asbestos, uranium, and radon. The study found 484 cases of cancer, 412 of which were Stage I. Most received prompt treatment, and Henschke and her colleagues reported a cure rate of 92 percent. Eight patients declined treatment, and each died of lung cancer.

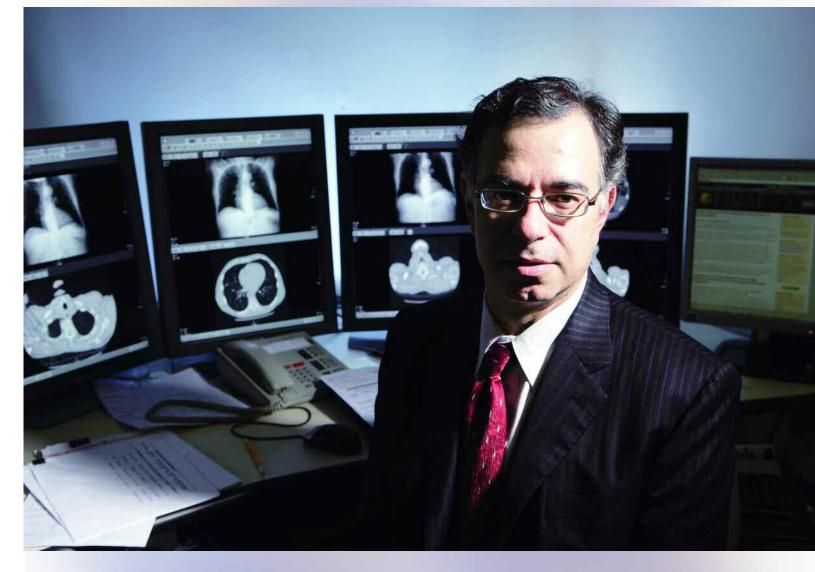
he controversy over Henschke's research reached a fever pitch in March, when the Journal of the American Medical Association published findings by Sloan-Kettering pulmonologist Dr. Peter Bach that screening does not enhance lung cancer survival rates—and furthermore exposes patients to needless surgeries. "We don't think there is a hint of benefit," Bach told the New York Times; USA Today

headlined its story, "Lung Cancer Screenings May Not Save Lives." But Henschke's team counters that Bach's findings were due to poor methodology. "The reason people aren't saying there's a benefit to early screening," says Yankelevitz, now a Weill Cornell professor of radiology in cardiothoracic surgery, "is that they've been studying it wrong, without attention to fundamental principles as to when to expect the benefit to be identified."

The coverage raised another challenge for Henschke, Yankelevitz, and their colleagues: helping the public assess sophis-

> "Screening is a difficult subject," Henschke says. "There's a lot of confusion." It can be especially daunting for former smokers and those who haven't been able to kick the habit, as they try to decide whether to undergo a CT scan—an expensive test often not covered by insurance. "Dateline NBC" correspondent Mike Taibbi, who smoked a pack of unfiltered Camels every day for forty years, scheduled a scan with Henschke in November 2006, a few weeks after the NEIM article hit the news. "My first thought was thoroughly melodramatic: will I ever again begin my day free of any concerns about a serious health issue?" he told readers of his MSNBC blog. "I was lucky enough to never have been seriously ill, but the scan, I knew, was merciless. If I had a cancerous lesion or nodule tinier than a grain of rice, if I had evidence of emphysema, it would be right there on the screen in front of me." Taibbi's scan was clean, and he plans annual return visits for the rest of his life.





Dr. David Yankelevitz

Eighty-year-old Milton Tapper—another of Henschke's patients, and a longtime smoker who has been unable to quitscheduled his first scan at the age of seventy. So far he, too, has no signs of cancer, but last year a scan revealed that a persistent cough was actually pneumonia. "I believe strongly that if there is an opportunity to pick up a life-threatening condition such as lung cancer in its early stages, you should seize it," says Tapper, a financial adviser who lives in Brooklyn. "I don't see any reason why there should be such opposition."

In the conference room where Henschke conducts interviews—she's been profiled by National Public Radio, the New York Times, and the Wall Street Journal, and coverage of her work has appeared in Business Week, Slate, and local papers throughout the U.S. and abroad—two maps hang on the wall, each marked with blue and red flags indicating ELCAP data collection sites in the U.S. and around the world. On top of a filing cabinet leans a yellowed magazine advertisement, an artifact from the days when tobacco companies tried to undermine causal links between smoking and lung cancer. "More doctors smoke Camels than any other cigarette," declares the text above a Rockwell-esque illustration of

woman and her son on the sidewalk in front of a picket fence.

The relationship between smoking and cancer is far clearer than it was back then, yet confusion about diagnosis and treatment persists. The National Cancer Institute is currently conducting its own randomized screening study of 53,000 current and former smokers; launched in the mid-Nineties, it is expected to produce its first results in 2010. And Henschke's work with International ELCAP continues. In February, the project got an \$8.7 million grant from the Flight Attendant Medical Research Institute to support CT scanning in 5,000 adults exposed to secondhand smoke, screening not only for lung cancer but also for emphysema, chronic bronchitis, and pneumonia. Yankelevitz will lead additional studies on screening for cardiovascular disease as part of the grant, while other Weill Cornell faculty will investigate the use of prostaglandin levels in urine to detect lung disease, as well as genetic precursors for rhinologic disease. With 173,000 Americans diagnosed with lung cancer each year, Henschke, Yankelevitz, and the rest of their team know that they have their work cut out for them. "Even if people all stopped smoking today," says Yankelevitz, "we'd still have smoking-related deaths for at

a grandfatherly physician—black bag in hand—greeting a young least the next forty years." 30 WEILL CORNELL MEDICINE SUMMER 2007 31

# vital organs

by Beth Saulnier photographs by John Abbott

As surgeries become more sophisticated and survival rates rise, transplantation has become commonplace. But with tens of thousands of Americans languishing on waiting lists, Weill Cornellians are working to improve donation rates—and save lives.

udy McLendon had no idea that so many of her friends read the New York Post. It was the first week of August 2005, and McLendon and her husband had just lost their eldest child to a sudden, unexplained cardiac arrest. Forty-year-old Laurie McLendon had passed away at NewYork-Presbyterian Hospital/Weill Cornell Medical Center, and, in accordance with her wishes, they'd donated her organs. The recipients were anonymous, but the family had some basic information: two women got her kidneys at Stony Brook University Medical Center; the William Randolph Hearst Burn Center at Weill Cornell received skin; her corneas went to the Eye Bank of New York; her liver had been transplanted into a sixty-oneyear-old man at NewYork-Presbyterian/ Columbia University Medical Center.



