

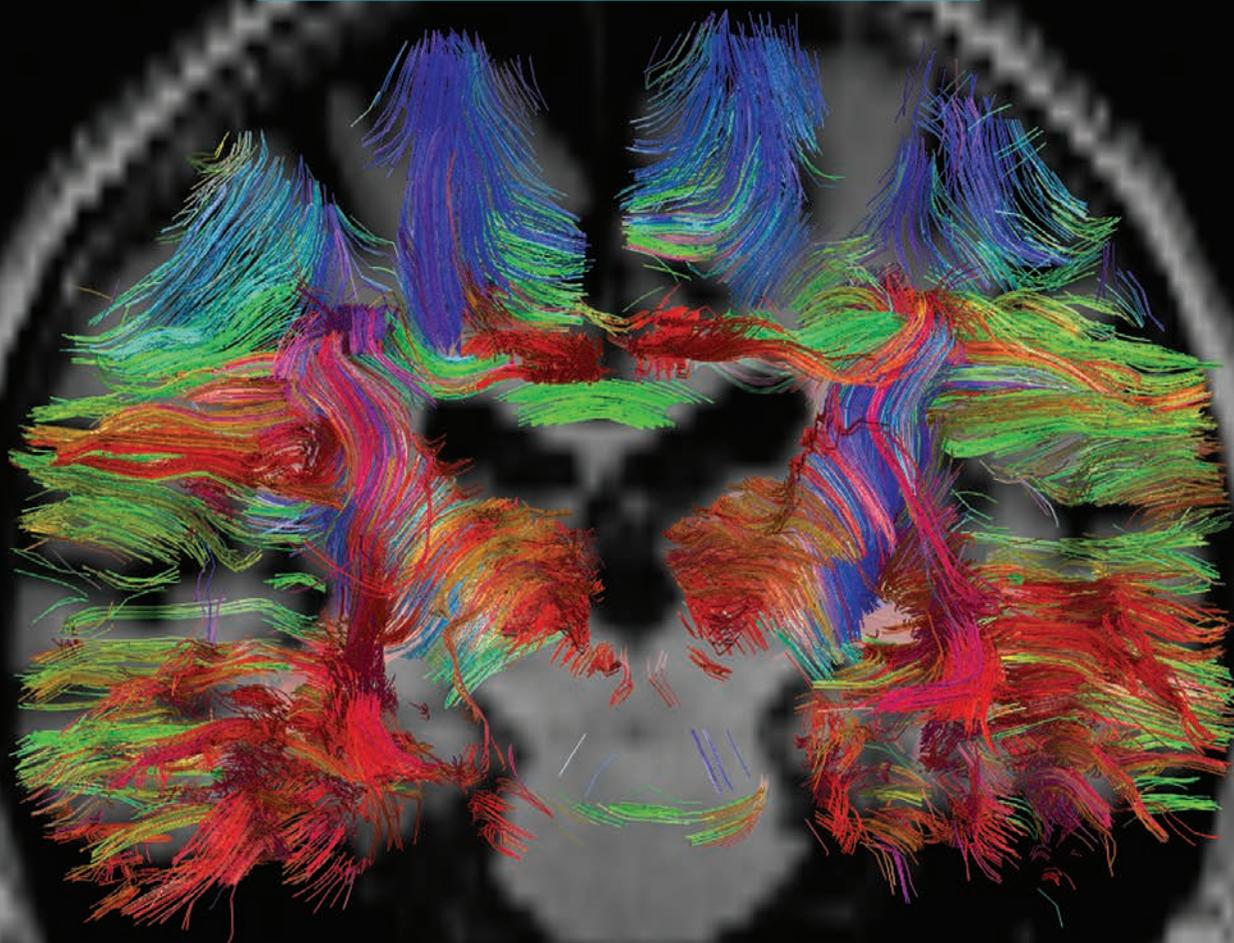
weillcornellmedicine

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

FALL 2012

Life of the Mind

Appel Institute
scientists battle
Alzheimer's disease



Salute to Scholarship

This year's *Salute to Scholarship* was a festive event, honoring the generous donors who provide scholarships and the student scholarship recipients. Thanks to these gifts, many more medical students at Weill Cornell Medical College will be able to continue on to their intended careers, including lower-paying medical specialties like primary care and family medicine, with less debt to pay.

"Scholarship support is so important to our educational mission and the future success of our remarkable students," Dean Glimcher said to guests at the event, which had record attendance this year. "I cannot thank you enough for your generosity and I know our students feel the same."

Speakers at the event included Weill Cornell Overseer Herbert Siegel, Lawrence Inra, M.D., Clinical Associate Professor of Medicine, and William Rudin, President of Rudin Management Company and Vice President of The Rudin Foundation and the Louis and Rachel Rudin Foundation.

Mr. Siegel and his wife Jeanne, long-time donors to Weill Cornell Medical College, endowed the Siegel Family Faculty Award – a great honor bestowed upon Dr. Estomih Mtui, Associate Professor of Anatomy in Cell and Developmental Biology – and the Siegel Family Student Prizes – prestigious awards given to eight medical students each year. Colleen Wichser, a third year medical student, was a recipient of one of the Siegel Family Student Prizes and gave opening remarks at the event.

"My thanks go to all the donors here for your confidence and belief in the students at Weill Cornell. Our scholarships come with a message of trust and confidence – they are a big boost to morale," she said. "I can now subtract some of my debt, and stay on the path of my interest rather than letting money dictate my decision on which field of medicine I will pursue."

Thanks to the generous support of our donors, the *Discoveries that Make a Difference* campaign scholarship goal of \$20 million has now been surpassed and is currently at \$26 million and growing.



Bill Rudin and his wife Ophelia



"Instead of focusing on dollar signs, we can focus on medicine," said Benjamin Jack '14, a Louis and Rachel Rudin Scholarship and Siegel Family Student Prize recipient, who presented at the event.



Dean Glimcher with Jeanne and Overseer Herb Siegel and the eight recipients of this year's Siegel Family Student Prizes.

To learn more about how you can help students today and assure medical excellence in the future with *Scholarships that Make a Difference*, please contact: **Lucille Ferraro, Campaign Director, 646-317-7387, luf2003@med.cornell.edu**



Weill Cornell Medical College

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



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FEATURES

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JORDAN LITE

Longtime Medical College benefactors Bob and Helen Appel had lost several friends to Alzheimer's disease when they decided to join the battle against it, giving two \$15 million gifts to support research at Weill Cornell. Alzheimer's expert Steven Paul, MD, is leading the institute founded in the Appels' name—leveraging his long-standing relationships with industry to spur understanding of a devastating disease that is expected to cost the nation an annual \$1.1 trillion in medical bills by 2050.

28 FATHER OF INVENTION

BETH SAULNIER

Two decades ago, Italian-born gynecologist Gianpiero Palermo, MD, PhD, refined a technique that revolutionized *in vitro* fertilization. Known as intracytoplasmic sperm injection (ICSI), it allowed men long considered infertile to father biological children. On the Weill Cornell faculty since shortly after his landmark discovery, Palermo—who first gained a love for design by observing the mechanics who worked next door to his family's business—reflects on a discovery that has enabled the birth of some two million babies worldwide.

34 BENEFITING EVERYONE

BETH SAULNIER

Every Monday night, a team of medical students offers free care to needy New Yorkers. The Weill Cornell Community Clinic is a win-win: the patients get top-flight treatment, while the students—mentored by a volunteer attending—get hands-on experience in managing cases and administering a practice. "We realize that they're getting this service for free," says MD-PhD student Megan Riddle, "but we try to provide the highest quality care—both for their sakes and because we want to learn how to give that level of care."

Cover image: Tractogram of an Alzheimer's disease brain, courtesy of Ashish Raj, PhD '05, assistant professor of computer science in radiology, and Eve LoCastro, senior research assistant.

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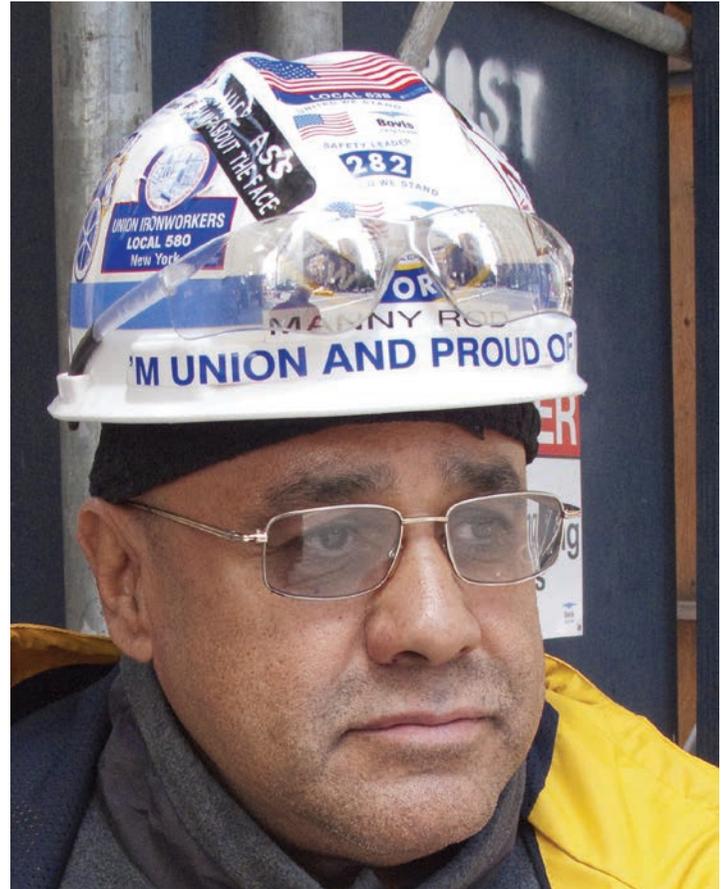
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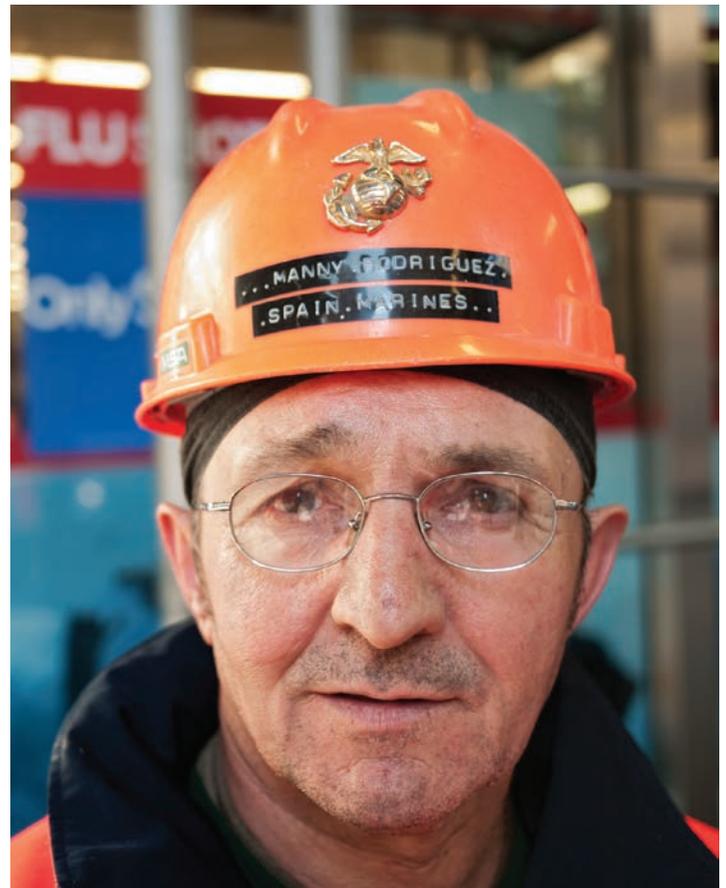
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Healthy habits

Light Box



New York state of mind: Pharmacology professor Marcus Reidenberg, MD, was an avid photography buff in high school and college, but he put the hobby on hold when he went to medical school. He picked it up again when he turned sixty-five—and thirteen years later, he's still going strong. In September, he became the envy of many a shutterbug: the *New York Times* published an online “slide show” of his images of construction workers and their headgear. “I realized these hardhats, with all the stickers and labels on them, are the way that construction workers express their views to the world,” says Reidenberg, who developed his own film as a student but now happily shoots digital. The portraits are part of Reidenberg’s ongoing series on people who work on the city’s streets, from mail carriers to coffee vendors to trash collectors. “They make the city work,” he says. “We pass by them every day, but they rarely get noticed. With the camera, I notice them.”





Research Leads to Cures

THE STARR FOUNDATION-

Bold Blueprints

Capital Campaign Update

Earlier this year, The Starr Foundation announced two gifts for stem cell and cancer research totaling \$105 million to a consortium including Weill Cornell Medical College and four other top-notch research organizations. It is a major renewal of its previous support for this pioneering, collaborative research.

With these grants, The Starr Foundation is creating powerful “laboratories without walls” that allow scientists to forge unlikely alliances across institutions and traditional research fields. The end result of this will be that medical breakthroughs will move more quickly from the laboratory to patient care. (See “At a Glance.”)

AT A GLANCE – THE STATS

The Starr Cancer Consortium

New Gift: \$55 million

Initial Gift: 2006 – \$100 million

WCMC scientists to date: 23

Partners: Weill Cornell Medical College, the Broad Institute of Harvard and MIT, Cold Spring Harbor Laboratory, Memorial Sloan-Kettering Cancer Center, The Rockefeller University

The Starr Foundation Tri-Institutional Stem Cell Initiative

New Gift: \$50 million

Initial Gift: 2005 – \$50 million

WCMC scientists and research fellows to date: 33

Partners: Weill Cornell Medical College, Memorial Sloan-Kettering Cancer Center, The Rockefeller University

“Weill Cornell scientists are among our participants who have already made advances that promise to transform our capacity to prevent, treat, and even cure a wide array of serious and fatal illnesses,” said Maurice R. (“Hank”) Greenberg, chairman of The Starr Foundation and a member of the Weill Cornell Board of Overseers. “Results have proven to us that using this collaborative framework is dramatically speeding up progress through close coordination among leading investigators working on the front lines of discovery.”



for Our Health

“Weill Cornell scientists are among our participants who have already made **advances that promise to transform our capacity to prevent, treat, and even cure** a wide array of serious and fatal illnesses.”

– Maurice R. (“Hank”) Greenberg

Chairman of The Starr Foundation and a member of the Weill Cornell Board of Overseers

These Starr Foundation gifts are the most recent step in its long-standing commitment to shape a framework for cross-institutional research that is intended to be a game-changer in the research world. They follow earlier Starr Foundation grants for these projects totaling \$150 million.

At Weill Cornell, some discoveries have moved from laboratory discoveries to clinical trials for patients in less than five years – much faster than the average pace of traditional approaches to research.

The Starr Foundation Projects

The kind of leading-edge science funded by The Starr Foundation is highly exploratory. As a result, researchers depend heavily on philanthropy from individuals and committed organizations such as The Starr Foundation. Conventional funding sources like the federal government often shy away from bold new ideas, and prefer to fund “safe” projects that already have convincing preliminary data. With The Starr Foundation’s support, scientists are encouraged to take on these high-risk but promising projects. The results are already yielding significant discoveries. This success, in turn, makes it more likely that these research efforts will become attractive to traditional funding sources, such as the National Institutes of Health.

The Starr Cancer Consortium

The Starr Cancer Consortium builds on complementary strengths among scientists across five research institutions. Working together, these scientists are conducting research on the many kinds of cancer that, together, constitute one of the greatest worldwide threats to human health. These include cancers of the breast, prostate, brain, and blood, among others. Revolutionary advances in medical and computer technology, such as “deep sequencing,” now allow access to information at the genetic and molecular level, where discoveries are revealing ever more complexities among various cancers.

The consortium allows biomedical investigators to pool ideas, easily share early-stage research findings, and build a critical mass of knowledge, advanced technology, and data.

The Starr Foundation Tri-Institutional Stem Cell Initiative

The Tri-Institutional Stem Cell Initiative forges interdisciplinary teams of top scientists at Weill Cornell and its two neighboring research institutions on New York City’s Upper East Side. It builds on a strong 40-year history of collaborations in research and education among the three organizations.

Our scientists at Weill Cornell are beginning to deliver on the promise of using stem cells to treat a wide array of illnesses, including cardiovascular disease, diabetes, cancer, and neurological disorders. The goal is to eventually design personalized cell-based therapies.

It is because of the generosity of The Starr Foundation that breakthroughs in stem cell research, and in cancer research, are already making a significant difference in human health.

“Inspired philanthropy stays ahead of the curve. **It builds creative partnerships with a focused end game in mind – the improvement of human health.** This epitomizes the leadership of The Starr Foundation. They are helping to shape the model for the future of biomedical research. We are enormously grateful for their vision and support.”

– Laurie H. Glimcher, MD

Stephen and Suzanne Weiss Dean
Provost for Medical Affairs



Weill Cornell Medical College

For more information and a detailed list of gift opportunities, please contact Lucille Ferraro, Campaign Director, at 646-317-7387 or luf2003@med.cornell.edu

Centers of Excellence

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

When I took office earlier this year, I pledged to avoid the “silos” of isolated academic fields. I believe that by working together—both across disciplines and up and down the leadership chain—we can best fulfill our tripartite mission of excellence in research, education, and clinical care. Because of that, I am enormously pleased to announce the establishment of two new translational centers.

Weill Cornell has long been among the nation’s leaders in cancer research and clinical care. The Medical College and Graduate School of Medical Sciences have made groundbreaking discoveries in the field—and our physicians have diagnosed and treated more than 4,000 new cancer patients annually since 2008. NYP/Weill Cornell is internationally recognized as a premier center for research and clinical care of patients with blood cancers, among others. Its comprehensive prostate program focuses on prevention, early detection, and novel treatment through patient-oriented research. And Weill Cornell has some of the world’s most renowned breast researchers and surgeons who are in the vanguard of offering new procedures and testing the latest drugs in clinical



JOHN ABBOTT

trials for the treatment of all stages of the disease.

In a critical step in the acceleration of translational medicine, research, and clinical care of this devastating disease, we are establishing a joint Cancer Center at Weill Cornell and NewYork-Presbyterian Hospital. The Center will be led by my former Harvard colleague Lewis Cantley, PhD, a highly distinguished researcher credited with discovering a family of enzymes fundamental to understanding cancer. His mission is nothing less than to create a unique kind of cancer center, one that will truly make personalized cancer medicine a reality. To be headquartered in the Belfer Research Building, the Center will ensure that patients can immediately benefit from the latest discoveries—especially in clinical trials—while training future researchers and recruiting leaders in the field.

As director, Dr. Cantley will forge the Cancer Center into a collaborative, multidisciplinary enterprise focused on gathering Weill Cornell’s research expertise under one umbrella and converting breakthroughs into novel therapies. Building on the successes of the Weill Cornell Cancer Center—and its exemplary leadership by physician-scientist Andrew Dannenberg, MD, the Henry R. Erle, MD-Roberts

Family Professor of Medicine—the new Center will initially focus on colorectal, lung, melanoma, and hematopoietic cancers. It will eventually expand to all cancers where there is a risk that the current standard of care will not lead to a cure, including those of the breast, prostate, pancreas, endometrium, ovaries, and brain.

And—in an additional event that underscores the depth and breadth of expertise at Weill Cornell and NewYork-Presbyterian—we have created another groundbreaking center, the Brain and Mind Research Institute. Like the Cancer Center, it is a vital initiative that crosses departmental and institutional lines.

The Brain and Mind Research Institute will be directed by Costantino Iadecola, MD, the George C. Cotzias Distinguished Professor of Neurology and Neuroscience. NYP/Weill Cornell neurologist Matthew Fink, MD, will be chair of the Department of Neurology. The Brain and Mind Research Institute will include faculty from multiple departments including neurology, neurosurgery, psychiatry, biochemistry, physiology, pharmacology, and radiology.

Weill Cornell researchers have long sought to answer fundamental questions at all levels of neuroscience—from genes to cells to systems to behavior. Our scientists have reached across disciplines to collaborate on groundbreaking work, from the first clinical trial of gene therapy for Parkinson’s disease to the world’s first successful use of deep brain stimulation to treat a minimally conscious brain-injured patient. In 2011, neuroscience made up almost one-fifth of Weill Cornell’s sponsored research, at \$33 million, and the Medical College recently started clinical programs in neurooncology, Alzheimer’s disease, and movement disorders. Meanwhile, at NYP/Weill Cornell, clinical neurology is increasingly busy. By 2014, outpatient visits are estimated to rise almost 30 percent, and the hospital expects to care for an additional 450 inpatients a year over 2011 levels.

The Brain and Mind Institute will work to advance knowledge in basic and clinical neuroscience and translate those discoveries into new treatments, while training the next generation of clinician-scientists. Faculty will hold joint appointments, and structures will be in place to encourage the translation of research into clinical care. The Institute will focus on a broad spectrum of neurovascular conditions such as stroke, hypertension, and dementia; neurodegenerative conditions such as Alzheimer’s, Parkinson’s, ALS, and aging; neuroplasticity development, including learning, memory, brain malformations, pain, and addiction; neuroimmunological conditions, such as multiple sclerosis; neuroimaging; and mind and consciousness.

