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# the **SCOPE**

Weill Cornell

News of the Joan and Sanford I. Weill Medical College and Graduate School of Medical Sciences of Cornell University December 2005

## Dr. Michael Stewart Is New Head of ENT

Renowned researcher named as Medical College's new chair of otorhinolaryngology

The recent appointment of Dr. Michael Stewart as chairman of the Department of Otorhinolaryngology (ear, nose and throat, or ENT) at Weill Cornell marks a significant academic coup for the institution—and an important shift in focus for the department.

It's an emphasis that will spotlight the needs of the patient more than ever before. That's because Dr. Stewart, previously affiliated with Baylor College of Medicine in Houston, has spent much of his career working in the burgeoning field of outcomes research.

Outcomes research looks at a disease and then goes beyond it, said Dr. Stewart, who has also been appointed otorhinolaryngologist-in-chief at NewYork-Presbyterian Hospital/Weill Cornell Medical Center.

"Traditionally in medicine we've studied outcomes like survival, or whether or not the disease recurred," he explained. "But I'm also interested in studying the patient's perception of outcomes—what's their functional status, their self-reported quality of life? It's actually an area we don't know a lot about."

Outcomes research has been a big interest of Dr. Stewart's for years. "It's a growing field, and not just in our specialty," he said.

In fact, Dr. Stewart has already served two terms as chairman of the Outcomes Research and Evidence-Based Medicine Committee at the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS).

His research has also contributed much to our understanding of nose and sinus disease and sleep breathing disorders, as well as head



Dr. Michael Stewart, new chairman of the Department of Otorhinolaryngology, with a patient.

and neck trauma—in fact, Dr. Stewart is the author of a textbook on the subject. Beyond that, he's authored 19 book chapters and published more than 75 times in peer-reviewed journals. He remains an associate editor at the *American Journal of Rhinology* and is a member of the editorial board at *Archives of Otolaryngology-Head and Neck Surgery*.

Dr. Stewart, who has lectured both nationally and internationally, teaches several instructional courses each year at AAO-HNS annual meetings, and serves on other

national groups such as the AAO-HNS Home Study Course Faculty and the Education Council of the American Board of Otolaryngology.

"An innovative researcher and dedicated teacher, it is with great pleasure that I welcome Dr. Stewart to the faculty of Weill Cornell," said Dr. Antonio Gotto Jr., dean of Weill Medical College. "His appointment is further evidence of our commitment to otorhinolaryngology and the growing field of outcomes research." >>> page 7

## Weill Cornell Researchers Score a Nature Quadruple Play

Quartet of groundbreaking studies published in the prestigious science journal

Publication in *Nature* is a coup for any research team, but Weill Cornell investigators earned recognition in the journal four times over the past several months with landmark findings in fields as diverse as HIV microbicides, ion channel function, neuronal growth and cancer metastasis.

The cancer findings, especially, "could open up a whole new door to identifying and treating metastatic disease before it starts," explained first author Dr. Rosandra Kaplan,



## WCMC/NYP Join in Hurricane Katrina Relief Effort

### WEILL CORNELL MEDICAL COLLEGE AND NEWYORK-PRESBYTERIAN

Hospital quickly reached out after Hurricane Katrina pounded the Gulf Coast of the United States. With flooding forcing the closing of hospitals, including Tulane University Hospital and School of Medicine, the WCMC/NYP team honored its commitment to supporting health care in areas in crisis by mounting a three-fold response on behalf of Katrina victims: medical education, research and patient care. "At a time like this, it is important for us to remember our humanitarian commitment to serve those in need, regardless of where they may be," said Dr. Antonio Gotto Jr., dean of the Medical College.

Physicians and emergency medical technicians from the Hospital's Emergency Medicine Department traveled to Biloxi on September 14 with mobile medical units and a satellite communications vehicle. The journey was part of Operation Assist, a collaborative project between the Hospital, Children's Health Fund and Columbia University's Mailman School of Public Health.

The team's doctors were Wallace Carter, associate professor of emergency medicine; Maria Lupica, assistant professor of pediatrics; Jay Lemery, instructor in medicine; Richard Patrick, chief resident in Emergency Medicine; and Alan Manevitz, clinical assistant professor of psychiatry. >>> page 4



Members of the Katrina relief team from Weill Cornell Medical College and NewYork-Presbyterian Hospital prior to their departure to Biloxi, Mississippi in September.

the Charles, Lillian and Betty Neuwirth Clinical Scholar in Pediatric Oncology. As noted in the December 8 issue of *Nature*, Dr. Kaplan and senior lead researcher Dr. David Lyden led a team that moved beyond examination of metastatic cells or even their "microenvironment" to a third party deeply involved in creating what they call the "premetastatic niche" at the site of secondary disease.

In mouse studies, "We noticed that vascular endothelial growth factor 1+ (VEGFR1+) stem and progenitor cells residing in bone marrow seemed to proliferate in response to certain growth factors released from the primary tumor," said Dr. Lyden, associate professor of pediatrics and cell and developmental biology. >>> page 3

# Pediatric Urology Garner Higher Profile

The Institute for Pediatric Urology at Weill Cornell has experienced a 1,000 percent increase in surgical volume alone over the past eight years, helping to make the Institute one of the country's premier centers for pediatric urology.

The program, directed by Dr. Dix Poppas, the Richard Rodgers Family Associate Professor of Pediatric Urology at Weill Cornell Medical College, manages urological conditions in the infant, child and young-adult populations.

"One goal of the Institute is to obviate the need for kidney surgery or renal damage later in life," said Dr. Poppas.

**"We identify what's wrong and we intervene early. Using this approach, continuity of care between the obstetrician, pediatrician and urologist improves patient care and relieve anxiety in the family."**

— Dr. Dix Poppas

To that end, scientists led by Dr. Diane Felsen are aggressively involved in basic and clinical research to understand the mechanisms of renal damage from obstruction, develop drug targets for therapy, and use diagnostic markers to predict outcomes and responses to treatment. One example of how the Institute's research has been applied is in studies that have pointed to a nitric oxide compound as

protective to the obstructed kidney. These findings are directing gene therapy approaches.

The Institute's innovative procedures, such as the first pediatric laparoscopic nephrectomy and the first pediatric robotic pyeloplasty in New York—both performed by Dr. Poppas, also director of the Laboratory for Minimally Invasive Urologic Surgery at Weill Cornell—have attracted referrals from around the world.

The robotic pyeloplasty corrected a common congenital malformation that would have endangered kidney function if left untreated. Robotic and minimally invasive procedures allow less scarring, short length of stay, quicker recovery and in general, a

greater potential for success. Much of the substantial research that is conducted within the program focuses on developing more applications for these procedures, which are particularly beneficial to young patients. Weill Cornell's is the only pediatric urology group recognized for

minimally invasive surgery, according to a recent Castle Connelly study.

Nearly 4,000 patients were seen by Dr. Poppas and his staff last year for conditions ranging from hernia repairs to complex congenital abnormalities, cancers of the kidneys and testes, and intersex disorders.

In 2004, Dr. Rosalia Misseri was recruited to lead the bladder reconstruction and urinary

diversion program, which discovers anomalies in utero, allowing for close monitoring and a rapid response, if and when treatment becomes necessary.

"We identify what's wrong and we intervene early," offers Dr. Poppas. "Using this approach, continuity of care between the obstetrician, pediatrician and urologist improves patient care and relieve anxiety in the family."

The Institute for Pediatric Urology maintains an internationally recognized referral center for the evaluation and reconstruction of children with ambiguous genitalia. This group has assisted more children with potentially devastating congenital adrenal hyperplasia than any other in the nation.

Dr. Mark Horowitz, a specialist in neuro-genetic disease in children, directs the Pediatric Voiding Dysfunction Center, where children with bladder dysfunction are evaluated, treated and re-trained.

Dr. Horowitz has a 90 percent success rate with day and night wetters. Andrew Combs, one of the nation's foremost instructors in urodynamics testing, heads up the laboratory.

