Geriatrics Expert Named Dean of Mailman School of Public Health

LINDA FRIED SAYS SCHOOL’S MISSION AND VALUES MATCH HER OWN VISION OF THE FUTURE OF PUBLIC HEALTH

Before a packed audience in Alumni Auditorium on Jan. 22, Lee Goldman, M.D., executive vice president and dean of the faculties of health sciences and medicine, introduced the next head of the Mailman School of Public Health to the school’s faculty, staff, students, alumni and other university and medical center leaders. As she took the podium to rousing applause, Linda Fried, M.D., M.P.H., gave special thanks to Phyllis Mailman and the Mailman family—who gave the naming gift to the school—and to outgoing dean Allan Rosenfield, M.D., who, she said, “has been so welcoming and has offered both counsel and support to make sure that this transition is great for the future of this school and all in it.”

After a 25-year career at Johns Hopkins, Dr. Fried is coming home. In her case, home is New York City, where she was born and raised, and where she now looks forward to plunging into every aspect of urban and global public health as she assumes the reins of one of the most prestigious public health schools in the world. Dr. Rosenfield, who has nurtured and grown the school into the public health powerhouse it is today, will continue as professor of population and family health and of obstetrics and gynecology (see sidebar on Page 8).

Dr. Fried is currently the Mason F. Lord Professor of Geriatric Medicine and professor of medicine, epidemiology, health policy, and nursing at Johns Hopkins. She directs its Center on Aging & Health and the Program in Epidemiology & Biostatistics of Aging at the university’s Bloomberg School of Public Health. She will take her post at the Mailman School in May.

“One of the things that excites me, among many, about coming to the Mailman School is that public health leaders here are able to create synergies with other medical center colleagues and with those in diverse disciplines across the breadth of a great university,” Dr. Fried says. “There is tremendous opportunity for mutual benefit and cutting-edge collaboration.”

As a geriatrician, Dr. Fried’s research has focused on the causes of frailty and on finding methods to intervene to prevent disability caused by this condition. At Columbia, where she will be

State-of-the-Art Dental Faculty Practice Site Opens on Haven Avenue

ALL PRACTITIONERS ARE FACULTY MEMBERS OF COLLEGE OF DENTAL MEDICINE, PROVIDE COMPREHENSIVE CARE TO CUMC FACULTY, STAFF

With the opening this month of the new Medical Center Faculty Practice at 100 Haven Avenue, patients can now visit their dentists in a sleek, modern, beautifully designed facility where nearly all dental needs can be met in one location.

The new 2,700-square-foot facility is part of Columbia University Dental Associates, the umbrella organization for all College of Dental Medicine’s (CDM) practice sites.

The Haven Avenue facility replaces the one formerly housed on the ground floor of an apartment building on 165th Street and Ft. Washington Avenue. That space, though close to CUMC and NYU, was cramped and out of date. CDM took over that space for the medical center’s faculty practice 10 years ago.

“ar worker puts finishing touches on sign outside dental facility.

“The new facility represents a significant investment of time and money on the part of the College of Dental Medicine,” says Stephen Marshall, D.D.S., M.P.H., associate professor of clinical dentistry and associate dean for extramural programs, who oversees CDM’s faculty practices. “We want to offer our patients the very best in contemporary dentistry, practiced by the very best general dentists and specialists.” Dr. Marshall credits Murray Schwartz, D.D.S., clinical professor, periodontics, with leading the design and

Please see Page 8
Dear Colleagues & Students,

One of the barometers of a society’s social and ethical standards is the health of its children. With the arrival of Lawrence Stanbury to chair the Department of Pediatrics at the College of Physicians and Surgeons this month, all indicators point to a great benefit for the children of New York, the surrounding area, and even the world.

Dr. Stanbury comes to us from the University of Texas Medical Branch at Galveston, where he was chairman of pediatrics. He is known for his role in developing topical microbicides to control sexually transmitted infections and for his studies of both prophylactic and therapeutic herpes vaccines. His research also has focused on genital herpes infection in teenagers.

As both the new chair of pediatrics at P&S and pediatrician-in-chief of Morgan Stanley Children’s Hospital, Dr. Stanbury will lead a 500-member team of health-care professionals. P&S pediatrics have been pioneers in the care of children, from their work in treating respiratory problems in premature babies to research in areas such as pediatric cancers and diabetes.

Children are an important priority in the other schools of CUMC as well. Dr. Frederica Perera of the Columbia Center for Children’s Environmental Health at the Mailman School has just received a $10 million grant to study environmental contributors to childhood asthma [featured in this issue]. At the School of Nursing, Dr. Mary Byrne has long worked to improve the lives of vulnerable children, such as those raised with imprisoned mothers and those receiving primary care in low-income neighborhoods.

All this and more define clinical care, education, and research programs aimed at the problems of children and offered throughout our campus, in our city’s neighborhoods, and, by extension, through public health programs around the world. As we thank John Driscoll for his years of superb leadership as chair for 15 years and Richard Polin for his outstanding service as interim chair, we welcome Larry Stanbury. His talent and expertise will add value to all we do in pediatrics, and we look forward to an exciting future in this critical component of health care.

