

weillcornellmedicine

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

FALL 2013

Generation Next

Mentoring
the physician-
scientists of
tomorrow



Alumni Giving:

Supporting our Newest Students



Students from the Class of 2017 receive their white coats from Carol L. Storey-Johnson, MD '77, Senior Associate Dean of Education and Associate Professor of Clinical Medicine; Dean Laurie Glimcher; and Elizabeth L. Auchincloss, MD, Vice-Chairman for Graduate Medical Education, Director of Residency Training, DeWitt Wallace Senior Scholar, and Professor of Clinical Psychiatry.

The White Coat Ceremony at Weill Cornell is held each August for the incoming class of medical students. This is many of the students' first opportunity to meet faculty, who help them slip on their new white medical student coats as their proud families look on. One of the defining moments of a young medical student's career, the ceremony is a time-honored tradition at Weill Cornell.

The Alumni Association reached out to members far and wide to seek donations for 3M Littmann Cardiology III stethoscopes, given as a warm welcome to each medical student at the ceremony on August 27th. The Buster Foundation's annual gift previously established the Paul F. Miskovitz, MD '75, Stethoscope Fund for Medical Students; alumni, 226 so far, have enthusiastically supplemented this fund, propelling it to an impressive \$44,650 for nearly 300 stethoscopes.

If you're interested in contributing to next year's fund, please contact Clara Cullen-Sharp, Director of Alumni Relations & Giving, at 646-317-7412.

"I know I speak for many alumni when I say it seems like only yesterday that we were using our stethoscopes for the first time," said R. Ernest Sosa, MD '78, President of the Alumni Association. "I'm so **happy that alumni can contribute** to this exciting phase for our new medical students."



Veronica M. LoFaso, MD, MS, Roland Balay Clinical Scholar and Associate Professor of Medicine; Lewis M. Drusin, MD '64, PhD, Professor of Clinical Public Health and Professor of Clinical Medicine; Oliver T. Fein, MD, Professor of Clinical Medicine and Professor of Clinical Public Health; and Sibel A. Klimstra, MD, Associate Dean, Academic Affairs and Associate Professor of Clinical Psychiatry, look on as students receive their stethoscopes.



Weill Cornell Medical College

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FEATURES

22 COMFORT ZONE

BETH SAULNIER

On the Westchester psychiatric campus, a former gymnasium is home to a new center carefully designed to appeal to people with autism and their families—from the décor to the layout to the lighting. “It’s a warm, non-threatening place,” one parent says. “It makes people feel at ease, which is fantastic.” Led by internationally renowned expert Catherine Lord, PhD, the Center for Autism and the Developing Brain offers diagnostic and therapeutic services for patients of all ages, as well as research that explores the still-mysterious condition whose prevalence has increased 1,000 percent over the past forty years.

28 THINK TANK

ANDREA CRAWFORD

With the aim of spurring neuroscience research and spearheading new treatments and therapies, the Medical College has created the Feil Family Brain and Mind Research Institute. Funded in part with a \$28 million gift in honor of Gertrude and Louis Feil, the Institute centralizes neuroscience at Weill Cornell—building a translational hub for Alzheimer’s, Parkinson’s, stroke, multiple sclerosis, and other diseases of the brain, at a time when the aging population means that such conditions will be more prevalent than ever. Says the Institute’s leader, Costantino Iadecola, MD, the Anne Parrish Titzell Professor of Neurology: “We’re building a system whereby we’re bringing all the expertise together.”

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BETH SAULNIER

Each summer, two dozen aspiring physicians come to Weill Cornell for a seven-week immersive experience—working in a lab, shadowing clinicians, observing procedures, meeting medical students, and more. They’re participants in the Traveler’s Summer Research Fellowship Program, which has helped members of under-represented minority groups strengthen their medical school applications for more than four decades. The program numbers among its alumni many prominent physicians in academia and elsewhere—including Weill Cornell’s own Carol Storey-Johnson, MD ’77, and Carla Boutin-Foster, MD, MS ’99.

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Cover photograph by John Abbott

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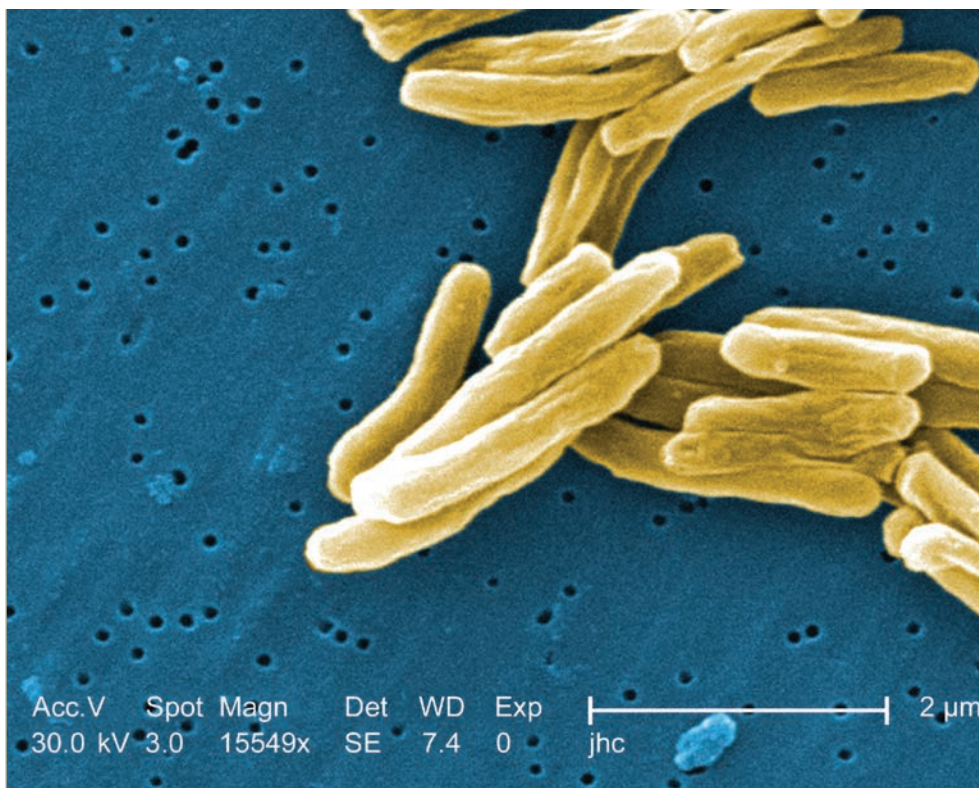
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Weill Cornell Medical College

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A better bone marrow transplant. *Plus:* Preventing cleft palate, aiding vets with PTSD, a weapon against metastasis, 9/11 and smoking, a team approach to TB, psychiatry in pregnancy, NeuroNEXT, and biotech in the heartland.

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Sound Investments

Laurie H. Glimcher, MD,
Dean of the Medical College

At Weill Cornell we have an abiding commitment and responsibility to accelerate discoveries for patients, and we can best accomplish this through support from industry and philanthropy. This need is underscored by dramatic cuts in federal funding for medical research and this fall's crippling government shutdown. We know that in order to fulfill our mission of delivering the best medicine, we must support innovation in academia, scientific discovery, infrastructure, and more.

In this issue, we highlight several major initiatives that demonstrate our commitment to excellence for this generation and those that follow. The Feil Family Brain and Mind Research Institute is just one example. This new neuroscience center, described in our feature story "Think Tank," was established last fall with a \$28 million gift in honor of Gertrude and Louis Feil. It marks the latest significant investment we've made in our long-standing effort to shape the future of neurological disease treatment.

Neurological disease represents a huge unmet need. Nearly half of Americans over eighty-five live with Alzheimer's—and the costs of dementia care, already higher than those for heart disease and cancer combined, are expected to double over the next three decades. Directed by stroke expert Costantino Iadecola, MD, the Anne Parrish Titzell Professor of Neurology, the Feil Family BMRI will be a translational hub, bringing together expertise from across scientific and clinical disciplines to improve understanding of the brain and consciousness to develop new therapies for Alzheimer's, Parkinson's, stroke, multiple sclerosis, and other neurological disorders.

Autism is another complicated condition affecting a growing, aging patient population—and it represents another area in which we've made key investments. In "Comfort Zone," we introduce the new home of the Center for Autism and the Developing Brain, an initiative on the Westchester campus in partnership with

NewYork-Presbyterian, Columbia, and the non-profit New York Collaborates for Autism. Directed by internationally renowned autism expert Catherine Lord, PhD, this thoughtfully designed facility provides comprehensive care to people with autism and other brain disorders across the lifespan.

As an educational institution, of course, we make ongoing investments in the future of medicine by training the next generation of physician-scientists. In "Well Traveled," we highlight one way we have done so: the Travelers Summer Research Fellowship Program. Launched in 1969, the program—whose alumni include leaders at Weill Cornell and other medical institutions—is the oldest and most successful of its kind in the U.S. It provides research experience to undergraduates who have demonstrated interest in aiding underserved populations. Endowed by Travelers Insurance for the last two decades, the program is open to students of all backgrounds but has a heavy emphasis on addressing racial and cultural disparities in health care, making future physicians better at caring for diverse populations of patients.

All of these initiatives involve innovative, multidisciplinary approaches to problems in medicine—strategies mirrored by the establishment of two additional Weill Cornell partnerships: the launch of the Tri-Institutional Therapeutics Discovery Institute and the sale of a floor of the new Belfer Research Building to Hunter College. Tri-I TDI brings together scientists from Weill Cornell, the Rockefeller Institute, Memorial Sloan-Kettering Cancer Center, and Takeda Pharmaceuticals, Ltd., in a unique setting in which academic and industry scientists can learn from each other to move promising compounds from the lab to the drugstore. And Hunter's researchers will collaborate side by side with ours, bringing new perspective to the WCMC campus, just as we expect our scientists will share their own expertise.

These are just a few of the subjects that demonstrate how Weill Cornell's deep commitment to patient care, medical research, and education demands that we always look forward—and make significant investments in the future of health care.



LISA BERG

The New *Driving Discoveries, Changing Lives* Campaign

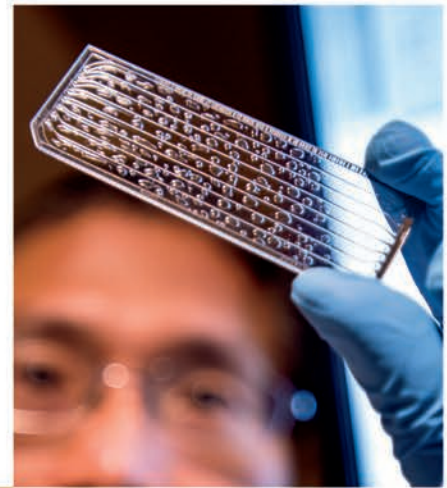
The Belfer Research Building on East 69th
Street is slated to open in early 2014.



Weill Cornell Medical College

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Launched with a transformative \$100 million gift from longtime partners and philanthropists Joan and Board Chairman Sanford I. Weill, the new ***Driving Discoveries, Changing Lives*** Campaign will catalyze the next phase of health care and medicine at Weill Cornell. At the heart of the campaign are physician-scientists collaborating, across disciplines, to speed innovative therapies and cures from the research lab to the patient bedside, a mission made even more feasible with the opening of the historic Belfer Research Building only months away.



Each element of this \$300 million campaign – recruiting more leading lights to our campus, enhancing our already strong medical education curriculum, and accelerating our current research efforts – is a critical step toward changing the lives of those who receive our care.

Ari Melnick, MD, Gebroe Family Professor of Hematology/Oncology, and Lewis C. Cantley, PhD, Margaret and Herman Sokol Professor in Oncology Research and Director of the Cancer Center at Weill Cornell.

The *Driving Discoveries, Changing Lives* Campaign will enhance programs in each of the following targeted areas:

- Cancer
- Cardiovascular Disease
- Children's Health
- Internal Medicine/GI
- Metabolic Syndrome
- Precision Medicine
- Neuro/Brain and Mind
- Health Care Services and Policy
- Medical Education



Debra Taubel, MD, Associate Professor of Clinical Obstetrics and Gynecology, teaches a seminar.

We are grateful to all of our donors for their continued support. For more information on making a gift to the new *Driving Discoveries, Changing Lives* Campaign, please contact Lucille Ferraro, Campaign Director, 646-317-7387 or luf2003@med.cornell.edu.

Scope

News Briefs



RENÉ PEREZ

Lab work: Long-standing benefactor Sanford Weill and Dean Laurie Glimcher, MD, tour the Belfer Research Building, still under construction.

Weill Cornell Launches \$300 Million Campaign

With the aim of advancing research from bench to bedside, Weill Cornell has announced a new, \$300 million fundraising campaign. Launched with a \$100 million gift from long-standing benefactors Joan and Sanford I. Weill and the Weill Family Foundation, *Driving Discoveries, Changing Lives* will support novel approaches to translating basic and clinical research into innovative treatments and therapies. “We are profoundly appreciative of the generosity of Joan and Sandy Weill, and of all our loyal donors who are committed to advancing medical discoveries and, above all, making a difference in our patients’ lives,” says Dean Laurie Glimcher, MD. “It is incumbent upon us to find therapies and cures for the world’s most intractable diseases, and the Weills’ phenomenal leadership and unwavering support will ensure that we enhance the health of our patients for future generations.”

The *Driving Discoveries, Changing Lives* campaign will support research and clinical work around this century’s most pressing public health challenges: chronic diseases, now the leading causes of illness and death. Priority areas include cancer, cardiovascular disease, diabetes, obesity and metabolic syndrome, neurological disorders, children’s health, internal medicine, precision medicine, and regenerative medicine. Along with the Weills’ gift—which brings the family’s philanthropy to the Medical College and Cornell University to more than \$600 million—the campaign has received additional

gifts that put it halfway to its goal.

The Weills’ gift will establish the Weill Center for Metabolic Health and fund other core priority areas of the Medical College’s scientific investigations, as well as recruitment of top-tier faculty. “Joan and I have had the honor and privilege to contribute to Weill Cornell Medical College, helping to sustain this extraordinary institution as one of the world’s leaders in biomedical research,” says Sanford Weill, chairman of the Board of Overseers. “We are immensely proud of what Weill Cornell has achieved—and what more we can accomplish in the years to come.”

Driving Discoveries, Changing Lives follows the recently completed *Discoveries that Make a Difference* campaign, which raised \$1.3 billion in less than seven years; when it was launched, it was believed to be the largest fundraising effort ever undertaken by a medical school. Its centerpiece is the Belfer Research Building, which will receive further support from the new campaign. Opening in January 2014, it will serve as a hub for multidisciplinary biomedical research and as a recruitment tool to attract some of the world’s finest scientists to Weill Cornell. In addition to biomedical research, *Driving Discoveries, Changing Lives* will enhance medical education through scholarships, faculty support, enhanced clinical experiences, and more. Says Board of Overseers member Robert Appel, co-chair of the campaign: “The immense generosity of all of our donors will enable Weill Cornell to maximize its impact on education, research, and patient care.”

Immunologist Named Graduate School Dean

Gary Koretzky, MD, PhD, has been named dean of the Graduate School of Medical Sciences and senior associate dean for research at Weill Cornell. An undergraduate alumnus of the Ithaca campus, Koretzky is an internationally renowned expert in immunology whose research has improved understanding of the development and function of immune system cells. "Dr. Koretzky will enhance our already outstanding graduate program, providing the very best education to our next generation of physicians and scientists while anchoring us at the vanguard of biomedical research," says Dean Glimcher. "He will enable us to translate scientific discoveries into the most advanced care for our patients."

Koretzky comes to Weill Cornell from the University of Pennsylvania, where his positions included vice chair for research, chief scientific officer, and associate director of the MD-PhD program. His research on T lymphocytes holds promise for the development of drugs that could alter immune functions and has broad implications for cancer, autoimmune diseases, and other conditions characterized by overactive immune responses. "The academic medical community across the country is aware that there are great changes at Weill Cornell," Koretzky says. "Even in a time of fiscal restraint when most institutions are retrenching, Weill Cornell is investing in new clinical and biomedical research programs with the goal of taking an outstanding institution to the next level of eminence."

A fellow of the American Academy of Arts and Sciences and of



Gary Koretzky,
MD, PhD

JOHN ABBOTT

the American Association for the Advancement of Science, Koretzky is a past president of the American Society of Clinical Investigation and a member of the Institute of Medicine. He has authored more than 200 articles, reviews, book chapters, and editorials and is currently editor-in-chief of *Immunological Reviews*. Koretzky earned an undergraduate degree from Cornell in 1978 and an MD and a PhD in immunology from Penn in 1984.

TIP OF THE CAP TO...

Associate Professor of Public Health **Laith Abu-Raddad, PhD**, and the WCMC-Q Infectious Disease Epidemiology Group, named the year's best research team by the Qatar National Research Fund.

Louis Bartoshesky, MD '70, chair of pediatrics at Delaware's Christiana Care Health System, winner of the inaugural Compassion in Practice Award from the Joy-Hope Foundation.

R. V. Paul Chan, MD, MS '08, the St. Giles Associate Professor of Pediatric Retina, winner of the Secretariat Award from the American Academy of Ophthalmology.

Professor of Cell and Developmental Biology **Robin Davisson, PhD**, appointed to a six-year term with the NIH Center for Scientific Review Study Section on Hypertension and Microcirculation.

Medical student **Eleanor Hope Emery '14**, internal medicine resident **Claiborne Childs, MD**, Associate Professor of Clinical Medicine **Susana Morales, MD**, and Assistant Dean for Student Affairs **Elizabeth Wilson-Anstey**, who received Pioneer in Diversity Awards from Weill Cornell's Office of Faculty Diversity in Medicine.

Lorraine Gudas, PhD, the Revlon Pharmaceutical Professor of Pharmacology and Toxicology, appointed to the FDA's Nonprescription Drugs Advisory Committee.

Pharmacology professor **Samie Jaffrey, MD, PhD**, winner of a \$50,000 Blavatnik Award for Young Scientists from the New York Academy of Sciences. Postdoc **Bi-Sen Ding, PhD**, was a finalist, winning \$10,000.

Carl Nathan, MD, the R. A. Rees Pritchett Professor of Microbiology, given the Anthony Cerami Award in Translational Medicine by the Feinstein Institute for Medical Research.

Alfonse Pomp, MD, the Leon C. Hirsch Professor of Surgery, given the Excellence in Clinical Care Award by the Society of American Gastrointestinal and Endoscopic Surgeons.

Marcus Reidenberg, MD, chief of the Division of Clinical Pharmacology, elected to the U.S. Pharmacopeial Convention's Therapeutic Information and Formulary Support Expert Committee.

Marco Seandel, MD, PhD, assistant professor of cell and developmental biology in surgery, winner of a five-year, \$1.5 million NIH award to study how fathers' ages can affect the incidence of autism and schizophrenia in their children.

Mark Souweidane, MD, professor of neurological surgery and of neurological surgery in pediatrics, winner of the Cristian Rivera Foundation's Vision of Hope Award for his work on diffuse intrinsic pontine glioma.

Assistant professor of clinical medicine **Luise Weinstein, MD**, named physician of the year by the Department of Nursing.