"Andy is the best physician's assistant of urodynamics in the country—he's a huge asset and major resource to Weill Cornell," said Dr. Poppas.

Combs' patients seem to agree, judging from the colorful notes and cards that festoon his office from children who have been treated at the Institute over the past decade. ■



Dr. Dix Poppas

## the Scope

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**THE STEPHEN AND SUZANNE WEISS DEAN, WEILL MEDICAL COLLEGE**  
Dr. Antonio M. Gotto Jr.

**DEAN, WEILL GRADUATE SCHOOL OF MEDICAL SCIENCES**  
Dr. David P. Hajjar

**VICE PROVOST FOR PUBLIC AFFAIRS**  
Myrna Manners

**DIRECTOR OF COMMUNICATIONS**  
Jonathan Weil

**DIRECTOR OF PUBLICATIONS/EDITOR**  
Michael Sellers

**FEATURE WRITERS**  
Ernie Mundell, Melissa Hantman

**DEPARTMENTAL WRITERS**  
Noreen Hoffmeister, Bruce Toman, Georgia Tucker

**EDITORIAL ASSISTANT/COPY EDITOR**  
Andria Lam

**DESIGN**  
Shostak Studios, NYC

**PHOTOGRAPHY**  
Amelia Panico, Susan San Giovanni, Richard Lobell

Office of Public Affairs  
1300 York Avenue, Box 144  
New York, New York 10021  
212-821-0560

publicaffairs@med.cornell.edu  
www.med.cornell.edu

## "E-Medicine" Is More Than a Mouse-Click Away

**Setting up a national Web-based health network won't be easy, Weill Cornell expert says**

Someday soon, experts predict, Americans will be able to access their patient health records, test results, prescription orders and insurance claims online in a secure, error-reduced National Health Information Network that the RAND Corporation estimates could save the nation an estimated \$162 billion annually.

President Bush is behind the initiative as well, and is urging the adoption of a secure, countrywide system by 2014.

But just who would be involved in this Web-based network, and what exactly should it provide? What will it cost, and are all of the key players in health care ready to take this on-ramp to the information superhighway?

Some of the answers to those questions can be found in a study led by Weill Cornell adjunct assistant professor of public health Dr. Rainu Kaushal, published in the September issue of the journal *Health Affairs*.

"Based on the input of an expert panel, we pinpointed those health information technologies that are

critical to building a national network," Dr. Kaushal explained. "We also sought to determine if there are gaps in who is equipped to join such a system."

According to Dr. Kaushal, any functional National Health Information Network would need to include doctors' offices, hospitals, nursing homes, home health-care agencies, clinical laboratories and pharmacies.

"Quite rightly, patients and health-care workers are going to expect a lot, as well," she said. Among the most important benefits: electronic access to test results, online health records, computerized physician-order entry, electronic claims submission and eligibility verification, patient communications, and an "e-prescription" service linked directly with local pharmacies.

"All of this would be expected to be secure, of course," explained Dr. Kaushal, who is also a patient-safety researcher at Brigham and Women's Hospital in Boston and an instructor in medicine at the Harvard Medical School.

Unfortunately, not all players in the health-care system have the financing and personnel needed to link up quickly to any national system, she added.

"When it comes time to join a National Health Information Network, we believe large hospitals will be best equipped to do so, because so many have already greatly upgraded their technologies," Dr. Kaushal pointed out.

"Perhaps the least able will be smaller stakeholders, such as skilled nursing facilities," she said.

In fact, her team's report found that just 14 percent of these types of centers could be expected to have "e-records" and online computerized physician-order entry up and running within the next five years.

"Based on these findings, we believe government must play a bigger role in helping these technologically or financially challenged players become full

partners in electronic medicine," Dr. Kaushal said. "This will benefit everyone by preventing 'safety gaps' that might harm patients as they move through the health-care system."

Challenges remain, and experts estimate that setting up a quality National Health Information Network could cost more than \$156 billion.

"Still," Dr. Kaushal predicted, "the benefits to all concerned—patients, doctors, everyone—could be enormous." ■



Dr. Rainu Kaushal

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## Weill Cornell Researchers Score a *Nature* Quadruple Play

Further murine research revealed that these cells migrated out of the marrow and headed to specific pre-metastatic body sites, depending on the type of primary tumor. “For example, when we worked with a lung cancer model, VEGFR1+ cells traveled to specific lung sites,” Dr. Kaplan said. “But when we used a melanoma model, they colonized disparate sites—just as you’d expect with that malignancy.”

Once they arrived at a new site, VEGFR1+ cells linked up with local fibronectin, which also seemed to be produced in larger quantities due to growth factors from the primary tumor.

“This fibronectin appears to bind with a molecule on the progenitor cell’s surface, acting as a ‘glue’ to hold the cell in place,” Dr. Lyden said. “And it appears that this partnership creates the ideal environment for metastatic cells in exactly the location they are seeking, depending on their cancer type.”

The paper also sets forth the intriguing concept that tumor metastasis may not only be dependent on the oncogenicity of the tumor cells, but also on the existence of developmentally bookmarked permissive niches or “hot spots” that are receptive for tumor metastasis. According to Dr. Shahin Rafii, the Arthur B. Belfer Professor in Genetic Medicine and co-author of the article, “It is conceivable that the number and the capacity of these hot spots to permit lodgment of tumor cells may be determined by the genetic make-up of any given patient. This may explain why subsets of patients with early-stage colon cancer are more prone to liver metastasis, while others with an identical stage of cancer are cured from their disease with adjuvant therapy or timely surgical resection.”

The discovery “really opens up a whole new world of targets that we might use to stop metastatic disease in its earliest stages, as well as treatment in the setting with adjuvant chemotherapy,” Dr. Kaplan said.

### NEW CELL INSIGHTS, AND CLUES TO PARALYSIS

Protein synthesis is perhaps the key cellular function, and it happens only inside the cell body, right? Wrong.

“We found that protein synthesis—which occurs via the action of messenger RNA—also occurs at the very tips of developing neuronal axons, in a structure called the growth cone, far away from the neuron’s cell body,” said Dr. Samie Jaffrey, an assistant professor of pharmacology and the senior author of a second *Nature* paper published in the August 18 issue. “In fact, like a kind of self-guided missile, the axon uses its own mRNA to seek out new neural connections.

It’s an exciting discovery, a real first.”

For decades, researchers peering into the mysteries of development and looking for ways to repair damaged spinal cords have wondered how individual neurons direct the activity of their axons—long, skinny “branches” that grow to incredible lengths as they seek out new neural connections.

“The growth cone can be 10, 20 centimeters away from the cell body,” Dr. Jaffrey pointed out, “and communication over those kinds of distances should take hours. So we wondered, was there a local control center lying in the axon itself?”

It appears there is. The Weill Cornell team noticed an abundance of an mRNA called RhoA, long associated with cell structural development. “It’s normally only found in the cell body, but here it was in the axon,” Dr. Jaffrey said.

To find out why, his team engineered neurons unable to produce RhoA mRNA in their developing axons. Surprisingly, the axons’ “fingertips,” the growth cones, turned out to be unresponsive to standard signaling without the help of RhoA mRNA.

“That means this mRNA must be synthesizing protein locally to guide axonal development,” he said.

Besides stripping the cell body of its sole claim to protein synthesis, the finding could pinpoint new targets for research into spinal cord injury.

### BIG NEWS ON A SMALL MOVEMENT

The August 11 *Nature* was also the forum for a third Weill Cornell discovery with perhaps the broadest implications of all: that a mechanism crucial to the life of every cell may not be quite what it seemed.

Tiny cellular doorways called ion channels are so small, scientists still don’t have a means of viewing them firsthand. And yet, ion channel dysfunction can wreak havoc and trigger diseases ranging from epilepsy to arrhythmias.