Muscle Cell Fatigue After Extreme Exercise Found Similar to Heart Failure Fatigue

What do marathoners and heart failure patients have in common? More than one might think, according to physiologists at CUMC. A new study shows that the fatigue marathoners and other extreme athletes feel at the end of a race is caused by the same tiny leaks inside the calcium channels in muscles that probably also sap the energy from patients with heart failure.

A continuous leak of calcium inside muscle cells seems to weaken the force produced by the muscle and also turns on a protein-digesting enzyme that damages the muscle fibers. The study found the leak was present in the muscles of mice after an intense three-week regimen of daily swimming and in athletes after three days of intense daily bicycling.

Andrew Marks, M.D., chairman of physiology and cellular biophysics, and director of the Clyde and Helen Wu Center for Molecular Cardiology at CUMC, previously discovered that this calcium leak existed in mice with heart failure.

"After finding this, we had a hunch that the process that produces fatigue in heart failure patients also may be responsible for the fatigue felt by athletes after a marathon or extreme training," says Dr. Marks, the study’s principal investigator.

The involvement of defects in calcium channels in limiting muscle performance and producing exercise fatigue makes sense because the flow of calcium in and out of intracellular stores in the sarcoplasmic reticulum of muscle cells controls contraction, according to first author Andrew Bellinger, Ph.D., who is currently finishing his medical degree at P&S.

The new study also found that an experimental drug developed by the researchers alleviated muscle fatigue in mice after exercise, suggesting that the drug also may provide relief from the severe exhaustion that afflicts heart failure patients.

"Our work does not show that exercise is bad for you," says Dr. Marks, the principal investigator of the study. "We only saw the leak in animals and human athletes who exercised three hours a day at very high intensities for several days or weeks in a row until they became exhausted." Athletes’ muscles, however, return to normal after several days of rest and any muscle damage will be repaired after several days or weeks depending on the degree of exercise.

On the contrary, the arm, leg and respiratory muscles of patients with heart failure do not recover. "People with chronic heart failure are subject to this same kind of muscle leak and constant damage even without doing any exercise," says Dr. Marks. "In these patients, muscle weakness and fatigue can be so severe that they can’t get out of bed, brush their teeth, or feed themselves."

The researchers decided to test their hypothesis that fatigue in heart failure patients also may be responsible for the fatigue felt by athletes after a marathon or extreme training by using an experimental drug that could increase exercise capacity and reduce fatigue. They gave the drug, which plugs the calcium leak, to mice before the animals started a three-week regimen of daily three-hour swims. With the drug, the animals had increased exercise capacity and their
Dental Site  
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Dental Site  
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Dental Site  
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construction effort for CDM to make this practice a reality.

The new practice is significantly larger than the old one — it has eight treat-
ment rooms as opposed to the five in the Ft. Washington space, an on-site lab and
sterilization area, and all new equipment, including digital X-ray machines.
The practice currently has about 6,000 annual patient visits and hopes to in-
terpret that number to 10,000. About 90 percent of patients are CUMC and
NYPH faculty and staff.

“Now, there is ample room for the practice to grow and for even more med-
ical center employees to have access to dental care by CDM faculty,” Dr.
Marshall says.

The dental practice system was created to allow patients to be cared for by CDM faculty, who provide high-
caliber dental services across the spectrum of oral health care, from basic
cleanings and restorations to implants and full mouth rehabilitation.
The practices consist of general dentists, endodontists, periodontists, oral sur-
geons, prosthodontists, pediatric den-
tists, and orthodontists. Each faculty
practice emphasizes collaboration
among its dentists and specialists, en-
abling coordinated care in a single
location. Most faculty practice teach full
time and practice part-time.

“As members of an academic dental
center, faculty practice dentists bring a level of knowledge and sophistication to the practice of dentistry that is unique,”
says Ira Lamster, D.D.S., dean of CDM.
“Our patients benefit greatly from the expertise our dentists bring to their respective fields.”
—Anna Sobkowski

College of Dental Medicine Faculty
Practice Sites

The College of Dental Medicine Faculty
Practice Sites

The Medical Center Faculty Practice
100 Haven Ave.
212-342-0107

The Oral & Maxillofacial
Surgery Associates
630 W. 168th St.
212-305-4552

Morningside Practices (two locations)
1244 Amsterdam Ave.
212-961-1266
430 W. 116th St.
212-662-4887

Midtown Practice
16 E. 60th St.
212-326-8520

For a listing and description of the dentists
who practice at each site and for more infor-
mation about all the dental faculty practice
sites, visit: www.cidentalassociates.com

College of Dental Medicine Treats Hundreds of
Children during “Give Kids a Smile Day”

Children from the New York area received free screenings and treatments from College of Dental Medicine faculty and students Feb. 1
as part of national Give Kids a Smile Day. CDM dentists were among the nearly 50,000 dental professionals and volunteers who provid-
ed free educational, preventive and restorative
dental services to children from low-income
families at 2,000 locations nationwide that day.
An estimated 4 million to 5 million children in
America have dental problems so severe they
have trouble eating, sleeping and learning.
The U.S. Surgeon General has called dental
disease a silent epidemic. The oral screening
took place at P.S. 79 on Jumel Avenue in
Washington Heights. The New York event is
part of Columbia’s Community DentCare pro-
gram, which provides comprehensive dental
care for children, adults and senior citizens in
need at six school-based clinics and a mobile
dental center in the Washington Heights/
Inwood and Harlem neighborhoods of
Manhattan.