Cleaning up after receiving family and friends in their New Jersey home, McLendon found a copy of the Post on the kitchen counter and assumed that someone had forgotten it. After more people visited the next day, she found nearly a dozen copies of the same issue. She opened the paper and read about Dr. Michael Harris, a pediatric oncologist/hematologist who had received a liver transplant from a female donor on August 3. A few months earlier, Harris—suffering from acute liver failure—had appeared on the "Today" show to discuss organ donation; the Post reported his successful transplant, which was performed at NewYork-Presbyterian/Columbia. His age? Sixty-one. "All my friends immediately assumed that it was Laurie's liver," McLendon recalls. "As did we." The paper stressed Harris's gratitude at receiving the organ, which had saved his life and would allow him to resume his medical practice. "Since he was a pediatric oncologist, he knew how difficult it was for a family to lose a child," McLendon says, "and he very badly wanted to meet the family to say thank you."

t would be several months before the Harrises and the McLendons would meet and form one of the most bittersweet and complex of human relationships-that between a person whose life was saved by a transplant and the family of the donor whose death made that organ available. It is a relationship that has existed for only a few decades: the first successful solid-organ transplant was performed in 1954, and that was from a live donor who gave a kidney to his identical

twin. A half-century later, transplants have become more common—but organs remain a precious and rare commodity. Some 95,000 Americans are on waiting lists, with a new name added every thirteen minutes, and 6,000 people a year die without receiving a needed organ.

At Weill Cornell, as at other medical centers around the country, physicians and staff have been working to save lives by improving donation rates. In collaboration with the New York Organ Donor Network (NYODN), the region's nonprofit organprocurement agency, the hospital has implemented policy changes, increased training, and developed an internal assessment system. Success is reflected in the numbers. In 2005, the donation rate—the percentage of medically suitable patients who became donors—was just 33 percent, but the following year it rose to 63 percent. The medical center also saw a commensurate rise in its "conversion rate," a figure that not only includes patients named as potential donors at the time of their deaths but those identified via later audits of their medical charts. "We've been out there beating the bushes, talking with the staff, actively engaging the patient care directors and medical directors of the ICUs," says Dr. Joseph Cooke, chairman of the NYPH/WCMC organ donation committee, who serves on the NYODN's medical advisory board. "We're seeing consistent improvement, so we're very happy with our

One change that has improved numbers at hospitals nationwide is the adoption of standards for donation not only after brain death but after cardiac death as well. Since only a tiny fraction roughly 1 to 2 percent—of patients who die in hospitals are

Dr. Michael Harris





Judy McLendon

declared brain dead, the shift significantly enlarges the potential donor pool. "In a Donation After Cardiac Death, you're waiting for the heart to stop beating," Cooke says. "These patients are not by definition brain dead, but by consequence of their medical disease or injury are deemed by two physicians not to have the ability to survive without mechanical support. The thought was, these

Organs remain a rare commodity. Some 95,000 Americans are on waiting lists, with a new name added every thirteen minutes, and 6,000 people a year die without receiving a needed organ.

patients have potentially donable organs. But in the past that option had not even been available to the family, because no one would think about transplanting these organs."

Before the policy was adopted in the summer of 2006, the hospital conducted mock donation exercises to increase the staff's

comfort level, taking teams through the new processes in the ICU and OR, including opportunities for the family to say goodbye in a private setting. To assure that the patient has indeed died, there's a five-minute waiting period from the time the heart stops beating until death is declared and the organs can be harvested. Although such protocols may be new, Cooke notes, they actually

> hark back to the early days of transplantation. "That's how organ donation was done when it first got started," he says. "Since there was no real knowledge of what brain death was, you'd wait for a patient's heart to stop beating, and then take the organs and transplant them in a timely manner."

> Another reason for the improvement in donation rates is the presence of Amber Roberson, the NYODN employee assigned exclusively to NewYork-Presbyterian Hospital since late 2003. Splitting her time between the Weill Cornell and Columbia campuses, Roberson holds the title of family services coordinator, but her job description

is much broader. She's the face of organ donation at NewYork-Presbyterian—educating staff, coordinating between the hospital and the network, and working to improve policies and processes. "I'm a fixture on the ICUs—I stop in weekly and say hi to the staff," Roberson says. "The point of my position was, if you could

#### Life Sentence

Think you've signed up as an organ donor?

Think again—and tell your family.

Roberson stresses that a single

other people and tries to frame

person's body can help many

what may be a family's worst

moment in a positive light.

hen a patient at NewYork-Presbyterian Hospital/Weill Cornell Medical Center has been identified as a potential organ donor, the first person who raises the topic with relatives is a representative of the New York Organ Donor Network (NYODN). The first challenge, says family services coordinator Amber Roberson, is to make them understand that their loved one is already gone. "When you're dealing with brain death, the problem that I encounter most frequently is that people don't associate being on a ventilator and being neurologically dead with actually being dead—they think that the patient is still alive. So the most work comes in getting them to a point where they realize the patient has died, even though they're still vented and they're still warm."

