



*Devoted to noteworthy happenings  
at the medical school*

## TAKING MEDICINE PERSONALLY

The numbers are big: \$300 million, 350,000 square feet, 375 jobs. So is the focus: to delve into the inherited and environmental factors that account for individual susceptibility to illness. Planning is under way for the UPMC Center for Innovative Science. Officials are evaluating what was the Ford Motor Co. building—which sits on Baum Boulevard near the Hillman Cancer Center and UPMC Shadyside—as a potential site. The new center will give University of Pittsburgh School of Medicine faculty members a base for work they hope will lead to tailor-made treatments. —*Joe Miksch*



A rendering of the UPMC Center for Innovative Science, at a proposed site in Shadyside.

## FOOTNOTE

World Wrestling Entertainment star The Great Khali expects to return to the ring following a successful operation this summer at UPMC Presbyterian to remove a tumor from his pituitary gland. The tumor caused surplus production of growth hormone, leading to a condition known as acromegaly, characterized by excessive growth in muscles and organs. The Great Khali, whose real name is Dalip Singh, finds such symptoms of use in his wrestling career—as did the late André the Giant. Khali stands 7-foot-1 and weighs 347 pounds.

## Critical Success

Despite being only a decade old, the University of Pittsburgh's Department of Critical Care Medicine—believed to be the nation's first—recently received a significant acknowledgment of its influence. Of 20 intensive-care specialists granted the new title of Master in Critical Care Medicine Fellow, the Society of Critical Care Medicine's highest honorific, seven were former or current faculty of Pitt's ahead-of-its-time department.

Three of the new fellows represent the legacy of intensive-care research at Pitt: Mitchell Fink, an MD and founding chair of the department; emeritus professor Ake Grenvik, an MD/PhD; and legendary intensive-care physician and researcher Peter Safar, who died in 2003 and was bestowed the title posthumously.

Four current faculty members also were named fellows: department chair and professor Derek Angus, who is an MD/MPH, and MDs Patrick Kochanek (professor and vice chair, as well as director of Pitt's Safar Center for Resuscitation Research) and professors Michael Pinsky and Ann Thompson. —*Justin Hopper*



## Edward Chu

### On Herbal Relief from Chemotherapy

In an open-air market in China, locals might be stocking their kitchens or grabbing a snack; they might also be visiting a doctor, often a practitioner of both Western and traditional Chinese medicine. After an on-the-spot exam, if the complaint is of belly aches, nausea, or diarrhea, the physician might prescribe an herbal formulation called Huang Qin Tang, serving it as a tea or a smoothie.

University of Pittsburgh professor Edward Chu (shown above), an MD who is deputy director of the University of Pittsburgh Cancer Institute, chief of Pitt's Division of Hematology/Oncology, and an associate director of Pitt's Drug Discovery Institute, and his colleague, Yung-chi (Tommy) Cheng, a PhD pharmacologist at Yale University, have tested the herbal compound in animal and blind clinical pilot studies. The preliminary studies showed it offers profound relief from gastrointestinal ailments for patients undergoing various chemotherapies. Huang Qin Tang has been used to treat such ailments for nearly 2,000 years.

It may even help fight certain cancers. Chu and Cheng's work is supported by the National Cancer Institute's Office of Cancer Complementary and Alternative Medicine.

#### Why they took on the studies

We've seen friends, relatives, and colleagues who've had a variety of cancers experience significant side effects of traditional Western medicines; and unfortunately, their disease continues to progress. Then they'll be treated with these herbal Chinese medicines and have some pretty dramatic responses—either alone or when used with chemotherapy. Their quality of life seemed to be better, and their toxicity was diminished. And since both of us are of Chinese origin, we said, "Maybe we need to study this in a scientifically rigorous fashion."

#### What he might not have guessed when he started

We found when we combined the herb with chemotherapy, the anti-tumor activity was maintained. In fact, [it seemed to be] enhanced. So in a new study [in patients undergoing chemotherapy for metastatic colon cancer], we're going to be looking at not only the effect on toxicity but also response rates, progression-free survival, overall survival, and quality-of-life issues.

We are trained, as Western physicians, to look for the active ingredient that can target a particular key pathway involved in tumor growth and proliferation. In traditional Chinese medicine and Eastern medicine, the idea is to use a formulation that's made up of multiple components [like HIV drug cocktails]. In animal studies, what we found is you needed all four herbs to be able to maximize the anticancer therapy and to maximize the so-called cytoprotective activity.

—Interview by Erica Lloyd

## Faculty Snapshots

This year, Brian Zuckerbraun and Nuria M. Pastor-Soler were invited to join the American Society for Clinical Investigation (ASCI). The society, established in 1908, is one of the nation's oldest and most respected medical honor societies. According to its Web site, it "represents active physician-scientists who are at the bedside, at the research bench, and at the blackboard."