Collectively, the founding of these two translational centers represents a vital interdisciplinary initiative for Weill Cornell and an important step forward in our mission to ensure that the patient is always at the center of everything we do.

For more information on the Cancer Center and the Brain and Mind Research Institute, see “Scope” starting on page 8.

Transition

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

Eighteen years ago, I joined the administrative team at Weill Cornell as the founding head of the Center for Vascular Biology. Two years later, I became dean of the Graduate School—and in the sixteen years since, it has been my honor and privilege to serve our provosts, chairs, faculty,



students, and alumni. As I prepare to leave my administrative position at the end of this year to resume research and teaching, I reflect with great pride on the positive changes we made during my tenure as the Graduate School's longest-serving dean, doing my utmost to enhance the quality of this institution and support its outstanding efforts to educate future generations of scientists.

It has been especially rewarding to be a part of the Graduate School's growth and expansion: its standing in national rankings rose,

the number of annual applicants doubled, and the size of the incoming class tripled—even as its GPA and GRE scores improved dramatically. We have significantly enhanced the living conditions of our students, so that we now offer housing to all, and we have reached out to middle and high school students with programs to improve science education in our city. Most important, our graduates are employed, having ascended to superb research positions in this country.

At the same time, we have ushered the graduate program onto a global stage, as we now attract students from around the world, maintaining especially strong ties to India and Brazil. We have also built exchange agreements with such institutions as the Pasteur Institute in France and Tianjin Medical University in China.

Serving also as executive vice provost and senior executive vice

dean at the Medical College, I have had the privilege of working closely over many years with Dean Tony Gotto, MD, and more recently with Dean Laurie Glimcher, MD, to help shape the medical school as a whole. I participated in the academic development of the last three strategic plans; the most recent, which I headed, led to the creation of the Belfer Research Building, which will double our research space when it is fully occupied. It has been an absolute joy to have worked with Sandy Weill and the Board of Overseers on these strategic plans.

*'Nothing is secure but life,
transition, the energizing spirit.'*

—Ralph Waldo Emerson

Last year, I was delighted to receive a Fulbright Scholar/Specialist Award to work in Doha, Qatar, which allowed me to further expand our international aims. There, I worked alongside WCMC-Q Dean Javaid Sheikh, MD, to strengthen biomedical education activities at Qatar University's College of Arts and Sciences and to build greater collaboration between that university and our Qatar campus. We now have a joint seminar series between the two institutions and an exchange program in place; we are also investigating other methods to spur interest in medicine among Qatar University students. And we are creating new ways for premed students there to participate in educational activities at WCMC-Q, including opportunities to conduct research in the laboratories of our faculty. It has been an honor to help develop WCMC-Q's research program and to nurture its growth into a rich hub of basic and clinical science.

Finally, we have worked hard to strengthen the ties with our faculty in Houston and with our alumni, and we have sought their continued involvement in our academic activities at Weill Cornell. That work will continue, as our graduates around the nation and the world do their part to train the next generation of biomedical researchers so we can continue to advance our basic understanding of disease.

Scope

News Briefs

Weill Cornell and NewYork-Presbyterian Found Translational Cancer Center

Future home: Lewis Cantley, PhD, in front of the Belfer Research Building, currently under construction; once completed, it will headquarter the new cross-disciplinary Cancer Center.



JOHN ABBOTT

In September, the Medical College and NewYork-Presbyterian Hospital announced the establishment a joint center for cancer research and treatment. It will be led by Lewis Cantley, PhD, a leading researcher credited with discovering a family of enzymes fundamental to understanding cancer. He comes to Weill Cornell from Harvard, where he was the William Bosworth Castle Chair in Medicine and professor of systems biology; he was also director of the Cancer Center and chief of the Division of Signal Transduction at Beth Israel Deaconess Medical Center. “We are honored and delighted to have Dr. Cantley, a pioneering researcher in the field of cancer, join us to lead the new Cancer Center,” says Dean Laurie Glimcher, MD. “Multidisciplinary translational research is the future of biomedicine. There will be no barriers between our clinicians, translational researchers, and basic scientists, whose close collaboration across disciplines and institutions will lead to new discoveries and cancer therapies—transforming cancer patient care and ultimately finding cures.”

Aimed to break new ground in the field of personalized medicine for cancer diagnosis and treatment, the Cancer Center will both offer patients access to the latest clinical trials and train the next generation of researchers. It will feature lab space, a cancer tumor tissue bank, facilities for genetically profiling each patient’s tumor, and more. It will be headquartered in the eighteen-story,

\$650 million Belfer Research Building, set to open in 2014. “We are thrilled about the formation of this new Cancer Center, as it will propel us to greater heights in cancer research and patient-centered clinical care,” says NewYork-Presbyterian CEO Steven Corwin, MD. “Together with Weill Cornell Medical College, we are committed to making NewYork-Presbyterian the preeminent academic medical center for cancer care in the country. The recruitment of Dr. Cantley puts us one step closer to making that goal a reality.”

Cantley, who earned a PhD in biophysical chemistry from Cornell University in 1975, is a fellow of the American Academy of Arts and Sciences and a member of the National Academy of Sciences. He has made significant advances in cancer research stemming from his discovery, in the mid-Eighties, of the signaling pathway PI3K, which has major implications in cancer. He revealed that human cancers frequently have mutations in PI3K and, for the past three decades, has worked to identify new treatments for cancers that result from defects in the pathway—research that has also benefited patients with diabetes and autoimmune diseases. Last year, he was awarded a \$15 million grant from Stand Up 2 Cancer to investigate the role of PI3K in breast, ovarian, and endometrial cancers. Says Cantley: “We are on the brink of an evolution in cancer research and patient care that will dramatically change how our patients are diagnosed and how their diseases are managed.”

Brain and Mind Research Institute Established

To advance knowledge in basic and clinical neuroscience, Weill Cornell and NewYork-Presbyterian Hospital have established a Brain and Mind Research Institute. A collaborative, multidisciplinary research enterprise, it will unite under one umbrella the Medical College's basic and clinical research expertise across faculty and departments. In its initial phase, it will bring together experts in neuroscience, neurology, neurological surgery, psychiatry, and radiology, eventually branching out to other specialties. "The future of biomedicine lies in breaking down any and all barriers," says Dean Glimcher, "and the creation of the new Institute is an important step in that direction."

The Institute will be led by Costantino Iadecola, MD, the George C. Cotzias Distinguished Professor of Neurology and Neuroscience. Its initiatives will include neurovascular conditions such as stroke and dementia; neurodegenerative conditions such as Alzheimer's disease; neuroimmunological conditions such as MS; and research of the mind and consciousness. Says NewYork-Presbyterian CEO Steven Corwin, MD: "The Institute will transform the way translational neuroscience research is conducted in the field and at our institutions."

Fink Named Chairman of Neurology

Matthew Fink, MD, chief of the Division of Stroke and Critical Care Neurology at NYP/Weill Cornell, has been appointed chairman of the Department of Neurology. Formerly known as the Department of Neuroscience and Neurology, it was recently restructured. "Age-related brain and mind diseases are a growing worldwide health challenge and a major culprit for loss of life and overall quality of life," says Fink, who served as interim chair for four years.

NIH Renews CTSC With \$49.6 Million Grant

Weill Cornell has received an NIH grant of nearly \$50 million to renew funding of the Clinical and Translational Science Center over the next five years. A multi-institutional consortium aimed at fostering interventions and treatments through translational research, it was founded in 2007. In addition to the Medical College, the Graduate School of Medical Sciences, NYP/Weill Cornell, and the Ithaca campus, it comprises Memorial Sloan-Kettering Cancer Center, Hospital for Special Surgery, Hunter College, and the Animal Medical Center. According to Dean Glimcher, the Center "has made terrific progress in breaking down barriers to translational research and laying the foundations for future cooperation, not only with other academic institutions, but also with the private sector."

Cornell NYC Tech Holds First 'Healthier Life' Workshop at the Medical College

Cornell NYC Tech, the graduate technical campus to be built on Roosevelt Island, held the first workshop for its "healthier life" research hub at the Medical College in July. The event drew leaders and researchers from Weill Cornell, the Ithaca campus, and the Technion-Israel Institute of Technology—Cornell's academic partner in the venture—as well as industry experts. They discussed such potential research topics as improved electronic medical records, sensor-enabled smartphones, and implanted electronic devices. Cornell NYC Tech, temporarily housed at the Google offices in Chelsea, opened with a small number of previously admitted graduate students this fall.

TIP OF THE CAP TO...

Bianca Acevedo, PhD, a postdoc in the Division of Prevention and Health Behavior, one of ten winners of the Women in Science Award: Nurturing Nobels from the U.K.'s Medical Research Council.

Leandro Cerchietti, MD, the Raymond and Beverly Sackler Research Scholar in the Department of Hematology and Medical Oncology, winner of a Doris Duke Clinical Scientist Development Award to study new ways to detect lymphomas.

Joseph Fins, MD '86, the E. William Davis, MD, Professor of Medical Ethics and chief of the Division of Medical Ethics, given Wesleyan University's Distinguished Alumnus Award.

Hugh Hemmings, MD, PhD, the Distinguished Research Professor in Anesthetic Mechanisms, elected a fellow of the Royal College of Anaesthetists.

O. Wayne Isom, MD, chairman of the Department of Cardiothoracic Surgery and the Terry Allen Kramer Professor of Cardiothoracic Surgery; **Richard Pasternak, MD**, clinical professor of medicine; and **Philip Stieg, MD, PhD**, chairman of the Department of Neurological Surgery, named "Champions of Heart and Stroke" by the American Heart Association.

Professor of clinical psychiatry **Marguerite Lederberg, MD**, winner of the Fisman Award for Lifetime Clinical Excellence from the International Psycho-Oncology Society.

John Leonard, MD, the Richard T. Silver Distinguished Professor of Hematology and Medical Oncology, elected chairman of the scientific advisory board of the Lymphoma Research Foundation.

David Lyden, MD, PhD, the Stavros S. Niarchos Associate Professor in Pediatric Cardiology, winner of the University of Vermont Graduate and Medical School Alumni Award.

Praveen Raju, MD, assistant professor of pediatrics and the Israel A. Englander Clinical Scholar, named a Hartwell Investigator, which includes a \$300,000 grant to support his work on brain tumors in children.

Ellen Scherl, MD, the Jill Roberts Associate Professor of Inflammatory Bowel Disease, winner of the Woman of Distinction Award in Medicine from the Crohn's and Colitis Foundation of America.

Assistant professor of pediatrics **Melanie Wilson-Taylor, MD '04**, named NYP/Weill Cornell's Patient-Centered Care Physician of the Year.

Assistant professor of pediatrics **Kaleb Yohay, MD**, winner of the Children's Humanitarian Award from the Children's Tumor Foundation.



Try it on for size: Dean Laurie Glimcher, MD, helps Ja Young Chung '16 don the uniform of the physician-in-training.

Ceremony Welcomes Class of '16

Dean Glimcher presided over her first white coat ceremony in August, welcoming the 103 members of the Class of 2016 to Weill Cornell and to medicine. “You’ve already proven that you’re smart and skilled and capable—otherwise you wouldn’t be here,” she told them. “You’re curious and open-minded, you’re good communicators and colleagues, and as Weill Cornell students you will have global opportunities and a world view that many others will not have.” In addition to their short white coats, the new first-years received stethoscopes provided by the Buster Foundation’s Paul F. Miskovitz ’75 Stethoscope Fund for Medical Students. “You are becoming one of the esteemed members of a brotherhood and sisterhood of care providers,” said keynote speaker Barbara Hempstead, MD, associate dean for the Office of Faculty Development and the O. Wayne Isom Professor of Medicine, “and you will be developing many attributes that will transform you into an effective and compassionate physician.”

Child Care Center to Open at WCMC

With the aim of supporting the work-life balance, the Medical College has announced it will open a child care center near campus in the second half of 2013. To be located on East 60th Street between York and First avenues, the center will accommodate up to sixty children of faculty, students, and staff. It will be operated by Bright Horizons Family Solutions, whose many child care facilities nationwide include one at NewYork-Presbyterian Hospital. An advisory committee of faculty and staff will oversee the center, including its cost, eligibility requirements, and program.

U.S. News Ranks NYP Best in the State

NewYork-Presbyterian Hospital, Weill Cornell’s clinical partner, has been ranked number one in New York—and among the top ten in the nation—in *U.S. News & World Report’s* 2012–13 survey of best hospitals. It also ranked number seven on the magazine’s honor roll, which recognizes medical centers rated at or near the top in at least six specialties based on reputation, volume, and other factors; it’s the thirteenth time that NYP has been so recognized. It landed in the top five nationally in five specialties: cardiology and heart surgery; nephrology; neurology and neurosurgery; psychiatry; and urology.

Diversity, Integrity Deanships Announced

Professors Carla Boutin-Foster, MD, MS ’99, and Rache Simmons, MD, have each been named to the newly created position of assistant dean for faculty diversity. Boutin-Foster is the Nanette Laitman Clinical Scholar in Public Health/Community Health; Simmons is the Anne K. and Edwin C. Weiskopf Professor of Surgical Oncology. The two have held leadership roles in the Office of Faculty Diversity since it was founded in 2009, with Boutin-Foster serving as the director of cultural diversity and Simmons as director of gender diversity.

Dean Glimcher has also announced another assistant deanship: assistant professor of public health Mary Simmerling, PhD, will serve as assistant dean for research integrity. Says Glimcher: “She will work closely with our faculty to continue to maintain Weill Cornell’s ethical standards and legal obligations in an increasingly complex research environment, while providing support to reduce the administrative burdens of managing human subject and animal safety and transparency.”

Student Humanities Journal Debuts

Medical students have published the first issue of *Ascensus*, a new campus literary magazine. Sponsored in part by the Liz Claiborne Center for Humanism in Medicine, the journal—whose title is Latin for “ascent”—will be published once or twice a year. It features poetry, short fiction, art work, photographs, and more; the debut issue even includes in-class doodles and the sheet music to a song about Carol Storey-Johnson, MD ’77, senior associate dean for education. Many of the works—such as a collection of tributes to anatomy donors—have medical themes.

Ascensus was launched in early September with a celebration of the humanities attended by some 100 students, faculty, and administrators. Organizers hope to expand future issues to include house staff, faculty, and other members of the Weill Cornell community.



PETER BARISH

Photographic evidence: The first issue of *Ascensus* includes a series of Polaroids by Peter Barish ’14, one of the journal’s editors.

FROM THE BENCH

Camera Explores Bile Duct

Professor of clinical medicine Michael Kahaleh, MD, is using a new probe—tiny enough to see inside single living cells—to look for cancer in the slender bile ducts that connect the liver to the small intestine. “We can see detail that was just unimaginable a decade ago,” says Kahaleh, chief of Advanced Endoscopy and medical director of the Pancreas Program at NYP/Weill Cornell. Kahaleh led a project in which he and his team sent videos, taken inside twenty-five patients with abnormally narrowed bile ducts, to six specialists at five different medical institutions. Their study, published in *Digestive Diseases and Sciences*, demonstrated that there was “poor” to “fair” agreement on the clinical significance of what the physicians were viewing—whether what they saw represented cancer, simple inflammation, or a benign condition. That means that physicians need a standard way of interpreting what the videos reveal, Kahaleh says.

Zebrafish and Melanoma

Researchers are using a transparent member of the minnow family to gain a better understanding of the aggressive skin cancer malignant melanoma. As reported at a professional meeting in June, assistant professor of cell and developmental biology Yariv Houvras, MD, PhD, and colleagues discovered that when a copy of the human gene SETDB1 was inserted into single-cell zebrafish embryo already containing a cancer-promoting mutation, it made melanomas progress faster—leading the researchers to believe that the gene may have a similar effect in humans. The project required studying several thousand fish for six months, during which scientists made more than 35,000 observations.

Weill Cornell Joins Blood Cancer Consortium

NewYork-Presbyterian/Weill Cornell is one of six institutions selected to join the new Myelodysplastic Syndromes (MDS) Clinical Research Consortium. Funded by foundation grants, the five-year, \$16 million initiative is the first of its kind in the U.S. It aims to advance treatments and patient outcomes for MDS, a cancer of bone marrow stem cells that inhibits the body's ability to produce healthy blood cells. While treatable, it can currently be cured only by stem cell transplantation. “MDS is an under-recognized disease,” says Gail Roboz, MD, associate professor of medicine and director of the

Leukemia Program at NYP/Weill Cornell.

“Sometimes we don't know why a patient has developed MDS, but we do know that those who have been exposed to cancer chemotherapy and radiation therapy are at increased risk. This Consortium offers a wonderful opportunity to develop new therapies and also to profile patients using the latest, state-of-the-art technologies so we can start to understand who gets MDS and why.” Other members of the Consortium include the Cleveland Clinic's Taussig Cancer Institute, the Dana-Farber Cancer Institute, and MD Anderson Cancer Center.

Single Dose Radiation For Early Breast Cancer

Following the results of a ten-year randomized Phase III clinical trial, NYP/Weill Cornell has become the first and only hospital in New York City to offer INTRABEAM radiotherapy for patients with early stage breast cancer. The treatment is delivered in a single dose during surgery—sparing patients weeks of radiation therapy. “Our ability to use this radiation technique in such a timely manner may add to its effectiveness since the area in need of treatment can be directly visualized at the moment the tumor is removed,” says Alexander Swistel, MD, attending breast surgeon at the Iris Cantor Women's Health Center and associate professor of clinical surgery at Weill Cornell.

Gates-Sponsored Partnership Spurs TB Drug Discovery

An innovative partnership aims to speed discovery of tuberculosis drugs. The effort comprises seven pharmaceutical companies, four research institutions—including Weill Cornell—and the Bill & Melinda Gates Foundation. Known as the TB Drug Accelerator, it has been tasked with creating a regimen that cures TB in just one month. Currently, a full course of treatment for TB—the second leading infectious cause of death worldwide—takes six months, a lengthy and expensive process that results in 20 to 30 percent of patients dropping out before completion; that leads not only to higher mortality rates but to the evolution of drug-resistant strains. The partnership, launched in April, is funded by nearly \$20 million from the Gates Foundation. “TB drug discovery has reached a crossroads,” says Carl Nathan, MD, the R. A. Rees Pritchett Professor of Microbiology and chairman of the Department of Microbiology and Immunology. “Finding new and faster-acting TB drugs will take a new kind of partnership, connecting not only academia and industry, but drug company with drug company.”

'One-Two Punch' Against Multiple Myeloma

Weill Cornell researchers have used a sequence of two anti-cancer drugs to defeat multiple myeloma cells in a mouse model. The therapy first uses one drug to weaken a cancerous cell's defenses, then the other to kill it. “Because robust functioning of the cell cycle is crucial to cancer growth and survival, this mechanism-based strategy could theoretically be used against many kinds of cancers,” says Selina Chen-Kiang, MS '67, PhD, professor of pathology and laboratory medicine and of microbiology and immunology. The approach has led to two clinical trials in humans, one in multiple myeloma and the other in mantle cell lymphoma.

A Vaccine for Nicotine

A vaccine to treat nicotine addiction has been successfully tested in mice, says Ronald Crystal, MD, chairman of genetic medicine and the Bruce Webster Professor of Internal Medicine. In *Science Translational Medicine*, researchers reported that a single dose of the vaccine protects mice against nicotine addiction for life. The therapy is designed to make the liver produce antibodies that consume nicotine the moment it enters the bloodstream, keeping the addictive drug from reaching the brain and heart. “As far as we can see,” Crystal says, “the best way to treat chronic nicotine addiction from smoking is to have these Pacman-like antibodies on patrol, clearing the blood as needed before nicotine can have any biological effect.” He notes that the vaccine could be used on smokers who are trying to quit—or, theoretically, to stop kids from ever picking up the habit. “Just as parents decide to give their children an HPV vaccine,” he says, “they might decide to use a nicotine vaccine.”

Immune Protein Has Winged Structure

Weill Cornell researchers have unlocked the structure of a key protein that triggers the body's immune response to certain viruses and bacteria. As reported in *Molecular Cell*, the protein, known as STING, has a double-winged crystal structure ideal for binding to molecules produced by particular types of pathogens. “Activation of STING is crucial to the ability of the human body to pick out bits of molecules secreted by pathogens, including many different viruses and bacteria, and alert the human body that they are there,” says lead author Qian Yin, PhD, a postdoc in the lab of biochemist Hao Wu, PhD. “By solving the structure of this protein, we now know how they do this crucial task.”

Talk of the Gown

Insights & Viewpoints



David Madoff, MD

Regenerative Powers

Minimally invasive technique offers new hope to liver patients

Orchard growers rely on pruning to promote arboreal health. Remove a tree's older, weaker boughs, and the younger limbs that remain yield larger, healthier, and tastier fruit than they would have otherwise.