The opening and closing of these channels (“gating”) relies on how the electrical charge of the protein is coupled to the membrane voltage. “Because the electrical output mirrors that of simple electrical circuits (measured energy is equal to charge times voltage), it was naively thought that the ‘gating charge’ would traverse the entire membrane—the so-called ‘big movement’ mechanism,” explained the study’s lead researcher Dr. Benoit Roux, professor of physiology and biophysics.

Working in cooperation with researchers from UCLA led by the legendary Dr. Francisco Bezanilla, the team used fluorescent molecular markers to try to deduce, indirectly, the

amount of actual movement involved in gating within a type of potassium ion channel.

“We found that you can have an effective gating charge crossing the electrical potential without actually moving very much,” he said.

Why so much fuss over a mechanism none of us may ever see? “The function and dysfunction of these channels are so important to the life of the cell, and to the cell signaling that governs both health and disease,” Dr. Roux said. “We just got a little bit surer as to how that function occurs.”

### MOVING CLOSER TO AN ANTI-HIV MICROBICIDE

Women now make up the majority of the estimated 40 million people now living with HIV/AIDS, largely because they often have little control over the safety of sexual encounters.

But a collaborative study led by Weill Cornell and Tulane researchers suggests that vaginal gels containing a combination of antiviral compounds might someday allow women some measure of protection and control.

As reported in the November 3 issue of *Nature*, a team of researchers including Dr. John Moore, Dr. Per Johan Klasse, Susan Schader and Thomas Ketas of Weill Cornell’s Department of Microbiology and Immunology, along with Dr. Ronald Veazey of the Tulane National Primate Research Center, found a three-drug topical microbicide effective in shielding female macaques from infection with SHIV—a hybrid of HIV and its simian cousin, SIV.

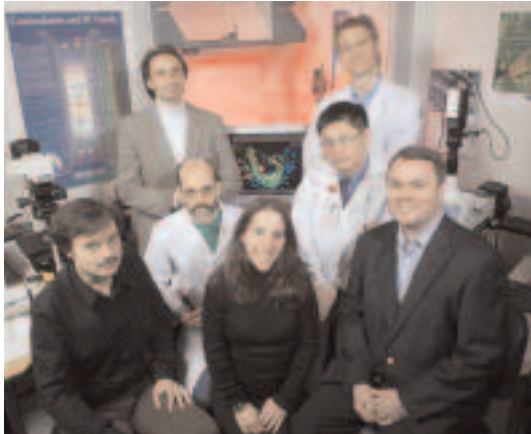
Two of the small-molecule compounds used in the combo gel originated with drug makers Bristol-Myers Squibb and Merck Inc., while the third, a peptide called C52L, was developed by study co-author and Weill Cornell associate professor of biochemistry Dr. Min Lu.

Gels containing just one or two of the microbicides were only partially effective in shielding the monkeys from SHIV. In contrast, all three of the macaques that received the three-drug combo gel remained HIV-free. The combination gel appeared to cause no harm to the monkeys’ vaginal tissue and conferred protection even when applied six hours prior to exposure to the virus.

“Although this primate trial shows promise, much more work is needed to develop a product that we can be sure is safe and effective—as well as affordable—for women at risk,” cautioned Dr. Carl Nathan, chairman of the Department of Microbiology and Immunology.

In a first-of-its-kind joint agreement, Bristol-Myers Squibb and Merck announced they were both giving away the rights to their two compounds used in the trial to the non-profit International Partnership for Microbicides (IPM), to help speed the development of a microbicide gel.

“This is a rare example of the type of academic-industrial partnership that will be so important in the future,” Dr. Nathan said. “It’s still early, but this is the kind of research that could help turn the tide against HIV/AIDS.” ■



Featured in the December 8 issue of *Nature* are (standing, from left) Dr. Shahin Rafii, Dr. Kristian Jensen; (seated) Dr. Sergey Shmelkov, Scott Kerns, Dr. Rosandra Kaplan, Dr. David Jin, Dr. David Lyden

# The War Against the Malaria Parasite

Its genetic complexity may be its strength—and weakness, Weill Cornell expert says

Infection with *Plasmodium falciparum*, the parasite that causes the most deadly form of malaria (pictured, right), remains one of the globe’s biggest health threats, killing millions of children each year.

Armed with a family of 60 var genes, the parasite can thwart the human immune system’s best defenses, allowing infection to last for months on end.

But in a commentary published earlier this year in the journal *Cell*, assistant professor of microbiology and immunology Dr. Kirk Deitsch contends that the sheer number and variety of var genes may be a key point of weakness for the parasite.

“It’s a real Achilles’ heel for this organism, pointing the way to new targets that might someday allow us to stop the parasite before it can kill,” he said.

He explained that *P. falciparum* causes disease by “invading red blood cells and digesting the cell’s hemoglobin.” This changes the cell’s shape, marking it for destruction as it passes through the spleen.

“Unfortunately, that’s when one of these 60 var genes goes to work, placing a special protein on the damaged cell’s surface that allows it to avoid this splenic destruction,” Dr. Deitsch explained.

However, in a kind of cat-and-mouse game, the immune system soon recognizes this protein as foreign, and then attacks it.

“Trouble is, the malaria parasite has 59 other var genes that each produce different proteins,” Dr. Deitsch said. The result: malaria infection that can linger for months and perhaps even be fatal. But how does *P. falciparum* silence its other 59 var genes when

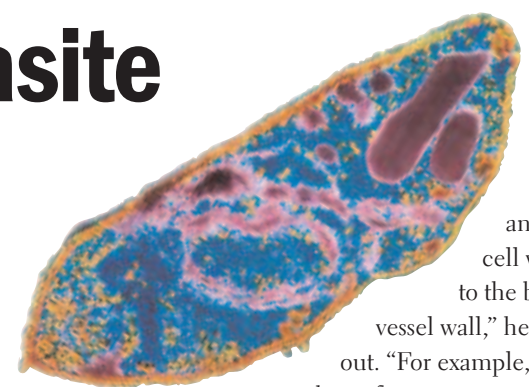
just one is in play? “That’s a hot topic now in malaria research,” he said.

In two studies published in the same edition of *Cell*, researchers in France and Australia focused on a protein called SIR2, which experts had pinpointed as a major component in silencing the 59 other genes.

“However, *P. falciparum* engineered to lack SIR2 still showed evidence of silenced var genes—suggesting there are other players at work,” Dr. Deitsch said.

On the surface, this could make the problem of breaking through the parasite’s defenses even tougher.

But there’s a silver lining, too. “We’re also realizing that the individuality of each of these genes determines just where



an infected cell will stick to the blood

vessel wall,” he pointed out. “For example, a small subset of var genes appears to

direct infected cells to the brain, causing highly lethal cerebral malaria, while another one sends them to the placenta, which can trigger miscarriage.”

Identifying var genes responsible for the worst kinds of malaria might lead to highly targeted therapies that could prevent specific types of the disease, Dr. Deitsch said.

“With a better understanding of var, we can perhaps design drugs that disable exactly those genes that cause us the most harm,” he said. “That’s the exciting part of this research.” ■

# Helping Brain Cells Branch Out

**A cellular transport molecule leads a double life**

It's like seeing an old friend in a whole new light: Weill Cornell researchers say a molecule linked to intra-cellular transport may also help guide the growth of the axons, the long, skinny branches that connect brain cells.

"We were the first to discover that this light-chain molecule, called Tctex-1, played a key role in vesicle ferrying within cells six years ago," explained Dr. Ching-Hwa Sung, an associate professor of cell biology in ophthalmology and cell and developmental biology at Weill Cornell.

But a chance observation revealed that Tctex-1 had another trick up its sleeve.

"We noticed high concentrations of the molecule in the axon terminals of young neurons," she said.

Intrigued, her team, with help from colleagues at the Instituto Investigación Médica Mercedes y Martín Ferreyra, in Argentina, wondered if Tctex-1 might play a role in axonal "budding" and growth.

