

Devoted to noteworthy happenings

at the medical school

JOINING THE PARTY OF LINCOLN

Abraham Lincoln established the National Academy of Sciences (NAS) in 1863 to provide counsel to the government on matters scientific. In May 2012, three University of Pittsburgh School of Medicine faculty members joined the roll call of luminaries.

Among the 84 new members inducted this year are Yuan Chang, Patrick Moore, and Peter Strick. Chang, an MD Distinguished Professor and American Cancer Society Research Professor of Pathology, and Moore, an MD/MPH Distinguished Professor and American Cancer Society Research Professor of Microbiology and Medical Genetics, are husband and wife. He is also director of Pitt's Cancer Virology Program. They have identified two of the seven viruses known to cause cancer in humans. (For the latest one they identified—the Merkel cell virus, which causes a rare skin cancer—they also quickly found potential therapeutic agents.) Strick's work has illuminated the way in which neural circuitry controls voluntary movement. He is a PhD, Distinguished Professor of Neurobiology, director of the Systems Neuroscience Institute, codirector of the Center for the Neural Basis of Cognition, and a senior research career scientist in the VA Pittsburgh Healthcare System.

Chang, Moore, and Strick join Susan Amara, Thomas Detre Professor and chair of neurobiology, and Angela Gronenborn, UPMC Rosalind Franklin Professor and chair of structural biology, as active School of Medicine faculty in the NAS. *—Joe Miksch*



COURTESY DARREN SMITH

About Face

Although all transplants are complex, a face transplant offers additional challenges, notably aesthetics and the fact that several kinds of tissues are involved rather than just a single organ. But thanks to plastic surgery resident Darren Smith, Pitt surgeons have a new tool to help them prepare for their first patient. (The University of Pittsburgh and UPMC's plastic and reconstructive surgery program was given the go-ahead to do face transplants in 2010 and has since screened potential patients.)

Before coming to Pittsburgh, Smith (Res '14) was spending his summers in New York City as an undergrad and then a medical student working with Court Cutting, professor and surgeon in the Departments of Plastic Surgery and Surgery at New York University. In the program, Smith learned how to build computer-based models of craniofacial anatomy for teaching purposes.

Shortly after arriving in Pittsburgh, Smith began to experiment more with his interest: "[Pittsburgh's] transplant program was huge. It was an opportunity. . . . In Cutting's lab, we built generic models of anatomy from image data to teach surgical techniques. Now, we are using similar principles to build anatomical models of specific patients to plan face transplants." *—Shermi Sivaji*



CAMI MESA

A&Q

Darlene Zellers: Improving the lot of postdocs

It's hard out there for a postdoc. You're not quite a student any longer, and you're not faculty. You have some idea where you want your career to go, but you might not know how to get there. To help sketch out the career road map, Pitt's schools of the health sciences recently established the Center for Postdoctoral Affairs in the Health Sciences, which is led by Darlene Zellers (shown above, center, flanked by staff members Tammy Dennis and Steve Wendell), associate dean of postdoctoral affairs in the School of Medicine. The office will help postdocs—there are about 650 of them in the health sciences at Pitt, 90 percent of these in the School of Medicine—form concrete career goals by pairing them with faculty supervisors and requiring that these mentors and postdocs work together.

Why Pitt chose to formalize the postdoc experience

There are guidelines for postdocs that the provost established in 2003. If you're going to say, "What kind of progress are postdocs making on their research?" you have to understand what they were supposed to accomplish. This is where the career development plan comes into play. It's a preliminary document that then later serves as the baseline for the individual being evaluated. We are among a handful of institutions to require a career development plan. Our process is unique in that there is so much structure to our template.

On expected results

A national survey of postdocs called "Doctors Without Orders" found that structured oversight of postdoc training correlated with increased trainee satisfaction, increased number of publications, higher rating of faculty-mentor relationships, and decreased conflicts between faculty and postdocs. So they found a very positive correlation between degree of structure and those positive outcomes.

Her question for us

I would be interested in other faculties' reactions to putting a similar process in place. How adaptable do they think our process is to other academic cultures? *—Interview by Joe Miksch*

Next Generation

The School of Medicine's scholarly project requirement, an integral part of the curriculum since 2004, has given students a taste of the research world while they learn the physician's arts.