New Institute Spurs Drug Development

Weill Cornell, Memorial Sloan-Kettering, and The Rockefeller University have united to form the Tri-Institutional Therapeutics Discovery Institute in partnership with the global pharmaceutical company Takeda. Known as Tri-I TDI, the independent, nonprofit Institute was founded thanks to a \$15 million gift from Lewis and Ali Sanders and a \$5 million gift from Howard and Abby Milstein. "With academia and industry working together closely, guiding each other in the laboratory, we have a better chance to translate research discoveries into lasting medical contributions and to do so with far greater efficiency," says Dean Glimcher. The Institute—which will have its own scientific advisory board and board of directors—will do medicinal chemistry work on the top floor of the Belfer Research Building, but each scientist's home institution will retain its intellectual property. Potential projects include drugs to treat tuberculosis, malaria, Alzheimer's, cancer, HIV, heart disease, and obesity, as well as "orphan" diseases.

Hunter College To Have Belfer Research Floor

In an innovative partnership, Hunter College will purchase the fourth floor of the Belfer Research Building. "This is a physical expression of a longstanding relationship between two institutions that will advance scientific study and train the next generation of scientists," says Hunter President Jennifer Raab, an alumna of the Ithaca campus. The \$650 million research building, rising sixteen stories and comprising 480,000 square feet of space, is set to open in 2014. Says Dean Glimcher: "Research in the building's open design space will encourage cross-disciplinary collaborations between some of New York City's top scientists in the pursuit of the shared goal of improving human health." Hunter is already a partner in Weill Cornell's NIH-funded Clinical and Translational Science Center.

Neuroscientist Wins MacArthur 'Genius' Grant

A Weill Cornell researcher who designs retinal prosthetics to treat blindness is among the winners of this year's "genius awards" from the MacArthur Foundation. Sheila Nirenberg, PhD, professor of physiology and biophysics, will receive an unrestricted grant of \$625,000 over five years. "It's a pay-it-forward situation: they help me, and I can use the money to help raise enough to build a device and help blind people," Nirenberg says. "It's an important credential from one of the most important foundations in the world. It's so thrilling." Also a professor of computational neuroscience in computational biomedicine, Nirenberg is designing an artificial retina that has shown promise in animal studies. Her device could help some of the 25 million people worldwide who suffer from diseases of the retina, most of whom cannot be treated with drug therapies.



Sheila Nirenberg, PhD

WCMC-Houston Training Program Launched

Weill Cornell and Houston Methodist Hospital have teamed up to offer an accelerated clinical research training program for their junior faculty interested in conducting clinical trials. The initiative, the

Mentored Clinical Research Training Program, provides one year of professional development to early-career physicians who want to participate in clinical trials but are too busy for a comprehensive training program. The program, with eight faculty in the inaugural group, began in July with a four-day workshop. Over the next year, participants will develop and conduct their own trials, with guidance from mentors at both institutions.

Sackler Brain and Spine Institute Founded

A gift from the Mortimer D. Sackler Foundation to NewYork-Presbyterian Hospital will support neurological and neurosurgical patient care, research, and education through the creation of the Sackler Brain and Spine Institute. The second floor of the Greenberg Pavilion and the sixth floor of the Starr Pavilion will be renovated to create a hospital within a hospital with advanced technology for the diagnosis and treatment of neurosurgical and neurological patients. "The Institute will bring together all of the various specialists who have expertise relating to the patient's condition," says Matthew Fink, MD, chair of the Department of Neurology and co-director of the Institute. "It's critically important that all doctors taking care of these patients are located together in the same area of the hospital and have frequent opportunities for collaboration and consultation."

The gift also establishes the Sackler Brain and Spine Institute Endowment, which will support recruitment and retention of leading physicians, surgeons, clinicians, and scientists to further the Institute's work. "The Department of Neurological Surgery at NYP/Weill Cornell has a long and distinguished history in translational research, bringing advances from the lab to the patient bedside," says Institute co-director Philip Stieg, MD, chairman of neurosurgery. "By fostering partnerships between neurological surgery and neurology and between researchers and clinicians, the Sackler Brain and Spine Institute will accelerate this process."

Transplant Program Marks 50th Anniversary

This fall, NewYork-Presbyterian/Weill Cornell and The Rogosin Institute are celebrating fifty years of successful organ transplantation. In October, the kidney transplant program held an anniversary celebration attended by some 200 people. "We have a very simple strategy when it comes to transplantation here at NYP/Weill Cornell—we consistently strive to offer the maximum number of opportunities for patients," says surgical director Sandip Kapur, MD '90, the G. Tom Shires, MD, Faculty Scholar in Surgery. "We've treated patients of all ages; we have an excellent pediatric program and have transplanted people in their late eighties. Every available tool that exists, exists in this program." The program has performed more than 4,200 transplants since its inception in 1963—making it one of the highest-volume centers in the nation.

\$5 Million Grant Funds Study of Consciousness

An international, eight-center study will explore levels of awareness in people with traumatic brain injury, reconciling brain scans with patients' actual function. The effort, led by Nicholas Schiff, MD '92, the Jerold B. Katz Professor of Neurology and Neuroscience in the Feil Family Brain and Mind Research Institute, is backed by a \$5 million grant from the James S. McDonnell Foundation. Says Schiff, director of Weill Cornell's Cognitive Neuromodulation Lab: "We're really interested in how to use measuring tools to identify consciousness when the bedside examination is an unreliable gauge."

FROM THE BENCH

Shift Toward E-Mail Problematic

Patients favor being able to reach their primary care physicians by e-mail, but doctors are reluctant to adopt such electronic communications, public health researchers have concluded. A study of six large group practices, led by Tara Bishop, MD '02, the Nanette Laitman Clinical

Scholar in Public Health—Clinical Investigation, found that lack of compensation for the additional time spent online was the major hurdle. While patients may be able to save time by replacing an office visit with an e-mail, physicians must add electronic correspondence to their existing workload. Says Bishop: "It takes a psychological toll on some people—the feeling of never being done." To increase the use of e-mail, widely endorsed as a way to improve quality of care without costly office visits, Bishop suggests that practices adopt team-based care models that manage electronic communications or find ways to better compensate physicians for the work.

Even Healthy Smokers' Lungs Show Damage

There's more worrisome health news for smokers: even those who have no clinical symptoms of lung disease can exhibit cellular damage to their airways. The study, which compared healthy non-smokers with smokers who had no lung disease symptoms, found that the smokers' cells exhibited known predictors of future cancer. "When you smoke a cigarette, some of the genetic programming of your lung cells is lost," says Ronald Crystal, MD, the Bruce Webster Professor of Internal Medicine. "Your cells take on the appearance of a more primitive cell. It doesn't necessarily mean you will develop cancer, but that the soil is fertile to develop cancer." With 20 percent of the population continuing to smoke despite laws and taxes passed to discourage it, Crystal hopes the research will lay the foundation for prevention efforts, such as the development of therapies to protect the airway from cigarette smoke.



Tara Bishop,
MD '02

Drug Aids Chemo in Aggressive Lymphoma

By pre-treating an aggressive form of lymphoma with the drug azacitidine, chemotherapy can be more effective, leading to longer survival times and better outcomes. The discovery could change the standard of care for patients with diffuse large B-cell lymphoma (DLBCL), and possibly other types of tumors as well. The Phase 3 study found that azacitidine is effective in reawakening the molecular mechanisms that turn on the cell "death signal" that gets turned off as cancer progresses—enabling it to be switched on by chemotherapy. "To have any hope for helping patients with aggressive lymphoma, we need to make this resistant cancer sensitive to treatment," says senior investigator Leandro Cerchietti, MD, the Raymond and Beverly Sackler Research Scholar. "We found we could do this by reprogramming the cancer to a more benign disease, which can then respond to chemotherapy." About a third of DLBCL patients fail to respond to chemo or relapse after treatment; as a result, the majority die within two years of diagnosis.

Study Finds Severe Risks in Home Birth

In the largest study of its kind, researchers report in the *American Journal of Obstetrics and Gynecology* that babies born at home are about ten times as likely to be stillborn as those delivered in hospitals. The project, which analyzed data on more than 13 million U.S. births, found that the risk is even higher with first babies. Additionally, it found that with home births, infants are almost four times as likely to have neonatal seizures or serious neurologic dysfunction. "The magnitude of risk associated with home delivery is alarming," says lead author Amos Grunebaum, MD, associate professor of clinical obstetrics and gynecology. "Parents-to-be need to know that if they deliver at home, their baby has a greater risk of dying or having a serious neurological problem." The researchers analyzed birth certificate files from the CDC's National Center for Health Statistics to assess deliveries by physicians and midwives from 2007 to 2010. They stress that the relevant factor is not who delivers the infant, but where. "When a complication does arise, what's needed is access to a team of skilled specialists with the training and technology in place to handle emergency procedures," says co-author Frank Chervenak, MD, the Given Foundation Professor of Obstetrics and Gynecology.

Thorny Stem Cell Question is Finally Answered

An ongoing controversy in regenerative medicine has been resolved, thanks to research recently published in *Nature*. A team led by Todd Evans, PhD, professor of cell and developmental biology in surgery, explored whether an enzyme known as AID was required to transform adult human cells into induced pluripotent stem cells. The answer: while AID makes reprogramming much more efficient, it's not absolutely necessary. That's welcome news, because AID is known to cause genetic mutations that can lead to cancer. As Evans, vice chair for research, notes, "If you can reprogram cells without AID, it could reduce risk of potential mutations, and thus be safer."

Exploring a Gene Variant for Depression

By better understanding why a common gene variant makes people more likely to suffer from depression, anxiety, and memory loss, researchers have moved closer to developing therapies to disable it. The alteration to a single nucleotide in the brain-derived neurotrophic factor (BDNF) gene—present in 20 percent of the population—helps explain why some mood disorders run in families. Now, investigators at Weill Cornell have described the specific mechanism by which the variant affects neurons, potentially pointing the way toward targeted treatments. The work was published in *Nature Communication*.

Endothelial Cells and Organ Regeneration

An injection of blood vessel cells may someday heal damaged or diseased organs—eliminating the need for transplants. In studies published in *Stem Cell Journal* and *Developmental Cell*, Shahin Rafii, MD, co-director of the Ansary Stem Cell

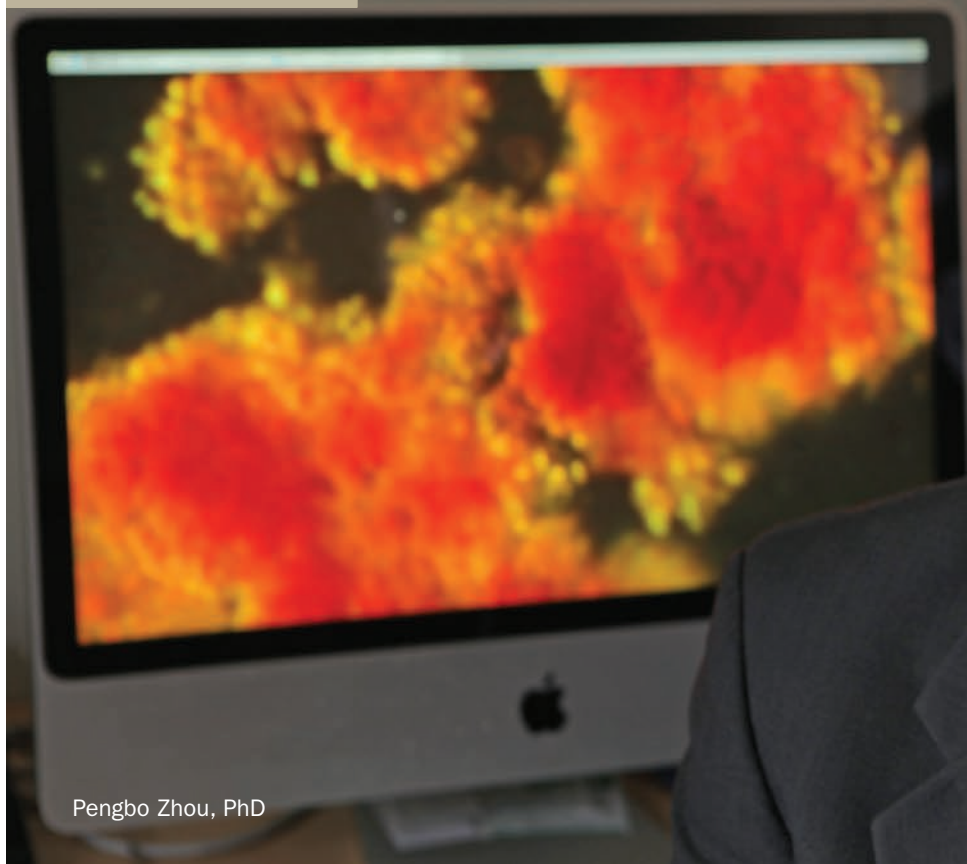


Shahin Rafii, MD

Institute, reports that endothelial cells drive tissue regeneration by releasing beneficial, organ-specific molecules. The work, says Rafii, "will open up a whole new chapter in translational vascular medicine and will have major therapeutic application."

Talk of the Gown

Insights & Viewpoints



Pengbo Zhou, PhD

JOHN ABBOTT

Go Forth and Multiply

A pioneering technique could greatly increase the efficacy of bone marrow transplants

Curing a patient with a blood disorder by replacing defective bone marrow with a new, healthy supply is riddled with contingencies. If the person supplying the cells is someone other than the patient, the pair must be compatible on numerous genetic and immunological characteristics. Whether the supply comes from the patient, a donor, or umbilical cord blood, a successful transplant depends on the recipient receiving enough cells to repopulate his or her

body with the hematopoietic stem cells (HSCs) capable of developing into all of the blood cell types necessary to support life. Unfortunately, physicians are not always able to collect enough lifesaving cells, jeopardizing a patient's chance of survival and recovery.

But a new technique developed by Pengbo Zhou, PhD, professor of pathology and of laboratory medicine, could eventually improve the supply of stem cells—improving the chances of a cure for more patients and reducing the burden

on donors to undergo more than one collection procedure. In the journal *Blood*, Zhou and colleagues at Memorial Sloan-Kettering Cancer Center and Italy's Magna Graecia University of Catanzaro reported that they were able to increase the survival time of a protein crucial to expanding these stem cells, potentially allowing for them to be "grown" on an industrial scale. Eventually, Zhou says, additional HSCs could be manufactured in the lab for patients who lack a sufficient supply from a donor or from their own bone marrow. The technique also could be used to increase the supply of stem cells from donors with rare blood types, which could be preserved for later use by multiple patients. "From a few cells you can make a lot of them," says Zhou. "The expectation is to take the cells, bank them, and make more in a pharmaceutical environment."

With the exception of blood stem cells that are culled from donated umbilical cords, bone marrow is taken either directly from the pelvic bone during a surgery or separated from other blood products during a procedure similar to donating blood called peripheral blood stem cell apheresis, after a donor has taken medication that stimulates bone marrow to release excess HSCs into the bloodstream. The volume of cells a patient needs is based on weight; the larger the patient, the more cells are required. Among autologous transplant patients—those who are their own donors—up to one-third need additional doses of HSC-stimulating medication to be able to collect a sufficient number of cells for transplant. About one in 500 bone marrow transplants facilitated by Be The Match, the nonprofit that contracts with the U.S. government to identify donors, requires more than one collection to supply the recipient with enough cells, as does about one in 1,000 peripheral blood stem cell transplants, a spokeswoman for the group says. If the best match is with cord blood, doctors must sometimes search for an additional cord if the recipient is an adult, because the first cord's supply of stem cells may be enough only for a child or small adult.

A collaborative team led by Zhou and Malcolm Moore, DPhil, the Enid A. Haupt Professor of Cell Biology at Sloan-Kettering, discovered a way to modify the protein HOXB4, which is known to promote HSC expansion and maintain stem cell potential. Though scientists have known that HOXB4 stimulates stem cells to divide while retaining their "stemness," or ability to remain in an undifferentiated state, the protein is degraded within thirty to sixty minutes—making it impractical and costly to routinely use in expanding numbers of HSCs. An approach using genetically engineered viruses as factories for this protein ran the risk of inducing leukemia as a result of viral integration into the oncogenic

"hotspot" of host cells. Zhou and his colleagues tackled this problem by modifying a signal they defined that HOXB4 normally gives off, which results in its own degradation. Altering that signal in a synthetic form of HOXB4 extended the survival of the re-engineered protein to more than ten hours—enough time for the team to treat extracted adult human HSCs with the new protein and produce large volumes of additional stem cells. When they transplanted those stem cells into special mice lacking immune systems, the human cells engrafted, or incorporated themselves, into the rodents' bone marrow and formed all the precursors of white and red blood cells and platelets, just as the original stem cells were able to do.

Zhou's findings, which still have to undergo safety and efficacy trials before being used in humans, could have applications beyond cancer, possibly benefiting patients with rare hereditary diseases that can be helped only by fixing the genetic mutations causing their illnesses.

Stefano Rivella, PhD, associate professor of genetic medicine in pediatrics, quickly realized that the technique could aid his work treating children with two debilitating blood disorders, sickle cell anemia and beta thalassemia. Although bone marrow transplants can cure such patients, finding a matching donor can be challenging. Rivella hopes to test a gene therapy approach that would correct the disease-causing mutations in a patient's own bone marrow stem cells with the correct genes delivered by a vector—in this case, a disabled HIV virus. Zhou's modified HOXB4 could greatly increase the number of cells that take up the corrective gene delivered by the vector, Rivella says.

Ultimately, Zhou says, the technique could provide an insurance policy similar to the umbilical cord stem cells parents now bank should their children need an autologous transplant. While the stem cells found in umbilical cord blood can replicate fairly readily when scientists culture them—making banking a practical choice—it's impractical for adults to store healthy cells for later use because scientists have been unable to expand sufficient numbers while maintaining their stemness in order to make them useful to transplant. Altering the HOXB4 protein, as Zhou's group has done, may change that. "There's always a limitation of finding donors because everybody has a different genetic makeup," Zhou says. "Ideally—this is the holy grail in this field—if everybody can bank a little bit of their stem cells, down the road if you need them you can thaw them, expand them, and put them back in your body. This is one major step to make that a reality."

— Jordan Lite

'From a few cells you can make a lot of them. The expectation is to take the cells, bank them, and make more in a pharmaceutical environment.'

The genetics lab is quiet and dark. A softly thrumming metal incubator sits on a corner of the lab bench, its housing filled with test tubes; inside each, a single mouse embryo—its skin still translucent—bathes in simulated embryonic fluid. Brought to the incubator at ten and a half days after conception, these embryos can be cultured in the lab for just twenty-four hours. During that time, Licia Selleri, MD, PhD, and her lab staff do something remarkable: they use a mouse strain that has been genetically manipulated to bear mutations in genes of the Pbx family, which cause cleft lip/palate, and attempt to introduce the protein that corrects the condition, erasing the defect *in utero*. Under a microscope, graduate student James Hart painstakingly performs microdissections, delivering protein-coated microbeads designed to repair the cleft in cultured embryos.

In the embryo, development of the face and cranium hinges on a small class of genes—called Pbx—that bind DNA and exert specific control on other genes, known as targets. The techniques Selleri's lab applies to mice could one day help humans. By homing in on the exact genetic factors that cause the clefting of the lip and palate, she and her team—as reported in the journal *Developmental Cell*—have made the astonishing leap of being able to genetically repair this common defect long before birth. Over time, this new technology could come to be used on human fetuses *in utero*, negating the genetic risk factors that lead to this and other birth defects. “Learning more about the genetic mutations that cause these malformations helps us to envision new ways to treat them before birth,” says Selleri, associate professor of cell and developmental biology. “This mouse model deficient for Pbx genes that we engineered is turning out to be a critical tool to help us study and attempt treatment of congenital diseases in humans.”

