

Devoted to noteworthy happenings at the medical school . . . To stay abreast of school news day by day, see www.health.pitt.edu

Change of Heart

As an undergrad, Hameed Aziz (Class of '05) did grunt work for his more senior lab partner. This confirmed his suspicions: He hated research. But when his partner left, he took on more responsibility; pretty soon he discovered that this research stuff was pretty exciting. Recently, Aziz received a Sarnoff Fellowship, which allows him to spend a year in a cardiology lab. The Stanley J. Sarnoff Endowment for Cardiovascular Science awarded eight fellowships to med students this year. Ultimately, Aziz chose to work with Michael Sack at the National Institutes of Health, where he studies mitochondrial biogenesis in relation to diabetes. But first, Aziz spent a marathon two weeks in July zigzagging across the country to select the institution where he would spend his fellowship year—interviewing at UCLA, Duke University, and elsewhere. His last stop was at Harvard University. He'd had no time to buy another plane ticket, so Aziz took an 8:45 p.m. red-eye bus back to Pittsburgh. Why the rush? He'd promised another student that he would help him with his research project in the morning. *—Jennifer Matson*

STEPHANIE HOOTON/PICTOGRAM STUDIO



Aziz at the NIH

LCME GIVES PITT PERFECT SCORE

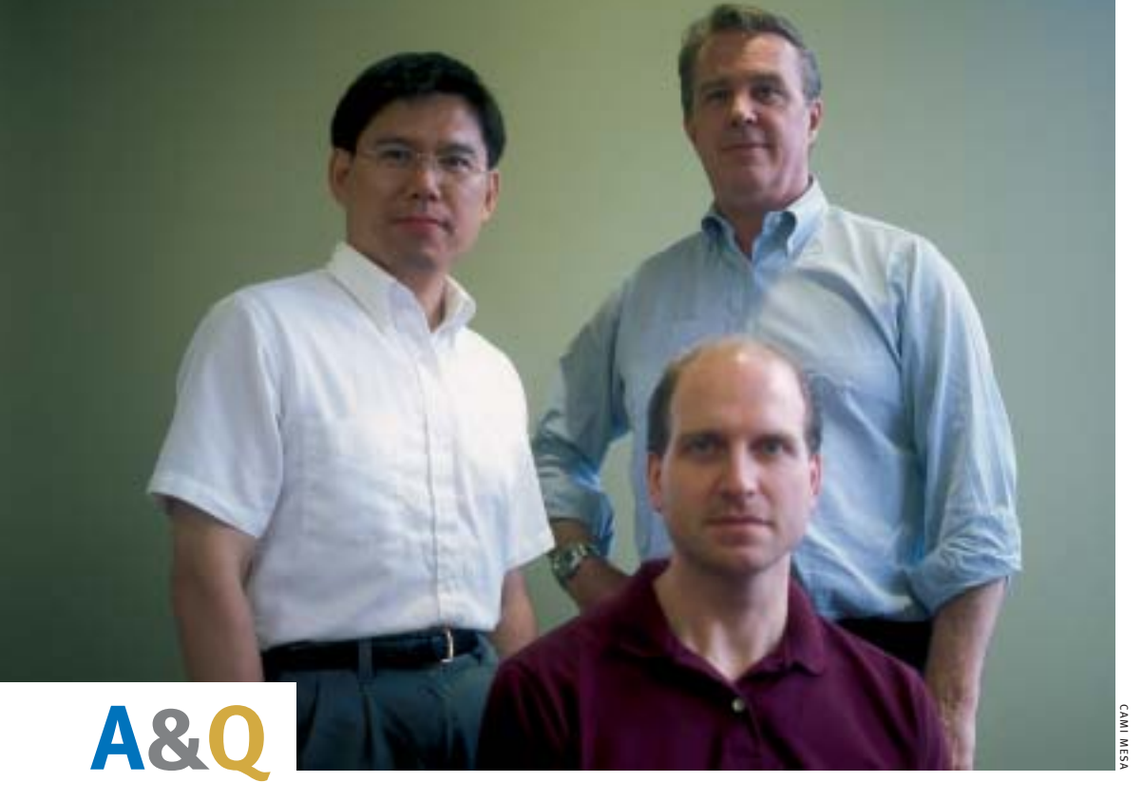
This year, Pitt's School of Medicine received a "perfect score" from the Liaison Committee on Medical Education, the group that accredits all MD-granting institutions in the United States and Canada. In other words, the school has fully complied with all accreditation standards. "Only a few medical schools have ever received that distinction," says Steven Kanter, vice dean of the medical school.