Pastor-Soler, an assistant professor of medicine and of cell biology, is investigating the regulation of a protein complex that pumps protons across membranes, helping to guide the normal function of kidney tubules and the male reproductive tract. Pastor-Soler's work has led to significant findings regarding the behavior of kidneys when acid levels in bodily fluid are abnormally high (acidotic states) as well as sperm maturation and male fertility. She believes that her lab's work will also help elucidate how kidney cancer cells metastasize.



Pastor-Soler



Zuckerbraun

Zuckerbraun's laboratory has focused primarily on the use of gaseous signaling molecules and their protective effects. He has investigated the use of carbon monoxide and nitric oxide as shielding agents against organ and vascular injury in a number of disease states. He says he is "very interested in developing therapeutics that harness the effects of these gaseous molecules and signaling pathways to protect against tissue injury and death."

Up to 80 individuals can be inducted each year—ASCI's active members must first approve the group—and only those who are under 45 years of age are considered. Pitt med claims 22 ASCI members.

In addition, two School of Medicine faculty members were elected to the Association of American Physicians (AAP) this year.

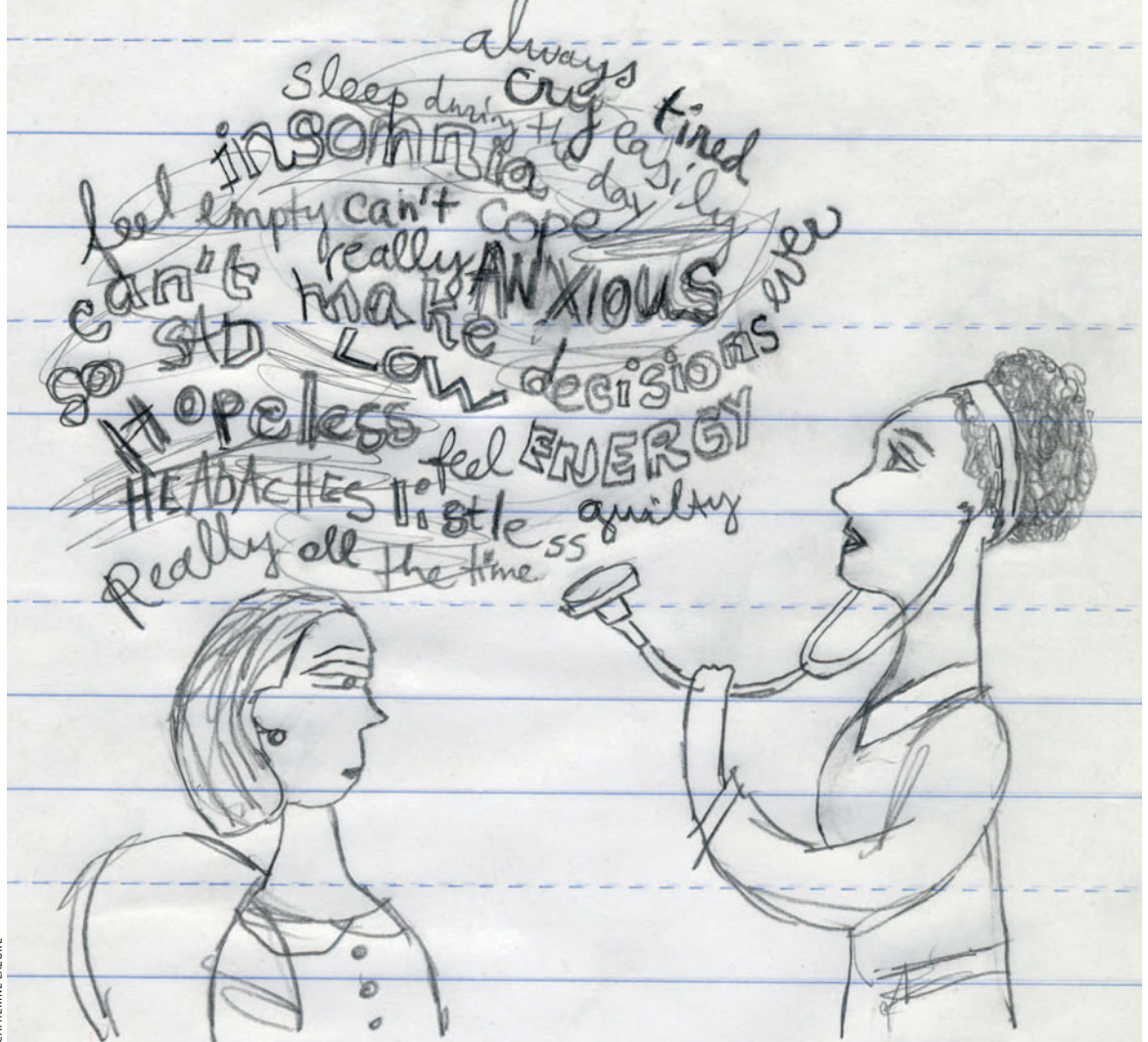
Neurological surgery chair Robert Friedlander, an MD and UPMC Endowed Professor of Neurological Surgery, and Ian Pollack—MD, codirector of the Brain Tumor Program at the University of Pittsburgh Cancer Institute, chief of pediatric neurosurgery at Children's Hospital of Pittsburgh of UPMC, and Pitt's Walter Dandy Professor of Neurosurgery—were among the 61 named to join the elite, 127-year-old organization. —Hayavadhan Thuppal