When the facial processes and bony plates that make up the skull fail to align properly during development, the result is often a cleft lip or cleft palate; this type of defect shows up in about one in 700 newborns. Such facial clefting makes nursing



Licia Selleri, MD, PhD

ABBOTT

Reason to Smile

Licia Selleri, MD, PhD, pioneers approaches toward a method of repairing cleft lip and palate—long before birth

difficult and can lead to severe social consequences—as well as lifelong difficulty eating and drinking—for those in the developing world, where surgery is often unavailable. In the U.S., a case of cleft lip or palate is treated by up to eight sequential surgeries beginning at three months of age, which may or may not be covered by insurance—and even afterward, the grow-

ing child may experience speech impediments, nasal impairment, and malformed teeth. “These birth defects that affect the body’s form—the head, the face, the limbs—can be devastating for the child, because they are disfiguring,” says Selleri.

In the case of cleft lip and palate, loss or mutation of Pbx fails to connect the gene with its target, dubbed Wnt, leading to

deficits in craniofacial formation. “When Pbx is lost, it hampers the function of Wnt and its related proteins,” says Selleri. “Therefore, without Wnt, you’ll have abnormal midface formation and clefting.”

To address this lapse in embryonic development, Selleri has partnered with Jason Spector, MD, associate professor of surgery (plastic surgery) and associate professor of otolaryngology. Together, they have built on the work of M. Elizabeth Ross, MD ’79, PhD ’82, the Nathan Cummings Professor of Neurology, who has pioneered mouse embryo cultures to study neural-tube defects. Now the Selleri lab uses embryos cultured in this special incubator, attempting to apply microscopic tissue implants that deliver Wnt proteins to treat cleft lip and palate. “We try to remediate the cleft surgically, by getting that Wnt protein back into the midface of the embryo using microbeads,” says Spector. “The microbeads release the Wnt—it’s all critically time-dependent—and the missing protein can correct the defect.” Though Spector specializes in reconstructive microsurgery and no longer performs cleft palate corrections, he understands the impact Selleri’s work could have on patients. “The corrective surgeries of clefting performed after birth can lead to all sorts of secondary growth deficiencies,” says Spector. “Being able to obviate even one of them would be a big improvement.”

Though Selleri’s lab mainly focuses on studying the genetic roots of craniofacial and limb deformities, it has recently devoted resources to studying another birth defect, isolated congenital asplenia (ICA). Some cases of human ICA, it turns out, are also caused by a mutation in a Pbx gene target. Babies born without a spleen are extremely susceptible to infections like pneumonia, which often prove fatal even with the benefit of antibiotics. Selleri has shown that, similar to the formation of a cleft lip/palate, the spleen fails to materialize when a Pbx gene is knocked out. “This goes to show how, using a mouse model, you can harness all this knowledge to learn about the underlying genetics of congenital disease in humans,” says Selleri. “In the next twenty years, we’ll see a revolution in terms of *in utero* corrections of genetic malformations. Times are starting to be ripe for putting together basic discoveries from the lab with the expertise of skilled surgeons and clinicians—trying to correct as much as possible *in utero*, before birth.”

— Kristina Strain

War Wounds

Weill Cornell clinicians
aid veterans with
post-traumatic stress



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In 2012, the U.S. military marked a grim milestone: a record 350 active duty troops committed suicide. And each day in this country, nearly two dozen veterans take their own lives—a startling statistic that has prompted calls to action by stakeholders from President Obama on down. “In the whole population of the U.S., around eighty people a day commit suicide,” notes Ann Beeder, MD, the Jeanette and Jeffrey Lasdon Professor of Clinical Public Health and Psychiatry. “So that’s an enormous number in a small population.”

Beeder is medical director of the Headstrong Project, a nonprofit devoted to providing free, confidential mental health services to veterans in the New York metro area who are coping with post-traumatic stress. The organization was founded by a longtime family friend, Zach Iscol, a 2001 graduate of the Ithaca campus who served two tours in Iraq as a Marine infantry officer. “In general, military people don’t rush to psychiatrists,” Beeder says, “so he wanted to build a program that is efficient bureaucratically and is cost free, hassle free, and stigma free.”

Staffed by about ten Weill Cornell-affiliated clinicians, Headstrong offers a variety of treatment modalities, from psychotherapy to cognitive behavioral therapy to eye movement desensitization and reprocessing (EMDR). Unlike many such programs, the number of sessions is open ended, with no limits on frequency of care. “We’re a treatment program,” says Iscol. “We’ll work with patients until they’re better. If that means we’re seeing them every day for six years, we’ll see them every day for six years. If we see them once a week for three months, and that’s what they need, that’s fine.”

In May, more than 500 people, including numerous Weill Cornell faculty, attended “Words of War,” a fundraiser that garnered \$300,000 for Headstrong. Headlined by Jake Gyllenhaal, star of the 2005 Marine Corps drama *Jarhead*, it featured poetry readings by veterans and actors. Gyllenhaal read *Dulce et Decorum est* by famed British poet Wilfred Owen, a second lieutenant who died in France during World War I:

*Bent double, like old beggars under sacks,
Knock-kneed, coughing like hags, we cursed through sludge,
Till on the haunting flares we turned our backs
And towards our distant rest began to trudge.*

So far, Headstrong has served about thirty veterans, many referred through word of mouth or social media such as the group’s Facebook page. “What’s extraordinary is the number of vets that stay in our program,” Iscol says. “It’s over 90 percent, which is astonishing. We designed it to be welcoming, open, and always available. When a veteran comes into our network, someone makes a point of being in touch within twenty minutes.”

Given the nationwide scope of the problem, the group aims to serve as a pilot project that can be replicated at other academic medical centers. And since many veterans live in rural areas without access to top-flight psychiatric services, technologies like Skype—a HIPAA-approved treatment medium—could help fill the gap. “They’re amazing people who are full of integrity and kindness,” Beeder says of Headstrong’s clients. “Many of them have given a lot for the U.S.’s interests in Iraq and Afghanistan. It feels unfair and sad that they’re suffering so much when they come back, unable to get jobs or to feel well enough to move on with their lives.”

— Beth Saulnier

Canceled Flights

Some cancers fail to build viable 'airports' where they can land and spread—offering a potential weapon against metastasis



Vivek Mittal, PhD

ABBOTT

More than a century ago, the “seed and soil” theory debuted in medical literature to explain how cancer spreads—and it remains in use today, as researchers seek to unravel how cells from a primary tumor take root at new destinations. Vivek Mittal, PhD, associate professor of cell and developmental biology, has long worked to understand the metastatic process, and he uses this familiar analogy to describe his recent findings. Last spring, he explains, he discovered that tumors that fail to metastasize do so by poisoning the “soil” where cancer cells would typically have grown.

Then Mittal shifts metaphors. A cancer cell, he says, is actually

like an airplane departing from one airport to land at another. “Local changes in the metastatic organ, working in concert, form a perfect landing pad for the arriving tumor cell,” says Mittal, director of the Neuberger Berman Foundation Lung Cancer Laboratory at Weill Cornell. “It’s like you’re constructing an airport in a distant country, and you want to fly there. The airport has to be built before the plane lands.”

No matter the metaphor, Mittal’s research—published in *Cancer Discovery* in April—illuminates the processes by which the human body fights cancer, showing for the first time that tumors can generate suppressive environments. And it provides important research avenues for the treatment of metastatic cancer, which causes the majority of cancer deaths but currently has few treatment options and no drugs approved to fight it.

In recent years, Weill Cornell researchers have illuminated how pre-metastatic niches are constructed. David Lyden, MD, PhD, the Stavros S. Niarchos Professor in Pediatric Cardiology, demonstrated the role of bone marrow cells in creating the right environment for cancer cells to alight and grow, and Mittal’s team has previously elucidated the process by which a primary tumor communicates with metastatic sites.

But Mittal wondered: How does the tumor do it? What signals is it sending? In an attempt to find out, he investigated what happens in the pre-metastatic microenvironments of

tumors that fail to spread. His team studied lung tissue, a common site for metastases in breast cancer patients. They expected to find differences in the microenvironment of healthy versus cancerous tissue—for example, fewer of the bone marrow cells required to support tumor growth. Instead, they found the sites to be identical. “We were dumbfounded,” Mittal admits. “We expected a change in the cellular landscape. We expected no airport or at least a dysfunctional airport, actually. But it was all there; apparently everything was the same. It was quite disappointing, originally.”

They almost stopped there. But his team pressed on—even though the landscape was similar, they wondered, could there be subtle molecular differences? And then they found one, in the lung

The Smoking Gun

In studying 9/11, a public health researcher finds a hidden toll



tissue associated with non-metastatic tumors. The bone marrow myeloid cells—which make up the metastatic niche—were producing Thrombospondin-1 (Tsp-1), a protein known to play a role in suppressing tumor growth. It was an important finding in and of itself, as these cells had not been previously identified as the main producers of Tsp-1.

But why were myeloid cells—the same cells that promote tumor growth, as shown by Mittal previously—secreting a substance that suppresses it? In collaboration with colleagues at Harvard, Mittal's team discovered that non-metastatic tumors produce a protein, which they named prosaposin, that drives the production of Tsp-1. "The prosaposin was able to travel through blood circulation and ask the hematopoietic cells to make more Thrombospondin," he explains. "It was an exciting finding." To use the airport analogy: the runway was ready, but air traffic control was preventing the plane from landing.

"In the clinic, by the time primary tumors are diagnosed, tumor cells have already disseminated," Mittal says. "The problem is not the primary tumor, which is very curable. The problem is existing metastases or metastatic relapse—five, ten years later. So we must target the cells that have already left the primary site." To do so, Mittal's team identified the tiny, five-amino-acid peptide in prosaposin responsible for inducing Tsp-1 production, an ideal target for drug development. The proteins also present opportunities for tests to determine which cancers will spread.

On top of its potential for fighting metastasis, the prosaposin/Tsp-1 phenomenon—which seems highly counterintuitive—raises some intriguing questions. "The job of a tumor is always to compromise the host," Mittal says. "Why, in this case, is the tumor making something not of interest to itself?" But he's leaving that issue to evolutionary biologists while his laboratory focuses on exploiting the weakness, no matter how illogical it may seem. "We're just thankful this is in existence," he says. "The tumors do this, and we should learn from them."

— Andrea Crawford

The September 11 terrorist attacks took the lives of nearly 3,000 people on that awful day in 2001, but according to a public health study, the cumulative death toll may ultimately be much higher.

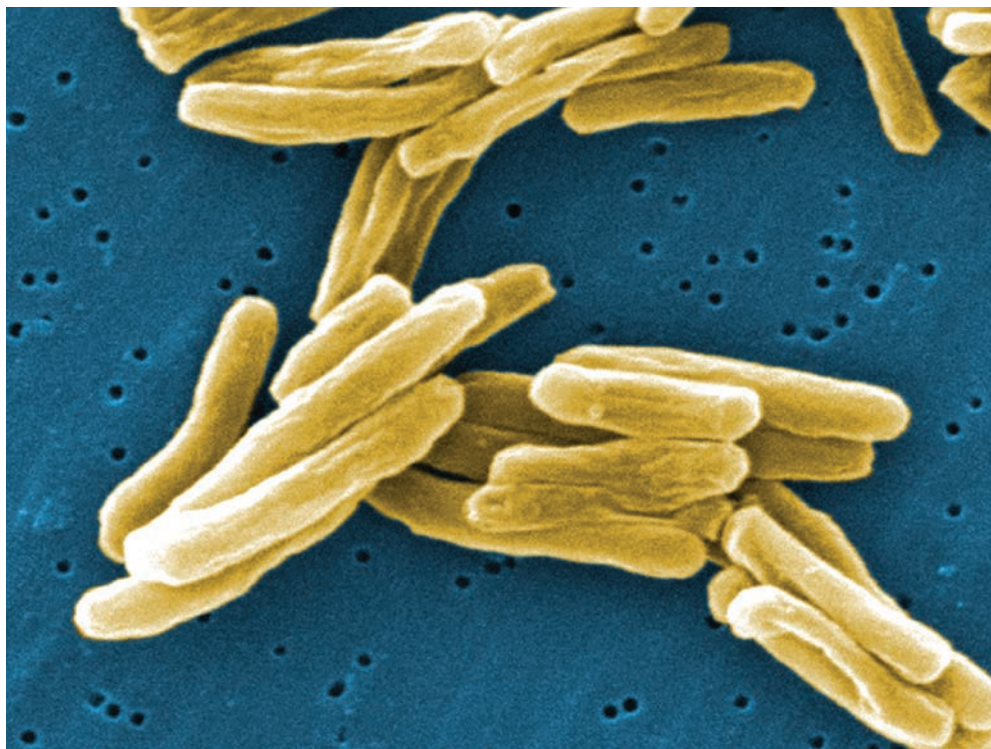
Last summer, Michael Pesko, PhD, assistant professor of public health, reported that the stresses of the attacks prompted about a million former smokers to light up again—making for a 2.3 percent increase in smoking nationwide among the population of current and former smokers. "From a public health perspective, that's very alarming," Pesko says. "The 3,000 who died in the 9/11 attacks is a catastrophic number—but how many of these one million former smokers will die as a result of their relapse?"

In the study, published in *Contemporary Economic Policy*, Pesko used data from the Behavioral Risk Factor Surveillance System, a long-term national phone survey that tracks such phenomena as seatbelt use, drinking habits, and frequency of medical or dental visits. He compared nearly 1.7 million responses, beginning in 1994 and running through 2003, and found a marked resumption in smoking from Fall 2001 onward. And while he had expected the stress-induced effects of 9/11 to be concentrated in the areas where the attacks occurred, they extended much further. "That was a surprising finding: that the increase in smoking from 9/11 was national as opposed to local," says Pesko, who is currently exploring how Hurricane Katrina affected smoking rates. "People in California exhibited just as much stress as people in New Jersey, even though New Jersey is obviously a lot closer to Ground Zero. It seemed like everybody was affected on some level."

Pesko emphasizes that 9/11 didn't make nonsmoking adults take up the habit; rather, it prompted many of those who'd previously quit to light up again. He estimates that the governmental costs of the smoking increase range from \$530 million to \$830 million—or possibly much more, if the habit continued beyond the study's end date of 2003.

Interestingly, Pesko found that when it comes to stress smoking, all terrorist attacks are not the same. While 9/11 had a significant effect, the nation's other major attack—the 1995 Oklahoma City bombing—did not. Why? Potential explanations include the fact that Oklahoma City had only a fraction of the casualties of 9/11; the perpetrators were quickly caught; and it did not tap into existing fears of skyscrapers and airplanes. Similarly, Pesko's study found that other stressors—such as crime, unemployment, and drops in the stock market—have not caused widespread resumption of smoking. The September 11 attacks, Pesko stresses, were different. "They made individuals feel less secure and potentially threatened," he says, "and that effect persisted across the nation." Given the human and monetary costs of having former smokers resume the habit, he says, a thorough governmental response to a terrorist attack might well include something unexpected: a supply of nicotine gum.

— Beth Saulnier



Team TB

Long battle: The regimen to defeat *Mycobacterium tuberculosis* can take up to two years.

Industry and academia join forces to battle a bacterial foe

When it comes to elegant—if diabolical—parasitism of its host, nothing beats *Mycobacterium tuberculosis*, a bacterium harbored by one of every three people worldwide. About three people die of tuberculosis every minute; over the course of a year, TB causes 1.4 million fatalities, making it second only to HIV in the contest for most lethal infectious disease.

Like the soldiers inside the Trojan Horse, *Mtb* hides out, for decades or more, in our macrophages, a major line of defense deployed by the immune system to protect against infection. Once active—triggered by HIV, malnutrition, or other forms of poor health—the disease exacts its toll at a leisurely pace, with a constellation of easily misdiagnosed symptoms: weight loss, weakness, poor appetite, and a productive cough. In the lag between activation of the disease and the start of treatment, aerosolized microbes—borne on a cough or sneeze—speed the pathogen's spread at the worldwide rate of one new

infection every second.

Beyond having biology befitting a saboteur, *Mtb* is practically tailored to wreak havoc by exploiting frailties unique to modern society. An extended and expensive treatment regimen that spans six to twenty-four months requires Herculean efforts on the part of patients; noncompliance speeds evolution of drug-resistant strains of the disease. And then there's the quest for new therapies, hampered by disjointed relationships among academic medical scientists and the pharmaceutical industry and compounded by the competitive secrecy required by for-profit drug development and the agonizingly slow pace at which new compounds are approved by government agencies.

The Tuberculosis Drug Accelerator (TBDA) aims to even the score. Funded with a \$20 million grant from the Bill & Melinda Gates Foundation, the project brings together seven pharmaceutical companies, the National Institutes of Health, Weill Cornell, Texas A&M University, and the Infectious Disease Research Institute, a global nonprofit. By working together, the

TBDA partners are re-imagining nearly every aspect of conventional antibiotic research and discovery in a quest to develop five new preclinical drug candidates with treatment-shortening potential by 2017 and proof of concept for a one-month, three-drug regimen by 2022. "This is an experiment in cooperation, recognizing that the old way of doing business just wasn't getting us there," says co-principal investigator Carl Nathan, MD, the R. A. Rees Pritchett Professor of Microbiology and chairman of the Department of Microbiology and Immunology.

The conventional method of transferring insights from academic medicine to prescription pad was about as efficient, Nathan quips, as "handing patents through a fence." Launched in April 2012, the TBDA aims to leverage the synergy of co-creation, with pharmaceutical companies sharing their libraries of compounds and their skill in medicinal chemistry and pharmacology while academics supply their knowledge of prospective targets, tools for genetic validation, novel assays, and basic science know-how. "The compa-

nies have phenomenal expertise, but they're not reviewing grants and papers all the time, as we do," says Nathan. "They don't have students digging up exciting new things, and they don't have time to develop new technologies."

The TBDA's first order of business was drafting and signing reams of legal paperwork that laid out ground rules to preserve confidentiality, honor intellectual property law, detail commitments for technology transfer, and hammer out procedures for internal and public disclosure of findings. "That did take a long time," admits Nathan, who notes that without the TBDA's dedication to internal transparency, the project would be plagued by the same enormously expensive redundancy of effort that has hampered conventional antibiotic development. Once the legal considerations had been addressed, the group collectively determined how to approach the problem, what to target, how to genetically validate their findings, and how to assess target vulnerability. "The

efficiency factor of this kind of collaboration among academics and industry is enormous," says Nathan. "If the TBDA succeeds, pharmaceutical companies will be able to apply this kind of collaborative model to settings where the financial risk and benefits are even greater than they are in a disease like tuberculosis."

Already, Nathan's group has screened 900,000 compounds. Among them, one supplied by TBDA partner GlaxoSmith Kline has captivated him and his colleagues at Weill Cornell. Postdoctoral fellow Thulasi Warriar, PhD—who spent a year on exchange at Glaxo's Tres Cantos Open Lab, just outside Madrid, Spain—has found mutant strains of TB resistant to the compound, isolated their DNA, and sent the samples to a partner lab at Texas A&M for complete genomic resequencing in search of common mutations. Back at Weill Cornell, Warriar is working with Kyu Rhee, MD, PhD, associate professor of microbiology and immunology, who pioneered the use of mass spectrometry to

reveal how drugs work within living bacteria. Together, they've identified a pattern of change in 170 metabolites as TB reacts to the compound, which resembles the pattern caused by a TB drug whose target is already known. This innovative approach will help guide the team in its search for the new compound's target.