Columbia dentist Richard Diamond examines a young student as Patricia Hong
CDM ’10 takes notes. Also looking on is Carlos Marin, a representative from Henry
Schein, a worldwide distributor of dental supplies and a national sponsor of Give
Kids a Smile Day.

Major Support for CUMC Stem Cell Initiatives

Columbia will receive $2.5 million in funding support for stem cell research from the Empire State Stem Cell Board, the agency cre-
ated by Gov. Eliot Spitzer and the New York State Legislature to manage the $600 million allocated for stem cell research in this
year’s state budget. The awards were announced in January by the governor and Lt. Gov. David A. Paterson. The funding will sup-
port the nearly 70 Columbia University researchers actively involved in research with adult, embryonic, and other forms of stem cells.
Columbia researchers are using advances in human biology and new stem cell technology to better understand and treat diseases
such as diabetes, Parkinson’s and amyotrophic lateral sclerosis.

Dental Exam Can Be Crucial in Finding Diabetes

College of Dental Medicine and Mailman School of
Public Health researchers have found that the den-
tal exam may play a key role in diabetes diagnosis.
“Diabetes has a reciprocal relationship with peri-
doanal disease, the most common oral disease in
adults. Adults with diabetes are more likely to have
deriodental disease, and those with periodontal dis-
 ease are more likely to have their diabetes out of
control,” says Luisa N. Borrell, D.D.S., Ph.D., assis-
tant professor of epidemiology at the Mailman
School and dentistry at CDM.

The authors suggest using a combination of
patient-derived information, (demographic, family
history of diabetes, and self-reported hypertension
and hypercholesterolemia), and findings from a
periodontal examination (pocket depth or level of
clinical attachment) to assess the patient’s risk for
diabetes. According to the American Dental
Association, 60 percent of Americans have at least
one dental check-up annually, so if dentists are able
to identify patients at risk for the disease, they
could refer them to a physician for diagnostic test-
ing and appropriate treatment.

By doing so, dentists could make a positive
impact on public health. Not only has the preva-
lence of diabetes in the United States increased
steadily over the past 15 years, but evidence sug-
gests that about 30 percent of such cases remain
undiagnosed. “A couple of important trends in
the U.S. population are going to force dentists and
other oral health care personnel to play an active
role in improving the health of the population,” Dr.
Borrell says, citing increased diversity, aging, tooth
retention, and the emerging link between oral dis-
ease and systemic conditions as examples.

Borrell LN, Kunzel C, Lamster IB, Lalla E. Diabetes
in the Dental Office: Using NHANES III to estimate
the probability of undiagnosed disease.
J Periodont Res 2007; 42: 559-565

This research was conducted with support from
grants from the National Institute for Dental and
Craniofacial Research and the Robert Wood Johnson Foundation Health & Society Scholars
Program.
Physician-scientist Uses Novel Methods to Treat Bone Cancer Patients

ORTHOPEDIC ONCOLOGIST FRANCIS LEE SAVES CHILDREN FROM MULTIPLE OPERATIONS, RESTORES LIMB FUNCTION

Looking at 10-year-old Clare W’s leg, a long scar is the only visible evidence from the surgery that removed 80 percent of her femur.

Last year, Clare became one of only 400 children in the United States to be diagnosed with osteosarcoma, a type of bone cancer. Her parents turned to Francis Lee, M.D., associate professor of orthopedic surgery in the New York City area skilled enough not only to remove the cancer from Clare’s leg but also to reconstruct her limb.

“A lot of people think that bone cancer always leads to amputation, but the techniques we have now have revolutionized patient care,” Dr. Lee says. “I always emphasize to my patients that, first and foremost, I must remove the tumor to save the life of the patient, even if that involves amputation. But most patients can keep their limbs, and they will look and function almost exactly like they did before the cancer.”

Like many osteosarcomas, Clare’s tumor was huge. Originating in the thighbone, it had spread so extensively that it formed a lump above her knee. The lump, and some pain, prompted her parents to consult their Mount Kisco pediatrician, Nick Germanakos, M.D., who referred them to Columbia. X-rays and MRI revealed a tumor about the size of a wine bottle.

Twenty-five years ago, most orthopedic oncologists would have amputated the entire limb (most osteosarcomas occur in the arms and legs). And for some patients with even more extensive tumors, or tumors that do not respond to chemotherapy, amputation is still the best option. But today, surgeons like Dr. Lee use a variety of new surgical techniques and can save the affected limb about 90 percent of the time.

With Clare, Dr. Lee faced an additional challenge beyond just saving her leg. At age 10, she still has several more years of growth, but her extensive tumor required the removal of cells responsible for bone growth. Clare would have to endure repeated invasive operations to lengthen the implant if Dr. Lee used a traditional titanium prosthesis to replace her femur.