Roberson stresses that a single person's body can help many other people through the donation of organs—heart, kidneys,

liver, lungs, pancreas, and small intestine—as well as corneas, skin, bone, and other tissue. As much as possible, she tries to frame what may be a family's worst moment in a positive light. "I tell them that they should think about the kind of

person their loved one was, and if they thought it was in line with their personality to give a gift to somebody else, it's something they should consider. Most people have not discussed it with their family, and because they don't know their loved one's wishes, they think it's safer to say no. But I always emphasize that saying no is as much of a decision as saying yes." Getting families to donate

internal organs, she says, is often easier than getting them to agree to the use of other body parts. "When you talk about tissue donation, which is eyes and bones and skin, that's when the restrictions tend to come into play. People become a little more apprehensive about things that they associate with being visible, although nothing disfigures a person. Everybody can have an open-casket funeral. But it takes more work to get them to the place where they can say yes to everything."

Some people believe that their religion prohibits them from organ donation—such as the Jewish commandment that the body be buried whole or the Jehovah's Witnesses' proscription against sharing blood—but Roberson comes armed with evidence that every major religion has endorsed donation as a desirable and selfless act. More difficult to combat, says NYODN hospital services manager Maria Sabeta, may be a sense of mistrust of the medical system by members of minorities and those who are economically disadvantaged. Donations by African Americans and other non-whites continue to lag, and misinformation persists—most disturbingly, the

myth that potential donors will get inferior care in the interest of obtaining their organs. "The family may be in such shock that they're not listening well," Sabeta says. "And you have busy staff members who may not repeat the information enough times. The family's angry, there's denial; it's

easy to distrust what's going on with the hospital. This is a typical picture, and I think it reflects itself in donation."

In many countries, people have to sign documents to opt out of organ donation. It's the opposite in the U.S., where citizens must choose to donate. And though millions of Americans have signed their driver's licenses to identify themselves as organ donors, advocates say it's not enough.



Although legislation is pending to strengthen the legal force of such documentation, hospitals tend to give next of kin the authority to consent to—or refuse—donation. Even a formal declaration of the intent to donate, using documents made available by the Donor Network and other agencies, may not result in a donation if a spouse, child, or parent is adamantly against it.

That's why supporters of organ donation stress that if someone chooses to be a donor, the single most important thing they can do is discuss it with their family. "Ignorance serves as the biggest obstacle for a lot of people, because these issues don't really come to the forefront of their mind," says Brant Ullery '08, cofounder of Medical Students for the Advancement of Transplantation. "They're thinking about the last thing they ever wanted to think about, and have no real foundation to make an educated decision." Fellow cofounder Avnish Deobhakta '08 puts it more bluntly: "Organ donation is something that people don't like to talk about, because it deals with death."

Sabeta has also experienced the donation process from the other side: her aunt was declared brain dead after suffering a massive cranial bleed, and the family donated her liver and kidneys. "Even though I had been working at the Donor Network for five years, and knew what a brain-death exam was, I was still sitting in hope with the family," she recalls. "That whole denial thing—it was like I had two heads." Sabeta has heard the donation process compared to a symphony, and for her the analogy rings true. "There's so many pieces to it. And when everything plays itself out right, it's a beautiful thing."

have somebody from organ donation become part of the hospital, and have the staff be familiar with them, then they can really work as a team. Before, when there wasn't somebody on site, it was an abrupt handoff. The doctors would do their part and then they'd say, 'The donor people are coming now.' There wasn't a real collaboration."

The concept, Roberson says, is that organ donation should be part of a continuum of care. "It used to be kind of an afterthought. Now, as the medical team realizes that there is no hope for a meaningful recovery, from that point on they begin working with me. We collaborate to find the best way to manage the patient so the organs are preserved, and to work with the family to make sure they understand brain death and feel supported, so when it does come time to talk to them about donation, they can say yes." For ICU staff, organ donation offers a way to contribute to a positive outcome, even if they never see the person who benefits. "It's embedded in us to save lives," says registered nurse Ernesto Perez-Mir, patient care director for the neurosciences ICU. "If the patient becomes brain dead, we're still fighting to conserve the body so someone else can use it. The thought process doesn't change. You're there to save a life, even if it's not this person's life."

Roberson notes that more and more grieving families are talking to hospital staff about organ donation even before being asked. The change, donation advocates say, reflects an increased awareness of the issue in American society. "Just in the past five years, it has evolved," Roberson says. "There's more acceptance of organ donation as something positive." In May, NewYork-Presbyterian—the site of more organ transplants than any other U.S. hospital last year—hosted a reunion at the 168th Street Armory that brought together hundreds of past recipients and their families, along with medical staff and the relatives of donors. "I've sometimes been shocked at how families are the ones who tell the staff nurse, 'I want to donate,' " says Perez-Mir. "I think increasing awareness helps. I was riding the subway the other day, and I saw an ad for organ donation."

wo Weill Cornell students—Avnish Deobhakta '08 and Brant Ullery '08—have been working to raise awareness, in both the medical community and the public at large, via Medical Students for the Advancement of Transplantation. The group, which they founded two years ago, sponsors an essay contest and organizes events; it also aims to broaden the way the Medical College curriculum covers the topic, including bringing guest speakers from NYODN to the Medicine, Patients, and Society course. "It's a personal decision," says Deobhakta, who was inspired by a high school history teacher who had received a liver transplant and became active in the cause. "We champion the issue, but I can understand how some individuals, after thinking it through, wouldn't do it for religious or personal reasons. But it's important that they make an informed decision."

For Judy and Heath McLendon, there was no question that they would donate their daughter's organs if it was medically possible. The act, Judy McLendon says, was in keeping with Laurie's spirit; she recalls how, when her daughter was in her

'The whole process was very difficult because I realized that someone needed to die for me to survive,' Harris says. 'I feel a tremendous responsibility to the McLendons and to Laurie's memory.'



