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EGG DESIGN | ELENA G. CERRI

School Launches New Curriculum

For today's physicians, keeping up with the rapidly growing body of medical literature is no small task. "You have so much that you're faced with reading," says Beth Piraino, professor of medicine. "You have to be able to understand fairly quickly when you look at an article whether the statistics are meaningless, the study design is bad, and you should just discard it, or whether it's something important that you should immediately implement in your practice." Teaching students how to make that distinction is one of the aims of the med school's new Methods and Logic in Medicine course. The underlying goal is to teach students how to continue their education after formal training is over. "What they learn in medical school as far as the nuts and bolts facts, that's going to be out of date so unbelievably fast," says Piraino, one of the codirectors of the course. "If they don't keep up with the literature, they'll just be an outdated doctor very, very quickly."

The course is just one element of the medical school's new curriculum, which is being implemented this fall after an extensive curricular evaluation. One cornerstone of the new curriculum is a "mentored scholarly project," which students will have four years to complete. "Every student will formulate a question about something important in medicine, gather information related to the question, and analyze and interpret the information—with close one-on-one mentoring," says Steven Kanter, vice dean of the medical school. The project, designed to foster independent and creative thinkers, may involve basic science or clinical research. Or it could be less traditional, involving, for example, health policy research, a community-based social science study, or another inquiry that arises from the student's interests.

Another major change: In the past, students weren't able to take electives until the fourth year. In the new curriculum, third-year clerkships will start two months earlier, giving students the option to take electives in the third year and to explore specialized career interests long before the fourth-year residency application process gets under way. "The added flexibility and choice will help students make a solid, durable career decision," says Kanter. *—Dottie Horn*

FOOTNOTE

Since the dawn of civilization, people have been getting drunk. By now, you'd think there'd be a better antidote for a hangover than a raw egg. It was recently reported that extract of prickly pear cactus prevents that "I-can't-even-look-at-food" feeling you might get after imbibing too much. The extract also eases dry mouth. Coincidentally, or perhaps not, the lead author works not far from Bourbon Street in New Orleans.



CAMI MESA

A&Q

With Mark Perlmutter

Shortly after arriving in Thailand, Mark Perlmutter (MD '04) and a friend decided to go to the Royal Palace in downtown Bangkok. They were standing at a bus stop with a map, trying to figure out which bus to take, when a local man offered to help. It turns out they were at the wrong bus stop, but the man took them to the correct stop, waited with them until the bus came, and was going to get on the bus and take them to the palace, which was a two-hour trip away, just to make sure they didn't get lost. (Eventually, Perlmutter convinced the man they'd be able to make it on their own.) Perlmutter says he had similar experiences "at least 10 times" during the year he was in Thailand: "The whole idea of fear of strangers doesn't really exist there. If you're walking down the street, people pull over and ask, 'Do you need a lift?'"

His exposure to Thai culture, especially the people's generosity and concern, has inspired Perlmutter to seek meaningful relationships with patients, "relationships of trust and, hopefully, friendship," he says. The year he spent teaching English in Thailand after college also inspired him to write a book, the ironically titled *A Year Wasted*, which he self-published. "It was one of the best years of my life," says Perlmutter, who recently started a urology residency at New York University.

On differences between American and Thai culture

What [a lot of Thai people] don't have in economic wealth, [many of them] more than make up [for] in interpersonal relations, and I think that's a lot more valuable in many cases than monetary wealth. … I saw the same people on the street in the evenings. The husband and wife would be sitting on the porch with their kids, playing board games or just sitting and chatting. Everybody would be out, sitting together, the kids would be playing together, some of the guys would be talking to their neighbors. … You could see that people were tired after a long day of work, but they were just really enjoying that time together as a family and with their neighbors. And I don't think that we really do that as much here. People just come home and go about their business.

His question for us

All of these things that you experience in your life before medical school really impact you, but how do you hold onto those values you had beforehand in a demanding lifestyle like medicine? *—Interview by Dottie Horn*

SEE PERLMUTTER'S BOOK ONLINE: www.ebookmall.com/ebook/144778-ebook.htm

Faculty Snapshots

Susan Amara, chair of the Department of Neurobiology and a former Howard Hughes Medical Institute investigator, was recently elected to the National Academy of Sciences. Amara's research focuses on neurotransmitter transporters, proteins that take up extra neurotransmitter molecules released from neurons as they communicate with each other in the brain. The transporters play a key role in regulating neurotransmitter levels. She helped discover how cocaine binds to the dopamine transporter and prevents it from functioning, so that extra dopamine builds up between neurons, stimulating the brain's reward system.