The school was reaccredited for the maximum period of eight years, after an intensive 18-month process. The final step occurred in March, when LCME officials visited the school for four days, meeting with about 100 people. Kanter was especially pleased with the LCME's long list of the school's strengths, which included its responsiveness to student concerns. One example of that responsiveness, says Kanter, is the area of concentration program, which allows students to earn certificates in areas of interest. "The AOC program was initiated by two students coming to me with some ideas and dreams," says Kanter. "We recruited some faculty and turned it into a reality. That kind of thing doesn't happen at every medical school." *—Dottie Horn*

MIND IF WE GUSH?

When reaccrediting the School of Medicine, the LCME took note of the school's strengths, especially...

- **"outstanding" leadership, vision, and responsiveness to student concerns**
- **"outstanding" student recruits**
- **a simulation center bar none**
- **"energetically committed" faculty**
- **the success of its research enterprise**
- **a strong partnership with the medical center**



CAMI MESA

A&Q

with RODS Team Leaders

If somehow a lot of people in your town ended up in the ER because of respiratory distress, Pitt's Mike Wagner (in blue shirt), an associate professor of medicine and intelligent systems, and lab colleagues William Hogan (red shirt) and Fu-Chiang Tsui (in white) might notice a blip on their computer screens. Wagner's lab developed RODS, Real-time Outbreak and Disease Surveillance. RODS ties into ER data to alert health officials of potential disease outbreaks. A new project coming out of their lab, the National Retail Data Monitor, collects daily sales data from pharmacies, groceries, and warehouse stores like Sam's Club on the quantity of products sold that could be used to relieve symptoms of infectious diseases (including the value pack of toilet paper you just bought). As with RODS, the data are made available each day to local health departments and the Centers for Disease Control and Prevention.

On what they were thinking when they first heard about SARS

Tsui: "It struck me that SARS, like other bioagents, could easily cause tremendous damage to a country in terms of the social-economic impact as well as on people's lives, and it could do so within a very short period of time."

On how biosecure they're feeling these days

Wagner: "I'm feeling secure about contagious diseases like monkey pox and SARS, where a good [containment] response is the main issue. But I'm not feeling very biosecure about… contaminations of the air, food, or water, where a lot of people will get sick suddenly, at the same time, and then, if it's a lethal disease, they'll all proceed to terminal stages. The window of opportunity for intervening is very narrow. The first sign of a problem is that everyone is sick. And that means you've already incurred a lot of morbidity."

On vaccinations for smallpox

Hogan: "I would get the smallpox vaccine. SARS demonstrates very clearly the problems that arise when hospital workers contract the disease they are trying to treat. However, the risk of the vaccine must be balanced with the likelihood of an attack. Hospital workers in large cities like New York and D.C. should probably be vaccinated, whereas hospital workers in small rural towns probably should not. I would, however, ultimately make the vaccine available to anyone who wants it and would force no one to get it against their will."

On what else we could be doing to prepare for an outbreak

Wagner: "[Systems to help detect] rare diseases a physician might overlook. A lot of the diseases of interest to public health are febrile pneumonic illnesses: influenza, tularemia, plague, anthrax… I'd like to see, and we will see, though it's going to take a lot of time, maturation of clinical information systems [to report such illnesses in real time]."

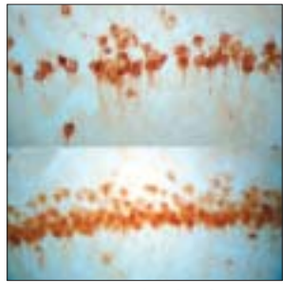
Their question for the world

"What can you do to help the RODS project to protect the public's health?"

—Interview by Erica Lloyd with Cleat Szczepaniak

Faculty Snapshots

On an average day in Pittsburgh, one person's heart suddenly stops beating. Out of every 100 of these sudden cardiac arrest cases, paramedics are able to restart the heart in about 30 people. Sometimes, the heart stops again while the ambulance speeds to the hospital; about 25 of those 30 will live to be admitted. Once they arrive at the hospital, doctors can usually keep the heart beating, but the patients are often in a coma from brain damage suffered while the heart was stopped—on average, eight will survive the coma out of every 25 admitted. Clinical studies have shown that hypothermia treatment (lowering the body temperature) helps increase survival in those who make it to the hospital alive. In treating sudden cardiac arrest patients, **Clifton Callaway**, assistant professor of emergency medicine, uses cooling blankets, and sometimes pumps cold water into the stomach, to lower body temperature to about 93 degrees. Using an animal model, Callaway has shown that hypothermia treatment after cardiac arrest results in higher levels of certain trophic factors, which nourish the brain. These factors seem to promote brain recovery.