As Dr. Sung explained, every nerve cell produces one axon: a long branch-like appendage that carries impulses away from the cell to sites of action or sensation elsewhere in the body. "The axon arises from one of many budding cellular outgrowths

called neurites," she said. "But, up till now, we had little idea how the cell 'picked' a particular neurite to be that axon."

To find out if Tctex-1 might guide that decision, her team used methods to either underexpress or overexpress the molecule in embryonic hippocampal progenitor cells in the lab.

"The results were pretty amazing," said Dr. Sung, who reported the findings this summer in *Developmental Cell*.

"If we downregulated the molecule, the neuron wouldn't even generate a neurite—a lack of Tctex-1 seems to block axonal 'budding' altogether."

Then they tried overexpressing the molecule. "We found that by adding it early on, cells actually developed multiple, fast-growing neurites—all with axonal characteristics. This even happened when we up-regulated it pretty late, during the mid-development phase," Dr. Sung said. "The speed of cell outgrowth was remarkable."

The Weill Cornell researcher said she's not sure how a molecule known mainly for its role in intra-cellular transport might direct axonal growth. But she believes Tctex-1 may serve as a kind of chemical "bridge" between two dissimilar structures within the axon's shaft.

"The main body is composed of structures called microtubules, while the end of the axon contains microfilaments," she explained. "We always knew some sort of molecule was conducting 'cross talk' between the two, and now we think Tctex-1 is one of those molecules."

It certainly makes sense, she said, since Tctex-1 is intimately involved with similar structures in its role as a transport molecule.

But does any of this have implications beyond basic science? Considering that the re-growth or replacement of dead or damaged brain cells is the dream of neuroscientists everywhere, it certainly does.

"Clinical applications are still a long way off, but in the future we might be able to develop some therapeutic treatment by applying Tctex-1 directly to injured neurons," Dr. Sung theorized. "This is really only the beginning." ■

**"We found that by adding Tctex-1 early on, cells actually developed multiple, fast-growing neurites—all with axonal characteristics."**

— Dr. Ching-Hwa Sung

# Finding Folate's Secret Weapons

**Nutrient's effect on gene mutation helps explain how it fights birth defects, Weill Cornell team reports**

For over a decade, obstetricians have urged pregnant women to up their folate intake to help ward off dangerous fetal neural tube defects (NTDs), which include spina bifida and anencephaly.

But they've known very little on how folic acid works its magic—until now.

Reporting in the September 6 issue of *Proceedings of the National Academy of Sciences*, a Weill Cornell team says they've pinpointed a genetic mutation that helps drive these dangerous malformations and is rendered less lethal in the presence of folate.

"The excitement of this paper is that it provides researchers with a new avenue of investigation—it shows how a very subtle change in a gene can lead to a very big problem in brain development," said Dr. Elizabeth Ross, a professor of neurogenetics in the Department of Neurology and Neuroscience. "It also gives us clues that might help us spot who's most at risk for these defects and where to look for new targets for prevention."

Working with a mouse model of human NTDs first developed by her lab in 1999,

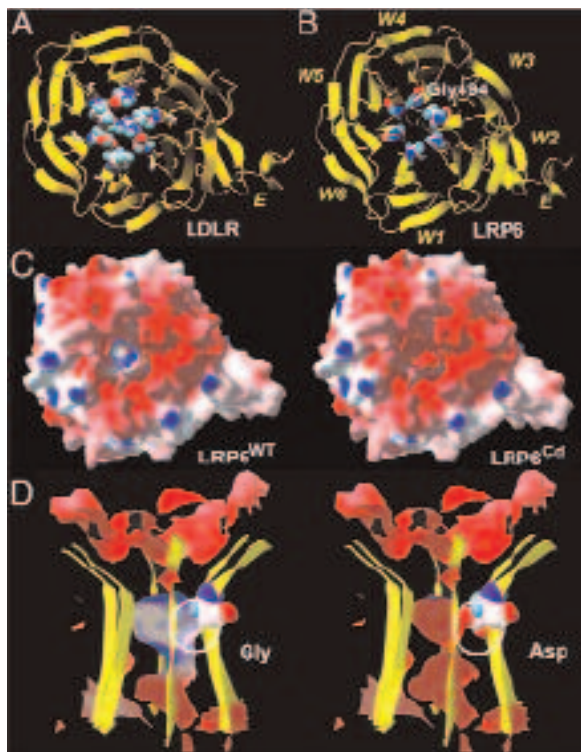
Dr. Ross and postdocs Michelle Carter and Xu Chen used positional cloning to pinpoint the mutation, which involves a swap of a single amino acid on the lipoprotein receptor-related protein 6 (LRP6) gene.

LRP6 encodes a protein vital to a complex developmental signaling pathway—perhaps explaining why such a small mutation in the gene can have such devastating consequences for the fetus. And, as occurs in humans, the mutant mice responded well to folate supplementation, giving birth to pups without NTDs, the researchers found.

Although LRP6 will probably turn out to be just one of many players in NTDs, "The next step is to figure out the mechanisms by which folate works on the mutation in this gene to mitigate its effects," Dr. Ross said.

The end-goal: Genetic tests that might someday pinpoint those women at highest risk for NTDs, and those who might benefit most from folate, or some other supplement, in pregnancy.

"That's still a long way off," Dr. Ross said, "but at least we've opened the door." ■



**Molecular modeling of LRP6Cd protein.** (A) Space filled residues in position X of PXG motifs are shown in the crystal structure of LDLR YWTD-EGF domain (Protein Data Bank ID code 1JJQ). White sticks are prolines N-terminal to them. The X residues pack tightly to cover the gate of the central channel formed by six YWTD repeats. (B) The second YWTD-EGF domain in mouse LRP6WT and LRP6Cd based on A (sequence alignment in Fig. 7). E, EGF domain; W1-W6, wing or blade of the propeller. (C) Top view (same viewing angle as B) shows electrostatic potential (E.P.) surfaces of LRP6WT and LRP6Cd. Contributions by X residues in PXG motifs were removed to expose the changes in surface E.P. in the central channel predicted for the Cd mutation. (D) Cut away side view of the E.P. surfaces forming the channel. Regions of negative surface E.P.s are red (-15 kT), and of positive potential (15 kT) are blue. Homology modeling was performed by using MODELLER 4 (35). Panels A and B were prepared with MOLMOL (36). The E.P.s and molecular surface were calculated by using GRASP (37). The surfaces displayed in C and D were prepared in SWISS-PDBVIEWER 3.7 (38).

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## WCMC Joins in Hurricane Katrina Relief Effort

Dr. Manevitz traveled to the heart of the disaster zone, just as he had after the attack on the World Trade Center on September 11, 2001.

"Mississippians," he told The New York Times, "are just as strong as New Yorkers, except more resourceful—chopping down trees with buzz saws and taking on other major jobs normally associated with public works personnel."

While some of their Gulf Coast patients were critically ill, most had more basic needs, such as prescription refills, tetanus shots and other supportive care in the first days of the aftermath. "We were seeing people disenfranchised from the health-care system and their primary care providers—patients at the fringes with chronic diseases

like diabetes, heart failure and kidney disease," Dr. Lemery said. "We were a bridge to get them back into the health-care system."

The medical workers went from home to home in devastated neighborhoods, treating the elderly for heat exhaustion, among other maladies. "The relief work was an amazing experience. People really appreciated that we were there," Dr. Lemery said. He recounted alarming, unsettling scenes, such as entire buildings displaced from their foundations, literally thrown across the beach.

"We came across a body that had been in the water since the hurricane. It was very poignant to see such graphic evidence of death firsthand," he said.

