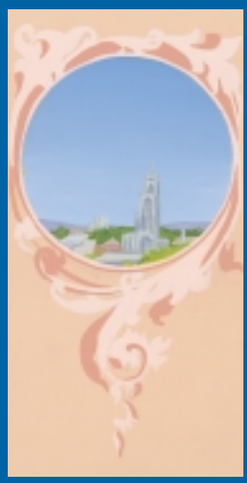
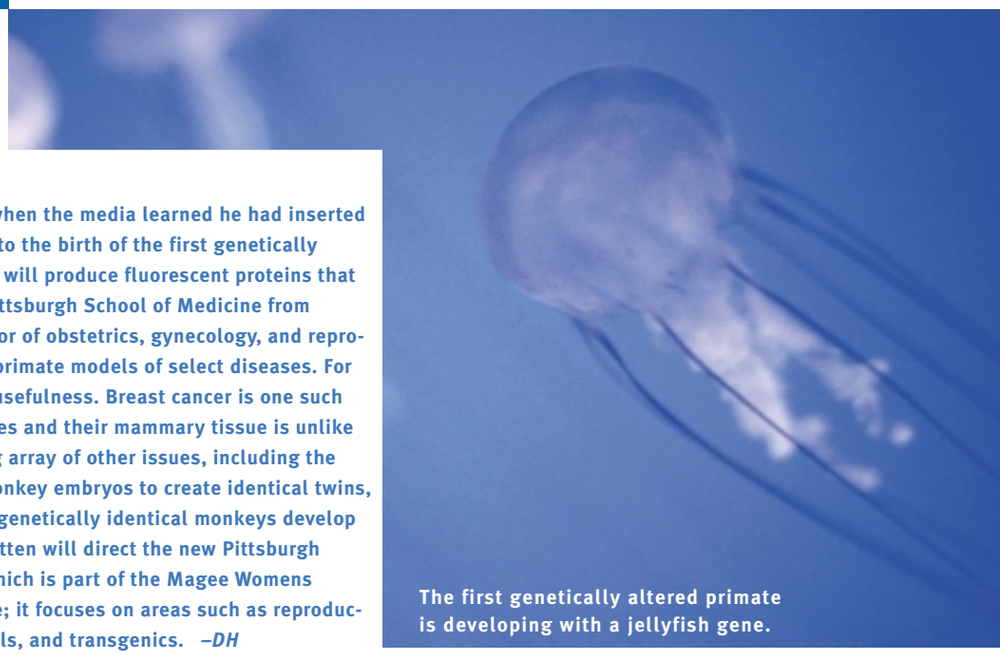


Devoted to noteworthy happenings at the medical school . . . To stay abreast of school news day by day, see http://www.health.pitt.edu



The first genetically altered primate is developing with a jellyfish gene.

Monkey Shine

Gerald Schatten got a lot of attention last winter. That's when the media learned he had inserted a jellyfish gene into the egg of a rhesus monkey, leading to the birth of the first genetically altered primate. (The monkey doesn't glow; the hope is it will produce fluorescent proteins that are easy to track.) Schatten arrived at the University of Pittsburgh School of Medicine from Oregon Health Sciences University in July. He is a professor of obstetrics, gynecology, and reproductive sciences. At Pitt, he hopes eventually to develop primate models of select diseases. For some illnesses, he explains, mouse models have limited usefulness. Breast cancer is one such disease, because mice don't have monthly menstrual cycles and their mammary tissue is unlike that of humans. The scientist will also examine a dizzying array of other issues, including the age-old question of nature versus nurture. By splitting monkey embryos to create identical twins, triplets, and quadruplets, he will be able to observe how genetically identical monkeys develop in different environments. Schatten will direct the new Pittsburgh Development Center, which is part of the Magee Womens Research Institute; it focuses on areas such as reproduction, stem cells, and transgenics. ***–DH***

CANDLES, JELLYFISH: PHOTODISC

As we were finalizing this magazine, America awakened to a heartbreaking new reality. We are sure that many Pitt people were touched by the recent events, through personal loss, in mobilizing to ease the suffering, or in other profound ways. We encourage you to share your September 11 story.