Dr. Joseph Cooke, chairman of the NYPH/WCMC organ donation committee (above). and Amber Roberson, the Organ Donor Network's family services coordinator (below)



mid-twenties, she volunteered to mentor an eight-year-old girl at the New York Foundling Hospital. When the city's social service agency prevented her from seeing the child after she was taken into foster care, Laurie protested all the way up to the deputy mayor's office-and won.

Laurie owned a store, Papivore, on Elizabeth Street in Little Italy, that sold her stationery designs as well as antiques she found in her jaunts to flea markets around the city. Although Judy McLendon chooses not to dwell on the details of her daughter's death, she notes that the store was close enough to the World Trade Center that the family wonders if the environmental fallout from the September 11 attacks might have contributed to the asthma Laurie suddenly developed in her late thirties. Mold in her store and apartment might also have been a factor. On the evening of July 21, 2005, after working with a colleague at her parents' apartment on East 52nd Street in Manhattan, Laurie fell ill and called 911. At the hospital, she went into cardiac arrest. "They quickly resuscitated her, which gave us some hope, and they put her in a deep

coma," McLendon says. "But it became pretty obvious that we weren't going to keep her."

They learned that their daughter had signed up as an organ donor, though not on her driver's license; McLendon suspects that she may have filled out paperwork during a church drive. "At some point, she made the decision that this is what she wanted to do," her mother says. "It gives you a lot of solace to feel that in some degree she goes on living."

r. Michael Harris had been coping with liver disease for more than a decade. In 1986, he was drawing blood from a child with hemophilia when he suffered an accidental needle stick. He developed hepatitis C, which went from chronic to active and eventually led to liver failure. He was treated on and off with trials of interferon and other drugs; nothing worked. In February 2005, he was placed on the transplant list. He was too weak to continue seeing patients—he could only walk a dozen feet without getting exhausted-but he was spending a few hours a day in the office, transported by friends since he was no longer able to drive. At 8:30 a.m. on August 3 he was at home in Englewood, New Jersey, getting ready for work, when the phone rang: a liver had become available. Within hours he was on the operating table at NewYork-Presbyterian/Columbia, where his daughter is a fellow in pulmonary critical care.

Harris was in surgery for less than seven hours and woke up about twelve hours later—low figures that, he says, reflect both the skill of his surgeons and the strong match between Laurie's liver and his body. "Some people say they feel immediately different when they wake up, but you're in a lot of pain," he recalls. "I can tell you that when the anesthesia finally wore off, I felt clearer. By the fifth or sixth day, I felt great." Harris's diet had long been limited, his appetite meager. In the hospital, his son brought him one of his old favorites: a tongue sandwich from a kosher deli. "It was a revelation to be able to start eating again, and I must admit I was in heaven. My friends said the look on my face was something to behold."

Harris spent just ten days in the hospital. He'll have to take

anti-rejection medication for life, and cope with minor side effects like fatigue and nausea. But while his physical recovery has been rapid—and his health remains good nearly two years later—he admits that receiving another person's liver is emotionally fraught. "The whole process was very difficult because I realized that someone needed to die for me to survive." he says. "I feel a tremendous responsibility to the McLendons and to Laurie's memory. I think of that every day, that she is part of me now. One always has to remember, and try to do good, to comport oneself in a moral and ethical way—the way I'm sure she would want me to."

In December 2005, Harris and the McLendons appeared on the "Today" show for a follow-up story. And last November Laurie's parents were guests at the wedding of Harris's daughteran event he wouldn't otherwise have lived to attend. "I'm very lucky," he says. "I had a family that, in their time of tragedy, offered to help somebody. I believe the message is that life is precious. When someone dies, if their organs can go to somebody else so that another life can be preserved, then in a way the person who passed away is still present. I told the McLendons when we met that I feel like I am their child."■

#### Facts & Figures

Number of people nationwide who die each day waiting for a transplant: 17

Approximate number of patients waiting for organs in the New York metro area: 7,000

Matching criteria: Blood and tissue type, medical urgency, body weight and size, geographic proximity of donor and recipient

Conditions that rule out organ donation: Active cancer, HIV, or infection

Success rate for vital organ transplants: 80 to 90 percent

Number of organ donations through the New York Organ Donor Network in 2006:

319 (176 male, 143 female)

**Total organs transplanted: 817** 

**Donor age range:** 18 days to 92 years

Consent rate: 56 percent

Number of lives than can be saved by a single organ donor: 8

Year of first successful kidney transplant from a live donor: 1954

From a deceased donor: 1962

First successful heart/lung transplant: 1981

**Approximate number of transplants since 1954:** 400,000

Source: New York Organ Donor Network, www.donatelifeny.org.



# **N**OTEBOOK

Dear fellow alumni:

As is almost always the case, activities around Weill Cornell Medical College go in full gear and at high speed. Your Alumni Association has had a busy spring since we last had the opportunity to communicate. To mark the nearly two years of affiliation among Weill Cornell Medical Center, NewYork-Presbyterian Hospital, and the

Methodist Hospital in Houston, I accompanied Dean Gotto to an alumni outreach meeting in Houston in mid-April. The assembled group-Medical College and Cornell University alumni and colleagues from the Methodist Hospital—heard updates from Dean Gotto and the Methodist leadership. The meeting was attended by some 150 local alumni and guests and sparked excellent questions about progress and activity at the Medical College.



By now you will have learned that the Alumni Award of Distinction was presented at Commencement to Jay Cohn, MD

'56, professor of cardiovascular medicine at the University of Minnesota. The award ceremony was a wonderful celebration of Jay's accomplishments and serves to remind us of the great breadth of achievement of our fellow alumni. The list of Award of Distinction recipients is impressive indeed.

Your Alumni Association has inaugurated support for several new student programs, the highlight of which is the long overdue establishment of a StudentWeb. The website is planned to have both public and private sections, maintained by a webmaster, and will allow student information, class notes, lecture slides and video, and other material to be accessible via the Internet. The Alumni Association has provided support for this initiative, which has been high among the students' priorities for some time. Once established, we will provide all of you the Internet link in a future communication. It will be interesting to compare it with the pre-Internet Medical College experience. Does anyone have a clear recollection of the first Internet applications at Cornell?