The Medical College also has become an academic haven, hosting Tulane medical students Jonathan Elias, Andrew Morchower and Lucius Howell, and Louisiana State University graduate student Antoine Panossia. Howell, a first-year graduate student in health sciences at Tulane, is adjusting to the dizzying sequence of events that planted an Alabama native in New York City. Not a month into his classes at Tulane, he called several medical schools after

the hurricane to ask if they would accept him. Though most were receptive, Weill Cornell was most attractive because of faculty efforts to secure him housing in Olin Hall. "It has really been great to see the outpouring of affection for New Orleans and all its displaced residents," he said. "I left New Orleans with just a backpack of clothes and my dog."

"It's an amazing, serendipitous route to end up in New York for the semester," he said. "I don't consider myself displaced at all. In fact, I feel fortunate."

In addition, Dr. Albert Dreisbach, who had appointments in pharmacology and nephrology at Tulane, fled New Orleans for drier ground at Weill Cornell, where he had completed a clinical pharmacology fellowship in 1992. "It feels like a

homecoming, returning to the division where I did my fellowship 14 years ago," he said. He is now an assistant professor in the Department of Pharmacology.

Dr. Dreisbach helped with triage efforts to evacuate critically ill patients from Tulane Medical Center, carrying them down the stairs with flashlights after the emergency generators became flooded and stopped working. "The water was getting toxic; it was almost like an open sore," he said.

After the patients and their families were lifted to safety, Dr. Dreisbach and other staff were evacuated by military helicopter. As they left, he recalled, they were fired upon by snipers. "It was frightening, but in the end we knew that we had done some important work, and that's what mattered most." ■



Tulane medical student Lucius Howell, now studying at Weill Cornell.

science  
at a glance

## Clinical Trials Update

**IT'S BEEN ANOTHER BUSY SUMMER AND FALL**

for clinical research at Weill Cornell. Data from a just-completed Phase II clinical trial in the use of Bexxar for non-Hodgkin's lymphoma looks very promising, and two other trials—one aimed at diabetics and the other at women with Premenstrual Dysphoric Disorder—have just gotten underway.



Dr. John Leonard (left), Dr. Margaret Altemus and Dr. Thomas Brannagan

In the open-label Bexxar trial, researchers led by Dr. John Leonard tested the radiolabeled monoclonal antibody drug, used after a course of fludarabine chemotherapy, in 35 patients with previously untreated low-grade/follicular non-Hodgkin's lymphoma. Reporting in the August 20 issue of the *Journal of Clinical Oncology*, Dr. Leonard's team found that after just three six-to-eight-week cycles of Bexxar, 100 percent of patients responded to therapy and 86 percent achieved a complete response over the long term.

"The fact that this treatment could result in a remission in the range of at least five years in the majority of patients is quite encouraging," said Dr. Leonard, who is clinical director of the Center for Lymphoma and Myeloma at NewYork-Presbyterian/Weill Cornell, and associate professor of medicine at Weill Cornell Medical College.

In the meantime, two other promising trials reached liftoff earlier this summer. The first, led by Dr. Thomas

Brannagan, is a Phase III, placebo-controlled trial of the promising new agent Ranirestat against a tough foe—diabetic neuropathy. Ranirestat inhibits an enzyme, aldose reductase, which experts believe is a key player in this diabetes-linked nerve disorder. There are currently no effective treatments aimed at the underlying cause of diabetic neuropathy, which is blamed for more than 85,000 amputations each year in the United States.

"We're excited to be taking part in this trial—the Phase II results were promising, and we are optimistic about the drug's potential," said Dr. Brannagan, an associate professor of clinical neurology at Weill Cornell and associate attending neurologist at NewYork-Presbyterian/Weill Cornell.

NYPH/Weill Cornell is the only academic medical center in the tri-state area chosen for participation in the yearlong trial, which includes patients with both Type 1 and Type 2 diabetes.

A second new trial, this time led by Dr. Margaret Altemus, is currently comparing the effectiveness of flutamide against placebo for the treatment of a severe form of PMS called Premenstrual

Dysphoric Disorder (PMDD).

"This disorder has been largely ignored, in part because PMS symptoms are common and usually mild," said Dr. Altemus, an associate professor of psychiatry at the Medical College and associate attending psychiatrist at NewYork-Presbyterian/Weill Cornell. "By contrast, PMDD has a significantly negative impact on patients' function and quality of life," she said.

Right now, most women with PMDD are treated with SSRI antidepressants, although 30 percent fail to respond to this therapy.

Irritability and anger, the most prominent symptoms of PMDD, can be triggered by androgen (testosterone-like) hormones, which can be produced in the brain when levels of the precursor hormone progesterone rise premenstrually. Flutamide works by blocking the action of testosterone and other androgen hormones. The four-month study is open to women 18 to 50 years of age and includes a comprehensive evaluation. ■

## Twin Tests Spot High Heart Risk

**THE USE OF TWO WIDELY USED SCREENS IN COMBINATION CAN PINPOINT PATIENTS AT THE HIGHEST**

risk of cardiovascular death, Weill Cornell researchers reported in the June 7 *Journal of the American College of Cardiology*. Looking at data on more than 2,100 patients, "We found that abnormal blood levels of C-reactive protein, coupled with a specific ECG called ST-segment depression, tripled the risk of dying from heart disease and nearly quadrupled all-cause death risk," said professor of medicine Dr. Richard Devereux. Too many heart specialists aren't picking up on ST-segment depression, especially, added the primary investigator, Dr. Peter Okin, professor of medicine. "In combination with other markers, even what seem to be minor findings on the ECG can identify people at high risk—people who deserve much greater attention," he said. ■

## Man Beats Machine in Reading ECGs

**A NEW STUDY SUGGESTS HEART PHYSICIANS ARE IN NO IMMINENT DANGER OF BEING REPLACED BY**

computers. Reporting in the July *Journal of Electrocardiology*, Dr. Paul Kligfield and colleagues from the Maurice R. and Corinne P. Greenberg Division of Cardiology found that the software used by half the nation's cardiologists to help interpret ECG heart rhythms makes diagnoses that are wrong about 13 percent of the time. "There is sometimes an over-reliance on computer interpretation of the ECG," said Dr. Kligfield, professor of medicine. "The computer is good, and it is getting better, but alone it is still not good enough." Incorrect computer readings were most often found in patients with pacemakers, the researchers noted. The bottom line? "Computer rhythm statements must remain secondary to the judgment of a physician," he said. ■

# Understanding a Silent Killer

**Weill Cornell cardiologist promotes minimally invasive approach to treat hypertrophic obstructive cardiomyopathy**

**Dr.** Srihari Naidu has become one of the first interventional cardiologists in New York to routinely treat hypertrophic obstructive cardiomyopathy (HOCM), a thickening of the heart's muscle, using a minimally invasive procedure known as alcohol septal ablation.

The procedure involves inserting a thin catheter into the groin and, using an artery as a pathway, moving the catheter toward and eventually into the heart. Once inside, an alcohol solution is released from the catheter, making contact with the excess muscle and causing it to wither away.