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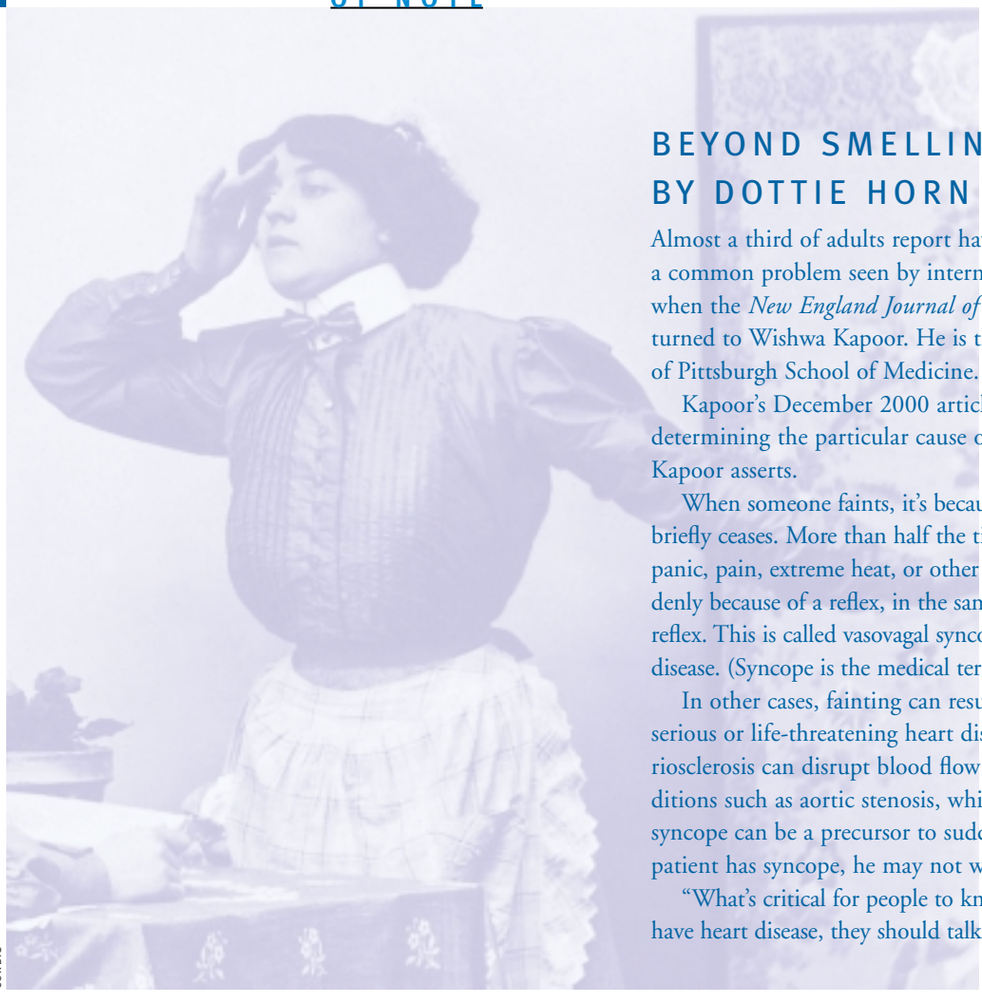
BIG TOBACCO PAYS

The revelation that tobacco company staff knew smoking was a health risk as early as 1960 was one of the more dramatic moments during the lawsuit against the tobacco giants. Now that the industry has signed the first checks in compliance with the multistate master settlement agreement, Pennsylvania will award about $9 million to the University of Pittsburgh each year for biomedical research. Those millions will be invested in research infrastructure, cancer research, "new biology" programs, and biotechnology applications in the wake of the Human Genome Project. Pennsylvania is one of the few states allocating all of its settlement money to health care and research. *—MH*



CORBIS

BEYOND SMELLING SALTS
BY DOTTIE HORN

Almost a third of adults report having fainted at least once in their lifetime—it's a common problem seen by internists, cardiologists, and neurologists. Last year when the *New England Journal of Medicine* wanted a review article on fainting, it turned to Wishwa Kapoor. He is the Falk Professor of Medicine at the University of Pittsburgh School of Medicine.

Kapoor's December 2000 article guides physicians through the process of determining the particular cause of a patient's fainting. It's an important issue, Kapoor asserts.