I want to appeal to you all on two items. First, we are continuing to strengthen and emphasize our Class Leader program. Rosemarie Fusco Marks, MD '81, a clinical assistant professor of ophthalmology at Weill Cornell, has agreed to head the committee. The obligations are simple but the rewards are great. (Haven't we heard that somewhere before?) Working as a class leader, or working with your class leader, entails a few phone calls, reconnecting with classmates, and encouraging interest in all things Weill Cornell. Class leadership does not require skill or aptitude for fundraising; in fact, we are much more interested in communication and connection. So please be in touch with me, the office, or Rosemarie to help your class remain current.

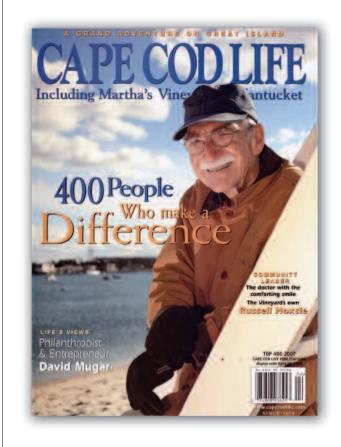
Secondly, as you know, the Dean's Circle and Dean's Second Circle are major initiatives of your Association to provide scholarship support to Weill Cornell students. Many of us, myself included, relied on such support to attend medical school. Please let us know that you value your Cornell medical education by joining the Dean's Circle. In addition, let us know about fellow alumni who have fallen out of touch with Weill Cornell, but who might become valued supporters of our alma mater. All supporters, and in particular Dean's Circle members, are central to the Medical College's mission and success.

I wish you all a healthy and fun summer, and look forward to our next conversation about Weill Cornell Medical College. I hope to hear from many of you in the coming weeks.

With my very warmest regards, Gene Resnick, MD '74 President CUWMC Alumni Association gene.resnick@alumni.med.cornell.edu

1950s Robert Greenwood, MD '50, is retired and living in Greeneville, TN. He keeps busy with Tiffany reproductions, woodcarving, lathe turning, jewelry fabrication, winemaking, writing, and gardening. He remembers "the imperishable friendships" and would like to hear from Al Rubin, MD '50, Al Robinson '46, MD '50, and Al Berkenfield '46, MD '50. "I lost track of Rube ages ago, but kept up with the other two Als until they submerged while my back was turned. Have just finished a novel and I'd like to send them a copy."

Russell S. Hoxsie. MD '52, was pictured on the cover of the April 2007 issue of Cape Cod Life as one of the community leaders featured in an article entitled "400 People Who Make a Difference." He and his wife fell in love with Martha's Vineyard in the 1950s and now live in Chilmark. The article describes him as "the definitive country doctor." Dr. Hoxsie is not only a family physician but



also past president of the medical staff of Martha's Vineyard Hospital, a newspaper columnist for the Vineyard Times and Martha's Vineyard Gazette, an author, and a published poet. He published a book of essays, Let's Walk, Lilly, in 2005.

Howard M. Feinstein '51. MD '55. PhD '77, included a poem in a note he wrote to Artemis Pazianos. MD '55:

"Dear Artie, It was a memorable weekend for Rosalind and me, and we recognize how much you had to do with making it that way. I happily accept the role of class prophet. Do you think Jeremiah (finger shaking thou shalt not) or would Isaiah (hopeful of redemption) do? I send you a poem that came to me when I got home. It was inspired by the line-drawing photos that were cleverly inserted on our nametags. I let this letter sit a while as you can see from the date, until the poem came clearer."

An Appreciation of Our 50th Medical School Reunion

*An old photo breaks up into lines* Tracing the face of a young man, A shadow no longer here. I remember him. Uncertain. Hoping no one could see.

Another picture This one in color. A white bearded man With others. Traces of faces hang Round their necks too. Some remembered. And others not But welcome.

He laughs A full throaty laugh Eager for more stories Before they fade to Forgotten lines Essences that Hint at a face A life.

Walter Menninger, MD '57, received an honorary Doctor of Humane Letters on May 5 from Dominican University in River Forest, IL, where he addressed the Class of 2007 on the importance of altruism. "Identifying with a career or a cause that is larger than yourself will enhance you; and you will demonstrate a powerful truth, a truth conveyed in a simple yet eloquent Nigerian proverb, which I learned at a completion of service conference of Peace Corps volunteers in Nigeria: When the right hand washes the left hand, the right hand becomes clean also." Dr. Menninger, a forensic psychiatrist, is a third-generation member of the family that established the Menninger Clinic. He served as president and CEO of the Menninger Foundation and the Menninger Clinic from 1993 to 2001. Dr. Menninger is an adjunct professor at the Menninger Dept. of Psychiatry and Behavioral Sciences at Baylor College of Medicine, Houston.

1960s Kenneth G. Swan, MD '60: "Some have called it the 'Triple Crown' in medical education. Here at New Jersey Medical School in Newark (part of the University of Medicine and Dentistry of New Jersey), I received the Golden Apple for best teacher from the Class of 2008, at the Golden Apple Dinner on April 3. The Class of 2007 elected me Class Marshal for Convocation (May 21). And the Foundation of UMDNJ selected me for its 'Best Teacher, Clinical Sciences' award to be presented also at Convocation. Teaching medical students brings seemingly little 'reward' these days, but our heritage is education. The word 'doctor' derives from the Latin doceo, doctum, which means 'to teach.'"

Jeremy Kaye, MD '65, was appointed chair of the Dept. of Radiology and Radiological Sciences at Vanderbilt University Medical Center. He was also named to hold the Carol D. and Henry P. Pendergrass Chair in Radiology.