Amara

The American Academy of Arts and Sciences recently elected as a fellow **Peter Strick**, a Pitt professor of neurobiology. Founded during the American Revolution, the academy recognizes those who have made exceptional achievements in scholarship, business, the arts, and public affairs. Strick developed a technique to use viruses to trace neuronal circuitry in primates. Not long ago, scientists thought that the cerebellum, a fist-sized structure atop the spinal cord, was involved only in movement, coordination, and balance. Through his primate work and fMRI studies in humans, Strick has shown that the cerebellum is connected to the brain's thinking processes. Strick is codirector of Pitt's new Center for Neuroanatomy with Neurotropic Viruses, for which the University recently received a $4.6 million National Institutes of Health grant. The center will use viruses to trace the circuitry and architecture of the nervous system. Strick also codirects the Center for the Neural Basis of Cognition.



Strick

The National Institutes of Health recently gave **Yan Xu**, professor of anesthesiology, a MERIT (Method to Extend Research in Time) award. The grant will support Xu's work on how general anesthetics work at the molecular level. Through this grant, Xu will have continued support for up to 10 years and will sidestep the usual competitive grant renewal process. **Charles Rinaldo**, professor of pathology with a joint appointment in the Graduate School of Public Health, has also been granted a MERIT award for his work on immunotherapeutic vaccines against HIV. Xu and Rinaldo are the latest among 13 in the School of Medicine given MERIT awards. "With a guaranteed eight to 10 years of funding," says Xu, "you can go into high-risk, high-reward territory." *–DH*



Xu



Rinaldo

SICILIAN TRANSPLANTS

In 1994 and 1995, the Region of Sicily spent $37 million sending Sicilians abroad for liver transplants because there were no facilities that performed the operations in the area. Then the U.S. Congress stipulated that only 5 percent of American organs could go to non-U.S. citizens. Many European countries went further and decided no organs would be allotted to foreigners. Sicilians needing transplants became desperate. Then, in 1997, Sicily partnered with the University of Pittsburgh Medical Center to develop a facility in Palermo, Italy, that would provide transplants and other specialized services. The facility, the Istituto Mediterraneo per i Trapianti e Terapie ad Alta Specializzazione (ISMETT), began operating out of temporary facilities in 1999. Earlier this year, the dream was fully realized—ISMETT opened its new $58 million home, tripling its number of beds and doubling its number of operating rooms. The larger facility will allow ISMETT to expand its living donor transplant program and to provide services not only to southern Italians, but also to more people from other countries in the Mediterranean region. ***—Melanie Donahoo***



Sicily's new transplant hub

Sound Medicine



GETTY

The Frick Room at the Omni William Penn Hotel breaks out in sound, not quite song. The walls echo voices, some high-pitched, some low, as about 150 people choose a random note and hold it. An animated woman at the front of the room has instructed the group to try out a technique: They should begin to "laugh silently" while they continue to produce the sound. The laugh will open up the vocal cords, increasing the distance between them, leading to a more full-bodied sound, she explains, demonstrating with a huge smile and an *aaaaHHAAAA*. She's onto something. As the crowd follows her cue, the sound in the room becomes louder, more voluminous.

This group is participating in a session called "Vocal Physiology and Care of the Choral Voice" during Chorus America, an annual conference for conductors and other choral professionals and aficionados held this year in Pittsburgh. The presenters are Clark Rosen, a Pitt associate professor of otolaryngology who directs the University of Pittsburgh Voice Center, and his staff—including Kimberly Steinhauer, the PhD vocal coach with the silent laugh.

The group has heard Rosen explain how medical conditions, like gastric reflux esophageal disease, can affect the voice. The doctor is just the expert to speak to the group. He created a fellowship program at Pitt to train physicians on how to care for the professional voice. (It's one of only a handful of such programs in the country.) He conducts voice-related research. He's studying, for example, the covering of the vocal cord, which sometimes becomes scarred from screaming, intubation, or trauma to the neck. "The covering is a highly elastic specialized tissue that doesn't exist anyplace else in the body, and so we're learning ways to repair that back to its normal physical properties through tissue engineering," he says. Oh, and did we mention—he's physician for the Pittsburgh Opera. The bulk of his patients are school teachers, attorneys, singers, and others for whom voice health is critical to job performance.