Still another compound was found by one of TBDA's pharmaceutical partners to kill TB in a way that seems particularly important. The drug, originally developed to treat a vascular disease, had been proven safe in humans—but it failed in Phase II testing, demonstrating no benefit beyond a placebo. "So the company shelved it," Nathan says. "There are a lot of drugs like that. Nobody thought about it for TB. It was safe, well tolerated—it just didn't deliver on peripheral vascular disease." Through the TBDA, myriad such compounds can be reconsidered. "They're just sitting there waiting to be tried for a new indication," he says. "It's repurposing."

— Sharon Tregaskis

Risk Management

Psychiatrists treating expectant mothers must balance potential costs and benefits—for two patients

Psychiatrist Lauren Osborne, MD '09, had a patient in distress—but when she suggested resuming antidepressants, the woman demurred. She was a nursing mother, she explained, and her pediatrician had told her to avoid psychoactive medications that might affect her baby. But when Osborne contacted the physician directly, she got a slightly different story. "I didn't tell her not to take it," she recalls him saying, by way of clarification. "I told her to take it only if she really needs it."

Osborne is a specialist in mental health care before, during, and after pregnancy, a field known as perinatal (or reproductive) psychiatry. The subspecialty has seen an explosion of interest over the past decade—but its practitioners still wrestle with the sort of distinctions her patient's pediatrician had made. "Most pregnant women are told, 'You have a psychiatric illness? Well, go off your medication,'" says one of Osborne's mentors, Catherine Birndorf, MD, clinical associ-

ate professor of psychiatry and of obstetrics and gynecology. "But if you have a neurologic condition, you're expected to stay on your meds. 'Oh, it causes birth defects? That's a risk you've got to take, because you can't have a seizure.' Because psychiatric illness was marginalized, and there has always been stigma around it, there's an idea that treating pregnant women with psychiatric illness is 'optional.' And that makes me crazy, because it's not optional. These illnesses are as serious as any other medical illness, and they need to be taken as such."

Birndorf was founding director of the Payne Whitney Women's Program at NYP/Weill Cornell, now led by Margaret Altemus, MD, associate professor of psychiatry. When Birndorf took the position in 2002, there were few training programs and little understanding of the complexities of treating pregnant women with mental illness. But there's a pressing need for such services: according to a 2008 article in *Obstetrics & Gynecology*, more than 500,000 pregnancies each



ABBOTT

Catherine Birndorf, MD, and
Lauren Osborne, MD '09

year involve women with psychiatric illness, and a third of expectant mothers are exposed to a psychotropic medication at some point during pregnancy. “This is a burgeoning field,” says Birndorf, who developed a popular six-month residents’ clinic in perinatal psychiatry at Payne Whitney. “In the past ten years, it has been bursting at the seams.”

Birndorf and Osborne note that, in large part, the side effects of psychoactive medications on a developing fetus remain unclear; there are, after all, obvious ethical restrictions on traditional experimental models during pregnancy. “It’s a tricky business doing research in this area,” Birndorf says. “You can’t do double-blind, placebo-controlled studies. You can’t have one pregnant woman take something and another take something else, and just see what happens to the babies.” Lithium has been associated with a small increase in congenital heart malformations. An anti-epileptic used to treat bipolar disorder carries an increased risk of neural tube defects. SSRIs have been found to be generally safe, but GlaxoSmithKline downgraded Paxil to FDA category D—meaning that there is “positive evidence of human fetal risk”—after reports that first-trimester exposure could

double the risk of heart defects.

Osborne notes that, due to the lack of randomized control data, FDA categories are not always the best way to understand risk; some FDA warnings on psychotropic drugs have been rescinded after additional data reviews. The FDA

‘There’s no “no-risk” path—but what path can reduce the risk as much as possible? There’s a risk with anything a woman takes during pregnancy.’

has been contemplating changes to these categories since 1997 and in 2008 announced plans for a major revision—but it has yet to be enacted. Specialists might choose to prescribe Paxil despite the warning, for example, in the case of a mother with severe suicidality for whom it is the only medication proven to work. “It’s such an individual, case-by-case situation,” says Osborne,

who completed her residency at Columbia last summer and is staying on as a research fellow and assistant attending psychiatrist. “There’s no ‘no-risk’ path—but what path can reduce the risk as much as possible? There’s a risk with anything a woman takes during pregnancy; breathing the smog in New York is an exposure. So how, in each case, can we minimize those risks in the most effective way to help the mother and the baby—the two patients that we have?”

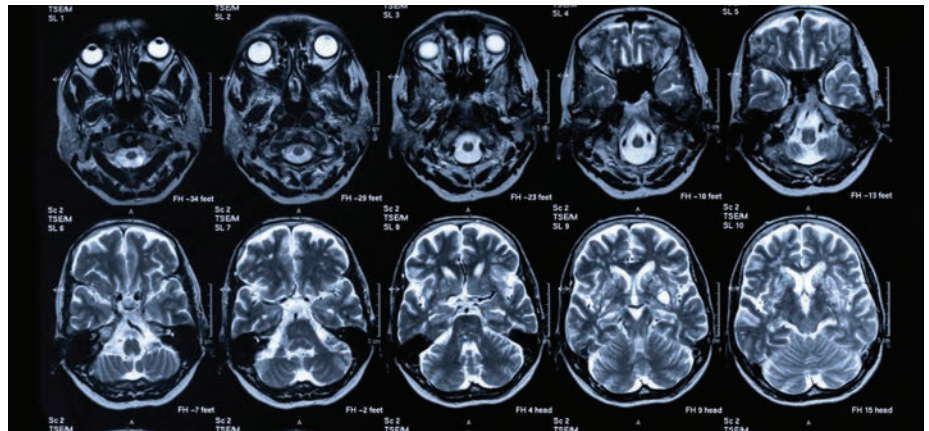
One essential fact remains: while psychoactive drugs have risks, untreated psychiatric illness has enormous perils as well, both to mother and child. Anxiety, Osborne notes, can raise cortisol levels; depression and other psychiatric disorders can cause an expectant mother to neglect prenatal care, engage in risky behaviors, or even harm herself and her baby. “These are serious illnesses that, when left untreated, have serious consequences,” Birndorf says. “It’s not as though you can will your major depression and suicidality away—that you can just suck it up for the sake of the fetus, then go back on your medications after you have the baby, when you’ve got postpartum depression so severe that you’re suicidal or you could commit infanticide.” Then there’s the fact that people—expectant mothers included—who suffer from untreated mental illness tend to self-medicate. “When you take patients off their psych meds, they fill in with everything else,” Birndorf says. “They go to the drug store and get things over the counter, they take herbals and supplements, they smoke pot, they drink alcohol. They do all kinds of things, because they still need to treat their illness.”

Both Birndorf and Osborne stress that staying on psychiatric medications during pregnancy isn’t an easy or straightforward decision—but that nowadays, there’s a greater understanding among both providers and patients that the issue is more complex than a blanket proscription against taking them. And while perinatal psychiatry remains a niche field—and isn’t yet a board-certified subspecialty—Birndorf notes that such concerns touch many practices, since women of childbearing age represent a significant portion of most psychiatrists’ patient loads. “While this is a subspecialty, everybody needs to know this information,” she says. “I always say to residents and medical students: ‘Treat every patient as though she could be pregnant.’”

— Beth Saulnier

NEXT Generation

NIH-funded network facilitates Phase II trials in neurology



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As an aging population brings rising numbers of patients with neurodegenerative diseases like Alzheimer’s and Parkinson’s, a new, streamlined clinical trials consortium may help resolve the inherent tension between the urgent need for treatments and the painstaking process of evaluating potential tests and therapies.

One essential factor in developing novel therapeutics for these diseases, notes Claire Henchcliffe, MD, DPhil, associate professor of neurology, is a clinical trials system that’s as swift as it is rigorous. So—with the aim of facilitating a faster, more effective, and more patient-focused process for evaluating potential tests and medications—Weill Cornell and Columbia have teamed up and joined a nationwide consortium for Phase II trials. Dubbed the National Network for Excellence in Neuroscience Clinical Trials (NeuroNEXT), the group will link sites around the country—uniting researchers, reducing bureaucracy, streamlining data analysis, and cutting costs. “NeuroNEXT is an innovative and exciting development,” says Henchcliffe, vice chair for clinical research in neurology and director of the Parkinson’s Institute at NYP/Weill Cornell. “Not only does it leverage the superb clinical research infrastructure at these two academic medical centers, but it will help break down traditional research silos and cultivate a culture of collaboration to improve future care of neurological disorders.”

Henchcliffe is principal investigator for Weill Cornell’s ten-member half of the bi-institutional team, which was funded by a seven-year, \$2.27 million grant from the NIH’s National Institute for Neurological Disorders and Stroke (NINDS); the Columbia side is led by neurologist Karen Marder, MD. Overall, NINDS is making an \$84 million initial investment in NeuroNEXT, which launched in 2012. The network’s twenty-five geographically diverse sites include the University of Iowa, Massachusetts General Hospital, and UCLA. Among its time- and cost-saving features are a common institutional review board and a central coordinating office for Phase II trials. Modeled after such programs as the National Cancer Institute’s Clinical Trials Network, NeuroNEXT is the first of its kind for neurological diseases—requiring some participants to retool their approach to research. “This is a paradigm shift at an institutional level, a funding level, and a science level,” says Juliann Paolicchi, MD, professor of clinical pediatrics. “Before, people worked as individuals, but now you have to work as part of a collaborative network.”

One of NeuroNEXT’s first trials is a study, led by Columbia pediatric neurologist Claudia Chiriboga, MD, on potential biomarkers for spinal muscular atrophy (SMA), a genetic disorder whose manifestations range from curtailed mobility to deadly respiratory failure. While well known in pediatric neurology, SMA is too rare for any one site to be

able to recruit enough patients to conduct an accurate study, Chiriboga notes. Through NeuroNEXT, however, multiple sites can work together to create an appropriate sample size. “Speed is of the essence when you’re doing clinical trials,” Chiriboga says. “This study may give us an early window into changes in the body that may predict disease progression.”

This patient-recruitment advantage is particularly vital for rare forms or subgroups of neurological diseases, says Paolicchi, director of Weill Cornell’s Pediatric Comprehensive Epilepsy Center. The genetic disorders that interest Paolicchi, such as a rare form of childhood-onset epilepsy known as Dravet syndrome, often occur in just a handful of patients. “I might see two or three cases a year,” she says. “That’s not enough

for a study; at that rate it would take me ten years to get a good result.” But with NeuroNEXT, that timetable can be drastically accelerated. “I may see only three a year, but all together we’re going to come up with thirty a year,” Paolicchi says. “So now we can do that trial, test the treatment, and come up with an answer in two years instead of ten.”

Researchers from other disciplines are beginning to take note of the NeuroNEXT experiment. Just as the National Cancer Institute provided inspiration for a multi-network approach, NeuroNEXT could spark similar models in other areas of medicine. Says Henchcliffe: “If this is successful, it could transform the way research in other fields is performed.”

—Meredith Bennett-Smith

Shot in the Arm

Frank Douglas, PhD '73, MD '77, leads an innovative partnership aimed at improving health—both of patients and the Rust Belt economy

Akron, Ohio, was once the tire capital of the world. But in recent decades, the city—like so many in the Rust Belt and beyond—has suffered an exodus of manufacturing jobs. “The city is trying to redefine itself, and it’s looking to the life sciences as one area,” says Frank Douglas, PhD '73, MD '77. “Its leaders considered their assets—and the University of Akron’s College of Polymer Science and Engineering is in the top three in the country.”

A longtime pharmaceutical executive, Douglas is president and CEO of an innovative non-profit aimed at stimulating the regional economy while improving health care and fostering medical device development. Austen BioInnovation Institute in Akron (ABIA) unites two local hospital systems, a children’s hospital, an energy company, the University of Akron, and Northeast Ohio Medical University in a collaborative effort that comprises research, training, and business incubation. “When institutions compete with each other, as our two adult hospitals do, it’s often not easy for people to work together,” Douglas observes. “So the Institute serves as a place where we bring teams together around a patient problem.”

Since ABIA’s founding four years ago, it has engendered some 300 ideas for novel devices, more than a dozen of which have gone to the prototype phase, with five licensed for development by spinoff companies. They include an implant for treating scoliosis that can be adjusted noninvasively, using magnetic screws; a simulator mannequin, dubbed PacerMan, that trains physicians in placing pacer wires; and a uterine retractor to assist with minimally invasive laparoscopic surgery.

ABIA also features a bio-skills lab where medical professionals can practice on cadavers, as well as a 30,000-square-foot simulation and training facility offering both mannequins and actors trained as standardized patients. The facility can play host to anything from small team training sessions to large-scale disaster-response drills—and in a real-life emergency, it can become a working hospital. “Everything is about the patient,” says Douglas. “Whether we are training, educating, or developing solutions or devices, it’s in the context of patients.” Since its opening, the Institute has twice been recognized by the White House, most recently in



BIOINNOVATION

September 2013 for the implementation of the Accountable Care Community concept, which Douglas introduced in 2011.

Douglas's work with ABIA is the latest chapter in a varied biography that began in Guyana, a former British colony on the northern coast of South America. He grew up in poverty, one of five relatives sharing a one-room house with no indoor plumbing. "I slept on the floor," he says. "I tell people the first time I slept in a bed was when I came to America." A top student, he won a Fulbright scholarship to study in the U.S., arriving in the country at age twenty after a stint as a high school teacher. "We had a thirst for knowledge," he says. "We may have been poor, but in school there was the excitement of learning. Those are my best memories of growing up in Guyana. The rest, I guess, I choose to forget."

Douglas earned a BS in chemistry at Pennsylvania's Lehigh University—he laughingly recalls that he'd never heard of it, and first assumed that the name meant it was a high school—and then a doctorate in physical chemistry from Cornell's Ithaca campus. He went to work at Xerox's

Rochester, New York, facility, where he was one of just three black PhDs. Discouraged by what he saw as limits on his advancement, he opted for a career change, attending Weill Cornell and doing an internal medicine residency at Johns Hopkins.

After time at the NIH and the University of Chicago, Douglas was recruited by the pharmaceutical industry and went on to a distinguished career that included serving as global head of research at Aventis—where, among other things, he oversaw the development of numerous drugs including the allergy drug Allegra and the diabetes drug Lantus. His many honors include being twice named Global Pharmaceutical R&D Director of the Year and winning a 2007 Black History Makers Award. In 2010, the Geoffrey Beene Foundation and GQ magazine named him a Rock Star of Science. "I grew up with a real understanding of the importance of contributing and giving back," Douglas says. "None of us have earned or deserve what we have; it's a blessing, and you use it to help others. That was ingrained into my psyche."

— Beth Saulnier

Tech transfer: President and CEO Frank Douglas, PhD '73, MD '77, in the simulation center at Austen BioInnovation Institute in Akron



comfort zone

By Beth Saulnier

Photographs by John Abbott



The Westchester campus opens a center designed to welcome people with autism

a powerful tool in the diagnosis and treatment of autism comes in an unlikely package: a hot-pink plastic toucan that shoots bubbles out of its bill.

It's a toy, one of many that psychologist Catherine Lord, PhD, uses to engage young patients at the Center for Autism and the Developing Brain. "We get a lot of mileage out of bubbles," Lord, the Center's director, says with a laugh. "Does the child look at you when the bubbles come out? Do they look at their parents? Most kids, when they see something they've never seen before, look at somebody—but a lot of times autistic kids are just focused on the bubbles. What does the child do to make you shoot some more? Do they take your hand and press your finger on the trigger? Even if they can't talk, a typical child would tend to look at you and make some sort of sound, or they'd go to their mother."

Home away from home: Housed in a former men's gym (above), the Center for Autism and the Developing Brain features a modern play space with carefully chosen equipment (opposite) and closets filled with toys that help clinicians assess and treat young patients (left).





Welcome matte: Decorated in muted tones, the reception area includes the historic building's original fireplace and ceiling beams.

Lord, professor of psychology in psychiatry and pediatrics at Weill Cornell, is standing in a jam-packed room in the Center's new home, a former men's gymnasium on the Westchester campus of NewYork-Presbyterian/Weill Cornell. On the floor and almost every available surface are clear plastic tubs that staffers and volunteers are filling with toys specifically chosen for their value in evaluating children who may have autism spectrum disorder (ASD). There are race cars, baby dolls, plastic phones—even a fuzzy bunny connected to a remote control that makes it jump from a distance. "You try to get the child to follow your gaze, to see if they'll shift their attention," Lord explains. "We create positive ways to look at behavior that can be standardized and measured, but are still fun. Take blowing bubbles—we could do the same thing with something boring, but it wouldn't work as well."

Such patient-centered approaches to diagnosis, treatment, and research are the *raison d'être* of the Center for Autism and the Developing Brain, an 11,000-square-

foot facility that was painstakingly designed to appeal to people with autism and their loved ones. When families arrive, they're greeted in a cozy reception area designed to feel like a living room; decorated in muted shades of blue and beige, it features comfortable couches, a play area, and the Tudor-style building's original grand fireplace. An adjacent mini-kitchen—included as a convenience to families who may visit for days at a time, often with multiple kids in tow—features a fridge, microwave, and giant candy bowl.

In what used to be the main gym, architect Jaques Black created what he calls a "treatment village." The vast space has been given a more intimate scale by the creation of individual offices and treatment rooms. Painted jolly pastel colors and sporting differently shaped roofs, their façades evoke a storybook idea of Main Street. Up above, the dark ceiling beams have been painted yellow, creating the effect of a sunny sky. "Before, it looked like an old-time gymnasium, all yellow brick and hard surfaces, windows with grates on

them," says Black, a principal with daSilva Architects who has designed several projects for NYP/Weill Cornell, including the inpatient eating disorders unit in Westchester and the psychiatric ED in Manhattan. "But it had potential to be something wonderful."

Dedicated in June after more than a year of renovation, the Center for Autism and the Developing Brain is a joint effort of NewYork-Presbyterian, Weill Cornell, Columbia, and the nonprofit New York Collaborates for Autism. It's designed to offer comprehensive services for patients of all ages—from evaluation and diagnosis to speech and behavioral therapy for children to occupational training for teens and adults. Unlike most other programs of its kind in the New York metro area, it accepts both private insurance and Medicaid—a significant factor in treating a condition that can require an intensive diagnostic process followed by many hours of weekly intervention therapies. "If you get your appendix out, your insurance isn't going to say, 'We'll pay for this but we won't pay for

that,' but in behavioral treatment, it's variable," says Lord, an internationally recognized autism expert who was recruited from the University of Michigan as the Center's founding director. "We can say, 'Here are the ten things we have, and six of them might be appropriate for your child. Which of them could you do?' And we can lay it out: 'This is what will be covered by insurance. So you decide what you want, and later we can revisit it.'"