John H. Shenasky II, MD '67: "I retired in 2004. Marge and I spend summers in Waterford, CT. Our major focus is enjoying our six grandchildren. I still enjoy golf. Our youngest daughter, Sara, lives and works in Manhattan. Our middle daughter, Amy, was a PT at Sloan-Kettering for 2004-05 and is now at Yale New Haven. Our son-inlaw, who's a Navy orthopaedist, did his joint replacement fellowship at HSS. Hope to see a lot of classmates at our 40th Reunion."

1970S Roy M. Nuzzo, MD '70: Roy and his wife, Jo, have been living in Westfield, NJ, since 1978. He went into practice there immediately following discharge from the Navy. The Nuzzos had two children. Michael and Aimee. Michael was lost in a tragic accident in 2004 while teaching English to Japanese children in Gunma Prefecture in Japan. Three years have passed since that event, but the pain remains. Mike was a wonderful son and a good friend to many. Aimee, an NBC local television news reporter in New York, lives with her husband, Rob, and daughter, Lily, in Scotch Plains, NJ. Lily is expecting a baby brother in June. Roy's private practice in pediatric orthopaedic surgery is primarily





Caps and gowns: The commencement procession included Medical College benefactor Sandy Weill (above, center). Below: Cardiologist and **Cornell President Dr. David** Skorton (left) looks on as Dean Antonio Gotto addresses the graduates. "You are there to serve the patient," he told them, "and your patient could be the person next door or the person from halfway around the world who needs your help."

involved with the treatment of neuromuscular disorders, cerebral palsy, spina bifida, and gait abnormalities in children. His center is located at Overlook Hospital in Summit, NJ. If anyone would like more information about his work, they should visit his website at www.pediatric-orthopedics.com. Jo, a pediatric nurse practitioner, works at Saint Barnabas Ambulatory Care Center in Livingston, treating children affected with endocrine disorders.

**Paul Miskovitz, MD '75**, clinical professor of medicine at Weill Cornell Medical College (gastroenterology and hepatology), and his wife, Leslie, just returned from a 14-day expedition to Antarctica. After a tumultuous crossing of Drake's Passage in the Southern Ocean, they visited Palmer Station (USA) on Anvers Island and Bransfield House at Port Lockroy Station (UK) on Goudier Island. Besides observing and documenting the feeding patterns of Adelie, Gentoo, Chinstrap, and Macaroni penguins, they participated in measurements of the Coriolis effect and compass behavior in proximity to the Magnetic South Pole.

**Frank L. Douglas, MS '68, PhD '73, MD '77**, received the Black History Makers Award from the Associated Black Charities at a dinner ceremony in New York City on April 11. Previous recipients of the award include Kofi Annan, Maya Angelou, Dr. Ben Carson, and Dr. Shirley Jackson. Dr. Douglas, professor of the

practice at the Harvard-MIT Division of Health Sciences and Technology and executive director of the Center for Biomedical Innovation in the MIT Schools of Management, Engineering, and Science, is an innovator in pharmaceutical research and development. He helped to discover, develop, and launch more than 20 drugs during his 22 years in the pharmaceutical industry. After earning his PhD and MD from Cornell University, he completed an internship and residency in internal medicine at the Johns Hopkins Medical Institutions and a fellowship in neuroendocrinology at the National Institutes of Health. Dr. Douglas is also a fellow of the High Blood Pressure Council. While he served as executive vice president of Sanofi-Aventis, he received the Global Pharmaceutical R&D Director of the Year Award in 2001 and 2004. Dr. Douglas was assistant professor of medicine and clinical pharmacology and director of the Hypertension Clinic of the Pritzker School of Medicine, University of Chicago. He chaired the executive committee of the Science and Regulatory Section of the Pharmaceutical Research and Manufacturers Assn. of America.

**Frederick P. Ognibene, MD '79**, became the 37th president of the Society of Critical Care Medicine in February at the annual Critical Care Congress in Orlando, FL. He is the director of the Office of Clinical Research Training and Medical Education at the





DCC CDEATIVE



Picture this: Painter and pediatrician David Haughton, MD '84, had two exhibitions of his art in Vancouver, British Columbia, in May. His works include the acrylic Foggy Morning Second Narrows (above) and the watercolor Nocturne: Segovia, Spain (left).

COAST IMAGING ARTS

National Institutes of Health Clinical Center and is an attending physician in critical care medicine at the NIH Clinical Center in Bethesda, MD. Dr. Ognibene is the author or co-author of 200 publications including research, book chapters, and abstracts. He co-edited the *Handbook of Critical Care Drug Therapy*, now in its third edition, and co-edited the second edition of *Principles and Practice of Clinical Research*. He is also a member of the United States Public Health Service Corps and has received the PHS Outstanding Unit Citation, Commendation Medal, and Outstanding Service Medal. In addition to his medical career, Dr. Ognibene serves as a member of the Contemporary Collection Committee and Curator's Circle at the Hirshhorn Museum and Sculpture Garden in Washington, DC.

1980s Audrey R. Kupchan, MD '81: "I am a partner in Coastal Medical Inc., a Rhode Island primary care group. We have recently moved into our newly constructed four-story medical office building in East Providence, RI. I am married to Sam Havens, a health-care consultant, and have two boys: Don, 13, and David, 10."