Pruning generally doesn't work in humans. Unlike the physiology of starfish, newts, and salamanders, our body parts don't have much regenerative potential, with one exception: the liver. Remove a portion of the three-pound, blood-filtering organ and the remainder may

grow back to full capacity within months. That's good news for people with cancer facing resection, in which surgeons excise a chunk of the damaged liver. There's just one fatal catch: take too much and what's left shuts down, flooding the body with toxins and bacteria.

"If people have a very small liver," says David Madoff, MD, "they can die after surgery." Madoff, professor of radiology and chief of the Division of Interventional Radiology at Weill Cornell, has devoted the past decade to developing and improving portal vein embolization (PVE), a technique for treating patients whose livers are so extensively damaged or the anticipated remnant liver is so small that resection is not an option.

Like most treatments deployed by interventional radiologists, PVE—pioneered by Japanese surgeon Masatoshi Makuuchi, MD, around 1990—is minimally invasive. Using imaging to



JOHN ABBOTT

reveal the portal vein, the interventional radiologist threads a catheter into the blood vessels to be embolized and injects either a chemical solution or beads that reduce blood flow to the part of the organ slated for removal. Much as removing diseased tree limbs increases the amount of sunlight and nutrients that reach healthy branches, PVE concentrates the nutrients and oxygen flowing through the portal vein to the non-diseased part of the organ, spurring liver regeneration even before surgery. Four weeks later, after a CT scan confirms that the rest of the liver has gained volume, the patient—previously inoperable—is eligible for resection.

Madoff was a fellow in vascular and interventional radiology at the University of Texas's MD Anderson Cancer Center when his mentor assigned him to present the case of a patient who'd had complications after PVE, then relatively unknown in the U.S. He was hooked. "I was absolutely fascinated by the physiology of liver regeneration," says Madoff, whose first scientific paper on PVE appeared in *Radiology* in 2003. "I realized there was a whole avenue of research just in its infancy."

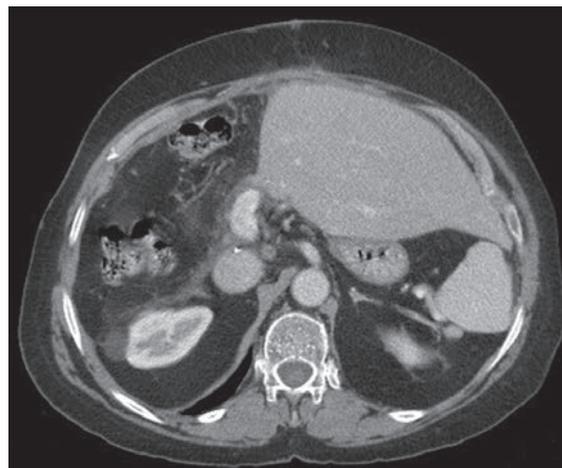
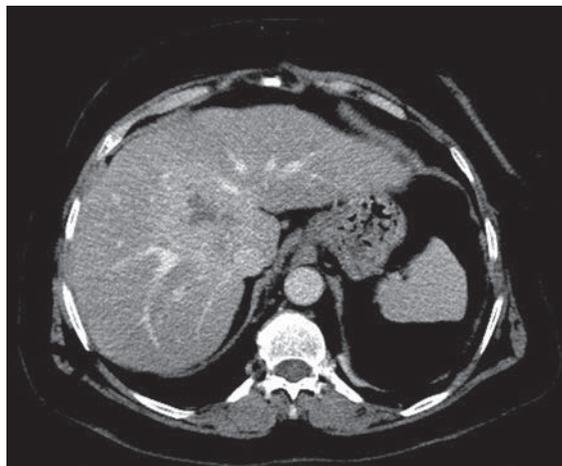
Madoff, who served as deputy editor of the *Journal of Vascular and Interventional Radiology* from 2007 to 2010 and now holds the same title at *Radiology*, has focused his PVE-related investigations on improving regeneration, reducing complications, developing criteria that make certain patients better or worse candidates, and fine-tuning surgical techniques and devices. In addition to publishing and lecturing worldwide on the topic, he has traveled throughout India and China performing live case demonstrations. He has also shown that a similar technique can be used to starve liver tumors while promoting function in healthy tissue, allowing some people to avoid conventional surgery entirely. In 2011, Springer published the textbook *Venous Embolization of the Liver: Radiologic and Surgical Practice*, co-edited by Madoff, Makuuchi, and two colleagues.

In addition to expanding treatment options for people with liver cancer, Madoff's research on novel PVE approaches has yielded new insights into cirrhosis, the extensive scarring caused by chronic alcohol abuse and hepatitis C infection. As he tested and refined his approach to PVE, Madoff discovered that the damage caused by a transarterial approach to PVE (which he calls "transarterial PVE") to the portion of the liver slated for removal mirrors that caused by cirrhosis, the ninth most common cause of death in the U.S. This technique was developed to take advantage of the liver's dual blood supply and its complex anatomy. By injecting a chemical mixture into the hepatic artery, the material percolates through the artery and via microscopic

communications; it ends up in the portal vein and remains there. "We noticed that the untreated half of the liver grew massively and the treated half was extremely shrunken, fibrotic, hard, and scarred," he says. In 2011, the *Journal of Vascular and Interventional Radiology* published his findings on transarterial PVE-related damage as a model system for cirrhosis.

Since his arrival at Weill Cornell last year, Madoff has focused on raising awareness of PVE among surgeons, oncologists, and gastroenterologists, introducing new procedures, bolstering his department's training program, and increasing awareness of interventional radiology's potential to shorten hospital stays and contain costs while enhancing patient safety. "In many cases, we can achieve similar survival outcomes to having an open surgery," he says. "That's the beauty of it."

— Sharon Tregaskis



PROVIDED BY DAVID MADOFF, MD

Successful surgery: A contrast-enhanced CT scan (top) reveals a large central mass involving the right liver and the medial left liver. Bottom: Imaging three months post-operative shows that, as desired, the remnant liver has been greatly enlarged.

Ethical Quandary

After an unsettling case, Gholson Lyon, MD '04, PhD, is questioning the limits on what genetics researchers can reveal to their study subjects



CONSTANCE BRUKIN

Gholson Lyon, MD '04, PhD

Max Caleb Grondahl was just four months old when he died on Father's Day 2011. In his obituary, Max's family thanked the members of their Mormon temple, the baby's doctors and nurses—and Gholson Lyon, MD '04, PhD. A psychiatrist and geneticist by training, Lyon had met Max's grandmother, mother, and aunts eighteen months earlier at a family gathering in their native Utah. The visit wasn't social: four boys across two generations had died as infants, and Lyon was collecting genetic samples in the hope of figuring out why. Already, Max's mother suspected that she might be a carrier for the condition that had killed her brothers and caused each of her sisters to bury an infant son.

She also knew she might pass on the trait—deadly for a son and heartbreaking for a daughter who might be a carrier. But until Lyon came along, no one knew where the mutation was or what it did. And until Max's death, Lyon had no idea that his career was about to take an abrupt turn.

Today, Lyon writes extensively on the increasingly thorny ethical issues associated with the burgeoning field of genomic research and the relationship between investigators and study participants. In addition to writing a blog and publishing papers in such professional journals as *Nature*, he has talked to reporters from *Discover*, *Forbes*, and *Bloomberg News*, calling for scientists to grapple with questions about when and how to report research findings to participants. "It's

like the Wild West out there,” he says. “Most academic researchers don’t have any desire to even think about this.”

Until he met Max’s family, Lyon didn’t either. As an assistant professor at the University of Utah—with an MPhil from Cambridge and a Rockefeller University PhD granted through the Tri-Institutional Program as he was earning his MD—he was intent on unlocking the genetic underpinnings of such complex psychiatric conditions as attention deficit-hyperactivity disorder, Tourette syndrome, and schizophrenia. But first he would need new analytical tools to focus on relevant mutations by using a combination of innovative software and the kind of pedigree details easy to obtain in Utah, thanks to the extensive genealogical records maintained by Mormon families. Eventually, he imagined, the effort might have clinical applications for the people providing their DNA, but initially it was pure research.

Nationwide, only laboratories certified by the Centers for Medicare and Medicaid’s Clinical Laboratory Improvement Amendments (CLIA) are authorized to release diagnostic information to patients. CLIA oversees every step of the process, from sample collection through analysis, and imposes rigorous standards to ensure that results are of the highest reliability. Research scientists, focused on discoveries

that will guide future clinical care, typically don’t certify their labs through CLIA; they’re not in the business of reporting results to participants, and CLIA imposes training, documentation, and other expenses. “In clinical medicine it’s all about rigor, industrialization, tracking every sample,” says Lyon, now an assistant professor of human genetics at Cold Spring Harbor and of psychiatry at the Stony Brook University medical school. “Every piece of information you give back to a patient has been closely tracked, and there’s a lot less room for error. In academia, it’s research; everyone does it their own way and no one likes doing things in an industrial manner.”

While Lyon had already worked clinically and published extensively by the time he met Max’s mother and her sisters, he had never given much thought to the subtle differences between academic and clinical laboratories. That changed when he got a call in early 2010. Max had been conceived, and his mother wanted to know whether she carried the mutation Lyon had already identified in his research lab. “I started looking into it and found that technically I wasn’t supposed to give back results unless they’re CLIA certified,” he says. Max’s mother had no intention of terminating her pregnancy—and doctors still lack a cure for the damage caused by

the mutation, which impedes the molecular signaling by proteins throughout the body and compromises cardiovascular function. She just wanted to know what Lyon already knew about her unborn baby. “It was just more stress and worry while I was waiting for my baby to be born,” she told *Bloomberg BusinessWeek*. “What do you plan for? Do you plan for him going to college or for a funeral?”

The American Journal of Human Genetics would publish Lyon’s report—co-authored with twenty-six colleagues—naming the mutation that killed Max, his cousins, and uncles—on June 23, 2011, the day before Max’s funeral. Even then, Lyon still couldn’t share the information his mother had requested when she was four months pregnant. Lyon has since helped to develop a CLIA-approved diagnostic test for the condition, now known as Ogden syndrome after the town where Max’s family resides. Like the unrelated California family in whom the mutation has also been detected, relatives can now be tested and carriers can choose *in vitro* fertilization to avoid passing on the trait to their children. “I’m not saying all academic research has to be regulated,” says Lyon. “But if you’re sequencing a live person’s genome, I think you have an obligation to think about the human being who’s involved in the research.”

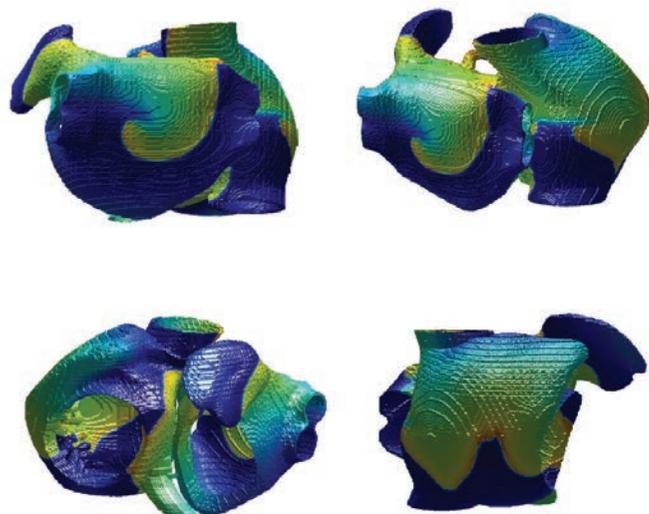
— Sharon Tregaskis

Artificial Heart

Physiologist Trine Krogh-Madsen, PhD, designs computer models of atrial fibrillation

Five percent of Americans older than sixty-five suffer from atrial fibrillation, a type of cardiac arrhythmia known to markedly increase the risk of ischemic stroke. In the U.S., treating atrial fibrillation carries a \$6.65 billion annual economic cost, which is predicted to rise precipitously as the Baby Boomer generation ages.

Trine Krogh-Madsen, PhD, an assistant research professor of physiology in medicine and of computational biomedicine in the Institute for Computational



PROVIDED BY TRINE KROGH-MADSEN

Heart condition: Trine Krogh-Madsen’s simulations of atrial fibrillation

Biomedicine, is employing an innovative blend of computational wizardry and engineering to enhance understanding of the affliction. She is modeling the heart's electrical contractions using electrophysiology to demonstrate the marked differences in impulses between normal organs and those experiencing atrial fibrillation. "The colors show how excited the tissue is," says the Denmark native. "Understanding how these processes work can open up new treatment strategies."

In the lab, Krogh-Madsen spends her time in the glow of the computer monitor—writing analytical software and running simulations. Over the course of her research, she has incorporated more and more variables into her models, coming as close as possible to generating a real-world scenario. "As computational power increases, and experimental work yields more data, we can use it to improve the model," she says. "We'll begin running drug tests on it within the year."

Krogh-Madsen holds a master's degree in engineering from the Technical University of Denmark, which gives her a unique perspective on physiological systems. Her first experience with medicine came as an undergraduate, through a semester abroad program at Montreal's McGill University, where she worked with a physiology professor interested in applying mathematical models to cardiac systems. "Cardiac cells are coupled together in a simple way," she says. "For that reason, the heart is very amenable to mathematical modeling." Capitalizing on the heart's modular structure, Krogh-Madsen can approach atrial fibrillation as if it were an equation to be worked out rather than a medical condition to be treated—but when the equation yields the correct answer, new ideas for treatment can present themselves.

After returning to McGill in 2000 for a doctorate in physiology, Krogh-Madsen began leaning away from straight math and physics and toward medicine. The move became official in 2004, when she began a postdoctoral fellowship in the Division of Cardiology, where she has remained, first as an instructor and now an assistant research professor. "I like the fact that there is the potential to help people by improving our knowledge in the field," says Krogh-Madsen. "Physics isn't going to change people's lives in the direct way that medicine can."

— Kristina Strain

Dr. Hayworth Goes to Washington

Republican Congresswoman faces her first re-election race

It's standing room only in the Orange County Courthouse in the Hudson Valley town of Goshen, where seventy-five people from thirty-nine countries are about to become American citizens. There's an Asian man in a monk's robe, several men in Hasidic garb, many others in suit and tie. Some women sport saris, Muslim headscarves, or the wigs of observant married Jews; one is dressed so formally her outfit would suit the mother of the bride.

Together, they take an oath to, among other things, "absolutely and entirely renounce and abjure all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty" and to "support and defend the Constitution and laws of the United States of America against all enemies, foreign and domestic." When they're called to collect their citizenship certificates, it's a veritable United Nations of names—Slavic and African, Hispanic and Asian, Hebrew and French.

Among the many dignitaries present is U.S. Representative Nan Hayworth, MD '85. She's a busy lady, and the ceremony is long—stretching to include a pro-donation speech from a teenage organ recipient and a folk song celebrating immigration recorded by a local nun—but she stays until the end. Clad in a trim navy blue suit and her signature four-inch stiletto heels (today in hot pink rather than her usual red), the retired ophthalmologist stands in the receiving line to shake hands and pass out copies of the Constitution, which the new citizens clutch along with little flags provided by the Daughters of the American Revolution.

"It's hard to get through one of these ceremonies without choking up," Hayworth says during her brief remarks. "My mother is an immigrant. My mother chose, as you have chosen, to become an American. And because of that, I had the good fortune to grow up an American, which is the greatest blessing of my life. I admire you so much for having taken the very great step to leave a life that you knew—your friends, neighbors, and communities—to come to this remarkable and unique place."

The only female physician who is a voting member of Congress, Hayworth won her seat during the 2010 midterm landslide that brought eighty-seven Republican freshmen to the House of Representatives. She defeated incumbent Democrat John Hall (a Cornell alumnus and co-founder of the rock band Orleans) to represent New York's 19th District. She's now in the midst of her first re-election campaign; due to redistricting, her district will be the 18th, though its make-up is largely the same. "There is a steep learning curve," she says of jumping into the job after never having held office. "Being a doctor helps with that, because you're accustomed to learning a lot of stuff fast and having to apply it. There are analogies to internship that are tremendously apt; the hours are crazy, you're thrown right in, and the more expert you can become rapidly, the better." Hayworth was hardly alone in being new to politics. She was one of thirty-five "citizen legislators"—six of them medical doctors—in her GOP freshman class.

Hayworth grew up in Indiana; her mother had emigrated alone from postwar



WWW.FLICKR.COM/PHOTOS/REP NAN HAYWORTH/

England in search of wider opportunities. Hayworth met her husband—Scott Hayworth, MD '84, an ob/gyn who's now president and CEO of Mount Kisco Medical Group—as an undergrad at Princeton; she was drawn to medicine by exposure to his premed coursework. Although she'd originally planned on surgery, she chose ophthalmology in part because its lifestyle was more compatible with raising a family. "It turned out brilliantly, because I'm a perfectionist and I had only the eyes to worry about," she says. "But in many ways I also ended up being an internist, because so many diseases are manifested within the eyes." She practiced for sixteen years before leaving clinical work in 2005 to devote more time to her sons, then fourteen and twelve.

It was her husband who—in response to her "frequent and vivid" objections to what she saw as intrusive governmental policies—suggested she run for Congress. She prides herself on running a civil campaign, noting that although she opposes the new health-care law, she refuses to call it "Obamacare" despite her supporters' urging. "There's a flavor to that term that feels pejorative to me, so I never use it," she says. "This is a principle of mine. I don't want to alienate folks on the other side of the aisle, and I work well with Democratic colleagues. We all have the

same goals; it's just how we get there." A fiscal conservative who fervently advocates limited government—she says her parents raised her "to cherish the power of the individual citizen and the value of enterprise"—she has described herself as generally pro-choice and supports gay rights as a member of the Congressional LGBT Equality Caucus.

Hayworth credits her medical training with allowing her to compartmentalize and keep her cool—even during contentious debates on cable news, where she has been a frequent representative of her party's positions. "I get a kick out of it when my counterpart in a discussion starts getting heated or histrionic," says Hayworth, who landed a plum spot on the House's Financial Services Committee, "because then I know I've won." And she notes that what makes a skilled physician can also translate into effective governance. "A doctor's first job is to listen to his or her patient, and I have to listen to my constituents," she says. "I have to help them to understand the nature of their problem, the challenge we face together, and help craft a solution that will work in their lives. And that's what a good doctor should be doing, too. So public service is very much like private practice, on a much bigger scale."

— Beth Saulnier

Representative government:
Congresswoman Nan
Hayworth, MD '85, speaks at
an event in Dutchess County.



Kate McCarn, MD
(left), and Hillary
Johnson, MD, PhD

ABBOTT

When Black finally got around to visiting his dermatologist, a biopsy revealed the bump was the proverbial tip of the iceberg: the visible manifestation of a squamous cell carcinoma, necessitating five hours in surgery and a nearly twelve-inch-long incision. “When I came out I was stitched from the top of the nose all the way across the top of the forehead and down the side of my cheek,” says Black. “It was something else.”

Requiring multiple specialists working in concert, Black’s complex case was handled by members of the Cutaneous Oncology Group, a multidisciplinary team that aims to streamline skin cancer patient care at Weill Cornell. Founded in January, the twelve-member team of oncologists, dermatologists, surgeons, and other specialists reflects the field’s unique challenge: preserving a patient’s appearance while removing cancerous tissue. “You’re talking about the skin, something that’s out there for the whole world to see,” says founding member Kate McCarn, MD, a facial plastic surgeon in the Department of Otolaryngology–Head and Neck Surgery. “We want to put these patients back together so they can walk down the street.” Addressing each area of the face—eye, nose, neck, brow—requires a different

skill set and, in some cases, a separate surgeon. “Sometimes skin cancers grow in very delicate locations, like the eyelid, so we have an eyelid specialist,” says team member Hillary Johnson, MD, PhD, director of Mohs Micrographic and Dermatologic Surgery. “We have the best of every field working together.”

The synchronized care that the group provides can have an enormous impact on the patient experience. “Our capability of bringing together specialists in all these different areas to take care of patients is a great advantage,” says Michael Lieberman, MD, associate professor of clinical surgery and director of surgical oncology at NYP/Weill Cornell. “By offering this kind of multidisciplinary care, we can greatly improve outcomes for these patients.”

On surgery day, Black’s cancer was removed by head and neck surgeon David Kutler, MD ‘96; McCarn then took over to perform his facial reconstruction. During both surgery and follow-up, Black recalls, his doctors were organized and efficient, constantly checking with each other to

Cosmetic Improvements

For skin cancer patients, physician collaboration means easier treatment—and better outcomes

Fred Black might never have noticed the bump on the side of his nose. He has a history of skin cancer—he was diagnosed with basal cell carcinoma in 2006—but this spot bore no resemblance to those doctor’s office photographs of malignant moles. “I thought it was a mark from my glasses,” says Black, a seventy-one-year-old advertising executive. “It would ooze a little from time to time, but I didn’t think about it much.”

ensure his treatment was as comfortable and convenient as possible. “If one doctor was running late, another would swap their schedule around,” says Black. “They’d flip-flop appointments so I wouldn’t have to wait.” By contrast, skin cancer treatment in other settings may involve downtime between surgery and reconstruction—even a crosstown cab ride from one specialist to another. “Being able to offer coordinated care under one roof is a big thing,” says McCarn. “Patients get out of surgery and look like the walking wounded. We don’t want them stuck in someone’s waiting room.”