More neurons (stained red) survived in the rat that Callaway's lab cooled during resuscitation (bottom) than in the rat they resuscitated at normal temperature (top).



Belani

Oncologists often treat elderly patients with less aggressive regimens than younger patients receive—with all types of cancer, says **Chandra Belani**, professor of medicine. In nonsmall cell lung cancer (NSCLC), for example, the standard of care is a combination therapy involving two drugs. Patients in their 70s and older, however, are often treated with only a single drug or with lower doses of the drugs, because of concerns about how they will tolerate the treatment. Belani's research has shown that, in general, NSCLC patients ages 70 and older who received combination therapies (involving the drugs paclitaxel and carboplatin) had rates of survival and side effects similar to those of younger patients who received the same treatments. His findings were presented at the American Society of Clinical Oncology meeting in May. *–DH*

MONKEY CLONING FAILS

Take an egg cell from cow A and pull out the DNA with a pipette. Replace it with DNA from a cell from cow B. The egg cell starts to divide, and if inserted into a surrogate mother, may develop into a new animal that has the exact same DNA as cow B. That's cloning. It has worked in cats, sheep, cows, and other species, but not in primates.

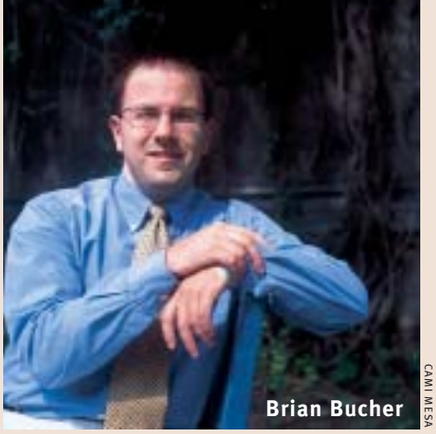
In a recent *Science* article, Gerald Schatten, Pitt professor of obstetrics, gynecology, and reproductive sciences and of cell biology and physiology, reported on his team's failure to clone rhesus monkeys. The Pittsburgh Development Center research team, which Schatten leads, discovered that the monkey egg is very different from the eggs of other animals in which cloning succeeds. After a monkey egg is first cloned, the egg divides, but the mitotic spindle that helps pull the chromosomes apart does not form properly. "From the outside, it looks as if you have a terrific cloned embryo, but at a genetic level, each of the cells has the wrong number of chromosomes," says Schatten. None of the embryos his group implanted into surrogate mothers resulted in births.

Cloned monkeys, Schatten says, could advance stem cell research and help scientists tease out how genetics and environment interact to produce disease. His lab has garnered $6.4 million from the National Institutes of Health to test an alternative method of cloning, which Schatten developed.

Although cloned primate cells could lead to new therapies for people, Schatten emphasizes that reproducing humans through cloning should never be attempted. "Human reproductive cloning is unsafe, unethical, and ought to be illegal," he says. *—DH*