The Bert and Sally O'Malley Awards for Outstanding Medical Student Research recognize especially notable scholarly project efforts with $500 prizes. (Bert and Sally O'Malley got their bachelor's degrees at Pitt in 1959; he went on to obtain his MD here in 1963 and then enjoy a career as an innovative endocrinologist. Bert O'Malley, a National Medal of Science winner, is chair of molecular and cellular biology at Baylor College of Medicine.) The Class of 2012's O'Malley winners are Naomi Pitskel, Sameed Khatana, Adam Christopher, and the team of Hyun Kim and Mark Bernard. Pitskel's work (performed under the tutelage of Kevin Pelphrey of Yale University) used functional imaging and neurogenetics to study atypical gaze processing in people with autism. Khatana (working with Wen-Chih Wu at Brown University) examined the association between certain antipsychotics and metabolic syndrome in patients with mood and psychotic disorders. Christopher was recognized for his project studying the role of cilia in complex congenital heart disease. (He was mentored by Cecilia Lo, a PhD, Dr. F. Sargent Cheevers Professor, and chair of developmental biology at Pitt.) And Kim and Bernard looked into ways to protect cells from radiation damage. (The two worked with Pitt's Michael Epperly, a PhD and associate professor of radiation oncology, and Joel Greenberger, MD professor and chair of radiation oncology at Pitt.) *—JM*

Partners with J&J

Money is tight. Federal funding of basic science is lagging. The state has cut support for Pitt's School of Medicine and the University as a whole. So, the medical school is looking for additional partners. It's embarked on a new venture with the New Jersey–based Johnson & Johnson Corporate Office of Science and Technology, hoping that this symbiotic relationship will benefit research here and provide new commercial prospects for J&J.

D. Lansing Taylor, director of the University of Pittsburgh Drug Discovery Institute and Allegheny Foundation Professor of Computational and Systems Biology in the School of Medicine, is leading the effort on this end. J&J will fund four research projects, expected to take 12 to 18 months to complete, to the tune of $100,000 each. "The idea is that while science is imperfect, out of the four, one or two may look really promising, and J&J will want to invest more," Taylor says. The grants will be awarded in July. (The University's Clinical and Translational Science Institute will also contribute funding.)

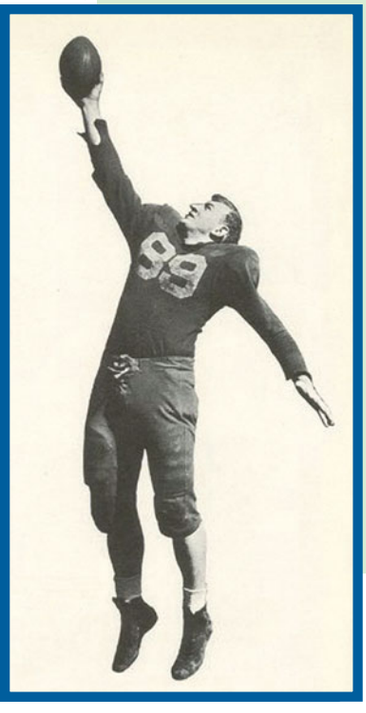
"Hopefully this is just the first [partnership]," Taylor says. "We're going to be aggressive in going after industry and getting our name out there." *—JM*



CATHERINE LAZURE

FLASHBACK

His patients remember the late Richard Deitrick (BS '54/MD '59) as the man who helped care for them and their babies (he served as head of ob/gyn at UPMC Mercy). Pitt football fans remember him as the man who, in 1952, helped the Panthers beat the Ohio State Buckeyes on their home field for the first time since 1936. Quoth the *Pittsburgh Press*: "Deitrick, a 215-pound end, caught the ball on Ohio State's 35-yard-line and stormed the rest of the way to the goal like an irritated bucking bronco, with several shifts of piggy-back riders having no success whatever at reining him in." After Deitrick's death in August 2011, we learned that the good doctor (who also played on Pitt's basketball and baseball teams) was drafted by the LA Rams, but instead chose to go to med school.



THE OWL, 1954

Deitrick captained the Panthers as a Pitt senior.