The impetus to start the group came from Johnson and McCarn, who had seen multidisciplinary treatment groups succeed in other places. “We had all the specialists here,” Johnson notes. “It was just a matter of organizing to work together in a more streamlined way.” Says McCarn: “The more heads you have working on a particular problem, the more likely you are to come up with a solution.” The field’s many contributing specialists had long worked together—with general surgeons, surgical oncologists, plastic surgeons, radiation oncologists, medical oncologists, dermatologists, ophthalmologists, facial plastic surgeons, head and neck oncologists, otolaryngologists, dermatopathologists, and others collaborating on patient care. The group’s creation streamlined that partnership, even providing a special phone number for referrals, handled by Johnson’s office in the Department of Dermatology. “All of these different components have been functioning together at Weill Cornell for a long time, but over the course of the last year we’ve formalized the group,” McCarn says, “No matter what part of the body a patient’s problem is on, we’ve got someone to take care of it.”

Two months after surgery, Black’s only remaining treatment consisted of a daily facial massage regimen to stimulate circulation. The scab had sloughed off, sensation and elasticity had returned, and that massive incision was barely visible. “Unbelievably, if someone did not know I had the surgery, they couldn’t tell it was done,” he said this summer. “The folds where they put my face back together match the folds on the other side. It’s amazing.”

Founded primarily to benefit patients, the Cutaneous Oncology Group has also enriched the professional lives of its members. Monthly meetings offer a chance for

physicians to confer about tough cases and review the latest research, while an electronic chart system enables the sort of groupthink that benefited Black. “Whenever I need to collaborate with another

physician about a patient, I can share the notes instantly,” says Johnson. “The communication we have with each other elevates the care we can provide.”

— Kristina Strain

The expert team of plastic surgeons at NYP/Weill Cornell is dedicated to improving patients’ quality of life through a range of cosmetic and reconstructive surgeries.

For more information, go to:

www.cornellsurgery.org/pro/services/plastic-surgery/team.html

Soothing Sounds

With monthly concerts, student musicians comfort palliative patients

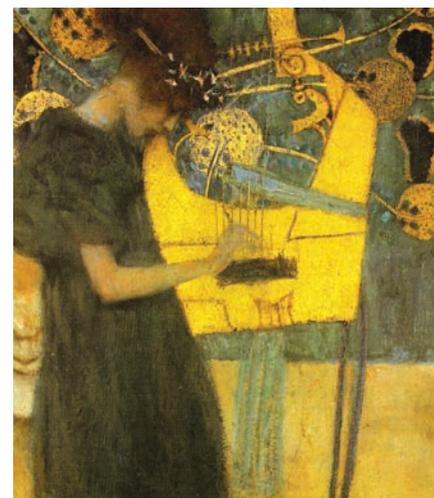
The patient on the palliative care service had refused further medical intervention. But she gladly took part in a nontraditional form of therapy: a concert by student members of the Weill Cornell Music and Medicine Initiative. Not only did the woman attend the performance, she asked the students to play her favorite song, the classic “Autumn Leaves.” “We played her request and suddenly she seemed like a completely different person,” recalls Music and Medicine co-chair Lindsay Gibbon ’13. “We reached her in a way that we weren’t able to medically.”

There has long been a correlation between musical talent and scientific acumen, and a significant number of Weill Cornell students and faculty are musically inclined. The Music and Medicine Initiative was founded to explore the connections between the two fields, and to give students and professors opportunities to perform. Last winter, Randi Diamond, MD—assistant professor of medicine and director of Weill Cornell’s Liz Claiborne Center for Humanism in Medicine—tapped the student musicians to give regular concerts for palliative patients. “Our Palliative Care Service is always looking for ways to improve quality of life, things that might offer a diversion from the difficult time that patients and families have when they’re in the hospital,” Diamond says. “We thought concerts on the inpatient units would bring in a little bit of the outside world.”

The students have been giving monthly instrumental and vocal concerts in a variety of styles—classical to jazz, bluegrass to holiday tunes. “One woman who wasn’t talking very much even sang a little for us,” says Gibbon, who sings, plays the trombone, and has been studying the *sanshin*, a Japanese stringed instrument. “Her family was pretty excited to hear her.” About a dozen students have participated in the concerts, and plans are in the works to offer on-request performances at patient bedsides. “Music can touch people in a way that words can’t,” says Dory Hottensen, LCSW, the palliative care service’s social worker. “It’s unique that way. Family members and patients are able to access their emotions through music.”

Diamond reports that the concerts have been popular with patients and families alike—and that the program may be expanded to include other wards in the hospital. “One family member was so touched,” Diamond recalls, “she said to the students, ‘If you become physicians who are anywhere near as good and caring as you are about your music, the world will be a better place.’ ”

— Beth Saulnier



GUSTAV KLIMT, MUSIC / ARTSTOR.ORG



ABBOTT

Richard Silver '50, MD '53

The Accidental Oncologist

In his sixth decade at Weill Cornell, eminent researcher Richard Silver '50, MD '53, remains active

Richard Silver '50, MD '53, never planned on specializing in oncology. But not only has the director and namesake of Weill Cornell's Richard T. Silver Myeloproliferative Disease Center had a front-row seat to the remarkable advances in cancer treatment over the last half-century, he has played a leading role in the improved survival of patients with blood disorders. His accomplishments, ranging from the discovery of a gene responsible for rare transfusion reactions to the validation of life-saving treatments for leukemias and myeloproliferative disorders, have garnered a slew of honors over the past year.

Last year, then-Dean Antonio Gotto, MD,

lauded the hematologist-oncologist at a special reception, citing "a lifetime of academic achievement, dedication, and service." Also in 2011, a pledge of \$3 million was made by the nonprofit Cancer Research and Treatment Fund for the Myeloproliferative Disease Center, renamed for Silver that year. This October, he will be fêted with the Weill Cornell Alumni Association's Special Achievement Award, which honors graduates who advance health care and science. And the following month, he will receive a lifetime achievement award from the nonprofit Sass Foundation for Medical Research.

The gift and the renaming represent "an apex of a total career of dedication," says Doug

McCormick, board president of the Cancer Research and Treatment Fund. While the Silver Center has existed in virtual form since 2002, the gift will fund the salary of a principal investigator to perform research in the Belfer Research Building, which is slated for completion in 2014. The Center will combine basic science, translational research, and clinical care; Silver hopes that discoveries about the genetics of myeloproliferative diseases—a collection of disorders characterized by bone marrow malfunction—may reveal new targets for cancer drug development and new clinical uses for the hemopoietic stem cells currently collected for transplantation.

Myeloproliferative disorders encompass four diseases: chronic myelogenous leukemia or CML (in which the bone marrow manufactures too many white blood cells); polycythemia vera (characterized by too many red blood cells); essential thrombocythemia (defined by excess platelets); and primary myelofibrosis (scarring of the bone marrow). For unknown reasons, these conditions terminate in acute leukemia. Because blood—in contrast to solid tumors—is easily accessible to scientists, research findings on the disorders are considered a window into the biology of other cancers. “These diseases are important far beyond their clinical incidence because they give insight into how cells develop, migrate, and differentiate; how they interact with each other; and what makes them malignant,” Silver says. “There’s a tremendous amount of attention being paid to this.”

Silver was not always so passionate about cancer. An aspiring cardiologist, he arrived at the NIH in 1954 as a reluctant clinical associate in the leukemia branch, having been told that since the armed forces had not accepted him for service in the Korean War, he must satisfy his military obligation through research. Cancer was then the purview of surgeons who performed radical procedures based on the now-disproved belief that it was not a disseminated disease. “I had no real indication of going into the cancer field because I saw it as the gulag of all disciplines; horrible things happened, everybody died,” Silver recalls. “It was a great surgical exercise. There was no place for medical oncologists.” There were no positions for cardiology researchers—but at the intellectually rich NIH, the straight-talking New

Yorker quickly became a convert. His mentors were three physicians who became the fathers of clinical oncology: James Holland, MD (now at Mount Sinai Cancer Center in New York City), Emil Frei III, MD (now retired from the Dana-Farber Cancer Institute), and Emil Freireich, MD (now at MD Anderson Cancer Center in Houston, Texas). “I had the most exciting time in my life,” Silver says. “I came into this field by accident, and by the time I left the NIH I had seven papers published.” Four books and more than 250 papers have followed.

When Silver began his career, life expectancies for cancer patients were short, and chemotherapy was a nearly

‘That’s why it’s an exciting field to be in: people who were destined to die are alive and well. I have a good number of patients who are refreshing their wills. It has been an amazing experience.’

brand-new idea. It was only eight years earlier that legendary pathologist Sidney Farber, MD, had first demonstrated that a folic acid antagonist could put children with acute lymphoblastic leukemia into remission. Silver and his NIH colleagues built on Farber’s work, demonstrating that combination chemotherapy can produce greater effectiveness against blood cancers with less toxicity than standalone drugs. “These principles that were developed in the treatment of acute leukemia and Hodgkin’s disease—the kinetics of how a tumor grows and what cancer was—were extended to the solid tumors,” he says. “The hematological malignancies became the model for how cancer should be approached in general.”

Silver later became a leader in proving that the drug interferon could improve survival in patients with chronic myeloid leukemia and polycythemia vera. He was a co-investigator on a 2006 study elaborating on the frequency and pervasiveness of Jak2, a gene abnormality found in most patients with polycythemia vera and about half of those with essential thrombocythemia and primary myelofibrosis.

But most exciting was witnessing the dramatic benefits of a targeted cancer therapy for CML. Silver was part of a breakthrough in that disease’s treatment when he served as a co-investigator on a 1999 multi-center trial of the drug Gleevec. The medication is different from standard chemotherapy, which destroys both cancer and healthy cells; instead, it targets a particular protein associated with the chromosomal abnormality linked to CML. Among patients who have been followed for a decade, 80 percent are still alive. “It was an absolute moon shot,” Silver says. “That’s why it’s an exciting field to be in: people who were destined to die are alive and well. I have a good number of patients who are refreshing their wills. It has been an amazing experience.”

Silver’s explorations haven’t been limited to the test tube. After a stint as a Fulbright Scholar at the University of Bahia in the late Fifties, he was made a member of the Explorers Club for his discovery of a new gene, which accounts for rare reactions to blood transfusions, in the Kidd blood group system among natives of the Upper Xingu river basin in the Brazilian state of Mato Grosso. Silver published his findings in leading medical journals and reported on his two-week adventure in a 1965 edition of *Explorer’s Journal*.

Though he continues to travel frequently as an invited speaker at scientific meetings, Silver now spends much of his time in New York. He is a life member of the Cornell University Council and chairs the International Symposium of Myeloproliferative and Myelodysplastic Diseases, a biannual meeting where leading investigators discuss advances in these disorders. That meeting is preceded by a popular day-long conference for patients from around the world, who participate in talks and exchange concerns with leading experts in the field. Silver also plans to lead an upcoming trial of interferon for treating myelofibrosis. And he serves on an international committee developing guidelines for the 30 percent of CML patients who ultimately discontinue Gleevec. “As a senior citizen in hematology, it’s nice that I keep finding new and important research and clinical issues to be involved with,” he says. “Despite my age, I still have a young outlook.”

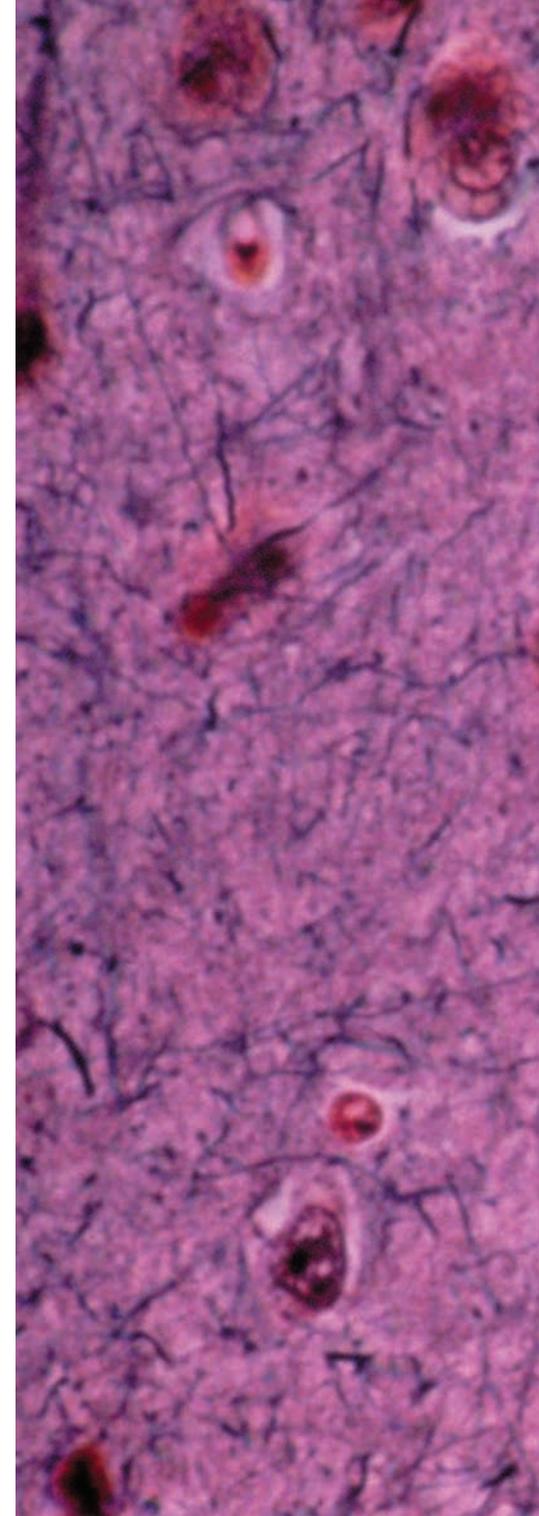
— Jordan Lite

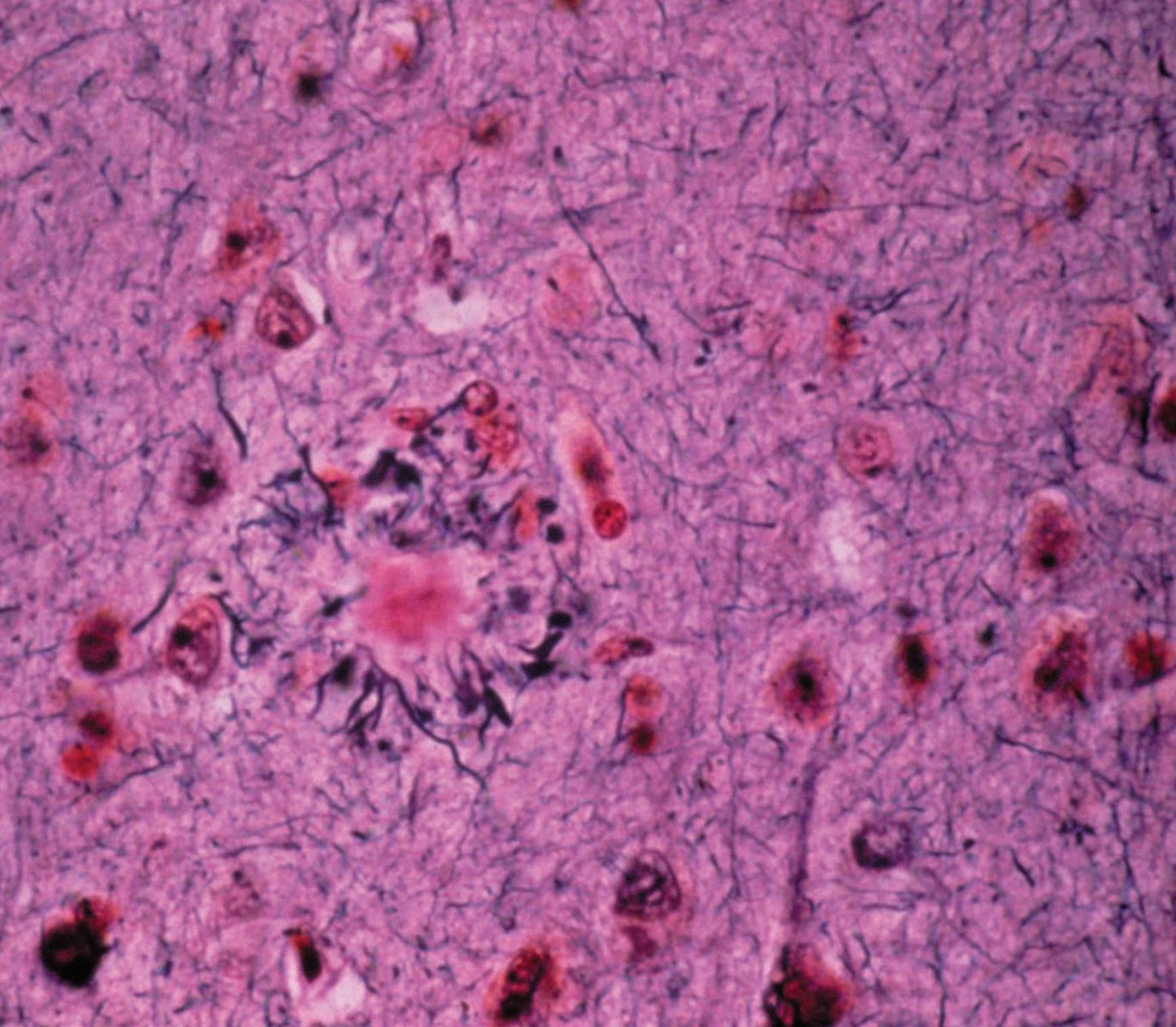
After losing friends to Alzheimer's, Bob and Helen Appel endow an institute dedicated to battling the disease—projected to have devastating societal costs in the coming decades

Never Forget

By Jordan Lite

Bob and Helen Appel, Cornell University alumni and longtime benefactors of the Medical College, were reeling from the deaths of two friends from Alzheimer's disease. One was a dynamic and athletic lawyer who developed Alzheimer's in her early sixties and died two years later. "We watched this disease literally ruin her life," Bob Appel says. Then a longtime male friend, constitutionally upbeat, was diagnosed in his early seventies, and the disease slowly killed him. "The man was very positive about everything in his life and this changed so suddenly and dragged itself out over a number of years where he still was considered to have a decent life, but it got less and less so as time went on," Appel says. "One almost began to wonder: is it better to get it and pass away within two years and not go through all of that?"





MARTIN M. ROTKER / PHOTO RESEARCHERS, INC.

Especially wrenching was watching both friends become depressed during the early stages of their disease, when they were still aware of what was happening to them. “There are terrible periods of time—you get up in the morning and know you’ll be out of it again,” Appel recalls. “It had an unusually strong effect on us.” His wife notes that their friends’ struggles touched the lives of everyone around them. “Aside from the individual,” she says, “you’re taking an entire family and putting them in the same boat but on a different shore, so to speak.”

Struck by a sense of fatalism around the disease, Bob Appel, a former managing partner at an investment and securities brokerage firm, began looking into whether Alzheimer’s scientists had the

Memory lapse: A light micrograph of amyloid plaques in the brain, one of the hallmarks of Alzheimer’s disease

money they needed to study it. “It was such a terrible disease, such a complicated disease,” he says, “and there was so little in terms of funding.” In 2006 the Appels made a \$15 million gift to Weill Cornell to establish an Alzheimer’s disease research institute—then another \$15 million four years later for lab space in the Belfer Research Building, currently under construction. Pioneering physician-scientist Steven Paul, MD, was recruited to lead the Appel Institute for Alzheimer’s Disease Research, and he quickly secured agreements with powerful industry collaborators—pharmaceutical companies

Johnson & Johnson and Astra-Zeneca—and with academic teams in and out of New York City to elucidate the biology of Alzheimer’s disease and create potential compounds to derail its development and progression.

As the Appels witnessed in their friends, Alzheimer’s disease causes forgetfulness, personality changes, and cognitive dysfunction including difficulties with language and learning. As the dementia progresses, patients stop recognizing loved ones and have trouble swallowing and caring for themselves. The symptoms are the behavioral manifestations of dying neurons; scans of patients’ brains show widening swaths of dark

emptiness where the brain’s gray matter—the cells where higher-order thinking occurs—has disappeared. As its sulci (fissures) deepen, the brain can shrink by up to a third, especially in the hippocampus and perirhinal and entorhinal cortices—the brain regions responsible for perception, navigating space, and forming associations and memories.