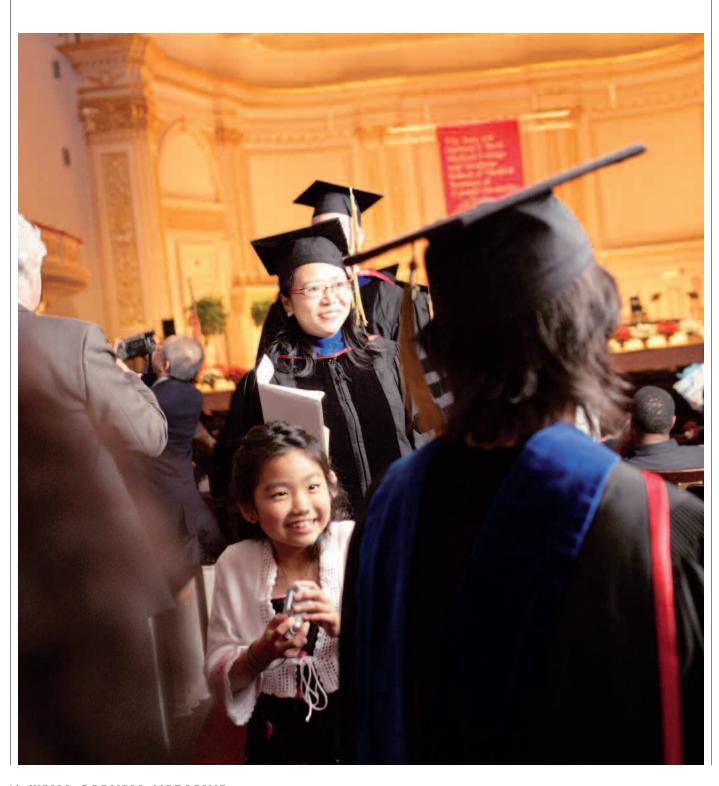
Jonathan Javitt, MD '82, is a senior fellow of the National Security Health Policy Center, vice chairman of Health Directions, chief scientific officer of Active Health Management, and director of Quality Systems Inc. President Bush appointed him to chair the Health Subcommittee of the Information Technology Advisory Committee. He also served as a presidential delegate to the 2005 White House Conference on Aging. He says he is "incubating a portfolio of 14 early-stage biotech companies in Israel and continuing to consult on US Pharma issues. After publishing far too many scientific publications, my first novel, *Capital Reflections*, is being published this summer. Other than sailing in the Mediterranean with Marcia and the kids, there is nothing I would rather be doing than what I'm doing."

**David A. Haughton, MD '84**: "Greetings from the purple house in New Westminster, BC. As some of you know, Lyne had a month's sabbatical in January and I took off some time with her. While living in our rented apartment in Paris, we spent a wonderful fortnight walking around the city, touring museums, eating baguettes, sampling amazing cheeses, and cooking recipes from *La Regalade* cookbook. We had a wonderful vacation, and I even did a few small acrylic paintings while Lyne caught up on some much-needed sleep. I'll be having three exhibitions of my work this spring:

two simultaneous shows in Vancouver and one in Athens, Greece. My first exhibit this spring continues my exploration of the British Columbia landscape. "Ships, Mountains, and the Sea IV" will show May 3–27 at Simon Patrich's new gallery space, the Gallery O–Contemporary, at the Art Center, 2060 Pine St., Vancouver. Some 50 acrylic paintings, from very small to very large, represent my best work of the last three years and are a source of great pride for me. Visit my website at www.haughton-art.ca/."

Joseph Fins, MD '86, became the governor of the New York

Downstate Region I of the American College of Physicians, the national organization of internists. He is the chief of the Division of Medical Ethics at Weill Cornell Medical College, where he serves as professor of medicine, professor of public health, and professor of medicine in psychiatry. Dr. Fins is also director of medical ethics at NewYork-Presbyterian Hospital/Weill Cornell Medical Center and a member of the adjunct faculty of the Rockefeller University. He is board certified in internal medicine and has been a fellow of the American College of Physicians since 1995.



**1990S christopher Starr, MD** '98: "I recently joined the faculty at Weill Cornell. I'm the director of the ophthalmology residency program and my practice specialty is in cornea, cataract, and vision correction surgery."

**2000S** Edgar Figueroa, MD '00: "I've left Columbia Presbyterian Medical Center as of October 2006 to become director of Student Health Services at WCMC."

**Lee Richstone, MD '00**, is an attending urologist. He has a fellowship with Louis Kavoussi in laparoscopy and robotic surgery. He remembers "finding Piyush asleep in the hallway outside his door with keys in outstretched hand."

**Yuliya Jhanwar, MD '02**: "I finished my nuclear medicine residency and am now board certified. I am pursuing a diagnostic radiology residency. I had a baby girl, Cordelia, in June 2006."

Alejandro Bernal, MD '03, who lives in North Wales, PA, is a

medical director with ApotheCom. After hours, he takes care of Sofia Victoria, 4, Luke Alexander, 2, and William Lawrence, 10 months. He'd like to be "playing softball on the Isotopes."

Jonathan Glass, MD '03, a general medical officer and infectious disease researcher, writes: "I am on active duty, still based in Jakarta, Indonesia, at a US Naval Medical Research Unit. The past year has been exciting, to the say the least. I was part of medical relief efforts in Yogyakarta following the earthquake there, and I direct infectious disease surveillance projects in respiratory pathogens in Laos. In addition, I coordinate development of an outbreak surveillance detection system for ministries of health in Southeast Asia. In the summer of 2006, I participated in a scabies prevalence study in Fiji. My wife, Sarah, gave birth to another boy, Joseph Aaron Glass, on October 31, 2006, in Singapore. Thomas, now 3, is a wonderful big brother and enjoying life in Jakarta. Sarah and I will be leaving Indonesia in the summer of 2007 after three exciting years, and we hope to be returning to the US."

#### IN MEMORIAM

'35 MD—H. Calvin Fisher of Colorado Springs, CO, July 13, 2006.
'33 BA, '37 MD—Donald B. Read of Wyckoff, NJ, formerly of Ridgewood, NJ, October 10, 2006; former medical director, Colgate-Palmolive Co.; emeritus staff member, Valley Hospital; active in civic, community, professional, and religious affairs.

'42 BA, '42 MD—Richard C. Slocum of Columbia, SC, April 22, 2007; urologist; chief of staff and VP of medical affairs, Baptist Medical Center; veteran; active in civic, community, professional, and religious affairs. Sigma Phi Epsilon.

'43 MD—Harriet Hull Smith (Mrs. Stephen Smith III, MD '43) of Alamitos Bay, CA, formerly of Pasadena, CA, February 21, 2007; practiced at Las Encinas, a psychiatric hospital owned by the Smith family; active in civic, community, professional, and religious affairs.