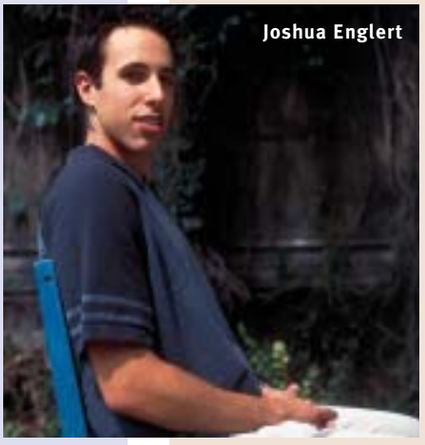


Francesca Coppelli



Brian Bucher

CAMI MESA



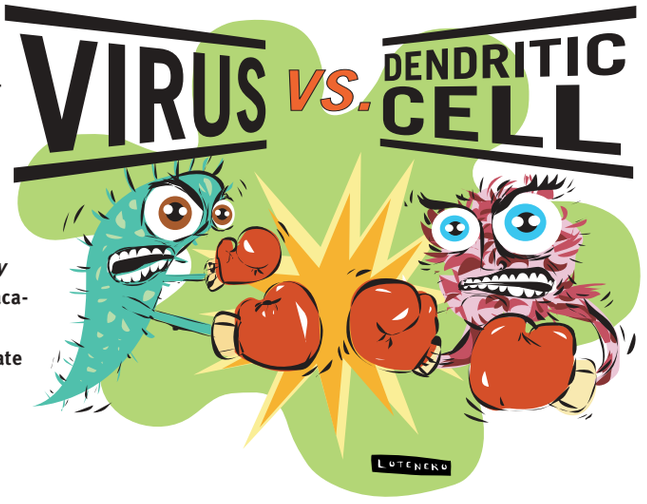
Joshua Englert

Ready for the Unexpected

Brian Bucher (Class of '06) tags this quote by Isaac Asimov to all his e-mails: "The most exciting phrase to hear in science, the one that heralds the most discoveries, is not 'Eureka!' (I found it!), but 'That's funny...'" Although Bucher is still waiting for his "that's funny"—i.e., "that's unexpected"—moment, he's hoping it will come soon. Maybe even this year. Bucher is taking off a year from school to pursue liver transplantation research with the Department of Surgery's David Geller (Res '96). He, along with Francesca Coppelli (Class of '05) and Joshua Englert (Class of '05), received Howard Hughes Medical Institute (HHMI) extramural fellowships to spend a year conducting research. The fellowship, awarded to 60 students nationwide, includes a $21,000 stipend. Coppelli is researching the epidermal growth factor receptor with Jennifer Grandis (MD '87), associate professor in the Departments of Otolaryngology and Pharmacology. Englert is studying a novel anti-inflammatory compound that has potential to treat conditions like sepsis and hemorrhagic shock. His mentor is Mitch Fink, chair of the Department of Critical Care Medicine. Two other Pitt med students were awarded HHMI cloister fellowships to study at the National Institutes of Health. (More on those coveted prizes in an upcoming issue.) *–JM*

Not Just a Game

"I'm gonna give you pneumonia!" said the eighth grader in the school cafeteria. "Well, I have a neurotrophil to defend against that!" his classmate replied, slapping a card onto a board game. Richard Steinman, associate professor of medicine and pharmacology at Pitt, listened to the teens and was thrilled by how animated they'd become as they played the educational game he developed called BioBattles. Steinman had come up with the idea while watching his own kids play Pokemon. Amazed by the incredible amount of detail they remembered from the cards, he thought, *Why not develop a card game about the constant battles being fought by the immune system in our bodies?* When he and his kids were on vacation, they made a prototype. Later, he received an Innovation in Education Award from Pitt's Provost's office to create a more elaborate product. He's now in discussions with a company about commercializing the game as he tests it formally and informally. It appears that both middle school students and med students score higher on immune system quizzes after playing BioBattles. *–JM*





CARNEGIE MUSEUM OF ART PITTSBURGH/THE CHARLES "TEENIE" HARRIS ARCHIVE

Trust Your Barber

Some people tell the barber things they would never say to a doctor. So Stephen Thomas, director of Pitt's Center for Minority Health in the Graduate School of Public Health, is turning barbers and beauticians into lay health advisers for a population that's been traditionally reticent about getting regular medical care. Stylists at nine African American shops and salons around Pittsburgh are being trained to recognize and discuss conditions their customers might have, like diabetes, obesity, asthma, and even cancer. So, how about a shave with that haircut? And have you asked your doctor about that mole yet?

FOR MORE INFORMATION:
www.cmh.pitt.edu

Appointments


Peault

Most adult human tissue contains stem cells—but at very low proportions. In adult bone marrow, for example, there is only one stem cell for every 10,000 cells. In embryonic tissue, stem cells are much more numerous and active—making them more accessible to researchers like **Bruno Peault**. A PhD, Peault recently came to Pitt as a professor of pediatrics and cell biology and physiology, leaving the Centre National de la Recherche Scientifique in Paris. Using embryonic tissue, Peault studies hematopoietic stem cells (which are the precursors to mature blood cells). He has discovered a new location in the embryo that is a source of hematopoietic stem cells. "It's a small body of stem cells that establishes the pool of blood stem cells that functions during the whole life of the adult," says Peault. He is now trying to identify populations of stem cells in the lining, or epithelium, of the human airway. The epithelium may use stem cells to repair damage caused by smoking, asthma, or cystic fibrosis.

Hepatitis C ravages the liver—and is the reason for half of the liver transplants that take place in the United States every year. When a hepatitis C patient receives a new liver, it inevitably becomes infected with the virus—and some of these people will require second and even third transplants. So, does the level of immunosuppression affect whether the new liver is ultimately destroyed by the virus? **Thomas Shaw-Stiffel**, an associate professor of medicine at Pitt, is helping to answer this question by studying drug metabolism. He's looking at the genetics of drug clearance in people before they undergo transplants, which could help him determine how much to immunosuppress, particularly in patients with hepatitis C. The MD came to Pitt last year from the University of Rochester in New York.