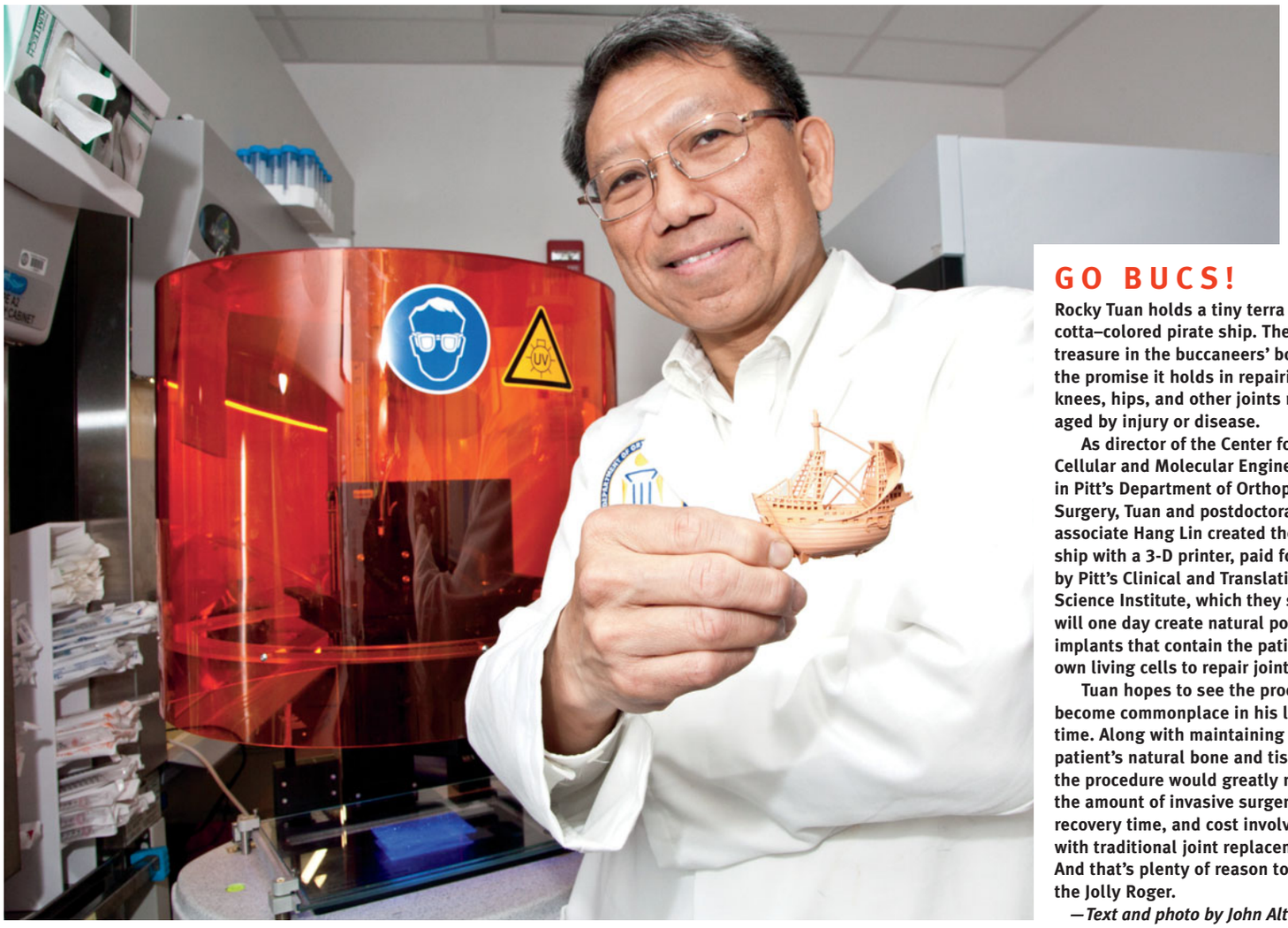
LONG LIVE MICE!

It seemed like a simple proposition. The stem cells in mice bred to age rapidly (mimicking the rare disease progeria) show signs of degeneration like those of naturally old mice. So Pitt's Johnny Huard, a PhD and professor in the Departments of Orthopaedic Surgery and of Microbiology and Molecular Genetics in the School of Medicine and director of its Stem Cell Research Center, and Laura Niedernhofer, an MD/PhD associate professor in Pitt's Department of Microbiology and Molecular Genetics and a member of the University of Pittsburgh Cancer Institute, wondered how an injection of stem cells derived from the muscles of a young mouse might affect the rapid aging process.