## All in the Family

This summer, Pitt's Department of Family Medicine, with UPMC and Western Psychiatric Institute and Clinic (WPIC), graduated its second trainee from the joint family medicine and psychiatry residency program, which was established in 2007 and is one of only a handful in the country. James Dewar, an MD, associate professor of family medicine, and the department's vice chair for education, says the program addresses an underserved need in family medicine. About 30 to 40 percent of patients seen by family physicians show symptoms of mental disorders, he says. The joint program, says Michael Travis, MD and director of Psychiatry Residency Training at WPIC, teaches its graduates to excel as family physicians and psychiatrists. —JM

CATHERINE LAZURE



## FLASHBACK

Today, the Falk Medical Building is known as a hub of clinical care and is home to the General Infectious Diseases Clinic and HIV/AIDS Care Center. But another kind of home occupied the space opposite Meyran Avenue at Fifth Avenue until construction of the Falk Clinic, funded by brothers Maurice and Leon Falk, began in the late 1920s. Instead of demolishing the private residence standing on the site, workers put it up on rails and moved it down the street to make room for the new outpatient dispensary.



## EVOLUTION OF A DEPARTMENT

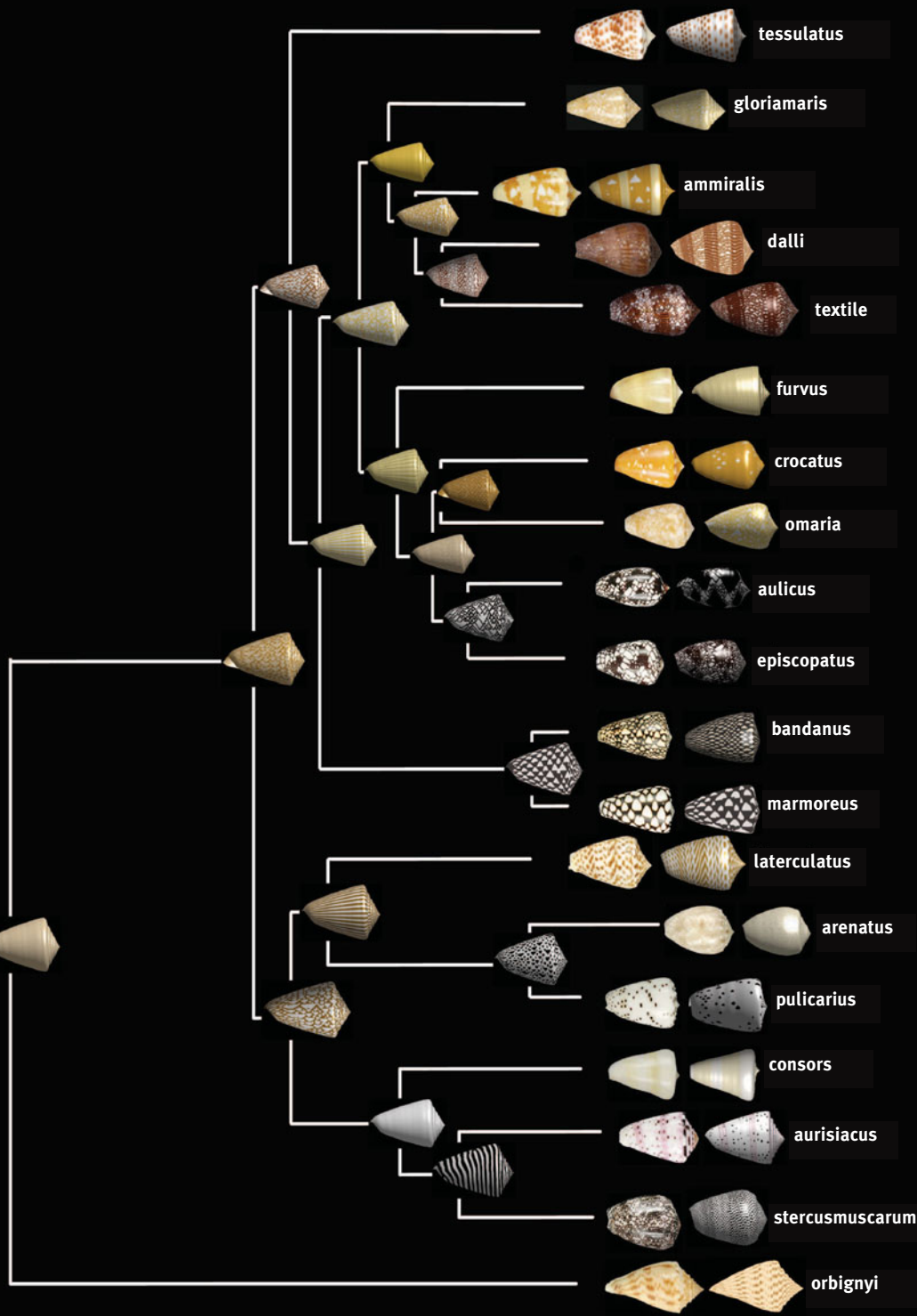
Plastic surgery has long been one of the School of Medicine's strengths. On July 1, this strong division of the Department of Surgery became a department in and of itself.