It's an area of behavioral medicine that's increasingly in demand. According to the nonprofit Autism Speaks, one out of every eighty-eight American children is on the autism spectrum. That represents a 1,000-percent increase over the past forty years, only some of which can be explained by diagnoses of children who might previously have been given other labels or left untreated. "The prevalence rates are definitely going up," Lord says. "Some of it is awareness, people being more conscious of it. And parents far prefer their child to have a diagnosis of autism than mental retardation or intellectual disability—so I think there are kids with a mild range of intellectual disability who end up getting called autistic because it sounds better. But it could actually be increasing too. We really don't know."

Such uncertainty underscores the fact that autism research—another focus of the Center, whose lower floor is dedicated to the field—is in many ways still in its early stages. While strides have been made in developing treatment protocols that markedly improve outcomes, especially if intervention happens early, much of the disorder remains a mystery. "The field is definitely still in its infancy," Lord says. "We do know a lot, and things could be much better tomorrow if there were enough money to provide training. But we can't cure it at all. It gets a whole lot better for some kids, but we can't make the intellectual disabilities go away. We can often make their lives better, help them be more independent, make families' lives better. But that's true for Down syndrome or Rett syndrome or almost any form of intellectual disability."

One of the most sought-after answers, of course, is what causes autism—which has infamously (and inaccurately) been blamed on factors from childhood vaccinations to wheat gluten. Like so many conditions, it's likely some combination of environment and DNA. "We think there are going to be a thousand different genetic abnormalities associated with autism," Lord says. "It's clear there's not 'a gene.'"

mark and Abby's case is typical of the challenges many families face. Their son, Dylan, was two when his parents grew worried that he wasn't babbling or making other preverbal sounds. "The fact that he wasn't trying to say 'mama' or 'dada'—that was a concern," says Mark, who asked that the family's names be changed to protect their privacy. "We thought something might be going on." They consulted a pediatrician, who referred them to a specialist. After a forty-five-minute evaluation, their only child was diagnosed with autism. Unfortunately, the practitioner's view of their son's prospects was painfully pessimistic—at least that's how it felt to them as they sat there, struggling to absorb the news. "I'll never forget what the doctor said: 'There's nothing good about this diagnosis. Don't expect too much. Don't set long-term goals,'" Abby recalls. "It was very discouraging, and kind of shattering as a parent." Adds Mark: "We were just lost. It was like a lead balloon hitting us. Not only the challenges you have as new parents, but all of a sudden getting hit with this."

Living far out in Brooklyn near Coney Island, the couple had a tough time accessing early-intervention services for Dylan. "Just to find therapists was a nightmare," Mark says. "Some were just coming in and punching the clock—and that's if they'd even show up." Eventually, though, they found their way to the Center—which, he says, "was like seeing some sunshine at the



Catherine Lord, PhD

end of the tunnel." It wasn't the physical space, which was still under construction; it was the attitude of Lord and her staff. "It was such a huge difference," says Abby. "She gave us so much hope. She tested him over a two-day period and focused on his strengths instead of just saying, 'He's got all these things going against him.'"

Where they'd previously been discouraged from taking an active role in their son's therapy, Abby says, "with Dr. Lord it was the total opposite. Every single session gave us tools as parents of how to do interventions through play with him at home. It was so much more natural. I saw how much he was changing just from that." For example, the parents were taught to encourage Dylan's

It takes a village: Individual treatment rooms and offices have distinctive façades and contrasting colors; a marble bench offers a respite stop, and frames display patient artwork.



use of language by setting up various toys—puzzles, a train set, blocks, balls—and letting him take the lead about what he wanted to play with. “We would join him and start imitating what he was doing, describe his actions using language,” she says. “Before he would play on his own, but it became a joint activity. We would play together, and there would be interactions. He started making sounds and simple words. It was a big change in a short period of time. Now he

speaks in sentences and asks questions.”

The family, which now comes to the Center about once a month, was among the first to visit the renovated facility. “It’s a warm, non-threatening place,” Mark says. “It makes people feel at ease, which is fantastic.” Adds Abby: “We love it, and our son loves it as well. It’s aesthetically beautiful, and everything from the waiting room to the gym area is so well thought out.”

Making the space friendly for its

patient population was a central goal for Black and Lord, who worked together closely in designing the Center, addressing even the smallest details. The lights are LEDs rather than fluorescents, whose blinking and clicking can upset people with autism. Similarly, the mechanical systems are ultra-quiet—there are no sudden whooshes of air when the heat or air conditioning turns on—and the floor coverings are cork, rubber, and carpet. “Everything is toned down,” Black says. “The greens, blues, and yellows are all more quiet than what you would think of as typical in a child’s environment, where people say they need to have bright, primary colors. That’s not true for kids with autism. A lot of them react negatively to jarring brightness.”

The facility—which is seeking LEED status for its environmentally friendly design—also includes numerous elements that make it flexible and functional as a clinical space. Each treatment room has wall-mounted cameras and a one-way mirror; on the other side is an observation room with monitors displaying digital video of sessions, whose recordings can also be accessed remotely. The furnishings and decor are color-coded, so patients can be told, “We’re meeting in the blue room.” Each room has giant closets, allowing furniture and equipment to be stored and swapped out for different purposes and age groups. Since there are psychiatrists on staff, some rooms have medical equipment that can be folded away. There are also offices for the Center’s practitioners, which include psychologists, speech pathologists, occupational therapists, and more. “What you typically see in autism is that you have the teachers, the home therapists, the speech therapists, the psychologists—everyone is doing their own thing without really coming together, collaborating, and figuring out what’s best for the child,” says Sara Levitt, MA, a clinical fellow in speech and language. “That’s one of the goals of the Center: to put those people together and make those connections in the community.”

Adds Marisela Huerta, PhD, an instructor of psychology in psychiatry who works with adolescents and adults: “In normative development, abilities fall fairly consistently with one another. But in autism, you never know what you’re going to get. Maybe verbal skills are low and nonverbal skills are high. So it’s always a puzzle to figure out the child’s profile. Where are their strengths, and where do we intervene and support them?”

In addition to the Center’s clinical

Color coded: Treatment spaces—such as the “green room”—have matching furniture, flooring, and walls. Bottom: An observation room offers a view through a one-way mirror.



work, it has a strong research mission, with numerous ongoing studies—including one that Lord has pursued for two decades. In work that she started in North Carolina and continued at various institutions, she has been following about 200 people diagnosed with autism at age two. They're now young adults; eight of them test as normal, while twenty-four are very high functioning but have autism symptoms. "The diagnosis has been much more stable than we thought," notes Lord. "Almost everyone has stayed within the range of autism. So you can predict a lot, even at two."

Another major study, a multi-site investigation led at Weill Cornell by Elizabeth McGhee Hassrick, PhD, assistant professor of sociology in psychiatry, is called AIM-ASD (Adapted Interventions for Minimally Verbal Children with Autism Spectrum Disorder). Conducted in conjunction with several other institutions and local school districts in Los Angeles, Nashville, and across New York State, it will explore the value of two common intervention protocols in children ages four and a half to eight. Alexandra DeGeorge, PhD, assistant professor of psychology in psychiatry, and postdoc Sarah Dufek, PhD, are at work on another study, exploring the efficacy of in-home interventions in young children of lower-income families. "What can be hard is that this field is in its infancy, but it's so prominently featured in the media that people feel you should have this quick fix," observes Levitt. "There's a disconnect between where we are clinically and in research, and what families know about autism in general."

On a balmy day last summer, speech pathologist Jackie Baker, MS, is at work on still another research project, one testing an instrument to note a child's language use in everyday situations. While colleagues observe from behind one-way glass, she interacts with a five-and-a-half-year-old boy whose mother brought him in as a volunteer research subject. She takes him through such activities as arranging drawings in chronological order, putting together a Mr. Potato Head, using toy fishing equipment, and going on an imaginary camping trip. It's all designed to elicit speech, which she and her colleagues annotate using the instrument—an oversized sheet of paper with color-coded spaces for recording gerunds, pronouns, adjectives, negation, irregular verbs, future tense, and more.

While the boy is highly verbal, Baker

notes later, there are subtle but measurable distinctions between him and peers not on the spectrum. "Mostly, he didn't look that different from a typical kid," she says, discussing the session afterward in Lord's office. "His eye contact is not great; he doesn't look at people as much as he should. He does great on vocabulary tests, but he has trouble with social conversation. The he/she pronouns were all over the place. He didn't ask 'who, where, or when' at all." When she gave him cues for social chitchat—like mentioning that she enjoys camping and likes making s'mores—he didn't hit the conversational ball back over the net. When she asked, in the course of telling a story, how a girl might feel if a friend ate all her French fries, he didn't have an answer. He also didn't follow up when Baker purposely included a non sequitur—a Korean word, *gu-rim*—in place of "umbrella." All things considered, though, Lord muses, "I don't even know if I would give him a diagnosis, but he still communicates differently than other boys."

dairine Curiel, like many parents, sought professional help when her child's language didn't develop along a typical timeline. A teaching paraprofessional from the Bronx whose husband works as a city bus driver, Curiel has high praise for the treatment her family has received—particularly from DeGeorge, whom she affectionately calls "Dr. Ali." In addition to working with Curiel's daughter—Madison, now two and a half—on improving speech and interaction using play and rewards, DeGeorge has helped with such practical matters as finding the right preschool. Now, Curiel says, Madison is saying "mama" and "dada" and starting to master other words like "car" and "bubble." "It's all coming little by little," she says. "When I first found out that Madison had autism, I thought it was the end of the world. Her diagnosis was severe, but she has come such a long way—now she's mild. Parents should never give up on their child. They should always try their best. Parents sometimes get depressed, but I feel like, no matter what, you should be happy and strong for your child. Always stay positive, and everything will come together."

Sam and Rachel (not their real names) have a similar message for fellow parents of autistic children: be persistent and strong,

and never lower your expectations. Although both are health professionals, they still had a hard time getting an appropriate diagnosis for their son, Bobby. "He didn't reach developmental milestones like pointing," says Sam. "He'd drag one leg when he learned to crawl. That was an early sign that there were some motor deficits." Like many kids with autism, Bobby fixated on collecting things and did repetitive behaviors, like rolling toys. "The eye contact was off," Rachel adds. "I have to say it was mild. Someone who was not looking for things, or was not as educated as we are, would probably have missed the things we saw. It was more like when you'd go up close he would look away, or he'd look a little to the right or to the left."

Bobby wasn't nonverbal, though, and their pediatrician brushed off their concerns. He didn't give the boy a common diagnostic test for autism—a lapse that still rankles. "Autism is kind of rampant, but at the same time we ran into an issue of people not wanting to diagnose it," says Rachel. "It's weird because you'd think the numbers are so high that people would be looking for it or overdiagnosing it, but we ran into an issue where they were dropping the ball, which was strange and alarming." Adds Sam: "People are hesitant to over-pathologize and overdiagnose, even in the face of clear markers."

They brought their son to Lord a year and a half ago, when he was twenty-eight months old; she confirmed he was on the autism spectrum, and he began intensive intervention in the form of occupational, speech, and behavioral therapy. "He has made substantial changes," says Sam. "He's much more engaged socially and interpersonally, and his language has improved." Now three and a half—and, in his mother's words, "an amazing, happy, beautiful, smart child"—Bobby is thriving at a specialized school. "There are effective treatments," Sam says. "There's hope and joy. You really appreciate the little things. Watching him hold his little brother's hand, we just melt."

Sam and Rachel have visited the Center since the renovation, praising it for its warm, family-friendly environment—though Sam jokes that given her skills, Lord "could do this work in the back of a pickup truck." Says Rachel: "We would have flown anywhere in the world to get the best treatment. We would have taken our son to Japan, to Iceland. For Cathy Lord to be thirty miles away from where we live is a miracle." ●

Think Tank



The Feil Family Brain and Mind Research Institute unites experts across disciplines to study our most mysterious organ

By Andrea Crawford

Diseases of the brain remain some of the most devastating human afflictions, carrying an enormous emotional and financial toll. Although many attempts to develop treatments have not met with success, recent advances—in such fields as neuroimaging, genetics, genomics, epigenetics, metabolomics, bioinformatics, and computational biology—are opening avenues for transformative advances and potential new therapies.

The urgency both to capitalize on this enormous promise and to address the dire need for knowledge is prompting a surge of interest in neuroscience research. The federal government demonstrated this last spring, when President Barack Obama announced his BRAIN (Brain Research through Advancing Innovative Neurotechnologies) initiative—which, in its first year, will provide \$100 million in funding to “revolutionize our understanding of the human mind.” Introducing the initiative, Obama said: “We’re still unable to cure diseases like Alzheimer’s or autism, or fully reverse the effects of a stroke. And the most powerful computer in the world isn’t nearly as intuitive as the one we’re born with.”

Weill Cornell has demonstrated a strong new commitment to advance neuroscience research. In April, the Medical College announced the creation of the Feil Family Brain and Mind Research Institute (BMRI). Funded with a \$28 million gift from their family in honor of

Gertrude and Louis Feil, as well as ongoing support from the Medical College and NewYork-Presbyterian Hospital, the Institute centralizes neuroscience at Weill Cornell, building a translational hub for Alzheimer’s, Parkinson’s, stroke, neurogenetics, neurodevelopmental disorders, disorders of consciousness, multiple sclerosis, and other diseases of the brain in an effort to transform research and spur new treatments and therapies. “There has never been a more critical time to advance research in neuroscience and neurodegenerative disease,” says Jeffrey Feil, a member of the Board of Overseers. “And this Institute is key to keeping Weill Cornell on the front lines.”

The need is pressing because many brain diseases, including Alzheimer’s and neurovascular conditions, such as stroke and vascular dementia, are increasingly prevalent as the population ages—and since people are living longer, their incidence is predicted to rise to epidemic proportions, says Costantino Iadecola, MD, the Anne



JOHN ABBOTT

Costantino Iadecola, MD

'We're bringing all the expertise together instead of letting that occur by chance. We're providing the resources to support and strengthen collaboration.'

Parrish Titzell Professor of Neurology, who leads the Institute. In addition, stroke—the leading vascular disease of the brain—is increasingly afflicting younger patients. “Stroke, already the second-leading cause of death worldwide, used to be a disease of the seventy-year-old,” he says. “Now, due to the obesity epidemic, it’s becoming a disease of the forty- to fifty-year-old.”

In creating the Institute, Dean Laurie Glimcher, MD, structured it as an interdisciplinary research hub. “We need to create what I think is a new paradigm in translational research, and that is to think about our community as having no boundaries—to recognize that patients are not just a collection of diseases, that having one disease alters the risk of having another disease,” Glimcher says. “There is so much in common between molecular and cellular mechanisms across different diseases.”

Glimcher gave the Institute an unusual level of autonomy: it has the financial and administrative power of a department, which makes it unique among such centers at Weill Cornell.

With approximately fifty faculty members under its umbrella, it is now the largest basic science department at the Medical College; it will also oversee administration of relevant centers, such as the Helen and Robert Appel Institute for Alzheimer’s Research, founded seven years ago.

The Feil Family Brain and Mind Research Institute plans to add about a half-dozen more researchers, and Iadecola notes that recruitment is being done in collaboration with other departments—with which some new hires will have joint appointments—and with a broadminded vision for the needs of the Medical College as a whole. In large part, Iadecola says, the Institute’s success will depend on its ability to foster collaboration within the research community and between researchers and clinicians. “We now have the resources to mount significant efforts in neuroscience,” he says. “The Institute is supporting the recruitment of faculty that will benefit the entire neuroscience research program at Weill Cornell.” Jack Barchas, MD, Barklie McKee Henry Professor of Psychiatry and chair of the Department of

Psychiatry—one of several departments that will collaborate closely with the Institute—praises this approach. “It was very far-sighted to facilitate interaction between the Institute and departments in such a way that we each have some independence, but we also have joint efforts,” he says. “It’s a mark of sophisticated, thoughtful administration, and it will dramatically enhance our competitiveness for large grants.”

Traditionally, clinical neuroscience research has taken place within departments such as neurology, psychiatry, and neurosurgery; in the basic sciences, investigators have worked in biochemistry, pharmacology, physiology, cell biology, and more. “It’s a discipline that can’t be captured in the specialization of any one department,” says biochemistry chair Frederick Maxfield, PhD, the Vladimir Horowitz and Wanda Toscanini Horowitz Distinguished Professor in Neuroscience.

Under the old system, researchers collaborated only on an informal basis. “But here we have a concerted effort,” Iadecola says. “We’re building a system whereby we’re bringing all the expertise together instead of letting that occur by chance. We’re fostering interactions by providing the resources to support and strengthen collaborations.”

A clinical department such as neurological surgery depends upon technological and molecular advancements, says its chair, Philip Stieg, MD, PhD—so having a strong relationship with basic scientists is important. “This is the perfect marriage,” he says. “We’ve got neurosurgeons who are scientifically trained, and now, because of the Institute, there is major emphasis on translational work. Neurosurgery has a long history of doing this. For example, the work of Michael Kaplitt, MD ’95, PhD, in gene therapy with Paul Greengard, PhD, in treatment for Parkinson’s. Or the work of Mark Souweidane, MD, with Ronald Crystal, MD, for Batten’s Disease. It makes a much more positive environment—and a much bigger environment, with more scientists—for us to work in.”

A close partner in this effort is Matthew Fink, MD, chair of neurology. Before the Institute was created, Fink oversaw the Department of Neurology and Neuroscience, an unusual structure for a medical school, he notes; it functioned more like two departments, evenly divided between neurologists and research scientists. “It became an unwieldy structure for management and organization,” says Fink, the Louis and Gertrude Feil Professor in Clinical Neurology. “To expand and seek excellence in the clinical and research realms, we needed more leadership



Matthew Fink, MD

in both those areas.” Creating an institute instead of a department, he says, opens neuroscience to all specialties. “Anyone who is doing work that pertains to the nervous system—whether they be a psychiatrist, biochemist, physical chemist, neurologist, or any specialty—can reside within this institute. They can get support, laboratory space, administrative help, and mentoring—all the things a research scientist needs to be successful,” says Fink. “On the other side, the Department of Neurology can concentrate on what it does best, which is developing and building neurological services for patients.”

Collaboration across disciplines is critical for improving patient care. And demographic trends—a population that is getting older and heavier—mean that more and more people are being diagnosed with multiple co-morbidities. Vascular, metabolic, and neurological diseases are inextricably intertwined: patients with diabetes or hypertension have double the risk for Alzheimer’s, and obese patients with hypertension have four times the risk. As these issues grow in occurrence and complexity, Iadecola says, “we need to focus on this intersection of the brain, the vascular system, the immune system, and the metabolic system. With the new Institute, we will bring all of this together.”

WCMC



Jack Barchas, MD



ABBOTT

Philip Stieg, MD, PhD

A prime example of such cross-disciplinary interactions is the work of Hooman Kamel, MD, an assistant professor of neurology with a joint appointment in the Feil Family BMRI. In several investigations of how types of arrhythmia may be risk factors for stroke, Kamel's research involves cardiology, neurology, neuroscience, and imaging. "Departments are very much organ-based," he says. "As we delve deeper into our understanding of disease and care for patients whose conditions are more and more complex, we start running into walls that make it difficult to find the collaborators we need across departmental boundaries. That's one of the things that's so exciting about the Institute: it affords the opportunity to cross traditional departmental boundaries to the benefit of clinical as well as basic research."