Instead, Dr. Lee selected a relatively new implant — approved by the FDA in 2002 — that can be easily lengthened in the doctor’s office. The device vaguely resembles an automotive shock absorber, with one end of the implant inserted into the other end. The two ends are normally locked in place, but can slide apart when a magnetic field outside the leg releases a mechanism inside the prosthesis. One application of the magnetic field can lengthen the implant up to one centimeter.

Dr. Lee’s Search for Bone Cancer Therapies

For some bone cancer patients, the prognosis is less reassuring than Clare’s, and it is these patients that motivate Dr. Lee to go to his lab, even after a day spent in the operating room.

The fact that Dr. Lee is also a researcher places him into a select, and dwindling, group of orthopedic surgeon-scientists. Of the nearly 16,000 members of the American Academy of Orthopedic Surgeons, less than two dozen — a group that includes Dr. Lee — have investigator-initiated RO1 grants from the NIH. His research is also supported by several foundations, including the Orthopaedic Research and Education Foundation, and a supportive environment for physician-scientists set up by Louis Bigliani, M.D., chairman of the Department of Orthopedic Surgery.

In the lab, Dr. Lee tests new ways to kill osteosarcoma cells, especially those that resist current treatments. Dr. Lee’s initial in vitro results with a new type of drug, called interfering RNAs, are promising. The small RNAs shut down genes that allow resistant sarcoma cells to survive, converting them into cells that can be killed with radiation or chemotherapy.

There are still many years of testing and development before the potential treatment is ever used in patients, Dr. Lee says. “Seeing Clare’s success just makes me even more motivated to stay in the lab so I can find ways to give other osteosarcoma patients the same hope for the future.”

Heart Failure

Continued from Page 2

muscles showed fewer signs of calcium leakage and muscle damage.

Plans are under way to test the drug at other medical centers in patients with heart failure to see if it relieves fatigue and improves heart function. Even if successful, it will take several years before the drug is commercially available. The athletes who participated in the current study were not given the experimental drug.

“The discovery of the calcium leak in fatigued animals and athletes is the first time anyone has pinpointed a precise mechanism for the involvement of a defect in calcium handling in limiting exercise capacity,” Dr. Marks says. The paper was published in the Proceedings of the National Academy of Sciences on Feb. 11.

Library Donates Journals to Tanzanian University

More than 55,000 bound volumes of biomedical journals from a collection housed in the Augustus C. Long Health Sciences Library will soon have a new home at the Muhimbili University of Health and Allied Sciences in Dar es Salaam.

Muhimbili University, the only public university for the health sciences in Tanzania, includes schools of dentistry, medicine, nursing, pharmacy, and public health. The donated journals will double the library’s holdings, which, at 50,000 volumes, is already the country’s largest collection of health and medical materials.

“This premier collection was carefully selected over many years and formed the core of our support for research, education and clinical practice, with some volumes even dating back to the 1700s,” says Pat Molholt, Ph.D., associate dean for education and scholarly resources. This is a magnificent collection we’re shipping, and we are excited that it will continue to be used.”

CUMC librarians have been working since last summer to ensure that all issues of the donated journal titles are accessible electronically to CUMC staff and students. The 30,000 square feet of space that will be available once the journals are gone will be transformed into classrooms and study space as part of an ongoing project to build a cohesive education facility in the Hammer Health Sciences Center, which houses the library. The new classrooms are expected to be up and running in 2010.

Cancer Care RENOVATION
**The Voice Doctor Will Hear You Now**

**SINGERS, TEACHERS, EVEN PRESIDENTIAL CANDIDATES OFTEN NEED SPECIALIZED CARE TO IMPROVE THEIR SOUND**

Singer Katie L’s long-standing voice problem took a turn for the worse when she began a job at a rock’s roll camp, where for a week accountants and fund managers can live out their teenage dreams of being Mick Jagger. “I had 80 adult campers to deal with so there was a lot of good-natured shouting as I tried to corral them. By the time the weekend came and I had to sing with my regular band, which performs at weddings, my voice cracked during each song. It was horrible. I would go home crying. I lost my self-esteem. If I can’t sing, that’s my livelihood, my career, my life.”

Just like athletes who see orthopedic surgeons for torn ligaments, singers with voice problems often seek medical help. So Katie turned to Hector Rodriguez, M.D., assistant professor of clinical otolaryngology/head and neck surgery at F&S. Dr. Rodriguez examined Katie to rule out a malignancy, since patients with throat cancer initially complain of voice problems, especially persistent hoarseness.

When he found no medical problem, Dr. Rodriguez referred Katie to Thomas Murray, Ph.D., for a videostroboscopic examination of her vocal folds. Dr. Murray is a professor of speech-language pathology in the department and one of a small group of voice clinicians in the country who specialize in caring for singers.

As a former singer in both church choirs and rock bands, Dr. Murray knows first-hand the demands singers place on their voices. “To work with singers, you need to speak the language of the singer, understand differences in musical styles, and the complex relationships the singer has with teachers, audiences, and agents,” he says. “Most importantly, you need to know how the voice works.” Dr. Murray has published more than 100 scientific papers on vocal function and voice care.

The human voice emanates from the two vocal folds in the larynx. Sound is produced when a singer exhales and air flows between the two vocal folds. The rush of air vibrates the folds and generates a buzz-like sound that is shaped by the resonating cavities—the mouth, nose and sinuses.