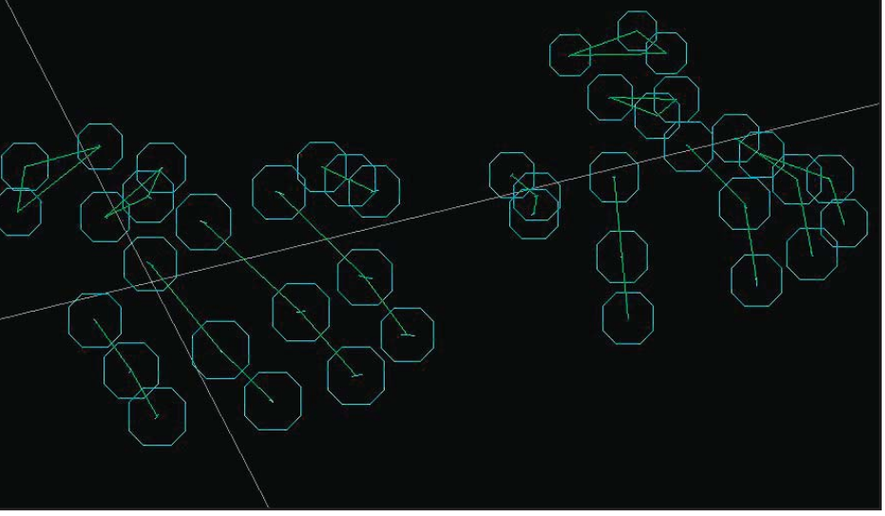
At the end of the session, after taking in Rosen's talk and tips from professionals from the voice center, members of the audience cluster around the presenters, extending their hands, expressing their thanks, eager to learn more. ***—DH***