'40 BCE, '44 MD—John R. Roberts of Kingston, NY, January 6, 2007; private practice physician; also served on the staff of Kingston and Benedictine hospitals; veteran; life master, American Contract Bridge League. Phi Kappa Psi.

'46 MD—Merlin K. DuVal Jr. of Phoenix, AZ, December 5, 2006; founder of Arizona's first medical school; former US assistant secretary of health; helped facilitate passage of the National Cancer Act; closed down the Tuskegee project; proposed the Emergency Medical Services Act; former president, National Center for Health Education; former president and CEO, Associated Health Systems; former senior VP for medical affairs, Samaritan Health Services; developed surgical procedure to treat chronic pancreatitis; first to replace a human jaw with acrylic rather than human bone; taught

at the U. of Oklahoma School of Medicine; taught at Kings County Hospital (Brooklyn, NY); hosted a CBS-TV program in Phoenix; helped establish the Arizona Advance Directive Registry; veteran; active in civic, community, and professional affairs.

'49 MD—Julian Mardock of Dallas, TX, December 18, 2006; family physician and general surgeon; veteran; active in alumni affairs.

'**52 MD—James L. Mertz** of Lincoln, CA, formerly of Kailua, HI, February 17, 2007; pediatrician; active in community affairs.

'56 MD—Harry M. Butler of Lake Metigoshe, ND, February 16, 2007; neurologist; medical director for the state of North Dakota; former co-head, ND Medical Rehabilitation Center; worked with developmental disabilities centers in Grafton and San Haven Centers; served with Regional Disabilities Center, State of Michigan; veteran; active in civic, community, and professional affairs.

'60 MD—Harry J. Mayer of Northport, NY, February 12, 2007; thoracic and vascular surgeon at Huntington Hospital; veteran; also affiliated with Stony Brook University Medical Center and the Northport Veteran's Hospital; clinical associate professor of surgery at Stony Brook; assistant professor, St. Vincent's Hospital, New York City; active in professional and alumni affairs.

'62 MD—Julian T. Hoff of Ann Arbor, MI, April 16, 2007; professor and chair of neurosurgery, University of Michigan College of Medicine; former professor, University of California, San Francisco; veteran; author; active in civic, community, professional, religious, and alumni affairs.

'74 MD—Burton M. Gold of Setauket, NY, May 31, 2006; associate chairman, Dept. of Radiology, Nassau County Medical Center.

# post doc

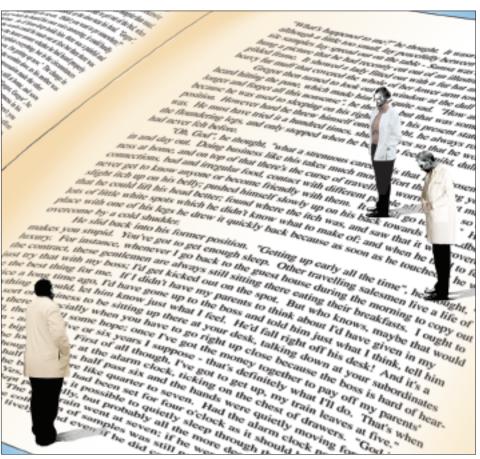
#### Page Turners Student book club offers a literary break

NCE EVERY SIX WEEKS or so, a dozen Weill Cornell students and a few faculty meet in Archibald Commons to have dinner and hit the books. Not medical textbooks—nothing containing formulas and Latin names, no hefty hardcover tomes—but the kind you find in the Lit aisle at Barnes & Noble: City of Dreams, a historical novel about doctors in seventeenth-century Manhattan; the off-beat mystery Motherless Brooklyn, narrated by a detective with Tourette syndrome; Never Let Me Go, a tale of cloning disguised as a childhood memoir; Saturday, about a day in the life of a troubled London neurosurgeon; The Curious Incident of the Dog in the Night-Time, narrated by an autistic teen wrongly accused of killing his neighbor's pet.

The titles chosen for the Weill Cornell Student-Faculty Book Club tend to be medically related in one way or another, but in large part the club's purpose is to give its members a break from their heavily scientific

studies. "Med school can be intense," says club co-founder Alison Haddock '07. "I was starting novels and not finishing them. The club gives us a reason to finish books so we can discuss them with other people." Founded during the 2004–05 school year, the club is open to all Weill Cornellians. The student organizers agree on a book and then send an e-mail to the entire community with the selection and the date and time of the two-hour discussion meeting, which includes a free meal. (Both the books and the food are funded, in part, by a grant from the American Medical Student Association.)

The meetings are facilitated by Dr. Edith Langner, clinical instructor in medicine, and Dr. Charles Bardes, professor of clinical medicine and associate dean for admissions. "I try to keep my mouth shut," Bardes jokes of his organizational style. "To say that I lead the discussion would overstate the case. I try to set a tone in which there's not an authoritative answer." In fact, the chance to



STUDIO ALLEGRA

interact with faculty in a casual atmosphere is one of the club's draws. "It steps away from the hierarchal setting of the medical classroom," Bardes says. "It puts doctors and students on an even playing field, where no one's idea is more privileged than another's."

In addition to fiction—Tolstoy's *The Death of Ivan Ilyich*, Kafka's *The Metamorphosis*—the club has read several nonfiction works, including *The Diving Bell and the Butterfly*, former *Elle* editor Jean-Dominique Bauby's memoir written after a stroke left him able only to blink his left eye. One of the club's early choices, and a favorite among members, was *The Spirit Catches You and You Fall Down*, which chronicles the culture clash between the American medical establishment and the family of a young Hmong girl diagnosed with epilepsy. "It's important to still have the arts in your life when you're in medical school," says Erin Rohde '09. "There's a lot of work here, and this gives us a chance to read. It definitely enhances your life and the medical school experience."

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