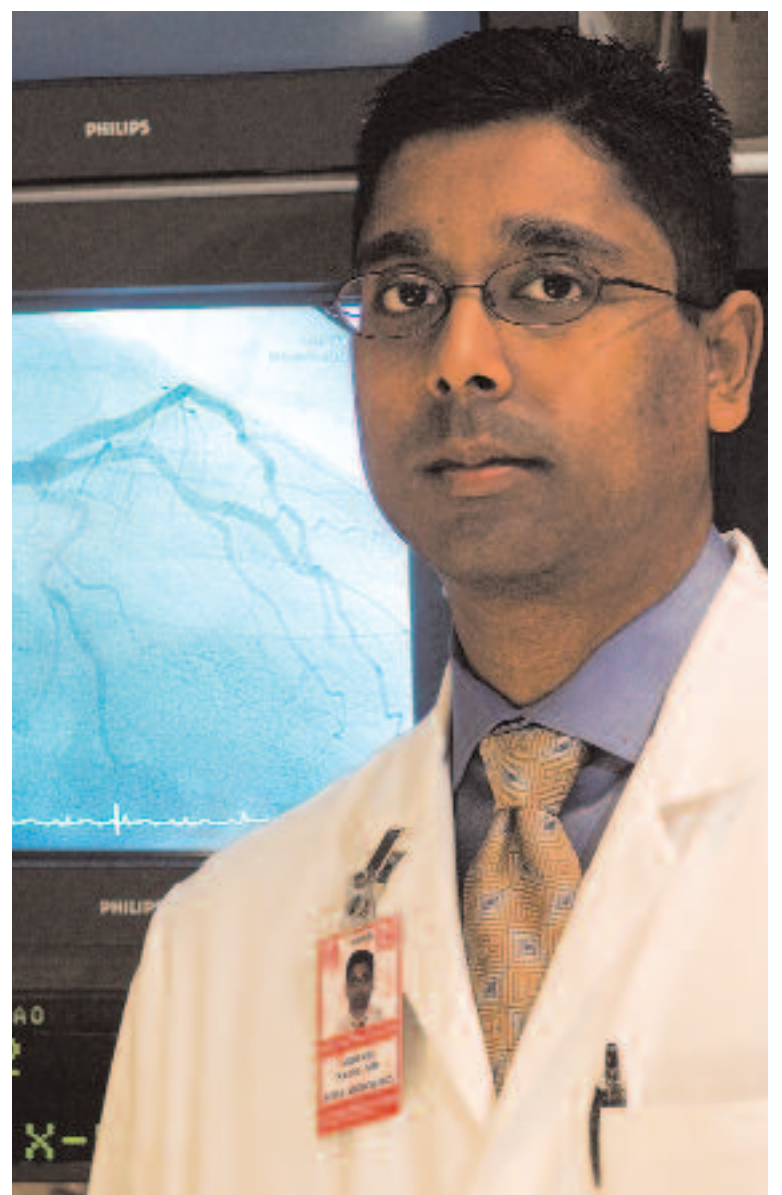
"What we are essentially doing is creating a carefully controlled heart attack," says Dr. Naidu. "However, in this case, we are killing off muscle that is actually hurting the heart—not helping it." The technique replaces an open-heart procedure where surgeons had to crack open a patient's chest and physically cut away excess heart muscle.

HOCM is believed to be caused by an inherited genetic defect that, interestingly, is inher-

ited by every family member yet only becomes problematic for some. Instead of lying neatly together, which is the norm, the genetic defect causes the cells that create heart muscle to arrange themselves in haphazard patterns, creating muscle that is abnormally thick. This occurs most commonly with the septum, the muscle or wall separating the heart's two chambers.

As the septum thickens, it can grow to block the flow of blood being pumped out of the heart, causing pressure to build within the chamber and blood to be regurgitated back into the lungs. Patients experience fatigue, shortness of breath, palpitations, chest pain or angina, and lightheadedness or fainting—usually during exercise. And in some cases the situation can prove fatal.

Determining if someone has HOCM involves a physical exam and comprehensive evaluation, which includes an echocardiogram (heart ultrasound). Medication is generally the first line of treatment, followed by a procedure such as septal alcohol ablation, if medicines do not bring adequate relief. ■



Dr. Srihari Naidu is a pioneer in the use of alcohol septal ablation to treat hypertrophic obstructive cardiomyopathy.

# Broadened Horizons, with Gorges Views

Medical and graduate students pursue accelerated M.B.A. degree in Ithaca

Medical science and business skill are often perceived as vastly different as Manhattan gridlock and Ithaca gorges. A new joint-degree, cross-campus program is set upon bridging these worlds by supplementing M.D. and Ph.D. work with an M.B.A.

Weill Medical College and Graduate School of Medical Sciences have partnered with the Johnson School of Management at Cornell University to offer Weill Cornell students the option of earning an M.B.A. degree in an accelerated, 12-month curriculum.

Under the program, M.D. and Ph.D. students join other M.B.A. candidates with graduate degrees for an intensive summer of core classes. In the fall, these 30 to 50 students join the second-year class of 250 M.B.A. students to graduate in the spring.

Medical students may apply for the dual degree before admission to Weill Cornell or within the first three years of matriculation; graduate students may apply at any time during their studies. Students must apply to both programs separately and meet both programs' admissions requirements, including taking both the MCAT and the GMAT.

The program, launched in 2004, marks another joint initiative between Cornell's New York City and Ithaca campuses. The dual degree is tailored to medical and graduate students who want to pursue a career in business, preparing them for leadership roles in major health organizations, pharmaceutical and biotechnology companies, and other industries in the life sciences.

The idea first took root in the mind of Joseph Habboushe, who will graduate from the Medical College in 2006. Even before he was accepted, Habboushe met with Dean David Hajjar to discuss a dual-degree program. After considering the idea, Dean Hajjar presented it to the Board of Overseers who overwhelmingly endorsed it. Sanford I. Weill, chairman of the Board, was an especially enthusiastic supporter.

Habboushe says one-third of all American medical schools offer a joint-degree M.B.A., a trend that gained traction five years ago, and Cornell needed to stay competitive and current. Its accelerated tract, offered in only a handful of schools, gives the University an added edge. Habboushe and his classmate, Maya Hartman, have already been accepted to the 2006-2007 M.B.A. program.

"I want to be one of a new breed of physicians, involved in improving the structure of health care," Habboushe said. "I am interested in both health care and business, and I want to bridge the divide between them."

Each year, three medical or graduate school students are eligible for endowments within the Lee Family M.D./M.B.A., Ph.D./M.B.A. Program, made possible through a gift from noted businessman Charles Lee, co-CEO of Verizon, member of the Weill Cornell Board of Overseers and Trustee Emeritus and Presidential Councilor of Cornell University.

Ann Richards, acting dean of admissions at the Johnson School, describes the M.B.A. program as an "intense, collaborative community" that integrates knowledge and practical experience, a learning method familiar to M.D. and Ph.D. students.

"Business school broadens your frame of reference and your horizons," Richards said. "The degree enables candidates to capitalize and build upon their education to become exceptionally competitive, productive physicians and scientists."

With its tradition of applied innovation, diverse student body and faculty at the vanguard of life sciences and biotechnology, Cornell's Ithaca campus is a

supportive milieu for medical and graduate students.

The program's two pioneers, both from the Medical College, charted different paths to divergent career goals: one within business and one within medicine, but each one fortified with knowledge of the other. Their experiences illustrate the gamut of options within this dual degree.

Bradley Miller completed the M.B.A. program this spring, after three years at the Medical College. He has now returned to Weill Cornell to complete his fourth year.

"I realized I wasn't dissatisfied with clinical medicine, but I was attracted to other issues within medicine," he said.



Bradley Miller (left) and Dr. Edward Nejat, former students in the dual-degree program.

Taking the GMAT, applying to the Johnson School and getting married made for a busy third year of medical school, but Miller was accepted and spent the 2004-2005 academic year in Ithaca.

Merging medicine with business will benefit the rapidly changing health care in this country, Miller said. "There are very few people that can cross over and understand both medicine and business. It's great that Cornell has recognized this and started this program." At the Ithaca campus, he managed to squeeze in sailing classes, welding classes, skiing and golf.

Miller and two classmates studying entrepreneurship drafted a plan for a medical informatics company, which demands a level of savvy in both the business and health-care arenas. The idea inspired the three to found a start-up venture in San Francisco, where Miller plans to move later this year.

The program "focuses on getting you into the thick of things, the realm of leadership and managerial dealings," he said, "so that when you work for a company, you're not just a 'lab rat' or bench scientist working alone."

Dr. Edward Nejat completed the M.B.A. program with Miller in Ithaca, after completing his four years at the Medical College. He is now a resident at Weill Cornell in the Department of Obstetrics and Gynecology.

When the accelerated M.B.A. became an option in his fourth year, Dr. Nejat reasoned that devoting a year to the program before starting his residency would yield a trove of advantages and opportunities, ones he could draw upon throughout his career. "I would like to practice medicine on a large scale, either by working in hospital administration, as chairman of an academic department, or by running a large-scale private practice," he says. "All three become much more attainable with the M.B.A. education and credentials."