Moreover, clinicians and researchers who work on the same diseases need to speak the same language, so they understand each other's efforts and challenges. To that end, the Institute

has implemented several weekly and monthly lecture series. One seminar series, Progress in Neuroscience, brings in top experts every week. Another, a Friday conference called Work in Progress, allows researchers to present ongoing projects or emerging theories with the aim of garnering advice or building collaborations. And once a month, the Bedside-to-Bench series brings in clinicians to talk to basic scientists—so, for example, researchers who investigate the molecular mechanisms of multiple sclerosis can gain a fuller picture of how the disease affects patients, and learn about fundamental clinical questions that remain unanswered and may inspire new bench investigations.

A priority of the U.S. Government's neuroscience initiative is advancing neurotechnologies, the tools scientists need to understand the brain. To that end, the Institute will devote resources to brain imaging—already a strength at Weill Cornell and a field undergoing rapid advancement. Through new imaging technologies, computational approaches, and data-gathering techniques, researchers can study the way brain centers connect to one another, both physically and functionally, providing a "circuit diagram" for the whole organ. Using new imaging tools and computational approaches, scientists are able to map neural networks and study their interactions in the normal brain and in the context of disease. This new field, known as connectomics, opens the way to examine the brain at a level not previously possible—with broad implications not only for illuminating disease mechanisms but also for developing early diagnostic tools. In Alzheimer's, for example, research has shown that changes in brain areas involved in memory can begin decades before cognitive symptoms appear. "By studying how the disease's process alters the connectome in high-risk individuals," Iadecola says, "researchers can gain insights into its early stage, when brain tissue has not yet been damaged and may be more amenable to treatment." At the most fundamental level, the Institute's researchers hope to provide insights into the cellular and molecular workings of the nervous system in order to develop new therapies. This need is most dire in the areas, such as Alzheimer's, where currently there are no effective treatments.

Alzheimer's is the most common cause of dementia and the fifth-leading cause of death in the United States, where some five million people now suffer from the disease—and experts predict that the number will double by mid-century. Worldwide, Alzheimer's is estimated to strike one

of every three people over eighty-five. While its impact is on the rise, a basic understanding of Alzheimer's molecular mechanism is still lacking, as the high-profile failures of clinical trials have shown. The question of whether amyloid plaques cause Alzheimer's—or are merely symptomatic—is hotly debated among researchers. Some believe the plaques are part of the disease process, even an important marker of it, while others call them the scars, lesions, or even “tombstones” of the disease—meaning that they are simply signs of what happened, appearing after the battle is lost. What is becoming clear, says Iadecola, is that “by the time you forget your first words, the horse is already out of the barn. The disease is well under way, and damage has already taken place. So we've got to understand what happened twenty years earlier, when all the neurons were still fully functional. What happened to make those neurons stop communicating?”

This question underscores one of the Institute's major efforts: to elucidate how neurons communicate with each other and with other brain cells to form an interacting network. “If you look at Alzheimer's disease, the traditional concept was that your neurons die and then you become demented,” Iadecola notes. “Now we know that's not completely true. What happens is that the neurons are still there, but they do not talk to each other. So it's not truly a degeneration process, at least at the beginning; it's a synaptic dysfunction process leading to a connectivity problem. Remarkably, what starts as a local problem within a certain brain region spreads to other areas, eventually involving the whole brain.” Among the Institute's initial strategies is to recruit in areas that have not been well represented at Weill Cornell in the past—and one such discipline is synaptic function and dysfunction. In Alzheimer's, schizophrenia, major depression, anxiety disorders, autism, addiction, and even stroke and trauma, either too much or too little information gets through, or the wrong message is transmitted. “It turns out,” Iadecola says, “that a big part of what goes wrong in diseases of the brain and mind involves neurons not talking to each other, or not talking to each other well.”

Training the next generation of basic and clinical neuroscientists is another core mission of the Feil Family BMRI, which has become home to the Neuroscience Graduate Program. Directed by M. Elizabeth Ross, MD '79, PhD '82, the Nathan Cummings Professor of Neuroscience, the program awards PhDs in neuroscience and engages sixty faculty members in laboratories at Weill Cornell and Sloan-Kettering. To further its training mission in translational neuroscience, in a joint effort with the Department of Neurology, the Institute sup-

'It turns out that a big part of what goes wrong in diseases of the brain and mind involves neurons not talking to each other, or not talking to each other well.'



ports the training of residents interested in combining clinical and research experience. In addition, thanks to a generous grant from the Leon Levy Foundation, the Institute offers post-residency training to highly qualified clinician-scientists interested in research careers in the neurosciences. One such individual is Makoto Ishii, MD '08, PhD, an instructor and Leon Levy Neuroscience Fellow. A clinical neurologist and bench researcher, Ishii is studying one path of potential promise in the treatment of Alzheimer's: how leptin, a hormone produced by fat cells, interacts with discrete regions of the brain to regulate the body's metabolic balance and memory processes. This is a new and promising area of research, which is particularly relevant today due to the increasing incidence of obesity and metabolic syndrome—and their still-mysterious link to Alzheimer's.

Such work underscores the Feil Family BMRI's boundary-crossing brand of neuroscience research. As an interdisciplinary hub, the Institute enhances Weill Cornell's investigative capacity and gives its neuroscience research the focus and resources it deserves. “We now have people who are dedicating all of their time and effort to building the research enterprise through this Institute,” Fink says. “There are great opportunities, and I'm optimistic that we're going to have some great breakthroughs.” ●

Well Traveled

For four decades, a pioneering program has encouraged minority college students to go into medicine

By Beth Saulnier

Photographs by John Abbott

Last summer, Duke University senior Corinne Pittman was taking the MCATs when she looked around and realized she was the only person of color in the room. An African American who grew up in Los Angeles, Pittman wasn't taking the test in some predominantly white suburb; she was in New York City, where she was studying in a summer program at Weill Cornell. "I was the only minority out of around thirty people," she recalls. "That was crazy to me. You can see just from that experience how necessary this program is."

The program Pittman finds so essential: Travelers, a seven-week immersive experience in medicine and research that brings twenty-five aspiring physicians—most of whom are members of underrepresented minorities—to the Medical College each summer. Pittman, an evolutionary anthropology major, did public health research under Carla Boutin-Foster, MD, MS '99, assistant dean for faculty diversity, studying the efficacy of a Weill Cornell program that supports women and minorities in academic medicine. "There are a lot of minority doctors, but even in the meeting I just came from, I looked around and it was three out of maybe fifty physicians," Pittman says. "With things like that, you see the need firsthand."

Boutin-Foster, director of the Comprehensive Center of Excellence in Disparities Research at Weill Cornell, is herself an alumna of the Travelers Program—one of several on the Medical College faculty. In 1988, as an undergrad at NYU, she did reproductive endocrinology work under contraception pioneer Brij B. Saxena, PhD. "It was critically important to my application to medical school," says Boutin-Foster, who



Aspiring MDs: Travelers students (from left) Corinne Pittman, Wisblaud Thermidor, and Sheila De Young



attended SUNY Downstate. “It helped me get in, and it was a top reason why I applied to Weill Cornell for residency.” For the past fifteen years, Boutin-Foster has given back by serving as a Travelers mentor. “It keeps me motivated,” she says. “As a physician you often forget the big picture. But when these students come in with projects they want to do, it reminds me of that young girl who wanted to become a doctor and change the world.”

Founded four decades ago amid the societal shifts of the civil rights movement, Travelers—which is named in honor of the foundation that supports it—is believed to be the longest-running program of its kind in the U.S. It was started in 1969 to help minority

students strengthen their applications to medical school by doing research, connecting with mentors, and getting an up-close look at a top-flight academic medical center. Back then, it was geared toward four racial/ethnic groups: African Americans, Native Americans, Mexican Americans, and Puerto Ricans living on the mainland. “Some medical schools looked at their own history in terms of the number of blacks and Latinos, and they saw it was horrible,” says Elizabeth Wilson-Anstey, assistant dean for student affairs and the program’s longtime administrator. “There was a social consciousness that was invoked at the time. Schools were trying to do the right thing.”



Carla Boutin-Foster, MD, MS '99

'It served as both an enrichment program and a networking opportunity—to meet people who were at your same level.'

Among the program's early participants was Weill Cornell's own Carol Storey-Johnson, MD '77. Now senior associate dean for education, Storey-Johnson attended in 1972, the summer before her senior year at Yale, recalling the experience as "eye-opening." "Those were the early days of increasing the numbers of minority students," she says. "From an institutional perspective, it was a pipeline program. And from an individual perspective, it served as both an enrichment program and as a socializing and networking opportunity—to meet people who were at your same level, because there were not a lot. Now we're used to classes that are half people of color and half white, but in those days you'd have a class of a hundred students where you might have four or five who were African American."

Today, Travelers is no longer limited to students of color; in 2004, amid national concerns about reverse discrimination, it dropped "minority" from its name. Now it's open to anyone with a demonstrated interest in aiding medically underserved communities. Past participants have included a Caucasian woman who had once been homeless and planned to practice medicine in an economically disadvantaged area. Still, most are members of underrepresented minority groups, primarily African American and Latino. "It's still a challenge to recruit from groups who are underrepresented in medicine," says Storey-Johnson, who notes that Weill Cornell is the largest recruiter of minority students of any private medical college



Carol Storey-Johnson, MD '77

in the U.S. (other than the historically black schools), at about a fifth of each class. “We and our peer institutions are looking for the very best students. First, you have a limited pool of African-American applicants, and then to get the cream of the crop, everyone’s trying to recruit the same folks.”

According to statistics from the AAMC, minority application numbers have mostly been headed in the right direction over the past generation—but arguably not fast enough. The number of Hispanic or Latino applicants more than tripled from 1977 to 2011 (from 955 a year to 3,459), but applications by black students grew just 36 percent, from 2,361 to 3,215. (The percentage of American Indian or Alaska native applicants actually declined by 19 percent, though the raw numbers are small, decreasing from 124 to 101.) In 2011, whites made up 54.6 percent of the applicant pool, compared with 7.9 percent Latino/Hispanic and 7.3 percent African American. “There is still a dearth,” says Wilson-Anstey. “There are still students who don’t get the right information from their premed advisers, and that is a major problem. Some don’t necessarily see students as works in progress. They will say, ‘If you get a C, forget it. You can’t be a doctor.’ This is one of the major challenges we in minority affairs find, and it’s ever so maddening. Students may come from a place that didn’t have the best high school preparation, so you have to work with them to help them succeed.”

For Gabrielle Pyronneau, Travelers offered invaluable guidance in making some big-picture decisions about applying to medical school. A senior biochemistry major at Villanova University, Pyronneau started volunteering in the ED of her local hospital when she was in high school. Although spending the summer at Weill Cornell and doing osteoporosis research in the lab of Adele Boskey, PhD, at Hospital for Special Surgery confirmed that she is “absolutely, 100 percent, without a doubt” sure that she wants to be a doctor, she had been on the fence about when to apply. “I was going through this conflict, wondering if it was appropriate to apply right now. I have good credentials, but I feel like I can get more experience, to become more mature and understand the profession a bit better,” says Pyronneau, a Haitian American who grew up in northern New Jersey. “Most



PAUL CRANE

Science project: Travelers student Gabrielle Pyronneau in the lab at her home institution, Villanova University

of the students in Travelers are taking a year or two off—and most of the program assistants, who are rising second-year medical students, took time off before they came here. That solidified my decision to take classes or do research, and apply either next year or the year after.”

Sheila De Young, a biology major at Susquehanna University who is of Dominican descent, received her MCAT scores over the summer—and the results were disappointing. She turned to Wilson-Anstey, who offered advice and encouragement, helping her evaluate why she didn’t do as well as she hoped. “We have such a great support network here,” says De Young, a student athlete who enjoyed running around the Central Park reservoir during her time in the city.

“When you’re here you become part of the Weill Cornell family. They want to see you succeed. I’m completely appreciative of the fact that they take time to get to know you and say, ‘You can still be a doctor. It’s just one obstacle. It’s going to help you grow even more. Stick with it, you can do it, it’s OK to hit a bump in the road.’”

De Young was particularly moved by what Carlyle Miller, MD ’75—the former associate dean for student affairs and equal opportunity programs who oversaw Travelers for many years before retiring last summer—said during orientation: “He told us, ‘You *will* be a doctor. If it’s what you want to do, you *can* become doctors.’ Having this affirmation, I know it will be OK. I can do this. I would not be satisfied with my life if I

'You're making a difference—changing not just Weill Cornell but other institutions, by introducing them to students who might have been overlooked.'

weren't a doctor. I know it's early, but I think it's my calling, and I'd find so much joy in it." On top of support from mentors, De Young says, is the camaraderie of her peers. "I come from a very small school, and I can count the premed students on two hands," she says. "There's often not enough support if I'm stressed. Just to have a group of twenty-four students you can go to and say, 'I am so stressed right now. How are your applications going? How are you preparing for your MCATs?' Having someone else to relate to is very important."

During their month and a half in Manhattan, Travelers students are housed free in Olin Hall and receive a stipend of \$140 a week; if they live far from the city, their transportation costs are covered. They work in their respective labs Tuesday through Friday, with Mondays reserved for lectures, including a cardiac physiology course and talks on such subjects as public health, cultural competence, health-care disparities, medical careers, and the admissions process. They also get to shadow doctors in the clinics, visit the gross anatomy lab, and observe procedures. At the end of the summer they take a final exam, do an oral presentation on their research, and submit a paper.

"This program has populated medical schools with talented students who probably wouldn't have gone otherwise," says Joseph Murray, MD, associate dean for student affairs and equal opportunity programs, who took over the leadership of Travelers upon Miller's retirement. "So you're making a difference—changing not just Weill Cornell but other institutions, by introducing them to students who offer a wonderful perspective but might have been overlooked. It's an important legacy." And, he adds, the program's longevity is an accomplishment in itself. "In an era of medicine where things often start and fade away in a year or two—where everything's a pilot project because nothing is sustainable—to have a program that has lasted forty years is absolutely astonishing," he says. "It's a rarity, and it should be celebrated and treasured."

Travelers counts among its alumni many distinguished physicians in academic medicine and elsewhere. They include Gary Butts, MD '80, associate dean for diversity programs, policy, and community affairs at Icahn School of Medicine at Mount Sinai; Gary Gibbons, MD, director of the NIH's National Heart, Lung, and Blood Institute; Warriia Esmond '80, MD '84, medical director of Settlement Health in Harlem; and Jean Ford, MD, chair of the Department of Medicine at Brooklyn Hospital. "It was an amazing experience," says another notable alumnus, Henri Ford, MD, vice dean for medical education at USC's Keck School of Medicine and Jean Ford's brother. "It was my first truly rigorous introduction to what medical school was going to be like. The mentoring was particularly wonderful. They told us that we were special in many ways, but that to capitalize on what was in front of us, we had to prepare. And being exposed to medical students, talking to them, and

having them serve as role models got me excited and put my mind in the proper disposition to tackle the rigors of medical school."

In the summer of 1979, while a Princeton undergrad, Ford worked under hematologist/oncologist Roland Mertelsmann, MD, PhD, at Sloan-Kettering—an experience that set him on the path to a career in academic medicine. He went on to graduate from Harvard Medical School and, in large part because of his Travelers experience, did his surgical residency at Weill Cornell, where he served as chief resident. "The program was a tremendous pillar in my overall foundation and preparation," he says. "It played a pivotal role in where I am today, and I'm so grateful for it."

At USC, Ford has faced the same minority-recruitment challenges as his counterparts at Weill Cornell and elsewhere, particularly in attracting qualified African-American candidates. "So, guess what I did two years ago?" Ford says with a chuckle. "I started a program, because I remembered how incredibly effective Travelers was. We modeled our program very much along the lines of what I saw at Weill Cornell, because I believe it's the prototype for what a successful program should be. Just look at those of us who went through it and what we're doing now. I want to replicate it as much as I can." In addition to upping the numbers of minority applicants, Ford and others say, there's a pressing need for more people of color in academic medicine in general. "We've made some strides, but when you look at the numbers, especially in the composition of medical school faculties, it is woeful," Ford says. "If you take away the historically black colleges, at most of the medical schools on average it's 2 percent or less. That's totally unacceptable."

To address the disparity at Weill Cornell, in 2009 the Medical College and Graduate School of Medical Sciences launched the Office of Faculty Diversity. Co-directed by Boutin-Foster and Rache Simmons, MD, the Anne K. and Edwin C. Weiskopf Professor of Surgical Oncology, it works to increase the participation of women and minorities through recruitment, mentorship, professional development, networking, work-life balance improvements, and more. In addition to enriching the faculty, such programs created a positive feedback loop: more minority mentors can attract and nurture more minority students, who go on to become mentors themselves. "By having a diverse medical school class, a diverse residency class, and a diverse workforce you learn from your colleagues and they learn from you. It's a great sounding board," says Murray, who notes the need for diversity not just in terms of race and ethnicity but also religion, sexual orientation, and gender. "You don't learn just from textbooks. You learn to care for real people, and America is a diverse nation. Physicians of the future have to be fluent in taking care of a wide range of patients."

Wilson-Anstey stresses that Travelers isn't intended to be a feeder program to Weill Cornell. While most of the students who complete it go on to medical school, she says, there are a number of reasons—including the preference for a school located elsewhere or one that offers a better financial aid package, as well as Weill Cornell's highly competitive admissions standards—why only one or two from each year matriculate. But an informal poll of a half-dozen summer 2013 participants shows that interest runs high; inadvertently or otherwise, Travelers is a powerful recruitment tool. Asked if he's interested in applying to Weill Cornell, Haitian-born City College graduate Wisblaud Thermidor flashes a wide, infectious smile that translates into an unqualified yes. "Two things I've taken away from this program are commitment and perseverance," he says. "Obstacles will come along the way—but I'm determined to become a great doctor." ●

Notebook

News of Medical College and Graduate School Alumni

Dressed for success: Members of the Class of '17 receive their white coats at the traditional ceremony marking the beginning of their medical education.



PHOTOS IN THIS SECTION BY WCMC



PROVIDED

R. Ernest Sosa, MD '78

Dear fellow alumni:

We are thrilled to welcome the Class of 2017 to Weill Cornell! At the annual White Coat Ceremony in August, the new students recited the Hippocratic Oath for the first time and received their white coats and stethoscopes, which were generously provided by The Buster Foundation and many alumni donors. I'd like to extend a special thank you to all alumni who sponsored a student's stethoscope this year. This annual event marks a rite of passage for incoming medical students whose interests, accomplishments, and talents will contribute significantly to the Weill Cornell community.

We have heard from several of our newest alumni about their adventures in the medical world. Since receiving their degrees last spring, they have spent long but exciting days in their internships and residencies across the country. Please don't hesitate to reach out to these young alumni. If you would like a copy of the match list, please contact the Office of Alumni Relations at alumni@med.cornell.edu or (646) 317-7419.

This fall Alumni Relations will hit the road again, hosting regional dinners in various loca-

tions in the tri-state area as well as around the country, including Providence, Baltimore, Washington, and Chapel Hill, N.C. These intimate gatherings will be great opportunities for alumni to learn more about what's going on at the Medical College and to connect with alumni in their area. For more information, please contact Susan Solomon, alumni relations and gifts officer, at sus2033@med.cornell.edu or (646) 317-7414.

Plans are under way for the next Reunion, which will take place in the fall of 2014. The weekend promises to be full of celebrations, engaging guest speakers, and exciting institutional updates and tours. The dates will be announced soon, so stay tuned for more details. I look forward to seeing the extended Weill Cornell family get together then.