The vocal folds are often injured when a singer has a voice problem. Dr. Murray says, and he checks them first when examining a singer. “The vocal folds are muscles, and just like other muscles, they are subject to fatigue, soreness and injury.”

**Analyzing Vocal Cords**

Vocal folds can vibrate up to 1,200 times a second — as fast as a butterfly flaps wings — so Dr. Murray uses the camera with a strobe light to make the rapidly vibrating vocal folds appear slower as the patient sings or speaks.

Dr. Murray spotted two “kissing” nodules, one on each of Katie’s vocal folds. The masses are benign, but they are one of the most common sources of voice problems. The word “kissing” is a bit misleading. Though the nodules contact each other as the vocal folds vibrate, they do not do so gently. The nodules grow when the vocal cords crash into each other.

“The nodules form when the singer strains while performing, yelling or crying, and is not using the muscles the right way,” Dr. Murray says. “It’s like when you try to lift a big weight off the floor but you strain your back muscles doing it. In singing, as in lifting, you need the support of whole body.”

Fortunately, most singers with nodules and other masses need only nonsurgical therapies. Voice therapy helps the singer reorient other muscles that engage the vocal folds, so he or she doesn’t strain the folds themselves.

Part of Katie’s therapy also aims to correct her “glottal attack,” a speech habit in which the space between the vocal cords (the glottis) is abruptly closed. Instead of relaxing her vocal cords before certain words, she flashes them together, which produces a noticeable “click” when she speaks and also leads to nodules.

Rehabilitation can take a few months. Katie’s nodules have nearly disappeared and she already notices a dramatic improvement. “During the singing gigs I’ve had lately, the improvement in my tone has been like night and day. People come up to tell me how great I sound.”

Professional singers are not the only people who can benefit from voice therapy. Much of Dr. Murray’s practice is made up of teachers, telephone operators and women in male-dominated professions.

“Interestingly, women who work around a lot of men, tend to speak in a lower tone of voice as a way of sounding more authoritative, because men talk lower,” Dr. Murray says. “But that effort can strain the vocal folds. We teach women to speak in a business-like manner that projects, but in a way that is more natural to them and does not injure the vocal folds.”

For all patients, Dr. Murray has drawn up a list of tips for good voice hygiene. Smoking is out (it thickens the vocal folds and causes throat cancer), as is alcohol the day before a performance or presentation (it dehydrates the folds). Many of Dr. Murray’s patients also benefit from medicine to control the amount of acid from the stomach that can reach the vocal folds and increase hoarseness.

One piece of advice Dr. Murray offers to preserve the voice might also help relationships. “Try not to yell,” he says. “It’s bad for the vocal cords.”

— Susan Conova

**Bone Cancer**

**continued from Page 4**

Two months of chemotherapy before surgery also allows doctors to assess each patient’s response to the drugs’ toxic effects. “What’s gratifying about Clare’s case is that 100 percent of her tumor was necrotic when it was removed,” Dr. Granowetter says. “Our goal is to see as much tumor necrosis as possible after two months of chemotherapy. Total necrosis is not common, but it is a great outcome.”

Last month Clare went through another round of post-operative chemotherapy and just started at-home physical therapy to build on improvements she has made in the hospital in moving her legs.

“We are confident that Clare’s determination and spirit will help her over come all obstacles so that she may live a normal, active life,” says Clare’s father.

— Susan Conova

**COLUMBIA CAMPS**

Registration is now under way for the Columbia Cub Camp during spring break and the summer, as well as for 10 summer sports camps led by Columbia head and assistant coaches. Spring Break Cub Camp takes place from March 17 - 21 at Columbia’s Dodge Physical Fitness Center. The camp features sports, games, and arts and crafts for children ages 6 through 12. To register, go to www.scoutcubcamps.com (click on “Recreation” and select “Sports Camps and Clinics” from the drop-down menu). Contact Katie Jones at 212-854-2233 or camps@columbia.edu for more information.
Physician Training, Education and Gender Affect Cancer Care

Whether a woman receives radiation after breast cancer surgery may be associated with certain characteristics of her surgeon, including sex and medical training, according to a new study by researchers in the Herbert Irving Comprehensive Cancer Center.

Radiation after lumpectomy reduces breast cancer recurrence and is a standard of quality cancer care, but many patients never receive the treatment. Patient characteristics, such as race, age and distance from a radiation therapy facility, are known to be associated with receiving post-surgical radiation, but surgeon characteristics have not been investigated.

The new study — led by Dawn Hershman, M.D., the Florence Irving Assistant Professor of Medicine & Epidemiology — analyzed data from 30,000 lumpectomy patients, including characteristics of the 4,453 surgeons who operated on these women.

During the study years, from 1991 to 2002, about 75 percent of women received radiation after surgery. After adjusting for patient and tumor characteristics, the researchers found that women who received radiation were more likely to have had a surgeon who was female (79 percent vs. 73 percent), had an M.D. degree (75 percent vs. 68 percent with a D.O. degree), or who graduated from a medical school in the United States (75 percent vs. 70 percent for a foreign school graduate).