When someone faints, it's because blood flow to the brain suddenly decreases or briefly ceases. More than half the time, people faint in situations involving anxiety, panic, pain, extreme heat, or other stressors. Blood pressure or heart rate drops suddenly because of a reflex, in the same way that an adrenaline rush results from a reflex. This is called vasovagal syncope, and is generally not indicative of underlying disease. (Syncope is the medical term for fainting.)

In other cases, fainting can result from medications or can be symptomatic of serious or life-threatening heart disease. Conditions such as arrhythmia and arteriosclerosis can disrupt blood flow to the brain and cause fainting. "There are conditions such as aortic stenosis, which is narrowing of the aortic valve, in which syncope can be a precursor to sudden death," says Kapoor. "The next time the patient has syncope, he may not wake up from it—may die suddenly.

"What's critical for people to know is that if they're on medications, or if they have heart disease, they should talk to their doctor if they faint," he says.

Faculty Snapshots

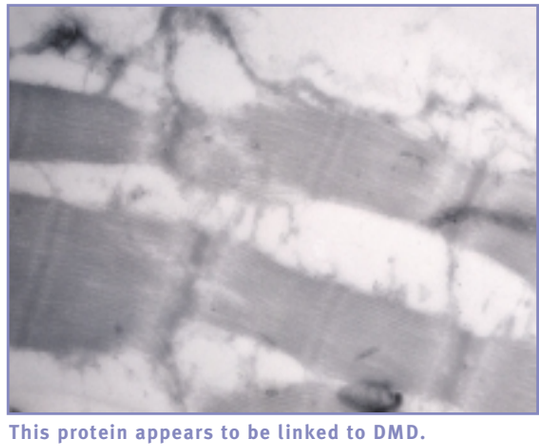
Five percent of women of childbearing age stop menstruating or have very irregular periods, even though their reproductive system is physiologically normal. The condition is called functional hypothalamic amenorrhea (FHA). Over the long term, it can cause bone loss and affect fertility and brain function.

Berga

Sarah Berga, a professor of obstetrics, gynecology and reproductive sciences and of psychiatry, has found that women with FHA have higher-than-normal levels of the stress hormone cortisol. She treated an FHA group with cognitive behavior therapy and dietary counseling to reduce stress and improve nutrition. Six of the seven women treated began menstruating normally within the study period of 20 weeks.

Young males from families that have abused alcohol for generations have differences in their brains that make them prone to abuse alcohol themselves, according to a recent study by **Shirley Hill**, professor of psychiatry, psychology, and human genetics. The brain differences are in the amygdala, a walnut-sized structure that has already been linked to other addictive behaviors, including cocaine use and gambling. Hill's study was published in the June 1 issue of *Biological Psychiatry* and was profiled in the *New York Times*.

Pharmacology faculty members **John Lazo** and **Radosveta Koldamova** have found that Apolipoprotein A-1 (Apo-A), which occurs naturally in the body, binds to a protein associated with Alzheimer's disease, called amyloid beta. Increasing the amount of Apo-A in blood may reduce levels of amyloid beta in the brain and may benefit Alzheimer's patients. One way to raise Apo-A levels is through diet; fruits, soybeans, and coconut oil are among the foods that can stimulate cells to produce more Apo-A, according to Lazo. The study was published in the March 27 issue of *Biochemistry*.



This protein appears to be linked to DMD.

Simon Watkins, professor of cell biology and physiology, and collaborators recently discovered a new protein (shown right), which they named desmuslin. It interacts with dystrobrevin, one of a complex of proteins that in turn interacts with dystrophin, the protein whose absence causes Duchenne muscular dystrophy. Watkins used a technique called immunoelectron microscopy to provide high-resolution images of single molecules. The research was published in the May 22 issue of the *Proceedings of the National Academy of Sciences*. —*DH*

COURTESY UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE

Icons and Placebos

The Agnew Clinic, **painted by Thomas Eakins in 1889, is considered an icon of the progress of surgery. It depicts Philadelphia surgeon David Agnew (solitary figure on left) just after he has completed a mastectomy. According to Maarten Ultee, a historian from the University of Alabama who gave the annual Mark M. Ravitch History of Medicine Lecture at Pitt, Agnew appears here as a brilliant angel. Yet, his operations for breast cancer were rarely a triumph. "You, the viewers of the painting, would be misled if you thought Agnew was trying to effect a cure," said Ultee. "Agnew provided palliative or placebo surgery." He believed mastectomies shortened rather than prolonged life and performed them to improve the morale of patients, even though he calculated that one in 10 died during the operation from loss of blood and none was cured. "Why did he operate? Because his patients demanded it," said Ultee.** ***—DH***