As always, thank you for your continued support of the Alumni Association, the Medical College, and our students. Weill Cornell would not be the special place it is without you.

Best and warmest wishes,

R. Ernest Sosa, MD '78
President, WCMC Alumni Association
drsosa@nyurological.com

'A second career is a marvelous adventure and keeps this retired physician from bothering his saintly wife.'

Clay Alexander,
MD '61

1940s

Howard S. Dunbar '41, MD '44: "I'm happy at Vicker's Landing. I read a lot and try to keep up with the wonderful advances over the past 70 years."

Douglas E. Johnstone, MD '45: "As I write this, I'm 92 and 8 months. I still read the *New England Journal of Medicine* and *JAMA*, plus the journal in my specialty. I enjoy reading and learning new things."

Herb McCoy, MD '45, continues to scuba dive and snorkel at the age of 92. He was featured in a recent article in *Asian Diver* ("A Dive for the Ages") about a trip he made to the Wakatobi Dive Resort in Sulawesi, Indonesia, a favorite of his for the diversity of its marine life and the healthy condition of the reefs.

1950s

Sarah Nelson, MD '50: "I'm enjoying a whole new phase of life in assisted care at Belmont Village with my second husband, Bernie Makovsky. We're keeping in touch with our five children and eight grandchildren, and pursuing old and new interests while we gain a new awareness of geriatrics. Old friendships continue to enrich our lives. We still enjoy swimming laps outdoors at the Y three times a week, too."

Stanley Birnbaum, MD '51: "I'm now retired from practice, but still doing some teaching in the ob/gyn department."

Edward Swain, MD '51: "I turned 87 in October; still living in Hartford, CT. I retired from my office psychotherapy in 1999. I'm still physically and mentally active, despite a CVA in 2011. Off the top of my head, I just now could recall the names of more than half of our class."

Peter Albright, MD '53: "Bets, my wife of 45 years, and I are enjoying a quiet and happy retirement on our beautiful hillside in northern Vermont, with loving and caring family nearby. I have been honored by the American Board of Holistic Medicine and the American Holistic Medical Association with life memberships. I send my affectionate regards to any other survivors in our class."

Joseph Plataras, MD '53: "I'm 85 and counting, healthy, and enjoying life on the eastern shore of Mobile Bay in Daphne, AL. I'm enjoying local live and cinematic opera and ballet—I never had the opportunity during my practice years. Golf and ballroom dancing, as well as visits to family scattered along the East Coast, continue to occupy our time. My best wishes to all my classmates."

Jack Richard, MD '53: "I'm still working for the New York State Department of Health in the Office of Professional Medical Conduct and teaching medical ethics at WCMC. I know I am getting old when I attend medical grand rounds.

Whereas at one time I knew almost everyone there, I now recognize fewer than 10 percent. I guess that's progress."

J. Kenneth Herd, MD '54: "I'm back in the research lab solving problems of cystic fibrosis at East Tennessee State University."

Ronald Arky '51, MD '55: "I am still active as the Daniel D. Federman Professor of Medicine and Medical Education at Harvard Medical School. In May of this year, I was honored with the 2013 Lifetime Achievement Award by the Massachusetts Medical Society. This fall the Arnold P. Gold Foundation will honor me at the Golden Thread Ceremony in Boston."

William Augerson, MD '55: "I'm nearly retired, but still busy with the county board of health. Obesity and tick-borne diseases are major challenges. I'll retire fully in March 2014."

Howard Feinstein '51, MD '55, PhD '77: "My wife, Rosalind, and I are traveling to China at the end of October. I continue to practice psychopharmacology half-time."

Ivan Gendzel '52, MD '56: After fifty years in Palo Alto, CA, Loi and Ivan Gendzel moved to The Forum, a retirement community in Cupertino, CA. Loi, who was a social worker at New York Hospital when they met and married in May 1957 while Ivan was an intern, died suddenly and unexpectedly on July 25, 2013. Ivan will continue to live at The Forum, where he is a board member at the Health Care Center, an editor for the magazine, and involved in other activities. Unfortunately, he has discontinued running marathons.

Sid Goldstein, MD '56: "I am still doing some practice and hospital rounding mixed in with golf in the summer and watercolor painting in the winter. I'm a professor of medicine at Wayne State University and on the Board of Visitors. I'm doing bedside teaching and physical diagnosis trying to emulate my mentor, David Barr."

Ramon Joseph, MD '56: "I'm retired in sunny Arizona and doing some non-clinical pro bono work. I'm active in my Episcopal Church and local theater productions. My health is still good except for osteoarthritis and controlled DM. My three children and six grandchildren are all doing well. I've been remarried for four years to Karen, a fantastic classical pianist."

Frank G. Moody, MD '56: "I continue to work as a professor of surgery at the University of Texas Medical School in Houston. I was reminded of my longevity a few months ago when I received a 30-year achievement award from Texas. It seems like only yesterday that I left my job as chairman of the Department of Surgery at Utah for a similar assignment in Texas in 1983 on a ten-year contract. My passion for the mountains has kept me commuting from my home in Utah to the Texas Medical Center. I

primarily participate in small-group discussions with medical students. The shift from administration at 66 years of age, operative surgery at 75, and research at 82 has not led to withdrawal symptoms. In fact, I have been able to devote more time to keeping my fingers on the pulse of surgery around the world. My soul mate, Inger Ardern, and I have just returned from a wonderful visit to Moscow, St. Petersburg, Helsinki, and Ghent, Belgium, reviewing the remarkable progress of medicine in that part of the world. It is a privilege to have had such a long and interesting life caring for the sick and injured, and teaching the students to 'Go and do thee likewise.'"

Don Goldstein, MD '57: "My wife, Connie, and I had lunch with Bill Plauth, MD '57, and Bobbie during our week's vacation in Santa Fe attending the opera. Their lovely granddaughter, Grace, attended the performance that evening as well. Both Bill and Bobbie are doing well and enjoying life in Santa Fe. We send our best regards to all our classmates."

John Chard, MD '58: "I finally retired in June 2012."

Frederic G. Dalldorf, MD '58: "My wife and I have moved from Chapel Hill, NC, to Pittsboro, NC. Our e-mail is unchanged: jbultman@bellsouth.net."

Larry Grolnick '54, MD '58: "I'm still practicing psychiatry in White Plains and living in the Murray Hill section of Manhattan."

Jim Hollister, MD '58: "I have been married to Marjorie Kuhn since 1958. We met doing an LP when she was a student nurse. We are slowing down with aches and pains. Right now, we are in the process of downsizing and will be moving to a two-bedroom condo, still in Groton, CT. Our four children are doing well and are spread out from Sheboygan, WI, to Oak Park, IL, to Naples, FL, and Cambridge, MA, with five grandchildren and one more on the way."

Robert G. Merin, MD '58: "We are in Dunwoody Village, a continuing care community in Newtown Square, PA, and highly recommend it. It takes a lot of the anxiety away for those of us who are not aging as gracefully as we might like."

George E. Shambaugh, MD '58: "I continue to participate part-time as a volunteer in the teaching of clinical endocrinology on the Emory Service to fellows and house staff at Grady Hospital. With the frustrations of the newly installed electronic records, I have asked why I continued to work there. A fellow overheard me and said, 'You are here for

us.' Shades of our preceptors—superb role models I have learned to re-appreciate. I am learning the bluegrass banjo, a real struggle over arthritis. And I have begun to raise tart cherries on 14 acres of land on the Old Mission Peninsula in northern Michigan. Roberta and I continue to live in our large home in Atlanta and welcome any and all of you."

John N. Baldwin, MD '59: "I'm out of

cion. I'm in touch with **Bob Post, MD '60**, and **Bill Webber '54, MD '60**, occasionally, which is wonderful. Best wishes to you all."

Clay Alexander, MD '61: "I published my first novel, *Ultimate Malpractice*, in August. It is available as an iBook on Amazon or through my website: clayalexanderbooks.com. The protagonists are a flawed surgeon and an unscrupulous personal injury lawyer—but I want to reassure



Many mentors: Dean Laurie Glimcher, MD (front), and fellow faculty at the White Coat Ceremony

the OR and onto the Pacific Ocean at Glacier Bay, AK, taking three groups of five during the summer, targeting king salmon and barn-door-sized halibut."

Thomas M. Nall, MD '59: "Having reached 80, I have decided to move back to my hometown of Freedom, KY, where I have family. Anyone brave enough to venture into the wilds of southwest Kentucky is welcome to visit. I underwent triple coronary bypass surgery in September and feel great. No cardiac symptoms."

1960s

Walter Lewis '54, MD '60: "Life is great. I'm still doing some consulting work to keep my brain functional. Our offspring span the generations with three children, four grandchildren, and four great-grandchildren. My youngest daughter is still in college/premed—no coer-

everybody this is not an autobiography. My next novel will be published in January. A second career is a marvelous adventure and keeps this retired physician from bothering his saintly wife."

John Gundy, MD '62: "Since retiring from pediatrics in 2008, I have had about ten poems published, including 'Four Years, Five Spot,' inspired by visits to the Five Spot, appearing in the *Edison Literary Review*."

Sumter Carmichael, MD '64: "As we approach our 50th anniversary, I am happy to announce that I have finished two of the three books I have been working on for the past seven years. The first, *HEAL: A Psychiatrist's Inspiring Story of What It Takes to Recover from Chronic Pain, Depression, and Addiction... and What Stands in the Way*, will be on Amazon next month. The second, *HEAL THYSELF: What You Can Do to Recover from Chronic Pain or Depression*,



Looking ahead: First-year students listen to the White Coat Ceremony speakers.

should be on Amazon by the first of the year. I would love to get your feedback, so please write a review for Amazon. Happily for me, I married my sweetheart four years ago. We spend two months every summer in Northern Ireland writing, walking, sailing, and painting. I look forward to seeing you all next year. My e-mail is bellesumter @ bellsouth.net; website is manage yourchronicpain.com."

Jack Rounds, MD '64: "I retired from practice with East Texas Anesthesiology Associates in March of 2011. This gave Virginia and me the freedom to move to St. Augustine, FL, in February of this year. Here we've been able to facilitate the enrollment of our grandson in the Florida School for the Deaf and Blind, where he is now thriving. In my ministry as a Catholic deacon, I'm serving at the Cathedral Basilica of St. Augustine, the oldest parish in the United States. It dates to the first Mass celebrated in 1565. It's thrilling to be part of such a continuous tradition. We're looking forward to visiting and enjoying our other grandchildren in Anchorage, AK, and Greenwich, CT."

Ian Happer, MD '66: "We moved in June to a continuous care retirement community. It was quite a shock to return East after 43 years in Denver, CO, but we are adjusting. There are a lot of New Yorkers here, but no Coloradans. I'm healthy and happy."

Roger Lewis, MD '66, and his wife, Liz, celebrated their 50th anniversary with a cruise to the Caribbean. They were married during medical school at St. Ignatius Church after Roger's first year. Their son, Lance, is an interventional cardiologist in Wilmington, NC, while Roger continues as a public defender in Daytona Beach, FL, and Liz is retired enjoying her five grandchildren.

Charles H. Hennekens, MD '67, the first Sir Richard Doll Professor and Senior Academic Advisor to the Dean of the Charles E. Schmidt College of Medicine at Florida Atlantic University, was awarded the 2013 Fries Prize for Improving Health in a ceremony at the Centers for Disease Control and Prevention (CDC) in Atlanta, GA. The prize was established in 1992 by the James F. and Sarah T. Fries Foundation to recognize individuals who have done the most to improve health. Hennekens takes his place among honorees that include former surgeon general of the United States **C. Everett Koop, MD '41,** and former director of the CDC Dr. William Foege. In 2012, Science Heroes.com ranked Hennekens #81 in the history of the world for having saved over 1.1 million lives based on his seminal research on aspirin, statins, angiotensin converting enzyme inhibitors, and receptor blockers as well as beta blockers in reducing the risks of cardiovascular disease.

Henry J. Kaplan, MD '68, is the Evans Professor of Ophthalmology, chair of the Department of Ophthalmology and Visual Sciences, and director of the Kentucky Lions Eye Center at the University of Louisville.

Ronald S. Rankin, MD '68: "I'm still barely working part-time as a radiologist. I'm mostly out of town and enjoying the travel, but also enjoying the grandkids."

Elaine Sarkin Jaffe '65, MD '69, will receive the Henry M. Stratton Medal for Clinical/Translational Research from the American Society of Hematology. Dr. Jaffe is head of the Hematopathology Section of the Laboratory of Pathology in the Intramural Program of the National Cancer Institute (NCI).

1970s

Kathryn E. McGoldrick, MD '70: "I was awarded the 2013 Distinguished Service Award by the Society for Ambulatory Anesthesia (SAMBA). This is the highest honor that SAMBA bestows. In addition, I was recently informed that I have been elected to Honorary Fellowship in the College of Anaesthetists of Ireland. The Conferring Ceremony will be held in Dublin on May 15, 2014."

Richard Lynn, MD '71: "I am pleased to announce that after 37 years of a busy clinical practice of vascular and general/oncological sur-

gery I stopped my practice, effective April 30. Fortunately for only good reasons. Like most of us, I loved practicing, just like Dr. Hochstein and others did. On March 6, I discharged the last of the four big operative cases that I had done the past week, and each one had done better than the next. If I must say so, I was feeling pretty good. I arrived at my office to start a busy day, and for once I was early. Sitting in my waiting room, alone, well-dressed, was a 90-year-old gentleman I had operated upon two years ago for a severe acute emergency. He had no scheduled appointment, and when I asked him why he was there, he said, 'I wanted to come on the anniversary of the surgery to thank you for saving my life.' When I heard that, I looked up to you-know-who and said to myself that it wasn't going to get any better than that. I chatted with him for half an hour and then started my day—and the first post-op patient, also 90, thanked me for the privilege of having me as her surgeon. When I finished with her, I called my wife and told her that she had to take a ride and to cancel her clients. She wondered what was the matter, but I told her it was very important. Needless to say, I spontaneously decided to stop. I wanted to go out on top of my game, as I saw it. Up until that moment I hadn't thought at all about doing this for another two or three years at the earliest, as my skills were perfect and despite all of the surrounding problems in medicine, I still was passionate about what I was doing and learning and applying new techniques (robotics, endovascular stents, etc.). My mentor, William Silen, chief of surgery at Beth Israel in Boston, stopped at 67 (also on top of his game), and the last operation he did was a Whipple on his first chief resident, who is now the chief of surgery at Tufts, and that was 1995. I too was 67. Ironically, I had just spoken to him two days before because I had heard that he wasn't feeling well, but fortunately he was fine. I asked him (not knowing what would happen two days later) when I would know it was time to stop, and he said, 'You will know!' I am now teaching full-time at Florida International University College of Medicine in the Department of Surgery in the surgical clerkship. It is the one part of my professional career that I missed not having. From June 28 to July 13, I was in Trujillo, Peru, with 16 second-year FIU students doing missionary surgery. What a validating, giving-back experience it was. This global health experience is being placed into the surgical curriculum twice a year, and yours truly is the one to be in charge. Thank God for being able to speak fluent Spanish. I am grateful to Weill Cornell for placing me on this path of 45 years. We were blessed to be at 1300 York Avenue! I'm still in Palm Beach. Come visit. E-mail: rich549bux@aol.com. P.S. We have 17 grandchildren, and I

don't think they are finished yet."

John Mitchell '69, MD '73: "I had my first grandchild, Zachi Wesley Okorie, on August 15, 2013. His parents are **Asha Yancy Okorie, MD '05**, and **Uzo Okorie, MD '05**. My first play to be produced will be here in New York City (date and place to be announced). The play, *A Few Good Men*, is about the black Marines of Montford Point, NC. It features four Harlem jazz musicians who join the Corps in 1942. Its protagonist, Aloysious Sam '44, is drafted out of Cornell, where he was in the marching band. It's fun and historical. Please contact me at mitchellmdj@verizon.net for the date and venue."

Brian Walker, MD '73: "I retired this year after 35 years in private hematology/oncology practice. I'm enjoying all the benefits of the Naples, FL, lifestyle, including the year-round outdoor activities of tennis and boating. My wife, Tami, and I will continue extensive travel plans: Asia and Africa in 2014."

Thomas M. Anger, MD '75: "I am getting into cycling now that I have the time and the bike. It's lots of fun, but the Lakeshore Path in Chicago does have some hazards."

Roger W. Geiss, MD '75: "Although I am somewhat jealous to read about my classmates who are retiring, I continue to enjoy teaching full-time at the University of Illinois College of Medicine at Peoria. In addition to the pleasure of mentoring many fine young people, my teaching activities have literally taken me all over the world. This year alone, I was invited to speak on learning objectives in general and systemic pathology at the first Brazilian Forum on Pathology Education in Botucatu, Brazil, and I also facilitated a workshop on integrated examinations at the 17th annual meeting of the International Association of Medical Science Educators in St. Andrews, Scotland. On the domestic front, I gave presentations at the annual meetings of both the Group for Research in Pathology Education in Augusta, GA, and the Association of Pathology Chairs in Boston. Needless to say, extra time for sightseeing was a significant component of all of these trips.

'Sitting in my waiting room was a 90-year-old gentleman I had operated upon two years ago. He said, "I wanted to come on the anniversary of the surgery to thank you for saving my life." I said to myself that it wasn't going to get any better than that.'

Richard Lynn, MD '71

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'I joined the Alpine Clinic and will be concentrating on orthopaedic sports medicine and helping take care of the US Ski Jump Team.'

Jeffrey Kauffman,
MD '93

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from you!

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your classmates.

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cf33@cornell.edu or by mail:
Weill Cornell Medicine
401 East State Street, Suite 301
Ithaca, NY 14850



Between journeys, Dianne and I continue to enjoy time with our grandchildren, who are now 14, 12, and almost 11 (boy, how time flies). Hope to see everyone at our next reunion."

William S. Packard, MD '76: "I retired from 28 years of working for Suffolk County's Division of Mental Hygiene. I am continuing my studies at SUNY Stony Brook, enrolled in the master's program in French. I still play the flute with my chamber music group, Basically Baroque."

Paul F. Lachiewicz, MD '77: "I retired from my faculty position at UNC and joined a small private practice in Chapel Hill. Duke Orthopaedics asked me to join their ranks, so I am a consulting professor and teach part-time at the Durham V.A. I'm continuing my clinical research and writing in my private practice. I was elected president of the North American Hip Society; my term runs from March 2014 to March 2015. Ave, a developmental pediatrician at Duke, and I have been married for 36 years now, with five grown children and four grandchildren."

Robert A. Schultz, MD '78: "On May 28 of this year, my book *Autobiography of a Baby Boomer* was published by LightMessages (Durham, NC). It contains some vivid history of the Medical College, featuring **J. Robert Buchanan, MD '54**, and John C. Ribble, as well as entertaining jaunts through the New York Hospital. Kindly visit www.autobiographyofababyboomer.com for further insight. It is a tribute to my alma mater, which took me back into the fold."

William Burtis, MD '79: "My wife had a stroke, but she is doing OK. I retired in February."

Thomas H. Lee, MD '79, reports that he recently published a history/biography, *Eugene Braunwald and the Rise of Modern Medicine* (Harvard University Press). He has left his role as network president of Partners Healthcare System to become chief medical officer for Press Ganey, and he continues his part-time practice as a primary care physician/cardiologist at Brigham and Women's Hospital.