The results were beyond their wildest dreams. Not only did the mice injected with stem and progenitor cells display healthier, more active behavior, but they also lived two or three times longer than expected (sometimes as long as 66 days, instead of the 20- or 21-day lifespan seen in other mice bred to inherit progeria). Three sets of control groups demonstrated no change in life span.

Further experimentation showed that the new cells had spread out beyond the abdominal injection site to reside throughout the body, "but even that doesn't explain the benefit we're getting," says Huard. By placing aging and healthy stem cells side by side, Huard and Niedernhofer discovered that an as-of-yet unknown secretion of the healthy cells actually rescues the aging cells.

"We really believe that, down the road, we can help to improve aging and delay aging-related disorders in people," says Huard. "This is what scientists dream about." *—Justin Hopper*



GO BUCS!

Rocky Tuan holds a tiny terra cotta–colored pirate ship. The real treasure in the buccaneers' boat is the promise it holds in repairing knees, hips, and other joints ravaged by injury or disease.

As director of the Center for Cellular and Molecular Engineering in Pitt's Department of Orthopaedic Surgery, Tuan and postdoctoral associate Hang Lin created the ship with a 3-D printer, paid for by Pitt's Clinical and Translational Science Institute, which they say will one day create natural polymer implants that contain the patient's own living cells to repair joints.

Tuan hopes to see the process become commonplace in his lifetime. Along with maintaining the patient's natural bone and tissue, the procedure would greatly reduce the amount of invasive surgery, recovery time, and cost involved with traditional joint replacement. And that's plenty of reason to raise the Jolly Roger.

—Text and photo by John Altdorfer

Appointments

Jian-Min Yuan, an MD/PhD, will lead the Cancer Epidemiology, Prevention, and Control Program in the University of Pittsburgh Cancer Institute. He will also serve as professor of epidemiology in Pitt's Graduate School of Public Health (GSPH) and associate director of cancer prevention and population science at the University of Pittsburgh Cancer Institute.

Yuan is interested in how environment, diet, behavior, and genetics influence cancer. His investigations have included the potential roles that green tea, incense, and volatiles released by Chinese home cooking might play in the disease. Yuan is a principal investigator on four National Institutes of Health–funded projects; he comes to Pittsburgh from the University of Minnesota.



Yuan

One of the U.K.'s foremost ophthalmic surgeons is now chief of the Division of Pediatric Ophthalmology at Children's Hospital of Pittsburgh of UPMC, director of Pediatric Program Development at UPMC Eye Center, and visiting professor of ophthalmology at Pitt. **Kanwal "Ken" Nischal** came to Pittsburgh last fall from Great Ormond Street Hospital for Children in London. In addition to his experience as a pediatric eye surgeon, Nischal has developed treatment algorithms that include innovative surgical techniques for children born with opaque corneas.



Nischal

Nathan Yates, a PhD, has been named associate professor of cell biology in the School of Medicine and scientific director of Pitt's Biomedical Mass Spectrometry Center. As codirector of the University of Pittsburgh Cancer Institute's Cancer Biomarkers Facility, Yates will pursue research on the discovery and measurement of protein biomarkers that may be used to detect disease early and help doctors select the best treatments. Prior to joining Pitt, Yates was scientific director for the Department of Exploratory and Translational Science at Merck & Co., where he codeveloped differential mass spectrometry. At Pitt, Yates plans to collaborate with scientists from leading academic institutions to develop a groundbreaking cloud computing platform for the storage and analysis of proteomics data.



Yates

As of April, the McGowan Institute for Regenerative Medicine has a new director and associate director. Professor of Surgery **William Wagner**, a PhD who takes over as director, is one of the institute's founders. Wagner's research into cardiovascular engineering, focusing both on the monitoring of existing equipment and the development of new technologies, involves graduate and postdoctoral researchers from a broad range of specialties and has resulted in numerous patent filings and awards for innovation. McGowan's new associate director is **Rocky Tuan** (shown with miniature ship above), a PhD and the Arthur J. Rooney Sr. Professor of Sports Medicine in the Department of Orthopaedic Surgery. Before coming to Pittsburgh in 2009, Tuan served as chief of the Cartilage Biology and Orthopaedics Branch of the National Institute of Arthritis and Musculoskeletal and Skin Diseases. Tuan's research has run the gamut from the development of the musculoskeletal system, to cell biochemistry, nanotechnology, and tissue-regeneration technology. *—JH*



Wagner