Dr. Nejat also found the upstate environs an invigorating change of pace and scenery. "It was the best year of my life," he said. "Studying something new and different was very refreshing. And Cornell offered everything in a campus I could ever imagine." ■

## academic affairs and appointments

### Dr. Katherine Hajjar Named Brine Family Professor of Cell and Developmental Biology

DR. KATHERINE HAJJAR, professor and chairman of the Department of Cell and Developmental Biology, has been named the first Brine Family Professor of Cell and Developmental Biology. The professorship, formerly known as the Madeline and Kevin R. Brine Professorship of Cell and Developmental Biology, was established in 2003 through a generous gift from the Brine family. Mr. Brine is chairman of the capital campaign *Advancing the Clinical Mission*.



Dr. Hajjar is an expert in basic science research, with a focus on the molecular mechanisms of angiogenesis, fibrinolysis and thrombosis. She is credited with the discovery of annexin 2, the cell surface receptor for the "clot-busting" agent, tissue plasminogen activator. As chairman, Dr. Hajjar has orchestrated a major expansion in the Department of Cell and Developmental Biology, whose mission is to address fundamental biologic questions that relate to human health and disease. She has been an invited lecturer, both nationally and internationally, for more than 20 years, and has written dozens of peer-reviewed articles, book chapters, reviews and editorials. Her current research on annexin 2, fibrinolysis and angiogenesis is supported by funds from the NIH Heart, Lung and Blood Institute and the March of Dimes.

Dr. Hajjar, who joined Weill Cornell in 1984, received her M.D. from Johns Hopkins University School of Medicine and completed clinical and basic research training at Children's Hospital of Pittsburgh and Johns Hopkins.

### Dr. Ellen Scherl First Recipient of the Jill Roberts Professorship of Inflammatory Bowel Disease

DR. ELLEN SCHERL, associate professor of clinical medicine, has been named the first recipient of the Jill Roberts Professorship of Inflammatory Bowel Disease. Board-certified in internal medicine and gastroenterology, Dr. Scherl also serves as director of the Center for Inflammatory Bowel Disease (IBD) at the Medical College.

Dr. Scherl's interest in IBD developed during her fellowship in gastroenterology in the early 1980s. "I was inspired to work at improving existing treatments after listening to patients' histories of this chronic, sapping, interruptive illness," she said. Over the years, Dr. Scherl's work has increasingly focused on ulcerative colitis and Crohn's disease. In 2003, Dr. Scherl and other world-renowned researchers at Weill Cornell created the IBD Tissue Bank.

The Roberts Professorship in IBD was established through a donation by Mrs. Jill Roberts, a longstanding friend of Weill Cornell Medical College. The professorship may be awarded to an associate or full professor in the Division of Gastroenterology.

### Clinical Scholars

Clinical Scholar Endowments are bestowed upon outstanding researchers or clinicians in the field of medicine who are in the early stages of their careers and have demonstrated the highest standards of science and clinical care. The awards are granted for an initial period of three years.

*Nanette Laitman Clinical Scholar Award in Public Health/Prevention — Women's Health*



DR. SHARI MIDONECK is creating a cancer prevention linkage study in the Iris Cantor Women's Health Center to determine whether screening for colon cancer can be improved in women already undergoing screening for breast cancer. Her study will form the foundation for further investigation and collaboration between the women's health and public health departments at the Medical College.

*Charles, Lillian and Betty Neuwirth Clinical Scholar Award in Pediatric Oncology*

DR. ROSANDRA KAPLAN'S research focuses on the role of bone-marrow-derived hematopoietic progenitor cells in the metastasis of cancer. She plans to apply the knowledge gained from her basic research into improving pediatric cancer treatment by developing new targeted therapies, including monoclonal antibody therapy. ■

## graduate school news

## Research with a French Accent

**THE WEILL GRADUATE SCHOOL HAS** entered into a new and exciting partnership with the Pasteur Institute in Paris that promises to enhance research activities in translational science by accelerating student investigations.

Beginning in the spring of 2006, students at the Weill Graduate School will have the opportunity to travel to the Pasteur Institute for research experiences lasting six to 12 months. The visits are designed to give students entrée into a powerful international research enterprise. The intercontinental link between the two campuses is an exciting opportunity to advance biomedical research.

Like Weill Cornell Medical College, the Pasteur Institute was founded at the end of the 19th century and has grown into one of the world's most prestigious research institutions. It houses 130 laboratories and trains more than 1,000 students each year. It has a strong focus on infectious disease and has developed important research programs in cancer and immunological, genetic and neurodegenerative diseases. The Pasteur Institute offers special training opportunities for Weill Cornell students, especially

for those interested in developing new therapies from discoveries made in the laboratory.

According to Dr. Isabelle Saint Girons, executive vice president of academic affairs at the Pasteur Institute, the collaboration with Weill Cornell is evidence of a trend that brings together leading scientific organizations to foster breakthrough discoveries that have a direct impact on public health. "We anticipate this will be a truly significant educational and research experience for all participants, fostering new friendships and research partnerships," said Dr. Saint Girons.

Dr. David Hajjar, dean of the Weill Graduate School, has high expectations for the new collaboration. "We expect that our students, particularly those studying infectious diseases and special neurological disorders, will take advantage of the unique opportunities available at the Institute to further their research, such as access to clinical samples that are unavailable in New York," he said. "In addition, we will offer reciprocity for those Pasteur students who are interested in our programs. This option will also be extended to students pursuing our new master's program in clinical investigation." ■

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## Dr. Michael Stewart Is New Head of ENT

Dr. Herbert Pardes, president and CEO of NewYork-Presbyterian Hospital, applauded Dr. Stewart's appointment as "just what the doctor ordered."

"I am thrilled to have Dr. Stewart with us," he said. "In addition to a broad expertise in ENT—including pediatrics, adult and geriatric care—he brings a longstanding commitment to evidence-based and humanistic patient care. We are proud to welcome Dr. Stewart as part of our team."

The Texas transplant also brings with him numerous achievements and accolades. After getting his medical degree from Johns Hopkins University, he completed his residency at Baylor College of Medicine, and received an M.P.H. from the University of Texas School of Public Health. His appointments at Baylor included associate professor and director of residency education in otolaryngology, chief of service at Ben Taub General Hospital, and associate dean of clinical affairs.

Besides benefiting from research grants from the NIH, the AAO-HNS Foundation and others, Dr. Stewart has received numerous awards and honors. While at Baylor he received the Fulbright and Jaworski Faculty



Dr. Michael Stewart

Excellence Award, and was also inducted into the college's Academy of Distinguished Educators. He's also been awarded the Distinguished Service Award from AAO-HNS and the Houston Distinguished Surgeon Award from the Association of Perioperative Registered Nurses.

According to Dr. Stewart, the move to New York City offers both opportunity and exciting new challenges.

"It's such an honor to join an institution with an outstanding reputation and also one of the best teaching hospitals in the nation," he said. "It's the kind of partnership you dream about." ■

## Thousands of Miles From Home, but Still on Campus

WCMC-Q students reap a summer of research in New York City

**F**or the inaugural class of Weill Cornell Medical College in Qatar, this summer offered a special way to celebrate a fruitful first year.

Eleven outstanding students in the Class of 2008 at WCMC-Q were selected to spend the summer in New York for an eight-week Summer Research Fellowship Program, which will become an annual event. The students began working in the labs in July.

The summer research fellows lived together in apartments on the Upper East Side, socializing with each other and their New York colleagues after work and on the weekends.

Maryam Shafae, a soft-spoken student from Iran, devoted her summer to studying the mechanisms of sodium channels in animal models, exploring protein mutations that may be involved in hypertension.



Dr. Lawrence Palmer working with WCMC-Q medical student Maryam Shafae in his New York City lab.