At the same time, changes in the synthesis and clearance of the protein beta-amyloid from the brain are thought to trigger the deposition of plaques—and, subsequently, to fuel the development of tangles of another protein, tau. The tau tangle or lesion is most closely associated with the loss of neurons and synapses as well the

The major risk factors for Alzheimer’s are advancing age and genes. Some 17 percent of women and 9 percent of men will be diagnosed with Alzheimer’s in their lifetimes, according to the non-profit Alzheimer’s Association. One in eight people over the age of sixty-five will develop Alzheimer’s disease and almost one in two over the age of eighty-five. While most patients do not carry genes associated with the disease, mutations in certain genes—the amyloid precursor protein (APP), presenilin1 (PS1), and presenilin2 (PS2) genes—are known to cause Alzheimer’s before the age of sixty. Variations of another gene, apoE, either elevate or reduce Alzheimer’s disease risk later in life, depending on which alleles, or forms of the gene, a person has.

To date, treatments for Alzheimer’s have only attempted to mitigate symptoms. Medications such as Aricept and Cognex work by enhancing the neurotransmitter acetylcholine, which plays an important role in memory and decreases markedly in the brains of Alzheimer’s patients. But neither drug interferes with the disease process itself—a clear drawback for patients, clinicians, and scientists. “Unfortunately, we don’t yet have any disease-modifying therapies,” says Paul, the Burton P. and Judith B. Resnick Distinguished Professor in Neurodegenerative Diseases. “All we have are therapies that very mildly to moderately improve symptoms and for only a short period of time.”

The vision that Steven Paul has articulated for the Appel Institute is informed by the first two decades of his career, when he studied how antidepressant and antipsychotic drugs work in the brain, and by the third and fourth decades, when he steered research and discovery at pharmaceutical company Eli Lilly. Awarded a fellowship in 1976 to study under biochemist and Nobel laureate Julius Axelrod, PhD, at the National Institute of Mental Health, Paul became an expert in visualizing how basic science could lead to drug discovery. He left the NIMH in 1993 to become Lilly’s vice president of neuroscience drug discovery and later became president of the Lilly Research Laboratories and executive vice president for science and technology, overseeing an annual budget of more than \$4 billion.

By the time Paul arrived at Lilly, the company had made Alzheimer’s drug discovery a priority; during his seventeen years there, Paul also maintained a lab, where he dove into what was for him a new area of neuroscience. “The science on Alzheimer’s disease was getting more and more exciting in the late Eighties and early Nineties,” he recalls, when researchers first discovered the mutations in APP, PS1, and PS2 that account for half of early-onset Alzheimer’s cases. “It’s exciting when you find a gene that causes a disease, even if it’s a relatively rare form. The information provides valuable clues to our understanding of the disease in its totality. The early-onset forms present clinically, and even neuropathologically, in a way that’s basically indistinguishable from late-onset, sporadic disease, the kind that’s more common in individuals in their late seventies and eighties.”

In his lab, Paul began studying how apoE dramatically contributes to Alzheimer’s risk and exploring a novel therapeutic strategy that helps clear the brain of amyloid, which might work to slow the disease’s progression. About a decade into his tenure, Paul



Steven Paul, MD

PROVIDED

‘What we’re interested in knowing is, why do neurons become sick and degenerate in the first place? Why do these neurons die?’

signs and symptoms of the disease. Because the lesions are believed to be responsible for the devastation wrought by the disease, they are a key focus of interest for Alzheimer’s researchers. “What we’re interested in knowing is, why do neurons become sick and degenerate in the first place?” says Paul, a psychiatrist and neuroscientist. “Why do these neurons die?”



Helen and Robert Appel

JOE VERICKER

zeroed in on a monoclonal antibody, one directed against a peptide called beta-amyloid, which can become aggregated to form amyloid plaques, and discovered that it reduced the deposition of amyloid plaques in transgenic mice engineered to carry the disease-causing APP gene. “Antibodies are a way to rid the brain of toxic proteins,” explains Jeffrey Nye, MD, PhD, vice president and global head of external innovation for neuroscience at Janssen Pharmaceutical Companies of Johnson & Johnson. Already, monoclonal antibodies are used to treat rheumatoid arthritis and cancer; the one Paul helped discover, solanezumab, is thought to work—at least in animal models—by facilitating clearance of beta-amyloid from the brain.

Paul was recruited to Weill Cornell in 2010, drawn by the opportunity to focus on research rather than juggle it with administrative duties, as he did at Lilly. He was also attracted by the chance to collaborate with scientists at the Medical College as well at Rockefeller University and Memorial Sloan-Kettering Cancer Center; the three institutions now hold Alzheimer’s-related seminars eight or nine times a year. “At the Appel Institute, we do translational research that goes from basic disease biology—understanding the etiology and pathogenesis of Alzheimer’s disease—to thinking about developing tools and methods to intervene,” Paul explains. “Everything I’ve done in my career, primarily focused on drug discovery and development, has helped me become proficient in this type of translational research—someone who can do this from either an academic or industrial perch. At present my laboratory is working closely with two very large pharmaceutical companies to discover drugs to treat or prevent Alzheimer’s disease. It’s rather unique for an academic laboratory, but necessary if we really want our work to directly impact patients.”

In addition to Paul, the Institute has four senior staff scientists and four support staff. Among its affiliated and collaborating scientists are M. Flint Beal, MD, the Anne Parrish Titzell Professor of Neurology; Fred Maxfield, PhD ’77, the Vladimir Horowitz and Wanda Toscanini Horowitz Distinguished Professor of Neuroscience; and Ron Crystal, MD, chairman of genetic medicine and the Bruce

Webster Professor of Internal Medicine. Paul expects to hire two postdoctoral researchers this fall and four to five principal investigators after the lab moves into the Belfer Research Building from its current home at 1300 York Avenue.

At the Appel Institute, Paul is asking two overarching questions: Can the plaques and tangles that characterize Alzheimer’s somehow be prevented or disrupted? And can genes known to affect Alzheimer’s risk be harnessed to protect people against the disease? While the Institute is in the earliest days of its work, says Matthew Fink, MD, chairman of the Department of Neurology, Weill Cornell researchers are ready to jump on any findings that suggest potential treatments. “As soon as Dr. Paul develops compounds that have some promise, we’ll have a unit to immediately get them into clinical trials,” he says. “We consider this a very high priority—to focus on prevention and treatment of this disorder.”

Alzheimer’s disease was first described in 1906 by Alois Alzheimer, MD, at a meeting of German psychiatrists. Alzheimer recalled his examinations of Auguste Deter, a fifty-one-year-old woman who had been admitted to a Frankfurt hospital with “progressive cognitive impairment, focal symptoms, hallucinations, delusions, and psychosocial incompetence,” according to a 1997 piece about the psychiatrist in *The Lancet*. When he published the case, Alzheimer described plaques and tangles found in Deter’s brain that are now known to signify the disease. Not long after, fellow psychiatrist Emil Kraepelin, MD, underscored that while Alzheimer’s looked like senility, it was, in fact, a disease. “Although the anatomical findings suggest that we are dealing with a particularly serious form of senile dementia, the fact is that this disease sometimes starts as early as the late forties,” Kraepelin wrote in 1910 in the eighth edition of the *Handbook of Psychiatry*.

Nonetheless, the conflation of Alzheimer’s and age persisted—in large part because while senility is not an inevitable side effect of aging,

age is the number-one risk factor for Alzheimer's, with 40 percent of people eighty-five and older getting the disease. Until recently, most people did not live long enough to develop Alzheimer's, but increasing longevity—combined with an aging Baby Boomer population—makes Alzheimer's particularly foreboding. Some 5.4 million Americans have been diagnosed with Alzheimer's, with their care costing \$200 billion a year; projections show that number will rise to between 11 and 16 million by 2050, translating into \$1.1 trillion in annual treatment costs in the U.S., according to the Alzheimer's Association.

"Alzheimer's disease is the largest public health crisis we're going to face in the next twenty years because of the aging population," Fink says. "We've developed great treatments for heart disease and we're developing great treatments for a variety of cancers, but we don't have a single effective treatment to prevent or delay Alzheimer's disease. The numbers keep going up and the costs are going to be astronomical, because all of these people are going to require extensive care. Theoretically, a condition like this—if we don't come up with a way of preventing it—could bankrupt our economy."

One strategy for mitigating the impact of Alzheimer's is to delay its onset to beyond the average age at which Americans die. "If we develop a treatment that delays the onset of symptoms by only five years, we can cut the prevalence by 50 percent," Paul says. "If you delay it from eighty-five to ninety, a lot of people are going to die from heart disease, cancer, or other things."

The Appel Institute's study of the biology of Alzheimer's may offer clues to staving off the disease. Plaques appear ten to fifteen years before the onset of symptoms. Understanding how cells begin to manufacture and dispose of abnormal beta-amyloid—and how beta-amyloid contributes to the formation and spread of tau—"could be very important in stopping the disease before the onset of symptoms or in the earliest stages of the disease," Paul says. He and his collaborators at Johnson & Johnson believe that better understanding of amyloid and tau will improve existing and future Alzheimer's drug candidates designed to remove amyloid or prevent its buildup, or to prevent the formation or spread of tangles.

While analysts projected that solanezumab would likely yield negative results in two late-stage clinical trials—and trials of another medication, bapineuzumab (from Pfizer, Johnson & Johnson, and Elan), which is designed to interfere with amyloid and its corresponding effects on cognition, were halted after they provided no benefit to patients in study results announced in July—Paul remains convinced that such drugs could work. "The results from the solanezumab trial were mixed," Paul says. "While the study did not meet its primary goals in the combined group of milder Alzheimer's patients, those with earlier disease, there was a statistically significant impact of solanezumab in slowing cognitive decline."

Paul believes that such medicines must be tried earlier—long before symptoms begin—to know whether they are effective. "Once you develop dementia, you've lost neurons and synapses. That's why bapineuzumab didn't work. You can remove amyloid, but not restore nerve cells; the horse is out of the barn," he says. "My interest is strong and unaffected by any of these failures. We have new and what we believe are better strategies for attacking the disease than we did ten to fifteen years ago, when these monoclonal antibody trials were first conceptualized and initiated."

In its pursuit of therapies targeting the other Alzheimer's lesion, tau tangles, the Institute is working to discover antibodies that would bind to an abnormal form of the protein and prevent it from

'Alzheimer's disease is the largest public health crisis we're going to face in the next twenty years because of the aging population.'

spreading throughout the brain without affecting normal forms of tau that are responsible for transporting molecules and other proteins inside cells. Such immune approaches are attractive to scientists because, in theory, they could correct the harmful, disease-causing part of a cell—in this case, abnormal tau—without damaging the healthy parts, says Hussein Manji, MD, global therapeutic area head of neuroscience at Johnson & Johnson Pharmaceutical R&D. While antibodies do not penetrate brain cells well, an anti-tau antibody could still positively impact the spread of Alzheimer's disease, he says. "It doesn't get inside the individual nerve cells, but one nerve cell releases this abnormal form of tau so that it's outside the cell, and then it kind of infects the next cell," Manji says. "Can we make an antibody that would be between nerve cells? That might be an ideal opportunity to intercept the pathogenic form of tau."

Institute scientists are working on an anti-tau monoclonal antibody that would be administered as an injection, a delivery approach referred to as passive immunization. (Active immunization would involve injecting a small amount of tau to trigger the body into manufacturing antibodies against it.) "The biggest challenge is knowing what to target," says Manji's colleague Nye. "The amyloid targets are multiple: antibody approaches and inhibitors of production, aggregation, and clearance are all being explored by companies and academic groups. The same sort of list could apply to the tau protein as well."

Another way of going after plaques and tangles would involve harnessing what is known about the genetics of Alzheimer's and using that knowledge to slow its progression or prevent the disease process itself. The APP, PS1, and PS2 genes confer a kind of genetic determinism for the 5 percent of people diagnosed with Alzheimer's before age sixty. "If you develop a mutation on one of those genes, you'll get the disease if you live long enough," Paul notes. "If you pass that on to your son or daughter, they will develop the disease." But apoE does not work in quite the same way. One allele, apoE4, raises a person's absolute risk of Alzheimer's by about three-fold and fifteen-fold if he carries two copies—one from each parent. Half of people with two apoE4 alleles will get Alzheimer's disease by age sixty-five, and about 80 percent or more by age eighty-five, Paul says. But he notes that apoE4 is not "absolutely causal"; some 10 percent of people with two copies of the allele will never develop Alzheimer's. Another form of the gene, apoE2, differs from apoE4 by just two amino acids, but those differences make the allele protective. "If you inherit that form of the gene, your risk goes down dramatically," Paul says. "It's

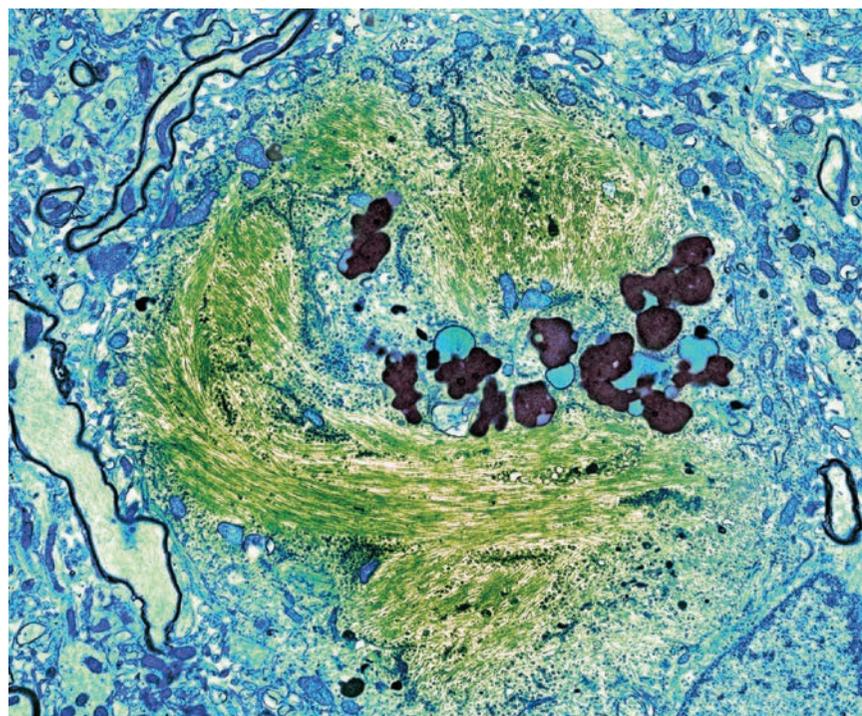
kind of a yin and a yang. That's what we're trying to figure out: how does one form of the gene increase the risk of getting the disease and how does another decrease it?" (A third allele, apoE3, carries an average risk, while an apoE2-apoE4 combination produces a similar risk to apoE3.)

Research that Paul did at Lilly demonstrated how those risks played out in the brain. Over twelve to eighteen months, mice that Paul and his colleagues engineered to express apoE4 showed much greater numbers of amyloid plaques in their brains compared to those expressing apoE3 or apoE2. When the same mouse model was treated in subsequent experiments with a viral vector that expressed apoE2 in the brain, the rodents' plaques decreased considerably.

Could people benefit from a similar therapy? Appel Institute scientists are collaborating with Ron Crystal and his colleagues in the Department of Genetic Medicine on a gene therapy study to determine whether apoE2 can be safely delivered and expressed in the brains of mice and monkeys with amyloid deposits but not Alzheimer's itself. The goal of the treatment would be to interfere early in the disease process, long before it affects cognition. Gene therapy would circumvent a crucial hurdle for many therapies designed to affect neurological diseases: the protective blood-brain barrier. While small molecules such as aspirin and Valium can cross that lining, and Manji says enough antibodies can get through to theoretically enable an anti-tau monoclonal antibody to work, gene therapy would be delivered directly into the brain via infusion of a virus engineered to carry the protective apoE2 allele. "Gene therapy is essentially a drug-delivery system," Crystal explains. "We're using the gene as the way of making the drug, but if we can modify cells in the brain to make a therapeutic protein—in this case, apoE2—we can deliver the drug exactly to where we want it."

Just how quickly plaques and tangles would disappear after an effective gene therapy is unclear, and it would depend on how far into the disease process it was administered. Until scientists prove such a therapy is safe, any human trials would likely be conducted only in sicker patients—though it would likely be more effective the earlier it is administered, Crystal notes.

That work will be informed by a collaboration with pharmaceutical company AstraZeneca and labs at Albert Einstein College of Medicine, Washington University, and the University of British Columbia to elucidate the biological mechanisms of how apoE confers Alzheimer's risk. It will examine whether increasing or decreasing apoE suppression or secretion in astrocytes and microglia, the



THOMAS DEERINCK, NCMIR / PHOTO RESEARCHERS, INC.

Tangled web: A colored transmission electron micrograph (TEM) image depicts a neurofibrillary tangle in a cell from the brain of an Alzheimer's patient. The tangle (shown in green) lies in the cell's cytoplasm (blue).

two types of brain cells that express the gene, could ultimately benefit patients. Earlier research showed that drugs that change the expression and secretion of apoE affect amyloid plaques in the brains of animals. Potential treatments might come in the form of small molecules—those with molecular weights small enough to penetrate the blood-brain barrier—that would affect the levels or function of apoE to reduce plaques and other Alzheimer's pathology. (Such drugs could also indirectly affect tau pathology via their effects on amyloid, Paul says.)

Small molecule treatments are essential, Fink says, because—unlike immune therapies such as monoclonal antibodies or gene therapy that would be administered by injection, infusion, or direct installation into the brain—they could be taken in pill form. "The importance of a small molecule is that it's easy to administer, and when we're talking about trying to treat a large number of people over a long period of time, it's very important that we have something that is easy for people to take," Fink says.

It's that awareness of the human cost of Alzheimer's that makes the disease a societal priority, Helen Appel says. Since she and her husband made their gifts to establish the Appel Institute, two more friends have developed early symptoms of the disease. Their plight has reinforced the couple's dedication to battling Alzheimer's. "No one is immune," Helen Appel says. "Everybody recognizes that it's a possibility in their own lives, and that is a very ominous feeling to cope with. We encourage people to support Alzheimer's research as an investment in their own future." ●

Alzheimer's Disease Symposium To Be Held at Weill Cornell

On November 1, Weill Cornell will host the first Appel Alzheimer's Disease Research Institute Symposium. Chaired by Steven Paul, MD, director of the Appel Institute for Alzheimer's Disease Research, the symposium will highlight groundbreaking research and discoveries by investigators at Weill Cornell to the broader academic community and provide a platform for discussing the advances being made in research on Alzheimer's disease and related neurodegenerative disorders.

Father of Invention

Two decades ago, physician-scientist Gianpiero Palermo, MD, PhD, created ICSI—and revolutionized *in vitro* fertilization

By Beth Saulnier

In the early days of modern fertility treatment, one of the most dire diagnoses a man could receive was congenital bilateral absence of the vas deferens. Essentially, says Marc Goldstein, MD, such men are born with the anatomical equivalent of a vasectomy. “Thirty years ago,” he says, “we couldn’t do anything for them.”

Despite their lack of internal ducts, Goldstein explains, the men’s testicles make sperm normally. So doctors would try retrieving it surgically and injecting it into the uterus of the female partner—but, he says, “nobody got pregnant.” When *in vitro* fertilization was developed, specialists tried mixing sperm and eggs in a petri dish; for these men, it rarely worked. “With a normal man’s semen, if you put the sperm with the eggs, about 80 to 90 percent will fertilize,” Goldstein explains. “But we found that when we sucked the sperm out of the little bit of ducts that these men did have and put it in a dish—even though there were millions of them, and many were swimming wildly—only

7 percent of eggs fertilized.”

It turned out the men’s bodies saw their own sperm as foreign invaders, triggering an immune response that fatally hindered them. “If the antibodies get stuck to the sperm, they won’t penetrate the egg, even though they have great numbers and they often swim beautifully,” says Goldstein, the Matthew P. Hardy, PhD, Distinguished Professor of Reproductive Medicine and Urology and director of the Center for Male Reproductive Medicine and Microsurgery. “So even after IVF came along, the pregnancy rates in these men—whom we couldn’t help at all before IVF—were extremely low, like 3 percent.”



Gianpiero Palermo, MD, PhD

PROVIDED



Life force: The ICSI procedure

EUGENE ERMOLOVICH (CRM) / GOOGLE IMAGES



Zev Rosenwaks, MD

JOHN ABBOTT

Then everything changed. In Belgium, an Italian-born gynecologist named Gianpiero Palermo, MD, PhD, focused his sabbatical research on developing a method for manually inserting sperm into an ovum. It was an uphill battle: the method, known as intracytoplasmic sperm injection (ICSI) had been tried in animals, with middling results—and in humans with no success whatsoever. “Imagine how difficult it was for me as a visiting research fellow in Brussels,” says Palermo, now the Blavatnik Family Professor of Reproductive Medicine at

Weill Cornell. “My boss said, ‘Don’t even try; it doesn’t work in humans. Other people have tried; don’t bother.’ So it was tough.”

But Palermo persevered—and eventually succeeded. The first ICSI baby was born in January 1992, six months before Palermo published his findings in *The Lancet*. It was such a game-changer that Zev Rosenwaks, MD, director of the Center for Reproductive Medicine and Infertility at Weill Cornell, was determined that Palermo join the Medical College faculty. “When it became apparent to me that he was moveable,”

he says, "I made every effort to recruit him." As Rosenwaks says of ICSI: "It really revolutionized the treatment of infertility in general, and of male infertility in particular. In effect, it allowed us to treat virtually all men, as long as they had sperm somewhere in their reproductive system."