Dr. Hershman says it is unclear why the differences exist. “There may be several factors contributing, including surgeon behavior, patient response, or surgeon-patient interactions,” she says, adding, “it is important to find what those factors are so we can improve quality of care.”

The study was published in the Feb. 6 Journal of the National Cancer Institute.

Doctoral Program Restructured To Enhance Educational Experience

Modern biomedical research is highly, and increasingly, interdisciplinary. The biomedical Ph.D. programs at CUMC, however, have remained largely organized along traditional departmental lines. Over the years a few cross-departmental programs have been added, and many individual faculty are affiliated with multiple programs, but there has not been a meaningful assessment of graduate operations at least since the creation of the current administrative structure, termed the Coordinated Doctoral Program, in 1998.

In early 2007, Lee Goldman, M.D., EVP for Health and Biomedical Sciences and Dean of the Faculties of Health Sciences and Medicine, requested such a reassessment. “The concern was that with 10 individual graduate programs operating largely independently, there was a risk of inconsistent admission standards and a potential for teaching inefficiencies,” says Richard Robinson, professor of pharmacology at P&S and associate dean of graduate affairs. Faculty frequently complained of being asked to give the same lecture in different courses, and students complained of hearing the same lecture multiple times.

The Office of Graduate Affairs, under the direction of Dr. Robinson and Fred Loweff, assistant dean of graduate affairs, formed a planning committee and sought input from graduate directors, from the Committee of Basic Science Chairs, center and institute directors at P&S and from peer institutions. A reorganization plan was presented to Dr. Goldman in July 2007 and implemented in advance of the current recruiting season, which is selecting the fall 2008 incoming class.

The new organizational structure is shown in the accompanying chart. Several of the existing programs are now tracks or specializations under two umbrella programs, while new tracks have been defined under other programs. This is not intended to be an inflexible structure. Many faculty in the first umbrella, the “Coll” group, conduct translational research intended to further understanding of disease mechanisms and therapies. Similarly, many faculty under the “Disease” umbrella conduct basic research into fundamental cellular and molecular mechanisms. And, faculty in both programs engage in research that encompasses neurobiology or informatics, the other umbrellas. In reviewing the existing programs, however, it was obvious that both in terms of the interests of the applicants they attract and core teaching requirements, the programs fall into a fairly natural division of four groupings.

“The intent was to bring together those programs with sufficient overlap of needs and interests that they could find common ground and form a truly coherent educational mission. In this way, there are fewer barriers to the free movement of students, and ideas, between programs and labs,” Dr. Robinson says. Such movement is hindered if students are required to take highly specialized and narrow courses in their first semester, locking them into a specific discipline. The second phase of the reorganization involves a complete reassessment of first-year core courses, which will be completed by the time the first group of students recruited under this structure arrives this fall.

“These and other aspects of the reorganization ensure that there will be more central oversight and standardization of recruiting, admissions, teaching and research progress,” Dr. Robinson says. “The Coordinated Doctoral Programs will become truly coordinated in more than just name.”

Restructured Tracks for the Coordinated Doctoral Programs

In Biomedical Sciences
- Cellular, Molecular, Structural and Genetic Studies
- Biochemistry and Molecular Biophysics
- Cell Biology
- Genetics and Development
- Microbiology, Immunology and Infection

Mechanisms of Health and Disease
- Cellular Physiology and Biophysics
- Nutritional and Metabolic Biology
- Pathobiology and Molecular Medicine
- Pharmacology and Molecular Signaling
- Neurobiology and Behavior

Animals Models of Nervous Systems Disorders
- Cellular and Molecular Neuroscience
- Neural Development
- Neurobiology of Behavior and Cognition
- Theoretical Neuroscience

Biomedical Informatics
- Bioinformatics
- Clinical Informatics
- Public Health Informatics
- Translational Informatics

Research Briefs

Depressive First Episode In Bipolar Disorder Increases Suicide Risk

The wide variety of symptoms experienced by patients with bipolar disorder complicates their care and management, especially with regard to preventing and predicting the risk of suicide. A recent paper by a group of researchers at the New York State Psychiatric Institute found a correlation between suicidal tendencies and bipolar patients who have depressive first episodes.

“Regression analysis showed that first mood episode polarity was strongly associated with past suicide attempt with an odds ratio greater than eight,” says Michael Grunebaum, M.D., assistant professor of clinical psychiatry. “This is over and above any contribution of the number of years of illness or lifetime number of depressive episodes.”

Predicting the risk of suicide is of critical importance for patients with bipolar disorder, but because of the many sub-types of the disease, physicians may encounter considerable difficulty. Evidence indicates that nearly 30 percent of those afflicted with bipolar disorder will attempt suicide, and these patients are most at risk for doing so during depressive episodes and dysthmic mania. Dr. Grunebaum and his colleagues found that patients who experienced a depressive first episode made twice as many suicide attempts as those who had manic first episodes.

“Although the more manic-predilected sub-group had a more severe course in some ways, such as more psychoses, these subjects nonetheless reported more reasons for living and were less likely to have made a suicide attempt,” Dr. Grunebaum says. “This might suggest, in a more speculative way, that there is some constitutionally depressive factor, pre-dating the accumulative burden of years illness and number of depressive episodes, that is related to suicide attempts in these patients with first episode depression.”