BIOMEDICAL SECURITY EMPHASIZED

Known instances of the attempted use of biological agents to inflict harm have been few and far between on American soil. The threat, however, is real according to federal officials. Technological advances in the handling and dispersal of agents employing viruses, bacteria, or toxins have spurred deep concern in public health and other circles. So have intelligence reports throughout the past decade of hidden stockpiles.

At Pittsburgh's new BioMedical Security Institute—an ambitious University of Pittsburgh/Carnegie Mellon University collaboration—faculty members are helping the nation take precautions against potential bioattacks. Much of their work also will be translatable to naturally occurring biothreats such as West Nile Virus. Pitt researchers, for example, are creating systems able to detect and analyze, in real time, possible clues of outbreaks that range from increases in toilet paper sales to upper respiratory infections reported.

The institute, which was established last fall, is funded by the Centers for Disease Control and Prevention and the Agency for Healthcare Research and Quality. ***—EL***

FLASHBACK

As a rheumatology fellow, Alexander M. Minno, MD '47, worked next door to Philip Hench, MD '20, at the Mayo Clinic, where Hench discovered cortisone. One day Hench suggested that they catch a Western at a local movie theater. The name of the flick escapes Minno today, and Hench probably wouldn't have remembered either: In the middle of the shoot-em-up, Hench's wristwatch alarm went off; he stood, announced he had another appointment—then left his astonished guest.

New South Side site

A 45,000 square foot "green design" building erected on Pittsburgh's South Side (left), next to the Hot Metal Bridge, will soon be the site of hushed "Eurekas!" It's the new home for the medical device component of the McGowan Institute for Regenerative Medicine, an organization born out of the McGowan Center for Artificial Organ Development. Investigators throughout the expanded McGowan Institute will be teasing apart possibilities of using biological building blocks (like stem cells and genes) as well as bioengineered solutions for repairing and replacing tissues and organs. Collaborators from the Center for the Neural Basis of Cognition will also pursue research in the new South Side building.

Original Oakland site

JENN URICH

Thwarting Head and Neck Cancer

Traditional chemotherapy saves lives, yet since it affects both tumor cells and healthy tissue, patients experience side effects such as hair loss and bone marrow suppression. Molecular targeted therapy allows for a drug to be more specific, affecting the tumor, but sparing other cells. Dong Moon Shin, a professor of hematology/oncology and otolaryngology at Pitt's School of Medicine, is a leader in developing molecular targeted therapy against head and neck cancer.

Shin

Shin, who came to Pitt this year from MD Anderson Cancer Center in Houston, Texas, now co-directs the Head and Neck Cancer Program with Jennifer Rubin Grandis, MD '87. In this role, he plans to emphasize three areas of research for the program: molecular targeted therapy, the preservation of organs affected by head and neck cancer, and chemoprevention. Of the 40,000 people in the United States who are diagnosed with head and neck cancer each year, most have a history of long-term, heavy exposure to tobacco or a combination of tobacco and alcohol. Shin is helping to develop drugs that may prevent head and neck cancer in this high-risk group. Such agents may also help those who have survived head and neck cancer.

"If you survive the cancer, and even stop smoking and drinking, the chance of developing a second head and neck tumor gradually increases every year, by four to six percent," says Shin. *—DH*

FOR MORE INFORMATION:
http://www.upmc.edu/NewsBureau/upci/bio_shin.htm

SUPERCALIFRAGI-COURSE

The expertise of 4.5 thousand scholars from across the globe is now online at Supercourse, a web site created by Ron LaPorte and Akira Sekikawa, both professors of epidemiology at the University of Pittsburgh. The site offers free access to hundreds of lectures dealing with medical and public health topics, with more being added regularly.