Dr. Gary Schneider, senior associate dean for research at WCMC-Q, traveled to New York for the summer with the students. After returning to Doha in September, he organized a forum for the students to discuss their research experience with oral and poster presentations.

Funded by summer research fellowships, the students were paired with professors in various research departments of the Medical College. Many of the professors had visited Qatar as guest lecturers, or taught the students via the video streaming system, so in many cases they were acquainted with the students who joined their teams.

"The faculty mentors have given the students a good scientific basis for medical research in the labs," Dr. Schneider said.

Constructed for the Medical College by Qatar Foundation, the Qatari campus provides faculty and students with a superb environment for study and research. There are 18 students enrolled in the Class of 2009, 39 students in the Class of 2010 and 56 in the Class of 2011. Courses are taught using curricula identical to the Manhattan campus, upholding the same high standards and awarding the same medical degree.

Her summer at WCMC was her first time in the United States. "It's great," she said. "I love this city."

She worked in the lab of Dr. Lawrence Palmer, professor of physiology and biophysics, who credits her as being among the pioneers at the Medical College's Qatari campus.

"It's amazing how a group of people focus on one special subject, work long hours for a long time and can accomplish something really significant," Shafae said, adding that everyone in the lab is patient, friendly, and just as eager to teach as she is to learn. Dr. Palmer traveled to Qatar for a week for a visiting lectureship, delivering a talk on kidney physiology which sparked Shafae's interest.

Her first lab experience focused on the rudimentary techniques of Western blots and other building blocks.

Working with Dr. Rache Simmons, the Anne K. and Edwin C. Weiskopf Associate Professor of Surgical Oncology, Shafae conducted data analysis in addition to attending two reconstructive breast surgeries.

"That was an amazing experience," she said. ■

## Dr. Robert Min Appointed Acting Chairman of Radiology at Weill Cornell Medical College

**DR. ROBERT MIN**, director of Cornell Vascular and associate professor of radiology, has been appointed acting chairman of radiology at Weill Cornell Medical College and acting radiologist-in-chief at NewYork-Presbyterian Hospital/Weill Cornell Medical Center.

Dr. Min is a leader in the development of minimally invasive techniques to treat varicose veins, including transcatheter duplex-guided sclerotherapy and endovenous laser. At Cornell Vascular, he and his colleagues diagnose and treat various vascular diseases, specializing in the treatment of venous disorders and uterine fibroids.

Dr. Min has written a number of peer-reviewed articles, book chapters and abstracts, and is frequently invited to present lectures on venous disorders. He is a member of the board of directors of the American College of Phlebology, the largest and only AMA-recognized phlebology society in the United States dedicated to researching and teaching venous disease diagnosis and management. He is also a member of numerous radiological societies, including the Society of Interventional Radiology, and is a fellow of the American Society for Laser Medicine and Surgery. Dr. Min graduated from Weill Cornell Medical College in 1990 and received his M.B.A. from Columbia University in 2002. ■



WEILL CORNELL ART & PHOTO

# Taking On the Mantle of the Physician

White Coat ceremony ushers medical students into new roles, responsibilities

As they donned their white coats in an annual ceremony this past August, the Class of 2009 officially assumed the mantle of the medical student.

One hundred and two students were helped into their white coats by the deans and professors who participated in the ceremony, as the students' family and friends applauded as each tried their new identities on for size.

Dr. Bruce Ballard, associate dean for student affairs and associate professor of clinical psychiatry, welcomed the audience to the ninth annual ceremony. "These coats are a symbol of medicine," he said. "When you wear them, others will expect a certain level of knowledge, expertise, care and compassion."

Dr. David Silbersweig, associate professor of psychiatry and associate professor of neurology, delivered the keynote address, a meditation on the limitless horizons of modern medicine. "Your time at Weill Cornell will shape

you and will always be with you," he said. "The white coat is a tremendous accomplishment, and also a responsibility. It can be traced to priestly healing traditions; at other times, it's a uniform, reflecting our occupation."

"We grow into our white coats," he added. "At first, you may feel like an imposter. But the coat is transformative. As you take on the mantle of a physician, you will see patients at their most vulnerable and tragic points. They will reveal the most private aspects of their lives to you. One gains unique insight into human nature, and we can use that insight to help our patients through the most difficult times of their lives."

Dr. Silbersweig explained that the traditional notion of doctors as paternalistic figures, beyond reproach or question, stands in sharp contrast to the modern reality of patients arriving in the doctor's office with a stack of printouts from their research on the Internet. While patients may be more knowledgeable than in the past, Dr. Silbersweig noted that now, more than ever,

patients need physicians to guide them through the constant barrage of new information.

"As medicine changes at a blistering pace," he said, "the white coat reminds the doctor of the immutable core values: compas-

and even forge their own paths, at a time when new fields of medicine are crystallizing day by day.

"If you stick close to what you're passionate about, and find your niche, you can help to create a whole new field, and you'll do

cine and society."

The White Coat ceremony segued directly into the Opening Exercises, where Dr. Thomas Sculco, professor of orthopedic surgery and chairman of the Department of Orthopedic Surgery, reminisced about his first days as a medical student 40 years ago at the Columbia University College of Physicians and Surgeons. "You should feel a great sense of accomplishment in being here," he said. "You will join a profession like no other."

"Medical school begins a lifelong process of education, a commitment to lifelong learning," Dr. Sculco said. He reminded the students to seek insight and enlightenment from not only professors, but also patients. "Patients can teach the physician so much. Beyond the simple diagnoses you will make, you will learn how their illness affects their lives and livelihood."

"Read, question, examine, listen, study, probe and seek out knowledge. Your interests and passions will make you a better doctor," he said. ■



New students don their white coats and assume their place alongside their instructors.

sion, attentiveness and empathy. Listen to your patients; give them your undivided attention, even when you're harried," he said. "We should endeavor to show to others the same respect the white coat engenders."

He urged the students to find

the best by your patients. It's a thrilling adventure you're about to embark upon."

Dean Antonio Gotto warmly welcomed the students, deeming the group "a highly accomplished and select class, with the promise of making contributions to medi-

## the Scope Weill Cornell at a glance

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**COVER STORY:**

**Dr. Michael Stewart  
New Head of ENT**

With a renewed focus on the needs of the patient, ENT researcher Dr. Michael Stewart takes up residence at Weill Cornell as chair of the Department of Otorhinolaryngology.

**2 SCIENCE STORIES:  
PEDIATRIC UROLOGY  
GAINS HIGHER PROFILE**

The Institute for Pediatric Urology at Weill Cornell is growing in leaps and bounds.

**2 E-MEDICINE MORE THAN  
A MOUSE-CLICK AWAY**

Setting up a national Web-based health network won't be easy—or inexpensive, according to researcher.

**3 THE WAR AGAINST THE  
MALARIA PARASITE**

Its genetic complexity may be its strength—and weakness, WMC expert says.

**4 FINDING FOLATE'S  
SECRET WEAPONS**

The nutrient's effect on gene mutation may explain how it fights birth defects.

**COVER STORY:  
WMC Researchers Score  
Nature Quadruple Play**

A quartet of groundbreaking studies have been published in the prestigious journal over the past few months on such wide-ranging topics as HIV microbicides, ion channel function, neuronal growth and cancer metastasis.



**COVER STORY:**

**WCMC & NYP Join in  
Katrina Relief Effort**

Teams from Weill Cornell and NewYork-Presbyterian traveled to Biloxi to offer aid to Katrina victims.



**6 CLASS ACTS:**

**THE BUSINESS OF MEDICINE**

A dual-degree program between WMC and the Johnson School of Management in Ithaca sets the standard for emerging health-care professionals.

**8 FOCUS ON:**

**TAKING ON THE MANTLE**

New medical students assume their roles as future doctors by donning their white coats.

Weill Medical College and Graduate School  
of Medical Sciences of Cornell University  
Office of Public Affairs, Box 444  
1300 York Avenue  
New York, NY 10021

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