Founding chair of the Department of Plastic Surgery, J. Peter Rubin, an MD, says that coming out from under the umbrella of the larger department is a logical step. "We've seen this [similar evolution] with orthopaedics, otolaryngology, and neurosurgery," he says. "We have developed our own educational pathway, separate board certification; we've had our own journal since the 1940s. Taken all together, plastic surgery is truly an independent specialty."



Rubin

The division's ascension to department status was celebrated in a ceremony in the Commons Room of the Cathedral of Learning on June 29 with a crowd of 275, including plastic surgery specialists from around the nation, 50 of them residency alumni. The new department has 19 clinical and five research faculty with the rank of associate professor or higher. —JM



COURTESY: G.B. ERMENTROUT

## A SNAIL'S TRACE

Sea snails in the *Conus* genus are known for their beautiful shell patterns that vary from species to species. These intricate patterns are created by the snail's neural responses. The patterns amount to a visible record of the nervous system—an organ that can't be preserved in the fossil record. Earlier this year, researchers, including Pitt's Distinguished University Professor of Computational Biology G. Bard Ermentrout, announced they'd created a computer model capable of illustrating evolutionary changes in *Conus* pigmentation and used it to model living as well as ancestral species. The snails (and some heady computing) have given scientists a window to neural evolution. (In the above graphic, brackets to the far left show modeled, ancestral shells. On the far right are actual, present-day shells paired with their models.) —JH

## Name Dropping

The University's annual science festival reliably brings a number of fascinating folks to campus.

This year's festival, Science2012—Translation, which kicks off October 3 this year, features a lecture by **Brian Druker**, winner of Pitt's Dickson Prize in Medicine. Druker, an oncologist most known for his central role in the development of imatinib (Gleevec), a drug that targets the molecular defect in chronic myeloid leukemia, also spearheaded the clinical trials of the drug. (It's an approved treatment for seven cancers.) He directs the Knight Cancer Institute at Oregon Health & Science University, where he is also associate dean for oncology, JELD-WEN Chair of Leukemia Research, and a Howard Hughes Medical Institute (HHMI) Investigator. Among Druker's litany of awards are the American Cancer Society Medal of Honor, the Charles F. Kettering Prize from General Motors Cancer Research Foundation, the Lasker-DeBaakey Clinical Medical Research Award, and the Japan Prize in Healthcare and Medical Technology. He is a member of the National Academy of Sciences and the American Academy of Arts and Sciences.

### **Ronald R. Breaker**, HHMI

Investigator and Henry Ford II Professor and chair of the Department of Molecular, Cellular, and Developmental Biology at Yale University, will deliver the 2012 Mellon Lecture. His work led to the discovery and characterization of many new RNAs, including riboswitches—a mode of gene regulation in which metabolites regulate the activity of certain pathways by directly binding to messenger RNA without the direct involvement of proteins. Breaker's work has been honored with the National Academy of Sciences' Award in Molecular Biology.

### Hofmann Lecturer **Karl Deisseroth**,

an MD/PhD, led the way in the development and application of optogenetics, a technology that "uses light to control millisecond-precision activity patterns in genetically defined cell types within the brains of freely moving mammals," says Deisseroth. This method allows for the real-time study of the relationship between neural circuits and behavior. Deisseroth, associate professor of bioengineering and of psychiatry and behavioral sciences at Stanford University and an HHMI Early Career Scientist, received the 2010 Koetser Prize and the 2011 W. Alden Spencer Award for his work. —JM