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Mailman School Researchers to Delve Deeper Into Childhood Asthma/Air Pollution Connection

$10 MILLION GRANT FROM THE NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES ENABLES SCIENTISTS TO CONTINUE GROUNDBREAKING WORK

The Columbia Center for Children’s Environmental Health (CCCEH) has conducted groundbreaking research for a decade on the effects of early exposure to air pollutants. “Before 1998 we were aware that environmental exposures were of concern in the development of asthma, but no one had directly measured those exposures in children and their mothers, starting prenatally, and then assessed their impact,” says Frederica Perera, Dr.PH., professor of environmental health sciences at the Mailman School, director of CCCEH and a pioneer in the field of molecular epidemiology.

Dr. Perera and Rachel Miller, M.D., associate professor of clinical medicine and environmental health sciences, director of the CCCEH asthma project and lead physician-scientist of the new DISCOVER Center at the Mailman School, with other CCCEH faculty, have studied more than 700 women and children in northern Manhattan since 1998 for exposure to particulates and polycyclic aromatic hydrocarbons (PAHs). The women’s in utero and postnatal exposure to diesel exhaust and other urban pollution sources are repeatedly monitored through portable personal monitoring and in-home testing. The team has found virtually 100 percent exposure to pollutants among these children, and an association with asthma-related symptoms is becoming apparent. The CCCEH study also assesses the impact of pollutants on cognitive development and cancer risk.

A child enrolled in the Mothers & Newborns Study in Northern Manhattan and the South Bronx, an initiative by Columbia’s Center for Children’s Environmental Health, is tested for allergies by center researcher Rachel Miller.

“The prevalence of asthma in this study cohort is about 30 percent,” says Dr. Miller, who adds that children in northern Manhattan are disproportionately affected by asthma. The reported asthma rate in Harlem school children is 25 percent—an among the highest in the nation. Among the study’s findings to date:

• Combined prenatal exposure to airborne PAHs and postnatal second hand smoke results in the increased likelihood of respiratory symptoms and possible asthma at age 2 years.

• More than half the babies in the study were born with an immune response to cockroach proteins. Studies regarding the clinical significance of this finding are under way.

• About 40 percent of babies in the study were born with DNA damage associated with carcinogenic PAHs.

In a pilot study among this same cohort, Dr. Perera and CCCEH colleagues, in collaboration with Dr. Shuk Mei Ho of the Environmental Health Sciences Laboratory at the University of Cincinnati, found evidence that changes in the methylation of certain genes may be a risk factor for parental report of asthma in childhood. Methylation of DNA has been associated with the loss of expression of that particular gene.

The $10 million DISCOVER grant (which stands for disease investigation through specialized clinically oriented ventures in environmental research) will allow these researchers to expand the original study’s scope and look much more widely across the genome at different genes, as well as those known to be asthma-related. One of the four projects funded by the new DISCOVER grant—“Genes and Asthma”—led by Dr. Perera in collaboration with Dr. Ho, will determine whether biomarkers, such as environmentally related changes in the expression of specific genes in utero, can predict childhood asthma. Such biomarkers would identify children at high risk of asthma so that interventions to prevent and improve clinical treatment for asthma might be developed.

“The center’s primary goal has always been to improve the health and development of children through community-based participatory research,” Dr. Perera says. Indeed, testimony and data from the center have been cited as having helped lead to legislation in New York to reduce the idling of buses and trucks and mandate cleaner-burning diesel fuel. “This grant will help us give parents, physicians and communities the tools they need to make informed decisions to improve the health of their children.”

—Gina Shaw

Mailman School Tackles Asthma on Many Fronts

In addition to Dr. Perera’s study—“Genes and Asthma”—the DISCOVER grant will support three other novel research projects:

• Rachel Miller, M.D., associate professor of clinical medicine, director of the Columbia Center for Children’s Environmental Health asthma project, and lead physician-scientist of the DISCOVER Center, is PI of a study that seeks to determine at what point young inner-city children are developmentally most vulnerable to diesel-related and other urban air pollution. She and her colleagues will investigate the relationship among pollution exposure, obesity, and an increase in allergy and asthma-related symptoms.

• Patrick Kinney, Sc.D., associate professor of public health and Steven Chilukuri, Ph.D., senior research scientist at Columbia’s Lamont-Doherty Earth Observatory and co-director of the Exposure Assessment Facility Core in the Department of Environmental Health Sciences, will lead a study that collects data from asthmatic and non-asthmatic children who will wear a unique air sampling system that enables monitoring of their exposure to diesel exhaust and other pollutants and their effects on pulmonary function.

• Philip Factor, D.O., associate professor of medicine, will examine the effects of traffic-related pollutants on beta 2 adrenergic cell receptors. Previous research has shown certain air pollutants interfere with these cell receptors, rendering some asthma medications useless and, in some cases, even worsening the asthmatic condition.

Suzanne Bakken, DNSC, Alumni Professor of Nursing and professor of biomedical informatics at P&S, will receive the 2008 Helen Nahm Research Lecture Award from the University of California at San Francisco, where she received her master’s and doctoral degrees. The award recognizes a UCSF School of Nursing faculty member or graduate who has made an outstanding contribution to nursing science and research.