Take the case of men with congenital bilateral absence of the vas deferens, who once faced such dismal IVF success rates. "All of a sudden ICSI came along, and 75 percent of the eggs fertilized—even with the antibodies, even if the sperm didn't swim well," Goldstein marvels. "As long as they were alive, they would fertilize. This dramatically changed what was once the worst diagnosis to have, where the only thing we could offer these couples was donor sperm or adoption. Now, that diagnosis is associated with the highest pregnancy rates of any cause of male infertility—70 percent on the first try, and 90 percent live delivery rate if couples do at least three tries. So it went from the worst prognosis to the best. And that's all because of ICSI."

Marking its twentieth anniversary this year, ICSI has become an integral part of fertility treatment; according to Palermo, more than 75 percent of IVF cases employ the technique. "Basically, ICSI changed the entire landscape of what we can do for male infertility," says Peter Schlegel, MD, the James J. Colt Professor of Urology and chairman of the Department of Urology, who calls the procedure a "crowning achievement." "For a lot of the patients we see, it's the only way they can be treated. So to them, it's a godsend."

The procedure can help men with poor sperm production—even those who have zero sperm counts in their ejaculate. Using microsurgery, reproductive urologists can search the testicles and retrieve sperm that can then be injected into an egg. "In more than half of them you can find enough inside the testicles to achieve pregnancy," Goldstein says. "This is another group of men that before ICSI had no hope, and all of them went to donor sperm or adoption. Now we can help at least half of them have a chance to father a child with their own sperm. Theoretically, if we just get one sperm—and they're lucky and it fertilizes that one egg and it sticks—that's all we need."

And for men who have ample sperm present but they are of poor quality, Schlegel says, ICSI has offered an elegant solution to a chronic problem. "When we tried to fertilize eggs with poor quality sperm, we would add more and more sperm to the eggs—and that would just result in more damage to the eggs," he says. "It might increase the chance of the egg being fertilized, but because the sperm had so many toxic components, it would damage it. So you won—you got sperm to fertilize an egg by put-

ting a million on it rather than 100,000—but by increasing the sperm exposure, you increased the damage, and therefore prevented the embryo from growing. It was a Catch-22."

For millennia, infertility was seen as a female problem; most ancient societies never contemplated a male role. And even in the modern era, early IVF efforts were focused on treating the female partner, since science had not caught up with techniques to address male infertility issues. "With ICSI, we suddenly made men comfortable with coming to a clinic and being screened," Palermo says, "because they knew that if there was a problem, we can probably take care of it." The procedure, Goldstein says, is one of a host of advances that continue to improve outcomes in assisted reproduction since IVF was developed in the late Seventies. "There have been steady improvements in stimulation, fertilization rates, implantation rates—it just gets better year after year—and both the male and female surgeries have gotten less invasive," he says. "But the biggest difference is that we can offer hope to so many more couples. It's rare now that I have to sit a couple down and say, 'I'm sorry; donor sperm or adoption, that's all we can do for you.' Even with those couples, if they're young enough, I can say, 'We're working on making sperm from your stem cells, so it's highly probable that within your reproductive lifetime we'll be able to make sperm for you.'"

As Rosenwaks notes, doctors now know that about 40 percent of infertility cases are due to the male partner, another 40 percent to the female, and the rest to mutual or unexplained causes. And ICSI's benefits are not limited just to the male side. It's routinely used in cases where the woman, often due to age, produces only a small number of eggs—so doctors want to maximize the chances that they'll be successfully fertilized.

That's what Rosenwaks and his colleagues did for Lindsay and her husband, Matthew. The couple—who asked that their real names be withheld to protect their privacy—came to the Center for Reproductive Medicine and Infertility after trying to get pregnant naturally for six months, during which time Lindsay turned thirty-five. "Everything I read online said, 'If you haven't gotten pregnant in six months and you're thirty-five, go to a fertility clinic,'" says Lindsay, a banker. After another clinic failed to identify the problem, they went to Weill Cornell; extensive testing still put the couple's infertility among the 20 percent for which

'Basically, ICSI changed the entire landscape of what we can do for male infertility,' says urologist Peter Schlegel, MD. 'For a lot of patients we see, it's the only way they can be treated. So to them, it's a godsend.'

'Since I was a kid, I always wondered, "What's my role in life?"' Palermo muses. 'Well, now I've figured out why I was born. I've done my part.'

there's no obvious medical cause. "When you're in high school, you feel like you're going to look at a boy and get pregnant," Lindsay says. "Suddenly I had this mind shift of, 'Now I want to have a baby, but I can't.' And at the same time, many of your friends are having babies seemingly with no problem—and some of them are having multiple children—so it becomes very tough. I felt like, why do I have to do all of this when it should happen naturally, as it does for most people?"

After ovulation-stimulating drugs led to the retrieval of just four ova, it was clear that one factor in play was Lindsay's low egg production. On her second IVF round she produced another four eggs and successfully conceived—using ICSI and guided ultrasound during implantation—and is now the mother of a healthy two-year-old girl. For Lindsay and her husband, using ICSI was an easy decision. "I had so few eggs," she recalls. "I said, 'Do anything you possibly can that's not going to leave it to luck.'" Says Matthew, an executive in the tech industry: "Obviously you wish you didn't have to go through it, but I felt relieved that science was increasing the chances of having a positive outcome."

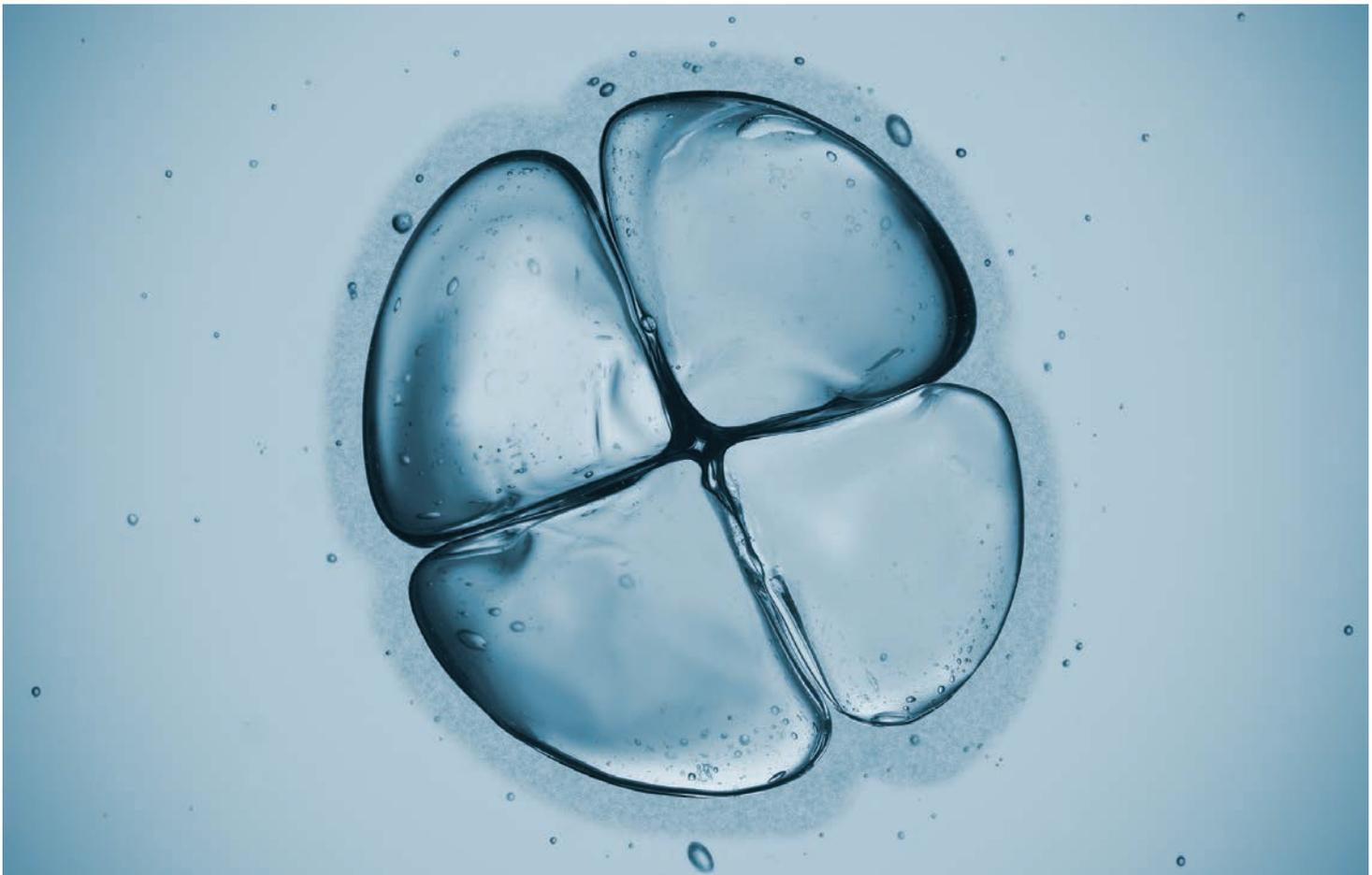
ICSI has also facilitated another aspect of IVF: the use of eggs that have been previously retrieved and frozen. "When you freeze eggs, the covering, or zona pellucida, becomes hardened, so normal fertilization is very difficult to achieve," says Rosenwaks, the Revlon Distinguished Professor of Reproductive Medicine in Obstetrics and Gynecology. "But if you inject a single sperm into it, then you have the ability to get fertilization in cases where previously you had a very poor rate. That's another major area where ICSI has been very successful." Palermo notes that ICSI can also be used in cases where the male partner is HIV positive; before being injected into the egg, the sperm swims through a viscous medium that removes contaminants, leading to the creation of an embryo that is free of the virus. "With ICSI, through the years, we've never gotten any infection," he says.

Additionally, ICSI has played a role in pre-implantation genetic diagnosis (PGD), where embryos are screened for inherited diseases and implanted only if they are found not to be carriers. "It has gotten rid of the effects of having multiple sperm around an egg," says Schlegel. "If you're going to do genetic testing of the embryo, you need to have that egg exposed to only one sperm. The genetic tests are so sensitive that they could pick up genetic material from a second sperm that was sitting outside the egg as well as the fertilized egg's genetic contents itself. Any sperm that were attached to it or around it could contaminate the test and basically prevent PGD from being done."

Schlegel notes that the development of ICSI has also contributed to a greater understanding of sperm's role in the fertilization and development process. "For example, shortly after Dr. Palermo invented ICSI and came to Cornell, he did experiments to show that it's not just the sperm head or nucleus that needs to get into the egg—it's a series of structures attached to the head, called microtubules, that actually drive development of an embryo," he says. "We had assumed that the sperm head goes into the egg, fertilization occurs, and—boom—it will grow. But it turns out that if you just put the head in, you don't have normal embryo development. That sort of observation would never have occurred if we didn't have ICSI."

Palermo's invention of ICSI sprang from a combination of scientific acumen and engineering skills that had been nurtured since childhood. He recalls that his father wouldn't allow him to work after school in the family business, a car wash, because he wanted him to study instead—but the boy felt drawn to the mechanic's shop next door. "I was so fascinated by the mechanic's work that I spent hours observing all the different tools and gadgets and skills," says Palermo, who holds a master's from the Free University of Brussels and a PhD from Australia's Monash University, as well as an MD from Italy's University of Bari. "I kind of acquired the knowledge by just watching, and that has stayed with me all my life." Long fascinated by aesthetic design, he lists Apple co-founder Steve Jobs among his idols. "The fact that ICSI was elegant—you take one sperm and make it so powerful—that's what attracted me," he says. "So I promoted that idea, even if everybody said that it would never work. When you believe in something, it doesn't matter if people agree or not."

Palermo's mechanical know-how offered invaluable insights as he designed the razor-sharp glass pipette that would insert sperm into egg; while others had tried using acid to form the tip, he opted to grind it on a stone meticulously wet by an IV drip. With his boss still skeptical that the procedure would ever work, Palermo was largely on his own. "No other scientist had ever obtained a pregnancy in humans, so it was almost futile to do ICSI," he says. "That's what I was told." In "Development and Current Applications of Assisted Fertilization," a February 2012 paper in *Fertility and Sterility*, Palermo recalls his limited access to a micromanipulator, a piece of equipment vital to his research. "The machine was under a plastic



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cover that instilled a sense of mystery to the device more than exerting a protective role,” he writes. “During my sabbatical in Brussels, I was allowed to work with the machine only one afternoon per week. Yes, the allotted time was actually distributed in half-days even if for the remainder of the week the micromanipulator was almost always beneath a dustcover.”

As he began to make progress, Palermo was told that before he could try the procedure in humans he had to prove that it worked in mice—which, he notes, is actually much more logistically challenging. “When they told me that I almost fainted, because it’s impossible to inject a mouse oocyte with a normal needle,” he says. “The diameter is half of the human, the membrane is very tense, and the minute you puncture it, it degenerates.” Eventually, he had enough success that he was given a technician and allowed to do human testing using a technique called subzonal injection, in which the sperm is inserted just below the surface of the egg. But—in the sort of serendipity that has marked so many scientific breakthroughs—one sperm was accidentally injected directly into the cytoplasm, the inner part of the egg. Figuring it would die, he labeled it with a question mark. “It was the only egg in a cohort of twelve that

actually fertilized,” Palermo writes, “generating an embryo that resulted in the first ICSI baby.”

But one major challenge remained: how to refine his tool so that it would reliably penetrate—but not destroy—an egg’s internal membrane. “You don’t want any breaks once you have created an invagination inside the cytoplasm, so you need to stretch it first,” says Palermo. “When I ground the tool it was sharp, but it was not good enough to break the membrane the way I wanted it. So I created a spike on it, like a bayonet; when you retract, it would seal the hole, like a funnel.”

By Palermo’s count, some two million babies have been born using ICSI over the past two decades. That’s enough to populate a city the size of Houston, Texas. “Since I was a kid, I always wondered, What’s my role in life?” muses Palermo, who’s been at Weill Cornell since 1993. “Well, now I’ve figured out why I was born. I’ve done my part.” Although he doesn’t regularly see patients, he admits that parents occasionally recognize him as the creator of the technique that allowed them to have the family they’d longed for. “Sometimes in the elevator they’ll see my nametag and say, ‘Oh my God, you’re Professor Palermo—thanks to you we have two wonderful children,’” he says. “And I just blush and say, ‘You’re welcome.’” ●

Growing up: A dividing embryo

By Beth Saulnier

Photographs by
John Abbott

I'm a great patient," Glen Adams jokes, "because I have so many things wrong with me." The fifty-four-year-old resident of the Bronx is a type 1 diabetic. He suffers from osteoarthritis, has chronic shoulder pain, and has undergone two hip replacements. He's on statins and cholesterol medication for his coronary artery disease, requires daily insulin injections, and takes the erectile dysfunction drug Cialis. An alcoholic with sixteen years of sobriety, he hasn't managed to quit smoking despite several tries.

Adams—who asked that his real name be withheld to protect his privacy—worked on Wall Street for nearly three decades, but lost his job in 2007 and has been unemployed ever since. With no health insurance, several years ago he turned to the Weill Cornell Community Clinic for medical care. Four or five times a year, Adams goes to the offices of Weill Cornell Internal Medicine Associates, which donates its space to the clinic each Monday night. He's seen by multiple medical students, a supervising physician, sometimes even a social worker—receiving physicals, lab work, benefits counseling, prescription drugs, referrals for services like eye

Benefiting Everyone

The Weill Cornell Community Clinic offers affordable care for the uninsured—and invaluable experience for medical students

Medical mentor: Volunteer attending Barrie Raik, MD, consults with medical students Joey Alsberge '13 and Jade Edwards '13 in the reception area of Weill Cornell Internal Medicine Associates.





exams, and more. And it's all at low or no cost to him.

"I can't tell you how grateful I am," says Adams, who "absolutely and unequivocally" plans to donate to the clinic once he gets back on his feet financially. "They have been tremendously helpful. The doctors are very professional and knowledgeable, and you couldn't ask for a better group of students. They have gone far beyond the call of duty. I'd be hard pressed to find anything negative about my experience."

Launched in its current form in spring 2006, the Community Clinic combines a service mission with a pedagogical one. Held year-round, it offers free or low-cost care to New Yorkers in need and gives students hands-on experience in treating patients, managing cases, negotiating the insurance and benefits systems, and administering a practice. "It puts us in a leadership role that we don't really have as med students," says clinical co-director Erik Fisher '13. "On any given team in a hospital, the student is essentially the lowest

Comprehensive care: The clinic's staff includes (from left) MD-PhD student Megan Riddle, Juveria Abdullah '13, and Erik Fisher '13.

member. It's not that we're not included—we very much are, and the faculty are always excited to teach—but it's a unique experience to direct patient care yourself. Obviously we have the support of the attendings, but essentially we take on the roles of residents. We're the ones who see the patients, come up with the primary plan, and run it by the attending."

The negative stereotype of a free clinic is of a crowded, run-down space with few amenities and long waits; the Weill Cornell program, by contrast, feels like a well-appointed private internist practice (which, of course, it is by day). Just eight patients are scheduled for each Monday session, held from 5 to 8 p.m. "To us, they're all important patients, and we treat them that way," says MD-PhD

student Megan Riddle, the clinic's executive co-director. "We realize that they're getting this service for free, but we try to provide the highest quality care—both for their sakes and because we want to learn how to give that level of care."

Since the agreement with Weill Cornell Internal Medicine Associates requires that the clinic not overstay its hours—and the tech who draws blood for lab work is scheduled to leave promptly at closing time—the students learn to balance comprehensive care with keeping up an efficient pace. "I want to emphasize time constraints, because we have four new patients," session coordinator Joey Alsberge '13 tells the student volunteers during an organizational meeting before the clinic hours one Monday this spring. "When we have new patients it takes more time—which is good, but we have to have the last patient seen by the attending by 7:45 at the latest. We have to be out of the space by eight o'clock—it's a big issue for us to keep this clinic going."



Administrative duties: During clinic hours on a typically busy Monday night, clinical co-director Mahala Schlagman '13 confers with executive co-director Megan Riddle.

To qualify, prospective patients must be at least nineteen years old, have no health insurance, live in the five boroughs, and make less than 400 percent of the federal poverty income level. (For someone in a family of four, that means a cutoff of \$88,200; for a single person, it's \$43,320.) The current patient population numbers about 300, with the wait for a new patient appointment running six to eight weeks. Some cases, though, are deemed too onerous for the clinic to handle given its limited resources. "That is one of the things we struggle with," says Fisher, "essentially, determining who is too complicated for our practice."

For each appointment, a patient is seen by a student team consisting of a junior clinician (a first- or second-year) and a senior clinician (a third- or fourth-year). The team then presents its findings to a volunteer attending; they discuss the case and then all see the patient together. "It gives the students a chance to practice what they're learning in the classroom," says Christina Harris, MD, an assistant professor of medicine who is the clinic's faculty adviser. "A lot of students know how to take a history or do a physical exam, but taking the next leap and deciding what's wrong and how to manage the case—the workup aspect—is the hard part, and it's what residency gives you. These students are getting a glimpse of that."

Unlike during rotations on the hospital floors, the clinic's staffers have primary responsibility for entering orders and results into a patient's file with oversight from only the attendings—one of myriad responsibilities the students take on, from recruiting and scheduling volunteer attendings to following up with patients who've missed appointments. The clinic's extensive administrative team includes volunteers dedicated to such issues as community outreach, continuity of care, patient education, referrals, pharmacy, IT support, and quality assurance and risk management. "I've learned a tremendous amount about how practices are managed, how departments are managed," says clinical co-director Mahala Schlagman '13, who took a year off from medical school to do a fel-

lowship at the Weill Cornell Physician Organization, where she conducted research on patient access to care. "Everyone is excited to be here and the volunteers are super dedicated. We give them a chance they can't get anywhere else."

Those opportunities include working with attendings, and with each other, in a more relaxed atmosphere. "You can ask questions without worrying about your limited knowledge—you're uninhibited," says session coordinator Juveria Abdullah '13. "It's a safe space to practice critical thinking and making presentations. You can feel comfortable throwing ideas around—and sometimes the ideas are really good and you learn a lot."

Barrie Raik, MD, is one of the clinic's volunteer attendings. In addition to the gratification of offering care to the uninsured, she relishes the chance to teach in a more informal setting. "Because there's no grading, they're more comfortable—they're just themselves and there's no need to show off," says Raik, an associate professor of clinical medicine and of clinical public health. "There's this medical student need to impress, because that's part of the way to get ahead. But that doesn't happen here; everybody is just trying their best."

The clinic also allows its volunteers to take on a role rare for medical students—that of teacher—as the senior clinicians mentor the junior ones. "We always say that the word 'physician' comes from 'teacher,' but you don't get to do a whole lot of that on the floors, because there's no one to teach. You're lowest on the totem pole," Fisher says. "But when you work with junior students, you get to teach them about the history and the exam and work with them to come up with a management plan. It gives us the opportunity to teach them how to do patient care, watch them do it, and provide them with constructive feedback, which is really nice for us."