1980s

Robert P. Naparstek, MD '80: "My wife, Lisa, and I are very happy empty nesters living in Providence, RI. I consult in occupational and environmental medicine and related public health matters. All in all, things are good."

Francis X. Brickfield, MD '81: "I'm beginning my second year of law school at George Mason University. Going back to school is fabulous."

Lee Shulman '79, MD '83: "I'm still

at Northwestern. This is the fifth year of my endowed chair (the Anna Ross Lapham Chair in Obstetrics and Gynecology), and I'm still chief of clinical genetics. My daughter, Becky, will be getting married this January. I hope all are well."

David A. Haughton, MD '84: "My recent flash exhibition at Visual Space was a great success. The group of related works was displayed over three days in the small but elegant space. The paintings were professionally hung by Brandon Thiessen Art Services and looked wonderful. Many good friends attended."

Stephen Rosenfeld, MD '86: "I was appointed to the Secretary's Advisory Committee on Human Research Protections (SACHRP). After a five-year diversion to Washington State, I've returned to the East Coast and our house in Maine."

Jack Chen '84, MD '88: "I live with my wife and two children in suburban Atlanta. I typically travel to China a couple of times a year to speak at their national cardiology meetings. We are very excited that our home renovation will be featured on CNN in either late 2013 or early 2014. I would love to catch up with my classmates."

Karl A. Illig, MD '88: "I am the lead editor of a multi-author textbook, *Thoracic Outlet Syndrome* (Springer), the first comprehensive textbook on the subject. Thoracic Outlet Syndrome is a group of disorders related to compression of the nerves, artery, and vein as they traverse the base of the neck to the arm. We delved into all phases of the pathology, diagnosis, and treatment of each subtype, include sections on the psychological and medico-legal aspects of the problem, and included a chapter by patients who can describe their experiences with this often misdiagnosed problem. I'm professor of surgery and director of the Division of Vascular Surgery at the University of South Florida in Tampa after having been at the University of Rochester until 2011. I have a son who's a senior in high school and a daughter who's a sophomore, and I'm just starting to enjoy my second 50 years of life in good health."

Mark Pochapin, MD '88: "After 25 years, I left the faculty of Weill Cornell Medical College and have become the director of gastroenterology and the vice chair of clinical affairs at NYU."

Theresa Rohr-Kirchgraber, MD '88, was recently named the chief physician executive of the Eskenazi Community Health Ambulatory Center at the on-campus location in Indianapolis.

1990s

R. Hal Baker '86, MD '90: "In August I was promoted to senior vice president, clinical improvement, in addition to the previous CIO role for WellSpan Health, a 9,600-employee health system in south central Pennsylvania."

Daniel B. Jones '86, MD '90: "I just returned from the 56th meeting for the International

Surgery Group (<http://international-surgical-group.com/>) with my wife, **Stephanie '88**. I caught up with classmate **Ron Dematteo, MD '90**, as well as **Yuman Fong, MD '84**, and former Weill Cornell chair **John Daly, MD '68**. Since Ron lives across the street in NYC, he promised me he would attend our next class reunion. My new book, *Atlas of Laparoscopic Hepato-Pancreato-Biliary Surgery* (Cine-Med), co-written with Dr. Michel Gagner, will be out soon."

S. Robert Rozbruch, MD '90: "I served as president of the Limb Lengthening and Reconstruction Society last year. I'm embarking on an exciting project as editor-in-chief of an upcoming textbook published by Springer, entitled *Limb Lengthening and Reconstruction Surgery—Case Atlas*. This will be a compilation of 200 clinical cases from 60 surgeon contributors worldwide."

Adam P. Dicker, PhD '91, MD '92: "On a happy note, my oldest child (daughter Michal), who was born during my ob/gyn rotation 22 years ago, was married this past Sunday."

Abraham Leung, MD '91: "I am happy to share that a Phase 3 study in which I served as the medical director has been accepted as a late-breaking abstract for the upcoming ECCO/ESMO European Cancer Congress Meeting: Abstract #15LBA entitled: T-DM1 for HER2-positive metastatic breast cancer: Primary results from TH3RESA, a Phase 3 study of T-DM1 versus treatment of physician's choice."

Jeffrey Kauffman, MD '93: "I have moved my orthopaedic practice from Sacramento, CA, to Franconia, NH. I joined the Alpine Clinic and will be concentrating on orthopaedic sports medicine and helping take care of the US Ski Jump Team."

Najjia Mahmoud, MD '93, was appointed chief of the Division of Colon and Rectal Surgery in the Perelman School of Medicine at the University of Pennsylvania. She is an expert in complex pelvic floor reconstructive procedures and minimally invasive approaches to colorectal cancer surgery. Dr. Mahmoud is a program chair with the American Society of Colon and Rectal



Surgeons. She also serves as associate editor for the journal *Diseases of the Colon and Rectum*.

David Rosenberg '89, MD '93: "In August 2013 our practice opened its own freestanding surgical center at 225 E. 64th Street in New York City. Named the Manhattan Facial Surgery Suites PLLC, it's dedicated to providing outstanding surgery in the most beautiful setting possible."

Yvonne Funcke-Sandweiss, MD '94: "I'm a pediatrician living in Scottsdale, AZ, and married to Dr. Bryan Sandweiss. We have two wonderful children: Ethan, 12, and Erin, 9. I'm the chair and medical director of Reach Out and Read Arizona. I am also part of the obesity committee of the AZAAP."

James McClane, MD '95: "I am living in Fairfield, CT, with my wife, Kerry, and two sons, Jack, 6, and Ryan, 4. I'm chief of the section of colon and rectal surgery at Norwalk Hospital and have a special interest in minimally invasive/robotic colorectal surgery."

Todd Gorman, MD '96: "Greetings to all of my Class of '96 peers. I'm still living in Quebec City and loving the Canadian health-care system. My wife, Nat, and I work in the same hospital and see each other more in the ICU than at

Try it on for size: Dean Glimcher and other faculty help the students don their coats.

'My time is divided between administrative duties and patient care. I am also functioning as the outpatient research lead for the family health center. In my spare time, I have been participating in international medical missions in El Salvador.'

Nonkulie Dladla, MD '02

home. Our daughter, Emma, 12, just finished 17th at the national tennis tournament. Her brothers, Noah, 10, and Jake, 6, remain true, wonderful terrorists. Give a shout if you're passing through."

Jeff Richmond '92, MD '96: "I have been practicing orthopaedic trauma surgery at North Shore University Hospital for 11 years and happily living on Long Island with my wife, Harlee, and two children."

Thomas Shields, MD '96, is the assistant director of the Emergency Dept. at Forsyth Medical Center in Winston-Salem, NC.

Jamie Alon, MD '98: "I'm a partner in a successful small/medium-sized pediatric group in Danbury, CT, where I practice primary care pediatrics. Shanni is a competitive figure skater and a high school senior applying to college. Matan is now a high school freshman and plays on the soccer team. Gil is a CFO of a startup cancer diagnostic reference laboratory that collaborates with the Yale School of Medicine."

2000s

Nonkulie Dladla, MD '02: "I'm working as a medical director at Park Slope Family Health Center at Lutheran Medical Center. My time is divided between administrative duties and patient care. I am also functioning as the outpatient research lead for the family health center, working to strengthen their research infrastructures through building relationships with academic partners. In my spare time, I have been participating in international medical missions in El Salvador. I like yoga and dance and attending talks on various philosophical topics."

Henry Wei, MD '02: "Earlier this year I finished a stint in the public sector with the White House as one of the first Presidential Innovation Fellows (see <http://www.whitehouse.gov/innovationfellows/>). I worked with the US Chief Technology Officer, the Dept. of Health & Human Services, and the Dept. of Veterans Affairs on something called Blue Button, which involves patients' access to their own interoperable health data. I'm back at Aetna now as senior medical director of Aetna's Innovation Lab, based in New York City, as a doctor-geek in the private sector."

Asha Yancy Okorie, MD '05, and **Uzoma Okorie, MD '05:** "Uzo and I have been working at the Marshfield Clinic in Wisconsin since July 2012. We recently had our first child, Zachi Wesley Okorie. He was born on August 15, 2013, and is an absolute joy."

Alejandro Garcia '03, MD '07: "I am currently scheduled to finish my general surgery residency at Columbia University Medical Center in June 2014 and will begin a two-year pediatric surgery fellowship at Johns Hopkins Hospital in July 2014."

In Memoriam

'39 MD—Melva Clark Fager of Los Angeles, CA, formerly of Floral Park, NY, August 31, 2013; retired physician.

'44 MD—William C. von der Lieth of Vincennes, IN, May 24, 2012; general thoracic surgeon, Surgical Corp. of Vincennes; veteran; fisherman; sportsman; historian; member, American Board of Surgery.

'45 MD—William H. Burke of Trumbull, CT, July 19, 2013; obstetrician/gynecologist; senior attending physician, St. Vincent's and Bridgeport hospitals; lectured on the anatomy of the abdomen and pelvis; veteran; gardener; active in professional affairs.

'47 MD—Elizabeth McCann Adams of Concord, NH, formerly of Kailua, HI, May 22, 2012; psychiatrist; treated children and adults in the corrections, mental health, and family court systems for the State of Hawaii; legislative advocate for the American Cancer Society; 1996 Physician of the Year, Hawaii Medical Assn.; member, Hawaii Medical Assn. and the American Medical Assn.

'47 MD—Donald Pyle of Lake Oswego, OR, formerly of Melbourne Beach, FL, and Point Pleasant, NJ, November 20, 2012; established a state-of-the-art cardiac care unit at Point Pleasant Hospital, where he was chief of staff; served in the Army Medical Corps in postwar Japan; jazz pianist; fisherman.

'48 MD—George H. Vogt of Madison, WI, December 26, 2012; orthopaedic surgeon; served on the staffs of Madison General, St. Mary's, and Stoughton Hospitals; veteran; pilot; earned a degree in airplane powerplant and airframe; golfer; gardener; fisherman; active in community and professional affairs.

'49 MD—John T. Craighead of Easton, MD, May 29, 2013; allergist; retired US Navy; commanding officer, 1st Medical Battalion of the 1st Marine Division at Camp Pendleton; assistant doctor, Navy football team; judge, Orphan's Court (Probate), Talbot County, MD; chair, Bishop's Search Committee, Diocese of Easton; watercolorist; active in civic and religious affairs.

'52 MD—Charles P. Foote of Miami Lakes, FL, October 4, 2013; taught biology, anatomy,

physiology, and life science at Miami Senior High School; tennis coach; veteran; active in religious affairs.

'52 MD—Virginia Weeks Moreau of Lake Placid, NY, May 11, 2012; pediatrician; developed Essex County's Well Baby Clinic and Mental Health Services; school physician; studied musculoskeletal/myofascial pain; author; gardener; birdwatcher; watercolorist; photographer.

'53 MD—Elizabeth Coryllos Lardi of Brookville, NY, March 6, 2013; clinical director of pediatric surgery, Winthrop University Hospital; associate professor of clinical surgery, SUNY Stony Brook.

'53 MD—Robert E. McCabe Jr. of Londonderry, VT, August 29, 2013; founder and director of the kidney recovery program at St. Luke's Hospital, NYC; veteran; fellow, American College of Surgeons; chairman of the board, Mountain Valley Medical Clinic; president, Londonderry Arts and Historical Society.

'50 BA, MD '54—John E. Peterson of Sandbridge Beach, VA, August 9, 2013; general and peripheral vascular surgeon; co-founder, Northern Virginia Noninvasive Diagnostic Vascular Laboratory; clinical assistant professor of surgery, Georgetown University; represented by the character Dr. Jack Lesperance in William Nolen's book *The Making of a Surgeon*; veteran; golfer; certified two- and four-stroke engine technician.

'55 MD—Chester M. Edelman Jr. of Bronxville, NY, September 19, 2013; senior associate dean and professor of pediatrics, Albert Einstein College of Medicine; author; pianist; furniture maker; active in community, professional, and religious affairs.

'62 MD—Bryant Barnard of Wenham, MA, August 17, 2013; urologist, North Shore Urological Associates; chief of surgery and president of the medical staff, Beverly Hospital; president, Evelyn Lilly Lutz Foundation; president, Massachusetts Assn. of Practicing Urologists; went on surgical missions to Cameroon and Kosovo; veteran; outdoorsman; woodworker; pilot; gardener; conservationist; philanthropist.

'64 MD—Richard Lennon of Southampton, NY, September 8, 2013; chief of surgery and pres-

ident of the medical staff, Southampton Hospital; established Southampton Hospital's Outpatient Surgical Dept.; partner, Southampton Eye Physicians and Surgeons; epidemic intelligence service officer, Centers for Disease Control; golfer; poet; fisherman.

'64 MD—Winthrop Wilcox Jr. of Naples, FL, June 23, 2013; anesthesiologist, Anesthesia Associates, Lancaster, PA; veteran; church choir singer; taught Sunday school; active in religious affairs.

'68 MD—Enobong A. Ekong of Lancaster, CA, September 17, 2011.

'68 MD—John C. Wolfe of West Gloucester, MA, May 8, 2013; president, Cape Ann Medical Center; chairman, Gloucester Board of Health; first recipient of Partners Health Care's Physician Leadership Award; veteran; active in community and professional affairs.

'71 MD—Angel J. Olazabal of Guayanabo, PR, May 27, 2013; gastroenterologist and internist.

'71 BA, MD '75—Steven M. Grunberg of Shelburne, VT, September 22, 2013; professor of medicine, University of Vermont Cancer Center; president, Multinational Association of Supportive Care in Cancer; also taught at the University of Southern California; performed in community theater; author; active in community and professional affairs.

Happy Birthday, Dr. Pritchett

Legendary physician, mentor, and booster turns ninety



1948 YEARBOOK

JOHN ABBOTT

When Joseph Hayes, MD, came to NYP/Weill Cornell as an intern in 1963, the residents offered the inside scoop on the attendings. One stood out. “They said, ‘He’s terrific, he’s a great teacher, and what he says is gospel,’” Hayes recalls. “‘And his name is Rees Pritchett.’”

That was a half-century ago—and the physician in question has become a Weill Cornell legend. R. A. Rees Pritchett arrived at the Medical College as a first-year student in 1944. In the intervening seven decades he has forged a relationship with the institution that’s unrivaled in its depth, breadth, and longevity. An internist with a subspecialty in cardiology, Pritchett, MD ’48, has been a Weill Cornell student, intern, resident, attending, patient, honoree,

fundraiser, and indefatigable booster. Just about the only title he doesn’t hold is retiree.

Although Pritchett stopped seeing patients three years ago, he still dons a natty suit and bow tie and drives to the office—he has had a Weill Cornell or NewYork-Presbyterian parking spot since 1951—to check on former patients and make fundraising calls. In September, the Louis and Gertrude Feil Professor of Clinical Medicine celebrated his ninetieth birthday. “There will never be anyone like him,” says Hayes, a professor emeritus of clinical medicine who served as both Pritchett’s partner in practice and as his physician. “Somebody who can be that good, that calm, that nice to patients and house staff, so even tempered. Not practicing what he learned in ’48, but what he learned two days ago. He’s an amazing human being and unbelievably devoted to Weill Cornell.”

Born in Kentucky, Pritchett grew up in New York City, where his family moved in 1930. He still lives there. At thirteen, he suffered a severe ear infection that—in the days before antibiotics—required a mastoid operation and a lengthy stay at Johns Hopkins Hospital. “I fell in love with the nurses,” recalls Pritchett, who’d go on to marry one, “and I fell in love with medicine.”

He majored in history and chemistry at Houghton College before matriculating at Weill Cornell, where his memories include studying under Nobel Prize-winning chemist Vincent du Vigneaud, PhD—who once beamed him with an eraser for talking in class. He was later elected to Alpha Omega Alpha Honor Medical Society. Pritchett and his first wife, Jane, married during his internship. Three years later, when their daughter was small, Jane contracted polio that left her wheelchair bound. She passed away in 2000, and he later remarried a longtime family friend, Clare Young.

His first wife’s care required that Pritchett adhere to a rigid schedule—which, Hayes notes, fostered remarkable time-management skills. “He had the uncanny ability to eat a tuna salad sandwich and talk to patients on the phone,” Hayes recalls with a laugh. “He had this timing: he’d take a bite, buzz his secretary, and say, ‘Get so-and-so,’ and by the time he was ready to talk to that person, he’d swallowed. It got to be a bit of a standing joke.”

Over the decades, many of the city’s best-known residents became Pritchett’s patients and—in gratitude for the care they received—Weill Cornell benefactors, including Brooke Astor and Leona Helmsley. “He had the most amazing bedside manner,” says Hayes. “He really taught me the art of medicine. The only thing Rees never got was the computer, which drove him nuts.”

Ask Pritchett what he loves about medicine, and he has a one-word answer: “Everything.” Revolving-door practice is anathema to Pritchett, a firm believer in the complete history, the hands-on physical exam, and the unhurried patient visit. “I don’t see how current doctors do it, because of the time constraints,” he says. “Doctors have learned to speed up. I never learned that.”

— Beth Saulnier

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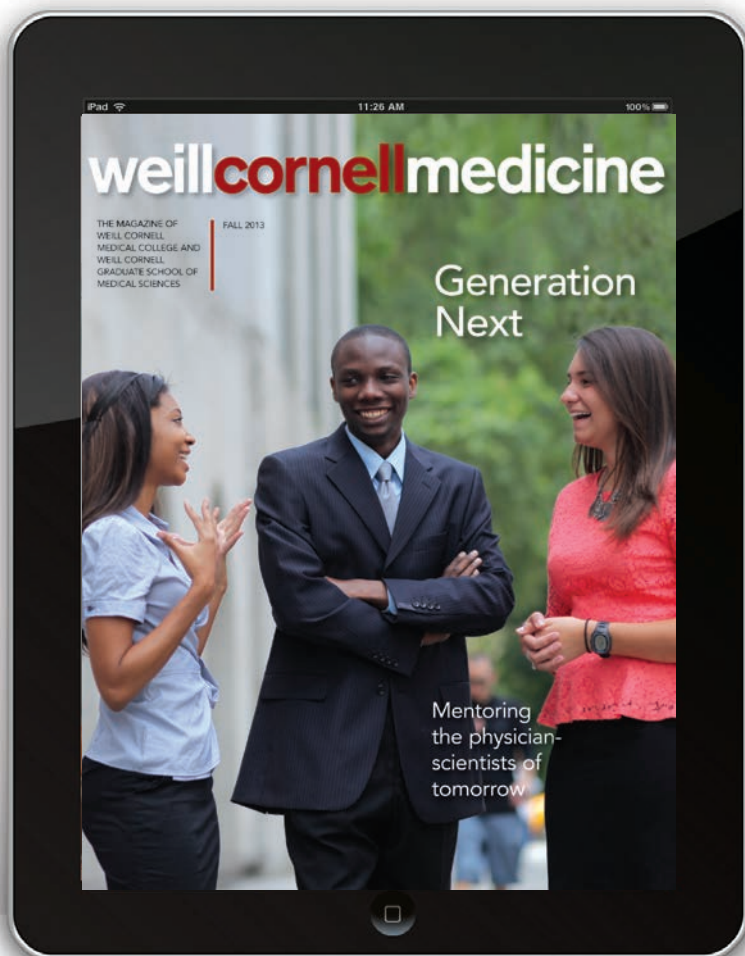
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