

Devoted to noteworthy happenings

at the medical school

A Mighty Mouse

The good news is that the thymus produces T cells, prime players in the immune system. The bad news is that as we age, the thymus degenerates, leaving the immune system compromised.

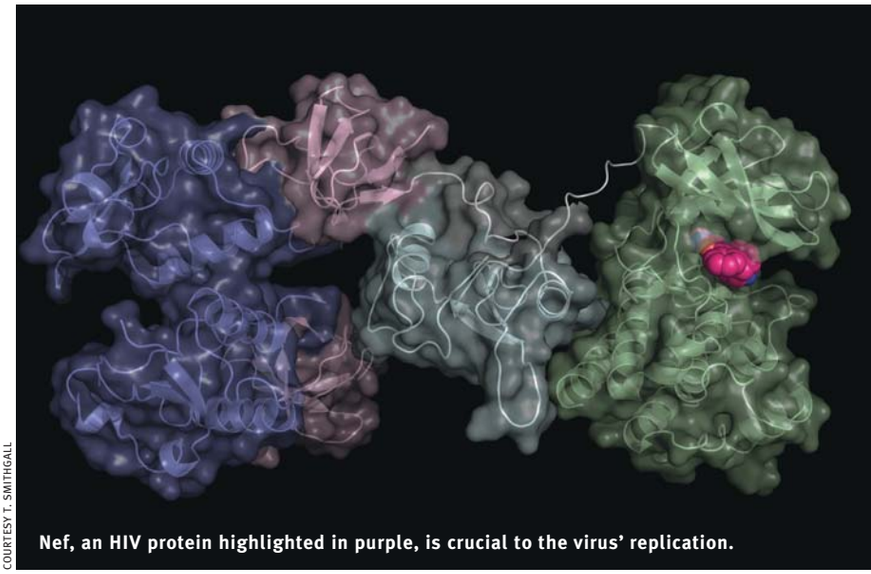
Abbe de Vallejo—a PhD associate professor of pediatrics and immunology at the University of Pittsburgh and faculty member at Children's Hospital of Pittsburgh of UPMC, the University of Pittsburgh Cancer Institute, and the McGowan Institute for Regenerative Medicine—is studying a mouse with a particularly robust thymus. De Vallejo's mice live at least 30 percent longer than his control rodents.

"These mice are different from the others in that, even as they age, their thymuses remain intact and [the mice] remain fertile," de Vallejo says. "They are not sickly animals." His results were recently published in *Proceedings of the National Academy of Sciences*.

—Joe Miksch

FOOTNOTE

Pitt med supports the Pittsburgh South Side's Birmingham Free Clinic in myriad ways. The most entertaining effort, though, is likely the student-led annual benefit auction. This year's items included handbags, coats, sports tickets, personal-training sessions, an invitation for eight to the annual Lotze/Harvey Crab Fest (hosted by Associate Dean for Student Affairs Joan Harvey and Professor Michael Lotze), an oil change (parts and labor offered by fourth-year student Andrew Farkas), and hula lessons (courtesy of first-year student Ka'ohimanu Dang).



COURTESY T. SMITHGALL

Nef, an HIV protein highlighted in purple, is crucial to the virus' replication.

CRACKS IN HIV'S ARMOR

At the Pittsburgh Center for HIV Protein Interactions, two recent discoveries show promise as ways to thwart the virus.

Center codirector Angela Gronenborn and Peijun Zhang, PhD assistant professor in the Department of Structural Biology, teamed up to study the structure of the coat that surrounds the HIV genome. Gronenborn's lab used nuclear magnetic resonance imagery to reveal the minute details of the 1,500 copies of the protein that form the capsid, or coat. Zhang studied the coat using cryo-electron microscopy. Together, they were able to develop a complete picture of the coat and identify a seam that is essential for infection. "The coat acts as the first line of defense for the virus," says Gronenborn, a PhD and UPMC Rosalind Franklin Professor and Chair in the Department of Structural Biology. If drug developers can find a way to attack that coat, she says, they will have a viable treatment for the infection.

Meanwhile, Thomas Smithgall, William S. McEllroy Professor and Chair in the Department of Microbiology and Molecular Genetics, has generated a method of tracking a protein known as Nef. Shown to play a role in HIV replication and progression, Nef activates another protein, Hck. By tracing Hck, the team could measure Nef activity. Smithgall, a PhD, studied 10,000 compounds and found one that interfered with the Nef-Hck complex, inhibiting HIV replication. Smithgall anxiously awaits the opportunity to test the effects of compounds in animal models, which he hopes could ultimately lead to a phase I drug trial. *—Tiffani Emig*



JOSHUA ROBERTS

A&Q

J. Nadine Gracia: A Voice for the Most Vulnerable at HHS

Her newest job has J. Nadine Gracia (MD '02, Res '05) advising top government officials on health policy—you could say it's taken her back to her roots. A first-generation Haitian-American, Gracia traveled this spring to Haiti as chief medical officer for the U.S. Department of Health and Human Services (HHS) Office of Public Health and Science, a position she assumed this year. Gracia was part of an HHS delegation helping the effort to rebuild from January's devastating earthquake by taking stock of the country's health care system. Before taking the job at HHS, Gracia was a White House Fellow. She spent part of her fellowship year in the office of first lady Michelle Obama working on her childhood obesity initiative. While at Pitt, she was the national president of the Student National Medical Association. Gracia is the med school's 2010 commencement speaker.