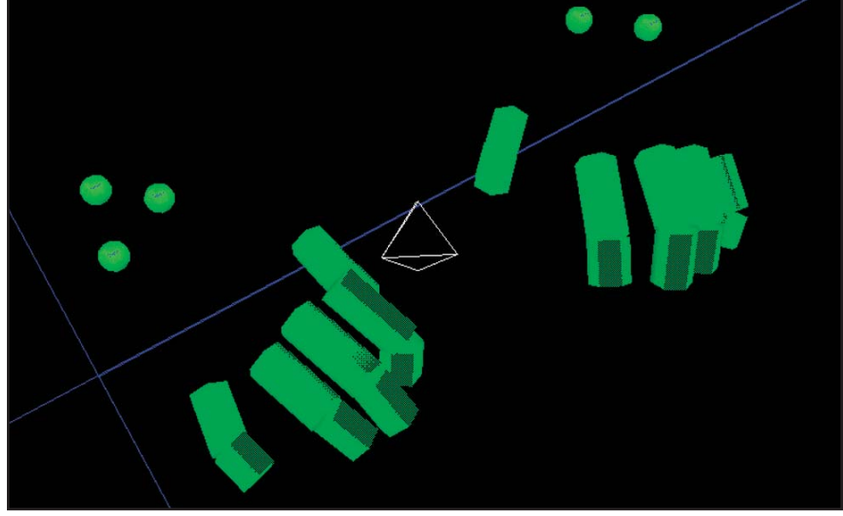
CORNUCOPIA OF CARE

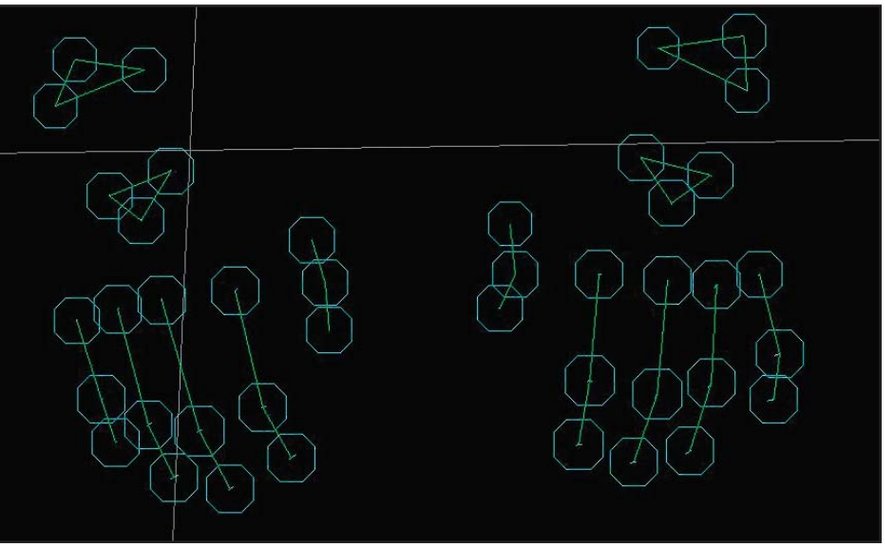
By 2030, one-fifth of the U.S. population will be over 65. Effectively treating the chronic diseases that are prevalent in the elderly will require team-based care, a whole cornucopia of healthcare providers working together to plan and deliver treatment. As the population ages, the incidence of chronic disease is likely to increase, and many believe interprofessional education will be needed to foster a collaborative approach among doctors, pharmacists, physical therapists, dentists, and practitioners in other healthcare fields.

Pitt was recently cited as a model of interprofessional collaboration in geriatrics by the Association of Academic Health Centers (AHC). It was among a handful selected for the recognition out of more than 100 academic health centers; Pitt's strengths included its new graduate-level certificate program in gerontology. All 16 of Pitt's schools, including the law and engineering schools, worked together to create the program, which is open to students in any field.

"It's a major step in the grand scheme of interprofessionalism to be able to get so many different people from so many different schools together to focus on just the issue of geriatrics," says Ryan Mrazik, a program assistant at AHC. *—DH*







COURTESY N. BAKER

FINGERED **Typing never looked so captivating. In Pitt's Human Movement and Balance Laboratory, Nancy Baker, assistant professor of occupational therapy, and Mark Redfern, professor of bioengineering, otolaryngology, and rehabilitation science and technology, capture 3-D motion in videos of typing hands (see stills above) in order to study finger movement patterns associated with carpal tunnel syndrome and other musculoskeletal disorders. The effect is like watching disembodied stick-figure hands type on an unseen keyboard. To create the videos, the researchers place reflective markers on the hands of a study subject. Then, with a technology developed by the Vicon corporation, several cameras placed at various angles track the markers as the person types. A computer records the spatial coordinates of each marker 60 times per second, so that the researchers can quantify the trajectory and speed of each movement. Other researchers have already elucidated problem patterns in wrist movements among typists, which has led to prevention and treatment strategies and dome-shaped ergonomic keyboards. Finger movements during typing, however, remain poorly understood.** ***—Corey Ballantyne***

Appointments

There is no perfect animal model for Parkinson's disease, says **Edward Burton**, an MD/PhD who is a new assistant professor of molecular genetics and biochemistry. In humans, the inherited form of the disease is caused by mutations in the alpha-synuclein gene. (In all forms of human Parkinson's, one characteristic of the disease is the brain's formation of Lewy bodies, which are abnormal clusters of the alpha-synuclein protein.) If you mutate the alpha-synuclein gene in a mouse, however, you get an unexpected result. "The microscopic features [of the mouse brains] don't look like Parkinson's—the wrong cells die," says Burton. At Pitt, Burton plans to develop a zebra fish model of Parkinson's. He hopes the model will help him understand why alpha-synuclein forms Lewy bodies in the neurons of people with Parkinson's, and how the formation of Lewy bodies leads to cell death. Before coming to Pitt, Burton was a clinical lecturer in neurology at Oxford University and a movement disorders physician.



Burton

Cocaine addicts may stop using cocaine, but if they see cocaine-using friends or go back to a place where they used to buy the drug, they sometimes relapse into addiction. Cocaine causes increased levels of the neurotransmitter dopamine in the brain; studies in rats have shown that exposing rats to an environmental cue associated with cocaine availability also triggers a release of dopamine in the brain. The cues trigger craving, researchers thought, because they have a biochemical effect like the drug itself, and cocaine stimulates the desire for more cocaine. But recent research by **Charles Bradberry**, a new associate professor of psychiatry and member of the Center for the Neural Basis of Cognition, shows that in this case, what has been observed in rats does not play out the same in primates. Bradberry found that in monkeys, exposure to environmental cues does not increase dopamine levels, but instead causes a decrease in levels of the neurotransmitter serotonin. His work may lead to drugs that could help former addicts resist temptations set off by environmental cues. Bradberry, a PhD, recently came to Pitt from Yale University.