Supercourse—the site is also known as Epidemiology, Global Health, and the Internet—means that anyone with online access can refer to lectures on topics such as type 2 diabetes in Japanese Americans or AIDS in Africa. Contributors to Supercourse hail not only from far-flung corners of the world but also from the Centers for Disease Control and Prevention, National Institutes of Health, and Pitt's School of Medicine. *–EH & SD*

FOR MORE INFORMATION: http://www.pitt.edu/~super1

REMEMBER TO BREATHE

NANCY SNYDERMAN | BY ERICA LLOYD

Snyderman's favorite family snapshot; shown here, her grandmother and great grandmother, circa 1915 Nebraska

As far as Nancy Snyderman, Res '83, knows, her grandmother was the first woman in her family to hold down a job. There was no way that lady was going to just sit and worry about how to stretch the little money her family had. So when her husband went to work, she would sneak out during the day to make extra cash as a milliner. She scooted home just in time to put dinner on the table. Her husband eventually found out. And he didn't like the idea of his wife making hats or holding any job. *This has to stop,* he told her. She said she understood, then kept working anyway.

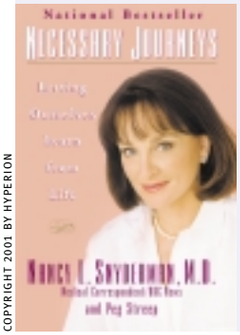
The women in Snyderman's family have a strong sense of self.

In the '60s, her mother planned a getaway with some girlfriends. This wife of a prominent otolaryngologist in Fort Wayne, Indiana, had decided, after years of attending to four children and a husband, she would attend to herself for a weekend. Her husband declared, *No, she wasn't going. Her place was with her family.*

Yes, Snyderman's mom went anyway (after stocking the fridge with meals and securing a sitter), which incensed her husband. He conspired to embarrass her on her return by lining up his children at the airport with forlorn homemade signs; little Nancy's said, "Mommy, Mommy, why did you leave us?"

It's a good thing that Mrs. Snyderman has a sense of humor.

Nancy Snyderman takes pride in this lineage of folk full of "piss and vinegar" in their veins, as she puts it. Like her mom and grandma, she doesn't get tired, which may, in part, explain her success: Snyderman is known to millions of *Good Morning America* viewers and *Good Housekeeping* readers as a medical reporter, is a best-selling author, and has a surgery practice in San Francisco, California.



In her autobiographical *Necessary Journeys,* the doctor looks at issues of women's emotional and spiritual health.

It was no surprise to anyone that Snyderman became a doctor. Her father had taken her on rounds since she was a girl. She attended med school in Nebraska, then came to Pitt for her residency. As much as she admired her father, Snyderman had decided not to become an otolaryngologist. Pediatrics was her chosen specialty, and that was that.

During an Eye and Ear rotation, she realized that otolaryngology must also be in her blood, as part of that vinegar concoction, perhaps. She speaks of training under Eugene Myers and Jonas Johnson as a gift.

She remembers one time Myers called all his residents together. Something was up. Myers *never* arranged a meeting just to check in. It turned out, not everyone's performance on the inhouse exams was acceptable. *I'm accused of having favorites,* she recalls him saying, *and I want you to know that's right. Those of you who work hard are my favorites.*

"I got it," she says. "I busted my chops for him, and I got paid back in spades. You just couldn't have had a better residency." She's now a head and neck surgeon, which is, she says, the best job in the world. And she's able to help more people than she ever imagined as a public personality. In her TV appearances, books, and speaking tours, Snyderman teaches women about their bodies and how to care for themselves in other ways. Some of this, she's still figuring out herself, she confides: "I think it's analogous to being on an airplane. When the flight attendant says, grab your oxygen mask first *then* give [oxygen] to those around you, we nod, but we don't do that as women."

Growing up, Snyderman was told that because the snooty daughters of doctors had horses, she would not. But now, during Marin County's early hours, Snyderman can be found running one of her horses, guiding it without getting in its way, keeping in mind what every good rider knows: The key is remembering to breathe.

FOOTNOTE

They kept their day jobs, but maybe they didn't have to. Someone you'll read about in this issue plays double bass, electric bass, and trombone, and has jammed in gymnasiums, concert halls, jazz cafes, country clubs, bandstands, barns, and chapels. Another featured Pitt person directs a swing band. Guess who; then see the inside front cover for answers.

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