On rebuilding Haiti

Part of my role is strategizing ways we can help with some of the longer-term needs of Haiti. It's about how you build a strong health care system—which includes the physical infrastructure, such as the hospitals, clinics, laboratories, and pharmacies—but it's also about having a comprehensive health workforce.

On returning to the country where her family is from

Being involved in the recovery process has meant a great deal to me—not only in my role at HHS, but also for me as a Haitian-American. It reinforces what I find to be important and what my passions are—to advocate for and serve the most vulnerable and underserved.

On working with HHS

I provide public health and policy guidance to the assistant secretary of health on such topics as childhood obesity, adolescent health, global health, environmental health, climate change, autism, epilepsy, and the White House Council on Women and Girls. We synthesize the science with public health and prevention. It's an exciting time. To be able to work in the new administration on such important health issues that impact various populations is a great opportunity.

Her question for us

What do you hope the world will be like in 20 years, and what are you doing now to make that a reality? ***—Interview by Reid R. Frazier***

A Big Share of Stimulus-Fund Grants for Pitt

Given that National Institutes of Health (NIH) funding has stagnated since 2003, federal stimulus grants have come at a good time, wrote Arthur S. Levine, the University of Pittsburgh's senior vice chancellor for the health sciences and dean of the School of Medicine, in a recent letter to President Obama and the U.S. Congress.

Distributed by the NIH as part of the American Recovery and Reinvestment Act of 2009, the agency's stimulus grant program was created to kick-start advances in biomedicine, behavioral science, and public health research. Of the $8.2 billion in total NIH research funding under the recovery act, Pitt received an ample share—$140 million spread among 305 grants as of May. At that time, the University's stimulus funding from federal sponsors totaled $173 million, and grants are still being approved.

The NIH funds will support investigations in cancer, liver disease, heart disease, infectious diseases, traumatic brain and spinal cord injury, diabetes, Parkinson's disease, obesity, mood disorders, among others.

Levine noted that Pitt is deeply appreciative of the stimulus funding, which he sees as a life raft for the research programs of many top-notch investigators.

"However," he added, "in order for our research to be translated into new therapies, new products, and new jobs, continued, stable funding of NIH is essential."