Bradberry

Fifteen years ago, the technique called nuclear magnetic resonance could be used to determine the three-dimensional shape of only the smallest proteins. Then, **Angela Gronenborn** and her colleagues advanced NMR; now it can be used to define the structure of much larger proteins. Gronenborn has joined the faculty at Pitt; she will direct the newly created program in structural biology. Gronenborn will continue working half-time at the National Institutes of Health until her laboratory at the Biomedical Science Tower 3 is completed in 2005. Gronenborn has used NMR to determine the structure of HIV- and AIDS-related proteins, those of interleukins and cytokines, and some protein complexes involved in transcription regulation. *—DH*



Gronenborn

POWER OF THE PEN

PHYSICIAN-WRITER HELPS SPARK WIDESPREAD CHANGE IN JAPAN

BY KRISTIN OHLSON



COURTESY KUFFNER

Physicians participating in the Pittsburgh-Japan Program faculty development workshop learn about medical simulator education at Pitt's WISER center with Kuffner (in red turtleneck).

As a Brown medical student, Haruko Akatsu Kuffner was startled to hear a pediatrician tell the parents of a baby to make time for themselves amid all the cares of child rearing. "That kind of advice would never be given by a doctor in Japan," Kuffner says. "In Japan, mothers are expected to give 200 percent to their child."

Kuffner wrote down the unexpected advice in her journal. Born and raised in Tokyo, she had dismayed her traditional family by leaving Japan—and the prospect of an arranged marriage followed by motherhood—to go to medical school in the United States at the age of 26.

As a med student, Kuffner was fascinated by her day-to-day experiences and didn't want to forget them. In her journal, she jotted down notes to help jog her memory.

In 1994, right after she finished med school, a publication in Japan asked Kuffner to write a column about what it was like to be trained as a physician in the United States. Her columns were eventually published in two Japanese-language books. The first, *America no Igaku-kyouiku* (*Medical Education in the United States*), published in 1996, focused on her experiences in medical school; the sequel, published in 1999, focused on her residency training.

Kuffner became something of a medical celebrity in Japan. Reform of the Japanese medical education system was a hot topic, and her books rocketed to the top of the charts for books on medical subjects. She was invited to speak at grand rounds and at conferences. Newspapers frequently interviewed her, and she was often asked to write opinion columns.

In Japan, students move directly from high school to six years of medical school. Their med school training is composed almost entirely of lectures. What clinical time they have is usually spent observing physicians, rather than interacting directly with patients. After six years of med school, students take a standardized test. If they pass, they receive a license. Up until recently, they could then begin to practice medicine. Or, if medical school graduates chose to specialize, they selected a mentor, say, an interventional cardiologist. They immediately began to narrowly focus their education without first getting more general clinical training.

After her fellowship, Kuffner returned to Japan and, for two years, worked with the Ministry of Education on medical education reform. Owing in part to her efforts, earlier this year, two years of postgraduate clinical training in general medicine became required for all Japanese medical school graduates.

Kuffner moved back to the United States two years ago to join Pitt's endocrinology division, where she is an assistant professor. At Pitt, she launched the Pittsburgh-Japan Program, which arranges the exchange of both physicians and medical students between UPMC and Japanese medical centers.

"Internationalization will improve patient care," says Kuffner. "If you're a car manufacturer, pianist, or researcher, you have to compete globally, but when it comes to clinicians, the market has been primarily domestic—clinicians in the U.S. never have to compete against doctors from Japan or France.

"Since clinical medicine is practiced so differently in different countries, we can all learn something from each other."

Kuffner has other books germinating, too. One day she would like to write about being a Japanese professional woman from a very traditional family. She would share, she says,"the choices I made, what I went through, how I felt—so my daughters can read about it." ■

FLASHBACK

It's a familiar story: A man who was 5-foot-5 and weighed more than 200 pounds went on a diet that strictly limited bread, sugar, beer, and potatoes. He ate freely of other foods, however, and lost 35 pounds. The published account of this new diet is widely read and followed. Atkins? Nope, the man's name was Banting, and his diet, known as Bantingism, circa 1892, was described in a Sept. 8, 2004, letter to the editor of the *Journal of the American Medical Association*.