The issues the clinic generally sees are typical of any internal medicine practice. "A lot of diabetes, a lot of hypertension," says Riddle, who recently defended her PhD dissertation on the neuroscience of eating disorders. "But then you have people with more

serious issues—sometimes you can handle those, but sometimes you can't." For example, on this particular Monday night, the students and Raik are speaking with one of the clinic's regular patients about the results of an X-ray, ordered after the patient presented with unusual breath sounds at a previous appointment. It has revealed a chest mass, and a follow-up CT scan has been scheduled. "Sometimes we have to refer them elsewhere for their care," Riddle says. "It's a wide range of cases, which gives us the opportunity to learn from a lot of different people."

Like many facilities of its kind, the clinic generally can't provide patients with continuity of care in terms of a particular student or physician—but the organizers have countered that with a program that assigns students to follow some of the more complicated ongoing cases, sometimes for years. Glen Adams says that while seeing different students during his visits may not be ideal, it is more than balanced by the level of care. "It goes with the territory," he says. "When you go to a clinic you have to understand that the student doctors are there on a rotational basis, and they're going to graduate and leave." But during any individual appointment, he notes, the plethora of eager students means that patients get an extremely thorough going-over.

"The medical students take great pride in what they do, and the level of attention they give to each and every patient is remarkable,"

Harris says. "There will be five students talking among themselves, all working on one case—which is exceptional, and something even my private patients don't get." As Adams puts it: "Their perspective is about learning, so they're careful to ask the right questions and make sure they're following the protocol. They're very, very thorough."

In addition to providing medical care, the clinic aims to help patients access the full range of benefits to which they're entitled. Appointments generally include a meeting with a volunteer social worker or student to ascertain whether they're eligible for Medicare, Medicaid, veteran's benefits, or other programs. "Working here has given me a better understanding of the personal stories," says Jose Villa-Urbe '15, one of the clinic's facilitated enrollers. "I've talked to patients who were insured and then lost their jobs; now they're working part-time so they're making too much for Medicaid. Those stories really bring it home about why it's so important to do this."

The clinic runs on an annual budget of about \$50,000, raised through grants and private donations; organizers hope to increase that to \$70,000 and see patients an additional night per week. Much of the budget goes toward prescription reimbursement, lab costs, and referral fees. In January, a benefit art show—with works on the theme of "without a safety net"—raised more than \$25,000, and last spring the clinic received \$10,000 from Wonder Bread through the company's "Share the Wonder" program. Additional support has recently come from Patricia Yarberry-Allen, MD, who donated \$12,500; Medical College Overseer Sanford Ehrenkranz, who gave \$25,000; and an unrestricted grant of \$250,000 from the Charles Evans Foundation.

Positive image: Mariana Forgie '15 (left) and Erik Fisher '13 discuss a case; the student clinicians have access to medical records.





Applying himself: As a facilitated enroller, Jose Villa-Urbe '15 (center, in the conference room that serves as the students' home base during clinic hours) helps ensure that patients have applied for the benefits to which they're entitled.

In addition to treating ambulatory patients at the internist offices, the clinic holds regular community outreach events through its Heart-to-Heart program, which offers free screenings for factors like blood pressure, glucose, lipids, and BMI. "There's a big need," Harris says of demand for the clinic's services. "Clearly New York City has a very large uninsured population, and within that subset there are patients who would prefer to get care outside the county hospitals, given the wait times, and the potential to get lost in a big system." She notes that the clinic patients who've received Medicaid "are often reluctant to leave because they're so satisfied with the care they've received."

With no aspersions cast on the clinic or his treatment, Adams says he's looking forward to the day when he's employed and has private insurance. He holds a degree in accountancy from a venerable university, but has all but given up hope of returning to work as a government securities trader, given his age—he says it's a young man's game—and his long unemployment. But he says he's optimistic that he'll find a job soon. "The fact that these clinics exist is a tremendous service to the people that fall into my category," says Adams, who is married and has three children from a previous union. "My desire is to secure my own insurance as quickly as possible."

As a well-educated man who was long a member of the upper middle class, Adams knows that he challenges the stereotype of the uninsured. "I never thought I'd have to go to a free clinic," he says. "To me, it's still unfathomable." Some of his fellow patients are fac-

ing similar financial downturns, while others grew up in impoverished circumstances; some are out of work, while others have off-the-books jobs—like housekeeping—that don't offer benefits. Clinic volunteers say that treating such patients gives them a truer sense of what it means to be uninsured in post-recession America. "All of the social issues surrounding health care and insurance—you get to see the harsh reality of what people without insurance have to deal with in a system that's extraordinarily difficult to navigate," says Alsberge. "We get exposed to those nitty gritty details every day."

Abdullah recalls a patient who needed a prescription from a particular pharmacy to access her discount drug benefits, but had a tough time getting there. "It was too far from her house—she'd have to walk fourteen blocks—and she couldn't afford a cab," Abdullah says. "These are the logistics that we don't normally think about. We say, 'This is what she has, let's give medication to fix it.' " The students also learn tough lessons about striving to provide optimal care while coping with limited resources. For example, major procedures—like surgery to remove a breast mass, which one patient needed—must be referred to a public institution like Bellevue. "It takes so long to get an appointment; things would happen so much faster with proper insurance," she says. "It gets a lot more difficult to manage people's care in these situations."

Although there are limits to the care the students can provide in the context of a free clinic, they relish the good they can do. Alsberge describes one particularly satisfying—though simple—patient interaction, a recent conversation with a man who'd been diagnosed with elevated lipids. "What would seem like a routine phone call to explain the lab results turned into half an hour about dietary habits and things he could do to lower his cholesterol, and it was really gratifying," he says. "I kind of felt like a real doctor." ●

Notebook

News of Medical
College and Graduate
School Alumni



Michael Alexiades, MD '83

Dear fellow alumni:

For Weill Cornell, 2012 has been about change. Laurie Glimcher, the new Stephen and Suzanne Weiss Dean of the Medical College, has done an outstanding job—continuing to make Weill Cornell a medical research powerhouse

while maintaining the student-friendly atmosphere we are known for. She has been working to recruit top-notch physicians and scientists to fill the Belfer Research Building, which is nearing completion. Although most alumni support scholarship with their donations, many have stepped up to support this research effort as well. Thank you.

In mid-May, the Alumni Association hosted its annual International Fellows Reception to recognize the generous fellowship sponsors and student recipients. Dean Glimcher provided a brief overview of the state of global health education at Weill Cornell, and two student fellows presented on their recent electives in underdeveloped countries. Many of the fellows have been funded through the generosity of alumni, for which they and we are most grateful.

On May 30, the association hosted its Award of Distinction Dinner, where we honored Michael Gershon '58, MD '63, and Carlos Cordon-Cardo, MD, PhD '85. Each year, this event honors two alumni—one of the Medical College and the other of the Graduate School of Medical Sciences—chosen for their notable achievements as physicians, scientists, and educators. The 2012 awardees spoke glowingly about their time at Weill Cornell and how it set the foundation for their careers. Dr. Gershon holds the distinction of being the second in his family to receive the award: his wife, Anne Gershon, MD '64, was honored last year.

In June, the association hosted a well-attended Alumni and Friends Reception at Spiaggia Restaurant in Chicago, in conjunction with the annual meeting of the American Society of Clinical Oncology. Several board members were present and remarked on the enthusiasm of those in attendance. Later in the month, the annual Dean's Circle Dinner, which recognizes alumni who make pledges of \$25,000 or more payable over five years or establish irrevocable planned gifts of \$50,000 or more, was held at the

New York Athletic Club. Dean Glimcher praised the support and dedication of our alumni. Those of you interested in joining the Dean's Circle may contact me or the alumni office for more information.

The Alumni Association also continued its support of medical students through our participation in the White Coat Ceremony and the Stethoscope Initiative for the Class of 2016. The incoming students were grateful for this support as they embark on their medical careers.

Our biggest event of the year is Reunion 2012, scheduled for October 19 and 20; another record turnout is expected and I hope to see many of you there. R. Ernest Sosa, MD '78, president-elect of the Alumni Association and chair of the reunion committee, and the committee members have worked exceedingly hard to make this year's program exceptional. Both Dean Glimcher and Cornell University President David Skorton, MD, will attend. The gala dinner dance will be held on Saturday evening at Cipriani 42nd Street, preceded for the first time by a special reception with Dean Glimcher that is exclusive to Dean's Circle members.

This report—written with bittersweet emotions—is my last as president of the Alumni Association. It has been a most wonderful two years of getting to meet our alumni, engage with them, and learn what a diverse and unique group of physicians our Medical College has produced. Our alumni include deans of other medical schools, entrepreneurs and CEOs, clinicians and chairs of innumerable departments and hospitals around the world, physician scientists of the highest order, and astronauts (we have three!). You are the most congenial and supportive group of alumni I have ever met. It has been a pleasure and honor to serve as president, and I am pleased to pass the torch to Ernie Sosa this fall.

Please continue to stay in contact with your classmates and remain supportive of the Medical College and the students who count on our assistance. Medicine has changed significantly in the last decades, and I am sure it will continue to do so at an ever-increasing rate. Your steadfast support has helped Weill Cornell remain one of the world's most prestigious medical schools.

*Best and warmest wishes,
Michael Alexiades, MD '83
President, WCMC Alumni Association
alexiadasm@hss.edu*

1940s

Herbert McCoy, MD '45: "At 90 I am giving up scuba diving, but will continue to serve as doctor on scuba trips. Next to Indonesia, then Hawaii."

Ernest Gosline '43, MD '47: "I closed my practice as of April 30, having been a physician since graduation in March 1947. The replacement of my aortic valve (stenotic) and then the TAVR procedure were eminently successful, through the good graces of Albany Medical Center. Regards to my fellow classmates."

Norval M. Marr, MD '48: "Alive and well. I'm active in Scottish Societies as the Southeast US Convener for the Tribe of Mar and the Florida Convener for the House of Gordon. Still taking care of lectures."

Rees Pritchett, MD '48: "I remain on the staff of WCMC doing some committee work and fundraising, this with the able assistance of Development. As I entered the Medical College in July 1944, I believe I am correct in assuming that I've been here longer than any other physician. This is my claim to fame. I was on the voluntary staff in the practice of internal medicine and cardiovascular disease from 1953 to 1992 while contributing to the physical diagnosis and third-year tutoring courses. I moved to the full-time staff with an office on the main floor of NYH in 1992 and subsequently to the new Weill Greenberg Center in 2007 while continuing practice. I discontinued patient care in 2010. I've been most fortunate to have wonderful supportive patients over the years and superb colleagues. My first wife, Jane, who was confined to a wheelchair for many years due to polio, died in 2001. Our daughter lives in northern Virginia and works for Management Sciences for Health. Her two children are in college. I was most fortunate to remarry in 2002 to my long-standing friend and neighbor Clare Lyons Young. We've traveled to Europe annually until the last couple of years, when rheumatic problems slowed us down. Overall, life is wonderful."

Edmund Welch, MD '49: "I'm much less active now. No more tennis. A pacemaker keeps me going (also Lasix). Best to classmates, those still around."

1950s

William Porter Jr., MD '50: "I'm still swimming four days a week and do a gentle workout at our gym every now and then. I've been a licensed Eucharistic minister, active for



WCMC welcome: At the white coat ceremony, Chioma Enweasor '16 receives her coat from psychiatry professor Peter Marzuk, MD, associate dean for curricular affairs.

WCMC

more than 20 years, at St. John's Episcopal Church in Cold Spring Harbor, NY."

Anne B. Johnson '48, MD '51: "Jack and I are enjoying a quiet retirement in our home in Great Neck, NY, on Long Island, but still visit New Hampshire during summer with family on Lake Winnepesaukee. Our grandkids have both graduated college (in California) and are doing well. So is our daughter, a psychiatrist in Newton, MA, and our son, an X-ray technician in Queens, NY. Best wishes to all."

Edward Swain, MD '51: "I retired from practice, largely long-term psychotherapy, in 1999. In spite of a stroke in 2011, from which I eventually recovered with almost no residual effects, I am reading a lot, exercising vigorously, doing a lot on my computer, plus—best of all—spending time with the kids and grandkids."

Russel Patterson, MD '52: "I'm still going back and forth between Vermont and New York City on a regular basis. Julie and I are in good shape, as are the children, who are in Ithaca, Palo Alto, and Portland, OR."

Aaron Ganz, MD '53: "I'm enjoying retirement in Boca Raton, FL. My oldest

grandchild is marrying this fall."

Joseph E. Plastaras, MD '53: "I'm still enjoying life on the eastern shore of Mobile Bay in Alabama at age 84, and I'm in good health. I would love to hear from **Earnest Curtis, MD '53**, who used to have a place here on the bay before Hurricane Katrina."

Bernard Yablin '48, MD '53: "News about my daughters: Adrian graduated from RIT in May and works in New York City. Dorian will be entering her second year at SUNY Plattsburgh majoring in expeditionary studies and minoring in geographic studies and will serve as an RA. Vanessa serves as head of the Department of Jewish Studies at the University of Virginia, and her daughter, Julie, has twins and serves on the staff of the art museum at Princeton. Rachele is a guidance counselor in the Greece, NY, school district."

George Dermksian, MD '54: "I'm beginning my 13th year of retirement. I continue to attend weekly medical grand rounds at St. Luke's/Roosevelt Hospital Center and still chair the Archives Committee of the Hospital Center."

Walter L. Freedman, MD '54, is retired and living in Academy Village in Tucson, AZ.

Kenn Hubel, MD '54: "I retired 14 years ago from the Department of Medicine at



New clothes: First-year students (from left) Amare Assefa, Jennifer Bender, Rebekah Blutstein, and David Byun

WCMC

the University of Iowa and lived nearby in North Liberty, IA, on a wooded five acres with Jan, my wife of 55 years. We are blessed to have two daughters and their families in neighboring towns. We visited our son and his wife in Missoula, MT, in July. Mile-long morning walks with our Old English sheepdog, Lancelot, help keep us mobile. Our joints are a little creaky but should permit a tour to Machu Picchu and the Galápagos Islands this fall. I volunteer with the local affiliate of the National Council for International Visitors, help teach reading in elementary schools, play alto sax in a local band, and attend monthly at the Iowa City Free Medical Clinic. A basement darkroom lies ancient and idle while I enjoy the modern benefits of Photoshop.

Ralph "Cooley" Williams '50, MD '54, and I stay in vocal touch, and I'd truly welcome contacts or visits with diminishing numbers of other classmates. We are only four miles north of Iowa City and Interstate 80."

Guy D. Plunkett, MD '55: "Marilyn and I have made what will be, we hope, our last move into the Army Residence Community in San Antonio. We had 18 moves during my 32-year career as an Army obstetrician/

gynecologist. Since retiring, we have managed to do a fair amount of traveling by motor home in Canada, Mexico, and 49 states, plus a few foreign trips by sea and air. Our four sons have thrived and we have enjoyed watching the grandchildren become adults. It's been a good life."

Cedric J. Priebe Jr., MD '55: "I retired from the clinical practice of pediatric surgery, but part time I handle quality and safety issues for the Dept. of Surgery at Stony Brook University Hos-

pital. Unfortunately, my wife, Cynthia, died October 17, 2011, after 56 years together. My seven children and 15 grandchildren keep me focused."

Paul Stucki, MD '55, and his wife, Joyce, celebrated their 55th wedding anniversary on March 17.

Forrest Tutor, MD '55: "I'm still enjoying good health and life. I give credit to my long career of running for my good health and would encourage all my friends and classmates to get involved in running. I have run marathons and am still running 5Ks and 10Ks. I had a heart attack before I started running, which resulted in six stents. It scared the hell out of me and got me running. It's never too late to start running—believe me."

Artemis Pazianos Willis, MD '55: "I have kept busy in my retirement: gardening, swimming, participating in a book group, and, especially, traveling. In addition to visiting friends and family in Florida and California during the winter, I went on a trip to Berlin in April and down the Elbe River to Prague. In September my daughter and I are going to Armenia and Georgia."

Charles Beckmann, MD '56: "I've cut work to two afternoons per week. Recently I had hip replacement surgery. I'm active with Shriners International, which raises money for crippled children."

David Schottenfeld, MD '56: "I was on the faculty at the Medical College from 1963 to 1986, before my appointment as chair of the Department of Epidemiology at the University of Michigan in 1986. I continue to be actively engaged in cancer epidemiologic research."

William H. Graff, MD '57: "I've been retired from internal medicine and gastroenterology for a few years now. I spent much of the summer playing golf. I have many thanks for a great education in medicine."

We want to hear from you!

Keep in touch with your classmates.

Send your news to Chris Furst:

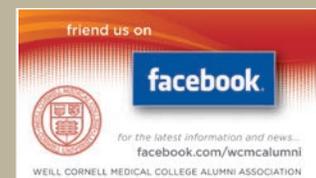
cf33@cornell.edu

or by mail:

Weill Cornell Medicine

401 East State Street, Suite 301

Ithaca, NY 14850



Anne H. Hinton '53, MD '57: "I strongly commend you for your students' involvement in care for low-income individuals in New York City and your camp for pediatric burn survivors, as well as your MACHO program. I only wish that such opportunities existed in the early 1950s."

William H. Plauth Jr., MD '57: "I'm happily retired. My wife and I celebrated our 50th wedding anniversary in August 2011. I retired in 1999. Bobby, my wife, has some health issues but is doing well. I'm fine. I miss the East Coast a bit, and salt water and sailing, but love Santa Fe. I had wonderful classmates and will miss them on our 55th in October, but so be it."

Robert L. Collier '55, MD '59: "I'm living in Fort Lauderdale, FL. Next July 4th I will celebrate my 50th anniversary with my partner, Charles Hunziker. We've had many happy years together. We're considering coming to New York to get married on our 50th."

James E. Shepard, MD '59: "Sally-Jean had a total knee replacement in February and did very well. She was initially a bit discouraged with her progress until the physical therapist told her she was ahead of all others, and the surgeon praised her for having as much mobility as one can hope for at one year."

1960s

Anthony J. Marano, MD '60: "I retired after practicing in my hometown of White Plains, NY, for 43 years. I miss the practice and my patients, but see many of them as we are still living in White Plains. In 2005, I had my proudest moment: the new cardiac care unit at White Plains Hospital was named the Anthony J. Marano, MD, Cardiac Care Unit."

David B. Robbins, MD '60: "I continue to practice psychiatry in Chappaqua. I enjoy talking with fellow psychiatrist alumni **Jerome Jacobs, MD '56**, and **Lawrence Grolnick '54, MD '58**."

Melvin S. Rosh, MD '60: "For the past five years, I have been on the staff of Metropolitan Hospital, where I teach pediatric allergy to residents and medical students."

Allen Togut '56, MD '60: "I'm working with hospice as a volunteer. It's quite satisfying."

Richard Winkle, MD '60: "I'm still in family practice in Cypress, CA, at age 77."

Robert S. Martin, MD '61: "We have had great trips to Russia, Southeast Asia,

and Italy. Still volunteering at Mystic Seaport. In reasonably good shape, all things considered."

Don Catino, MD '64: "I will return to Weill-Bugando Medical School/Center in October to teach for the fourth time. Then for seven months in Tasmania, I'll be teaching and doing geriatrics/internal medicine at the Royal Hobart Hospital. Summers in the USA are locum jobs in hospice, geriatrics, and internal medicine. I feel I'm living the dream in my seventies."

Charles Erik Nye, MD '65: "I'm married to Lynne. Daughter Erika has three lovely children and is doing well. I'm a retired orthopaedic surgeon. Doing well physically despite left above-elbow amputation due to angiosarcoma caused by lymph edema from breast cancer ten years ago. I miss everyone at Cornell and loved my four years there."

Ian Happer, MD '66: "I left my Social Security job May 31 and am now retired for the third time. Maybe this time it will stick. Saw **Roger Lewis, MD '66**, and his wife, Liz, in their lovely Orchard Beach, FL, house in March. They're both well. Roger now works as a public defender—imagine."

Robert S. Ennis, MD '67: "Hard to believe it's been 45 years. I hope to see everyone at the reunion. I am no longer in active clinical practice, but still consulting and teaching, spending time with family

and several charitable organizations."

Bob Koehler, MD '68: "I recently retired from being chair of radiology at the University of Alabama, Birmingham. I now work half time as an abdominal radiologist and teacher. Barbara and I enjoy life in Alabama: hiking, birding, reading, attending concerts, and sharing meals with friends. Life is good."

G. Peter Bloom '65, MD '69: "I led a team of surgeons, nurses, and anesthesiologists on a surgical mission trip to Milot, Haiti, to provide surgical care to approximately 80 patients in an area where no other surgical care was available. I partnered with a friend to purchase a thoroughbred racehorse. Daughter Stephanie lives in New York City; granddaughter Zoe is almost a year old and is a great kid. Son David is an architect in Washington, DC; he married Dana Matthews in September."