Shaw-Stiffel

In African Americans, colon cancer is 25 times more common than it is in native Africans. "We're investigating the differences in the bacterial populations between African Americans and native Africans and seeing whether this is related to colon cancer risk," says **Stephen O'Keefe**, an MD/PhD who came to Pitt this year, leaving Virginia Commonwealth University. Other studies have shown that certain types of bacteria in the colon will metabolize undigested food into toxins that increase the risk of colon cancer. O'Keefe, a professor of medicine, is also studying a new way to feed patients with acute pancreatitis. (If these patients eat normally, their disease often becomes worse.) O'Keefe delivers nutrients using a tube that is inserted through the nose into the digestive tract, avoiding the problems associated with intravenous feeding. *–DH*


O'Keefe

2,000 MILES AND 26 TEENS: ON THE LEWIS & CLARK TRAIL

BY JENNIFER MATSON AND DOTTIE HORN







COURTESY LANTZMAN

Eric Lantzman as a flower child and other scenes from the med student's journey on the Lewis and Clark trail with youth artists. BOTTOM LEFT: The teens learn a Native American dance.

Eric! Eric Lantzman (Class of '05) heard his name called from the edge of the Missouri River and saw a girl—one of 26 Pittsburgh teens he was traveling with through wilderness areas—lying facedown on a dock. Her throat was tightening, and she was losing feeling in her fingers and toes because of severe dehydration. Someone helped Lantzman flag down a boat. Onboard, he covered her with river-drenched towels and put a paper bag over her mouth to control her hyperventilation. He treated her until they reached an EMS crew downstream; there, the girl stabilized.

As the medical guide on a Manchester Craftsmen's Guild–sponsored trip for inner-city teenagers that traced the Lewis and Clark trail (the trip celebrated the 200th anniversary of the expedition across North America), it was Lantzman's job to handle medical emergencies like this one. The med student was trained as an EMT in high school in Mt. Lebanon. He's used to crises and expected this sort of thing. What he may not have expected from the trip was how much new territory both he and the teens would cover by taking the storied trail.

With the teenagers, he jumped off a 30-foot cliff into the Missouri River, but there were other splashes along the way. Like the boys who didn't want to share a hotel bed and started screaming about who was going to sleep on the floor. Lantzman defused the situation—he didn't want the teens to bear ongoing resentment against each other. "We're just here to sleep," he told them. Eventually, the boys calmed down, having learned something about compromise. And there was the girl with behavioral problems who opened up to him about her family situation: She lives with a relative because she doesn't get along with her parents. *An individual's story can really alter my view*, he wrote in his journal that night. *She has never learned to deal with her own sadness and despair, which is so debilitating.*

For three weeks, the group traveled by train, bus, foot, and canoe. Their bus had an area where the teens could sketch or press flowers. All of the teens—some of whom are "incredible artists," notes Lantzman—take art classes at Pittsburgh's Manchester Craftsmen's Guild. (The Guild has been celebrated for its efforts to build hope and interconnectedness in urban communities through learning and arts programs.) The group stopped to camp and hike, and Lantzman showed them how one would wrap a sprained ankle or sling a broken arm. He taught them about the medical methods used in Lewis and Clark's day, such as placing unsterile lint in a wound to keep out infection. One night, it was Lantzman's turn to be the pupil as a few of the teens showed him some dance moves. He tried to mimic their steps, spinning, bouncing, throwing his hands in the air—to the amusement of his audience. Lantzman was happy to see that he gave the kids a good chuckle. The trip, after all, was about stretching boundaries; he wanted them to know that he, too, was willing to try something new.

And there are quieter memories from their time together. On a warm, blue-skied day, the group planned to paddle on the Missouri for several miles. Lantzman and a boy got into a canoe with a girl who'd seemed intimidated throughout the trip; she was shy and didn't say much. Lantzman sat at the back and steered. They came across another teen, who'd set out by himself. He'd rolled his boat twice and didn't want to go any farther. "I'll trade places with you," Lantzman told him. "You steer this canoe, and I'll take yours." Then the girl spoke up: "Do you mind if I take control of the boat?" Lantzman didn't mind. In the other canoe, he paddled alongside her, explaining what to do. It was bumpy going at first, but soon, she started to master the skills. "It took her no time to learn how to rudder the boat," he says. When the river trip was over, the girl, who'd been the quietest person on the trip, was all smiles, talking about what she'd done. ■

FOOTNOTE

Stolen hospital wheelchairs—they've been likened to wayward grocery carts, and they add up to costly crimes of convenience. As many as 200 have disappeared in a year at the VA Pittsburgh Healthcare System. In a recent article, the *Pittsburgh Post-Gazette* reported "the ultimate reversal in fortune" for these hot wheels: Someone from the local Giant Eagle called to let Allegheny General know one of its chairs had been left at the store.