Marvin Baptiste, CDM ’08, is profiled in the February 2008 issue of Ebony magazine as one of 30 young African-American leaders on the rise.

Mary Gamble, Ph.D., assistant professor of environmental health sciences at the Mailman School, is the first recipient of the Mary Swartz Rose Young Investigator Award, given by the American Society of Nutrition to a scientist within the first 10 years of completing postgraduate training for research on the safety and efficacy of bioactive compounds for human health.

David Kimhy, Ph.D., assistant professor of clinical psychology (in psychiatry), has been named by the Beck Institute for Cognitive Therapy and Research, an international cognitive therapy and cognitive-behavior therapy research, training, and clinical center, to the institute’s scholars program for 2007-2008.

The editors and reporters of Scientific American named IAN LIPKIN, M.D., director of the Mailman School’s Center for Infection and Immunity, and his team’s groundbreaking research using revolutionary technologies to find a significant connection between the Israeli Acute Paralysis Virus and colony collapse disorder in honeybees, as one of the top 25 science and health stories of 2007.

Marianthi Markatou, Ph.D., professor of clinical biostatistics, at the Mailman School, has been elected to the International Statistical Institute, the world’s premier professional association for career statisticians.

Allan Rosenfield, M.D., Mailman School dean, DeLamar Professor of Public Health Practice, and professor of obstetrics & gynecology at P&S, received an award from the Physician’s Forum, a consortium of medical and public health advocacy organizations for his contributions to peace, justice, and public health.

Grants

Henry M. Colecraft, Ph.D., associate professor of physiology & cellular biophysics at P&S, received two multiyear, multi-million-dollar grants from the National Heart, Lung, and Blood Institute to study cellular calcium channels.

Please see Page 8
ABBY J. FYER, M.D., professor of clinical psychiatry at P&S, has received a four-year, $906,000 grant from the National Institute of Mental Health for a genome-wide association study of early-onset obsessive-compulsive disorder (OCD). Results are expected to guide future molecular strategies to identify genes involved in the development of OCD.

SHERRY GLIED, PH.D., chair and professor of health policy & management at the Mailman School, received a $189,000 grant from the Commonwealth Fund to address the debate over strategies to expand and improve healthcare coverage and control cost growth in the United States.

MICHELE HIRANO, M.D., associate professor of neurology at P&S, has been awarded $1 million over five years by the National Institute of Child Health and Human Development to study how deficiency in coenzyme Q10, which is essential for cellular metabolism, develops and causes diseases at the molecular level.

CARLOS JOSE RODRIGUEZ, M.D., M.P.H., assistant professor of clinical medicine-cardiology at P&S and epidemiology at the Mailman School, has been named a fellow of the Columbia University Diversity Faculty Award Program. He will use the funds to study ambulatory blood pressure, psychosocial stress, and left ventricular mass in Hispanics.

JAMES E. ROTHMAN, PH.D., Clyde’56 and Helen Wu Professor of Physiology (Chemical Biology), and director of the Judith P. Sulzberger MD Columbia Genome Center, has been awarded $500,000 by the National Center for Research Resources for the purchase of a massively parallel DNA sequencer for the Columbia University community. A single sequencing run on this instrument can achieve the equivalent of more than 100 runs on each of Columbia’s currently available sequencers, dramatically expanding the scope of scientific research programs. The new sequencer will be housed at the Genome Center.

Janet Sparrow, PH.D., Anthony Danna Professor of Ophthalmic Science (in Ophthalmology and Pathology) and professor of pathology, has received a $75,000 senior scientific investigator award from the Research to Prevent Blindness Foundation, to probe the environmental causes of age-related macular degeneration. Dr. Sparrow is one of 155 investigators given this honor since the award’s establishment in 1987.

Mailman School

Dr. Rosenfield has clear ideas about the many public health issues that must be addressed and defined for the future. “Historically, public health has concentrated on communicable diseases, hygiene, and prevention of epidemics,” Dr. Fried says. “The discipline has expanded over the years to encompass chronic disease prevention, community-based health studies and programs, and effective health promotion. More recently, emergency preparedness, surveillance for biological threats, and diminishing health risks for vulnerable populations have received attention. To this panoply, we now need to add the creation of a public health workforce that is adequate, diverse, and technologically savvy, and learning how to best care for aging populations.”

A great draw for Dr. Fried is the Mailman School’s commitment to scientifically rigorous and ethical research geared toward promoting health as a fundamental human right.

“This school has an unswerving sense of bravery and a willingness to pursue research and service programs that address controversial or socially unpopular areas,” she says. “The people here are committed to resolving social inequities and associated disparities in health.”

Under Dr. Fried’s leadership, the Mailman School’s strong global focus will continue. Although about half of the health issues in less developed countries are related to infectious diseases, the remaining health problems are similar to those in the United States. People in these countries are catching up as far as developing so-called “lifestyle” diseases—heart disease, hypertension, and diabetes. Findings from global health studies, therefore, now have worldwide applications.

“In the months and years ahead, medicine and public health will be increasingly intertwined in a way that will enhance the quality of both medical care and the health of communities,” Dr. Fried says. “This is a wonderful time to be coming to Columbia.” —Anna Sobkowski