Jeffrey S. Borer, MD '69, professor and chairman of the Department of Medicine and chief of the Division of Cardiovascular Medicine at SUNY Downstate Medical Center, has been elected a fellow of the International Academy of Cardiovascular Sciences. He recently published his fifth book, *Principles of Research Methodology: A Guide for Clinical Investigators* (Springer), which he edited with his colleague Phyllis Supino.

Suiting up: Diana Wang '16 (left) and Kartik Viswanathan '16 don their white coats.



Nick Hardin, MD '69: "Our son, Chris, married his fiancée from Thailand, once in Thailand in December 2011 and again here in the States on August 11, 2012. They threw a great party in a field in Londonderry, VT, which was an occasion for reunions for the friends of the bride and groom, and a family reunion for their parents."

Michael Schwartz, MD '69: "I recently got tapped as regional chair for the Department of Psychiatry of Texas A&M Health Science Center School of Medicine in Round Rock, TX. Third- and fourth-year medical students this year, residencies and a translational research program, more to come. Can't imagine a better way to look forward to 70."

1970s

Tom Harbin, MD '70: "I reconnected with **Pat Coonan '66, MD '70**, recently, and we both vowed to fix the paucity of notes from our class by sending an update. I continue to practice ophthalmology with the same group I joined in 1975, although I have slowed down a bit. My first book, *Waking Up Blind: Lawsuits over Eye Surgery*, has been used to teach ethics at a number of residency programs. Recently my partner and I developed an app for smartphones—EyeDROPS—to help patients with glaucoma and other chronic eye diseases become more compliant with their drop treatment. Both Pat and I would like to hear about others in the class."

Allan Gibofsky, MD '73, was named a special consultant to the Arthritis Advisory Panel of the Food and Drug Administration.

Richard E. Tosi, MD '73: "I continue to practice internal medicine and pulmonary disease in Fall River, MA. My wife also practices cardiology there, so we stay quite busy. The three children are grown and have been on their own for some years. I always enjoy coming back to New York and seeing all the changes at Weill Cornell. Some things don't change, however, as I still on occasion refer to my Hockstein text of physical diagnosis."

Richard M. Moccio, MD '74: "I have been in active hospital practice of diagnostic radiology since finishing my residency at New York Hospital/Cornell Medical Center in 1979. I'm chairman of the Department of Radiology and Medical Imaging at Adirondack Medical Center/Adirondack Health in Saranac Lake and Lake Placid, NY."

John E. Nees '70, MD '74: "I participated

in the Texas Amateur Piano Festival in 2010, 2011, and 2012 and saw Malcolm Bilson there."

Ronald N. Riner, MD '74, received the Excellence in Teaching Award for his course "The Business of Medicine" provided to the primary care clerkship in the Department of Public Health. Dr. Riner is president of the Riner Group, a health-care management consulting firm.

Michael Weitz, MD '74, has been elected president of the Florida Society of Rheumatology. He is also the medical director of the Center for Arthritis and Rheumatic Diseases in Miami, FL.

Mike Anger, MD '75: "I just retired and

'I always enjoy coming back and seeing all the changes at Weill Cornell. Some things don't change, however, as I still on occasion refer to my Hockstein text of physical diagnosis.'

Richard E. Tosi, MD '73

am already enjoying not being on call every other night and every other weekend. More sailing, more folk music, more guitar lessons, and more trips to Columbus, OH, to see kids and grandkids."

Roger W. Geiss, MD '75: "At the close of academic year 2011–12, I received an Alpha Omega Alpha Faculty Teaching Award from the University of Illinois College of Medicine at Peoria Chapter of AOA. I was also voted Best Instructor in the second-year gastroenterology course by the UICOMP Class of 2014."

Elwin G. Schwartz, MD '76, retired from practice after 30 years of service to his patients. He continues to assist in the practice management as well as advocate both statewide and nationally for better patient access and care. He and his wife, Cheryl, are enjoying their family and friends, sailing on extended trips, golf, and skiing.

Mark D. Dibner, PhD '77: "We are enjoying our 26th year in North Carolina and winding down a fun and motley career. I have been a neuroscientist in academia and industry, author of 13 books on biotechnology, adjunct associate professor (Duke, NC State), and entrepreneur, having started three small businesses over the last 18 years. In 2003, I and my son, Ned, then 13, founded the Kramden Institute, Inc. (www.kramden.org), a charity that collects, recycles, and donates computers to hard-working students who cannot afford a home computer. What started as a father-son project in our basement now has three paid staff and more than 6,000 volunteers, and has just awarded its 11,500th computer. For the last eight years, I have volunteered half of my time to help manage and grow Kramden. I recently turned 60 atop Machu Picchu, and my wife, Elaine, and I will celebrate our 30th anniversary soon in Costa Rica and Panama."

Mark Kris, MD '77, will be honored at Joan's Legacy: Uniting Against Lung Cancer's "Strolling Supper with Blues and News" gala in New York City on November 14, 2012, for his contributions to the field of lung cancer research and for guiding the foundation's Scientific Program. NBC's Brian Williams will be the host. Dr. Kris serves as chief of the Thoracic Oncology Service and the William and Joy Ruane Chair in Thoracic Oncology at Memorial Sloan-Kettering Cancer Center. He specializes in developing new anticancer treatments using personalized medicine. In addition to the strolling supper, blues musician Delbert McClinton will perform.

Barry Weintraub, MD '77: "I remain a board-certified cosmetic plastic surgeon, with two busy practices: a primary practice in New York City and a satellite in East Hampton. I recently appeared on 'Good Morning America' speaking about the positive effects of cosmetic facial surgery as it relates to competing in today's difficult job market. I'm also busy renovating my New York City office to be equipped with its own state-of-the-art, fully accredited operatory on Fifth Avenue at 61st Street. I still enjoy teaching plastic-surgical residents one-on-one in the operating room. In my free time, I appreciate the open ocean and the natural beauty of East Hampton, as well as a good game of tennis."

Jeff Gold '74, MD '78: Jeff and Robin's daughter, Stephanie, has entered WCMC as a first-year student. Matthew was married this August, following graduation from

Northwestern Kellogg with JD/MBA degrees. Jeff is the chair-elect of the AMA Council on Medical Education and serves as co-chair of the Liaison Committee on Medical Education. He was named a founding member of the Accreditation Council of Undergraduate Medical Education.

Diana Rodo Horne, MD '79: "Things have been difficult since my husband passed away in October 2011 of chronic myelogenous leukemia. My three sons are nearby and I continue my practice in psychiatry."

1980s

David Emmel, MD '80: "I'm now retired from the presidency of the Connecticut Society of Eye Physicians, but remain active in the organization. Two very fast and rewarding years."

Lala M. Stawowy, MD '81, is a dermatologist and Mohs surgeon. She lives in Kerrville, TX, with her husband, Dr. Carlos Menendez. Besides working and raising a family, she swims, bikes, and does weight training and downhill skiing. She'd like to hear from Betsy and Steve Kimball.

Steven Wexner, MD '82, chairman of the Department of Colorectal Surgery, chief academic officer, and emeritus chief of staff at Cleveland Clinic Florida, was elected a fellow of the American Surgical Association. One of the original staff physicians to join Cleveland Clinic Florida when it was established in 1988, he is currently the only active ASA fellow practicing in Broward and Palm Beach counties. Dr. Wexner is president of the American Society of Colorectal Surgeons and the immediate past president of the American Board of Colon and Rectal Surgeons. He is professor and associate dean for Academic Affairs at the Florida Atlantic University Charles E. Schmidt College of Medicine.

Gary Eddey, MD '83, published his debut novel, *The Weather House*, a historical mystery set on Block Island. In the book, the family working at the weather station must discover the intentions of three strangers who arrive on the island just months before the U.S. enters World War I.

James Lee '79, MD '83: "I'm enjoying Hem/Onc practice in South Jersey. My son, Jason, is a third-year med student at Robert Wood Johnson, and my daughter, Janet, is a sophomore at Barnard. Looking forward to seeing old classmates at our 30th Reunion."

Scott Hayworth, MD '84: "I continue as president and CEO of Mount Kisco Medical Group, a 280-physician multispecialty



Rite of passage: Astrid Marshall '16 gets her white coat from associate professor of anatomy Estomih Mtui, MD.

group in the lower Hudson Valley. Recently I was elected treasurer of the American Congress of Ob/Gyn and finished my term as chair of the American Medical Group Association. My wife, Nan Sutter Hayworth, MD '85, continues to serve in the House of Representatives (see page 16)."

Rogert Blumenthal, MD '85: "I had a great time hosting **Troy Elander, MD '85,** and his wife, Diane, when they visited Baltimore. My son, Ross, is entering the 7th grade. He loves sports and is a good lacrosse goalie, basketball player, and golfer. Wendy and I continue to stay busy at Hopkins in Preventive Cardiology. I also enjoy keeping in touch with close friends **Dave Blaustein, MD '85,** and **Steve Berger, MD '85.**"

Jorge Marcet, MD '85, is professor and director of the Colorectal Surgery Fellowship program at the University of South Florida. **Joanne Marcet '81, MD '85,** is director of the rheumatology fel-

lowship program and director of the Doctoring course for second-year medical students at the University of South Florida.

Montgomery Douglas, MD '86: "I'm chair of the Department of Family and Community Medicine at New York Medical College in Westchester and also associate dean for diversity and inclusion. I live in Edgemont/Scarsdale with my wife and two children, 12 and 13. The third, who is 27, is in Japan."

Chris Plowe '82, MD '86: "I'm a Howard Hughes Medical Institute Investigator, professor of medicine, and leader of the Malaria Group. I've been spending a lot of time in Southeast Asia, especially Burma, starting new collaborations focusing on emerging drug-resistant malaria. My wife and I are about to become empty nesters. Jack, the eldest, is finishing at Sarah Lawrence and planning to be an actor in New York City. Willie and Emily will be freshmen at Columbia and Colby, respectively. Willie is leaning toward an arts major



Learning curve:
The Class of 2016

WCMC

and med school, perhaps WCMC '20. I remember pumping iron with **Stephen England, MD '86**, **Harry Arlis, MD '86**, **Bruce Siegel, MD '86**, and **Jeff Lapeyrolerie, MD '86**, in the Olin Hall gym, with the English Beat on the boom box."

Walter Klein, MD '87: "Time flies. My oldest daughter graduated from Cornell two years ago, and my middle daughter is going back to Cornell for her senior year. Meanwhile, my youngest daughter is about to start her freshman year at Emory and is thinking about medical school. I had better keep working."

Nina Mithi Taggart, MD '88: "I'm the chief medical officer for Blue Cross of Northeastern Pennsylvania and its subsidiaries. I'm enjoying life in the beautiful foothills of the Poconos with my husband, Mark Ungvarsky, who is the vice president of informatics and business analytics for AllOne Health. (Yes, we spend a lot of time together.) I happily continue to see patients one day a week."

1990s

S. Robert Rozbruch, MD '90: "I was promoted to professor of clinical orthopaedic surgery at Weill Cornell Medical College and elected president of the Limb Lengthening and Reconstruction Society."

David Gruen '87, MD '91, received his MBA in May from the Isenberg School of Management at the University of Massachusetts. In June, he joined Stamford Hospital as director of women's imaging and co-director of breast care.

Perry Sutaria '88, MD '92: "I'm a partner in Garden State Urology, where I specialize in reconstructive urology and robotic surgery. I'm also the urologist for the NY Jets. I live in Mendham, NJ, and have three daughters: Serena, 15, Emily, 13, and Grace, 9. Still love skiing, travel, and playing hockey and tennis."

Matthew Spitzer, MD '95: "Having started working with Medecins Sans Frontières/Doctors Without Borders in

1999, and being elected president of the MSF-USA section in 2008, I've handed over the leadership. Work with MSF took me to Tibet, Sierra Leone, Cambodia, Uganda, Kenya, Afghanistan, South Africa, Colombia, and Queens, NY; it evolved from focus on clinical work to taking on work in advocacy and negotiation for medical humanitarian action. I'll stay on the board for this year, and continue as faculty in the Center for Family and Community Medicine at Columbia, practicing in Washington Heights."

2000s

Doodnauth Hiranman '96, MD '00, started a new position as vice chairman of emergency medicine at St. Vincent's Medical Center in Connecticut. Along with his spouse, Jean, he spends as much time as possible playing with his three boys, Michael, 4, Scott, 3, and J. D., 1.

Michael S. Irwig, MD '00: "I have become involved in pharmacovigilance research. It turns out that some young, otherwise healthy men who take finasteride (Propecia) develop persistent sexual and non-sexual side effects including depressive symptoms and suicidal thoughts. The research was published in the *Journal of Sexual Medicine* and *Journal of Clinical Psychiatry* and featured on the 'Today' show and 'NBC Nightly News,' among other outlets."

Steve Yung, MD '05, received a teaching award from Mt. Sinai Hospital.

Jason Portnof, MD '06, is an adjunct associate clinical professor and director of pediatric maxillofacial surgery and craniomaxillofacial surgery in the Department of Oral and Maxillofacial Surgery at Nova Southeastern University College of Dental Medicine. He and his wife, Courtney, and son, Justin, welcomed the addition of Liv Charlotte Portnof on August 20.

Allison Sherman, MD '06, earned the Outstanding Teaching Award, Pediatric Clerkship, from Community Mental Health System.

Ann Thomas, MD '06, was given the Faculty of the Year Award by Georgetown University Hospital.

Kate Lampen-Sachar, MD '07: "I'm a diagnostic radiology fellow in breast and body imaging at Memorial Sloan-Kettering Cancer Center. I would love to stay in touch: kate.lampensachar@gmail.com."

In Memoriam

'43 MD—**George R. Holswade** of Alpine, NJ, May 22, 2012; retired thoracic surgeon, New York Hospital; veteran.

'41, '43 MD—**C. Ray Huggins** of Wilmington, DE, July 22, 2012; medical director, University of Delaware Health Services; medical staff member, Mary Walker Clinic, SUNY Oswego; also practiced at Margaretville Memorial Hospital; veteran.

'46 MD—**J. George Tift** of Huntsville, AL, formerly of Fort Myers, FL, May 2012; obstetrician/gynecologist; served on the board of trustees, Aultman Hospital; veteran; sailor; active in community and religious affairs.

'48 MD—**John M. Wilson Jr.** of Darien, CT, June 6, 2012; chief of surgery, Norwalk Hospital; attending physician, Stamford and St. Joseph's hospitals; team physician, Darien High School varsity football; veteran; sailor; gardener; skier; board member, Norwalk Hospital Foundation.

'50 MD—**Charles R. Williams** of Essex, CT, April 24, 2012; chief of internal medicine, VP, and president of the medical staff, and chief of staff of Bridgeport Hospital; veteran.

'54 MD—**Melvin J. King** of Attleboro, MA, August 6, 2012; practiced internal medicine; served on the staff of Sturdy Memorial Hospital; also practiced in Gallipolis, OH, and Washington, DC; veteran; tennis player; hiker; skier; ice skater; active in community and professional affairs.

'51, '54 MD—**William A. Vincent** of Evansville, IN, June 18, 2012; internist and cardiologist; chief of internal medicine and chairman of the coronary intensive care unit, Welborn Baptist Hospital; veteran; active in community, religious, and alumni affairs.

'56 MD—**Robert E. Whalen** of Wake Forest, NC, April 25, 2012; director of cardiovascular disease service and chief of internal medicine, Duke University Medical

Center; professor emeritus of medicine, Duke University; golfer; collector of antique ships in bottles; active in community and professional affairs.

'50, '57 MD—**Lawrence Scherr** of New York City, September 6, 2012; David J. Greene Chairman, Department of Medicine, North Shore University Hospital; professor emeritus of medicine, Weill Cornell Medical College; professor of medicine, New York University School of Medicine; served on President Clinton's White House review group on health-care reform; veteran; active in professional affairs.

'57 MD—**Lawrence J. Werner** of Smithtown, NY, July 19, 2012; family physician; veteran.

'62, '66 MD—**Michael L. Lichtig** of Shrewsbury, NJ, June 9, 2012; ophthalmologist; chief, Department of Ophthalmology, Air Force Regional Hospital (Minot, ND); also practiced in Long Branch and Tinton Falls, NJ; veteran; active in community affairs.

'66, '70 MD—**George L. Wineburgh** of Frankfort, IN, May 15, 2012; radiologist; organic gardener; hiker. Zeta Beta Tau.

'72, '76 MD—**Jane Bailowitz** of Berkeley, CA, May 1, 2012; physician, San Francisco Department of Public Health and the Castro-Mission Health Center.

'78 MD—**Edward R. Chelist** of Corrales, NM, August 24, 2012; worked in urgent care and family practice for Lovelace Hospital and ABQ Health Partners; served in the Indian Health Service in Kayenta, AZ.

Faculty

Richard Isay of New York City, June 28, 2012; psychiatrist; psychoanalyst; gay rights advocate; author, *Psycho-*

analytic Therapy and the Gay Man and Commitment and Healing: Gay Men and the Need for Romantic Love; worked to end the American Psychiatric Association's classification of homosexuality as a disease.

Brij Saxena of Englewood, NJ, July 30, 2012; the Harold and Percy Uris Professor of Reproductive Biology and professor of endocrinology in obstetrics and gynecology, Weill Cornell Medical College; researched the endocrine, immunological, and molecular mechanisms of hypothalamic-pituitary-gonadal regulation and control of gonadal function; explained daily blood levels of FSH and LH and their correlation with gonadal steroids in regulation of the menstrual cycle; developed new drugs and drug delivery systems; isolated the lutoprin receptor, which led to ovulation detection and the first reliable home pregnancy test kit.

Living Well

Elective trains future MDs to help patients—and themselves—improve basics like sleep and exercise



Lea Bornstein '15

JOHN ABBOTT

Lea Bornstein '15 lives off campus, so she figured her daily commute must provide a fair amount of exercise. But when she started wearing a pedometer, she got a wake-up call. “My goal was 10,000 steps per day, but the days that I just went to school and back home, I was taking only about 7,000—and a lot of days, that was the only exercise I was getting,” says Bornstein, a Maryland native who’s contemplating a career in pediatrics. “I wasn’t meeting my goals for daily walking, so I’d try to get off the bus a stop early. And with the pedometer, I was motivated to keep track of it.”

Bornstein’s experiment in being a pedestrian was part of Foundations in Lifestyle Medicine, an elective for first-year students that debuted last winter. The course is taught by Keith LaScalea, MD, associate professor of clinical medicine, who founded it in response to student requests for hands-on lessons in helping patients improve such fundamentals as diet, exercise, sleep, and stress reduction. “Most of us pick up these skills as we go along, but it’s good for students—even as early as their first year—to understand how to do this well,” says LaScalea, an internist who regularly counsels his

patients on lifestyle issues. “The research shows that the traditional model of us wagging our finger and telling patients what to do doesn’t work very well. We need to understand where they’re coming from, what they’re willing to do, and what kind of changes they’re able to make in their lives.”

The six-week elective drew some twenty students—a fifth of the first-year class. It included lessons in basic communication, motivational interviewing, nutritional surveying, and community-based research, and featured such guest speakers as a sleep specialist, a physical therapist/personal trainer, and a nutritionist who advises marathon runners. “You wouldn’t tell a patient with depression to ‘just cheer up’—and no doctor should tell a patient who’s overweight to ‘just go on a diet,’” says Matthew Rosenbaum '14, one of the students who (as a second-year) suggested the course and helped organize it with the help of Daniel Hegg '14. “You start by gathering information, understanding what patients think is important, and identifying obstacles we may not be aware of. This curriculum has taught me to delve deeper into our patients’ lives as we figure out how to help them.”

One key element of the course is self-analysis—such as wearing a pedometer, keeping a food diary, and tracking sleep patterns. Each student then picks one area to improve, giving a sense of the challenges patients face when their doctors prescribe healthier habits. Bornstein tried to walk more; Rosenbaum aimed to work out at least every other day. “Finding exercise you can tolerate really makes a difference,” he notes. “I used to try to force myself to do weight training or stair climbing or run on a treadmill, but it didn’t feel good. Now that I’ve switched to using machines like the bike and the elliptical, I go to the gym a lot more.”

Like many medical students, Alec Swinburne '15 has a less-than-ideal sleep regimen. During the elective, he aimed to improve his sleep hygiene—turning in earlier, varying his pre-bedtime activities and diet, rearranging his room, and wearing earplugs to block nearby construction noise. He reports that although his sleep improved for a couple of weeks, his best efforts didn’t translate into lasting change. “It was impressive how hard it was to change something simple,” he says. “Whether it was getting up in the morning to exercise, sleeping more, or eating more fruits and vegetables—everybody struggled with getting out of the habits they’ve set.”

Rosenbaum notes that the point of behavioral modification and motivational interviewing isn’t necessarily about getting it right the first time. “It’s a process where success is defined as keeping the patient engaged in self-improvement on their own terms, even if they don’t feel as if they’re getting anywhere sometimes. If the students participating in this curriculum leave with some idea of how hard patients work to make the lifestyle changes that we recommend so glibly and some ideas about how better to encourage them, then this course could dramatically change the way they practice medicine.”

— Beth Saulnier

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