—Elaine Vitone

THE STIMULUS FUNDING IS SEEN AS A LIFE RAFT FOR THE RESEARCH PROGRAMS OF MANY TOP-NOTCH INVESTIGATORS

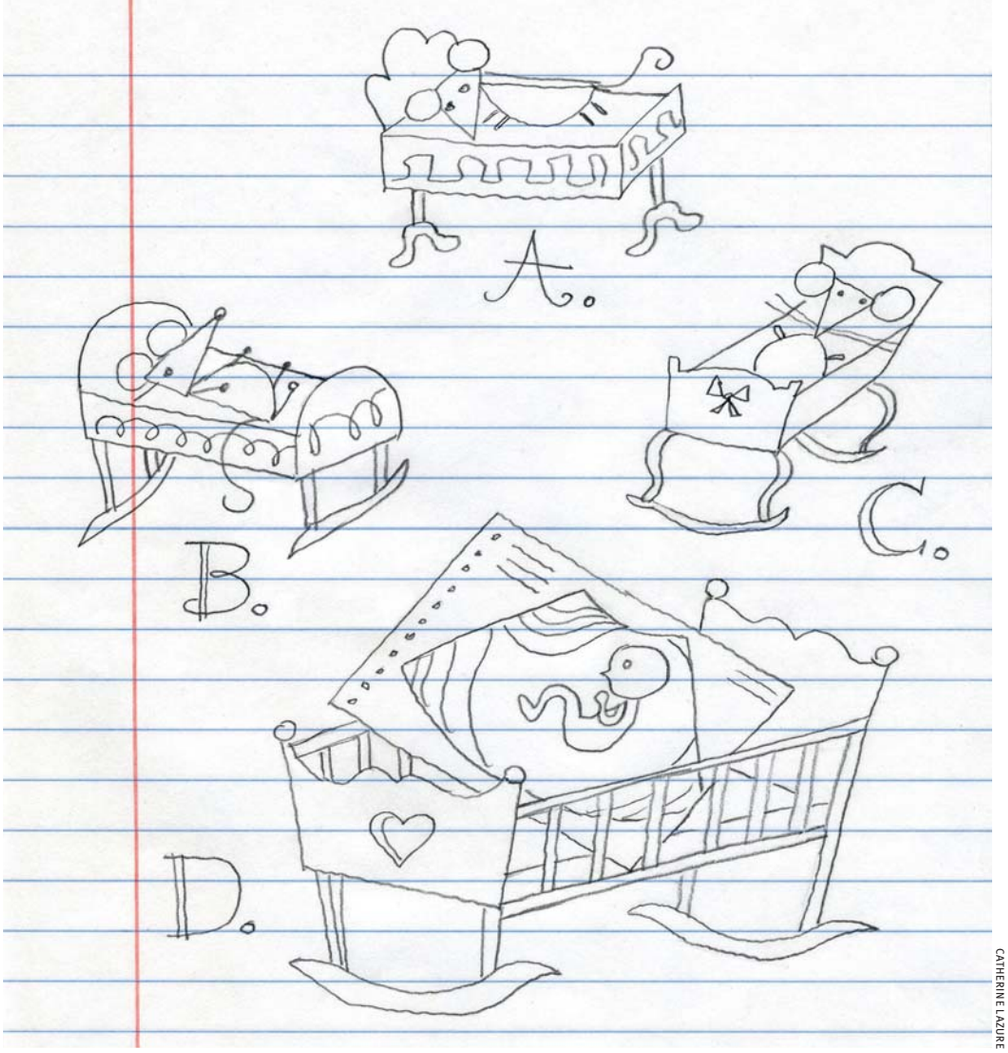
CARDIAC CRIB NOTES

One percent of babies are born with congenital heart defects. In many cases, why that's so is a mystery.

Cecilia Lo, a PhD and founding chair of the Department of Developmental Biology, is looking for answers as she leads Pitt's portion of the six-year, $100 million National Heart, Lung, and Blood Institute's nine-site Bench to Bassinet Program. As the name suggests, Bench to Bassinet is intended to quickly move insights gained into the nature of congenital heart defects from the lab to the clinic.

Lo says that Pitt's portion of the work will consist of screening mutant mice to discover the core genes—likely a few hundred—that play a role in congenital heart disease. Fetal ultrasound will help Pitt investigators watch malfunctioning hearts as they develop in the mouse mutants.

"In the future, we can use this knowledge to prescreen patients for mutations in genes involved in congenital heart disease," Lo says. "The longer-term possibility is that by understanding the genes that underlie heart disease, we can develop better therapies." *—JM*



CATHERINE LAZURE



CAMI MESA

FLASHBACK

History gives us much to chew on. And, in this case, to chew with. George Washington's dentures—made of ivory and human and animal teeth and wired to lead plates—are on display until July 18 at Pittsburgh's Senator John Heinz History Center. The president's real teeth were destroyed by mercurous chloride, a common ingredient in 18th-century medicine and purported yellow fever cure. In addition to the incisors, molars, and bicuspids, the traveling show also features "forensic figures" of Washington at 19, 45, and 57 created by a team led by Pitt professor of anthropology and history and philosophy of science Jeffrey Schwartz.

Doors Opened

A series of case studies recently featured at Falk Library were not of the medical variety but the biographical—stories and images of African American surgeons from far and wide who overcame adversity to become leaders in their field. The exhibition, "Opening Doors: Contemporary African American Academic Surgeons," was a collaboration between the National Library of Medicine and the Reginald F. Lewis Museum of Maryland African American History and Culture. It ran from November 2009 through January 2010.

"It's important that students coming along behind [these surgeons] know that there are role models out there," says Paula Davis, assistant vice chancellor for health sciences diversity. Visitors to the exhibit included Pitt's Premedical Organization for Minority Students and students from the new Pittsburgh Science and Technology Academy. "We hoped people would leave with a new sense of attainability," says Davis.

Not to be outdone, the School of Medicine complemented the exhibit with a similar display highlighting pioneers with Pitt med ties. Among them: Ala Stanford Frey (Res '04), among the very first African American women to become a pediatric surgeon, and Velma Scantlebury-White (Fel '88), former Pitt associate professor of surgery and pediatrics, and the nation's first African American woman to become a transplant surgeon. *—Ben Korman*



FRANK HARRIS

HEAD AND SHOULDERS ABOVE THE REST

Jack Schumann wins teaching awards like Pitt's men's basketball team wins games. The PhD associate professor of neurobiology at Pitt and member of the school's Academy of Master Educators is considered the cream of the crop by his anatomy students from the Class of 2013. In recognition of his pedagogical prowess, they recently gave him an anatomical model of the human head, neck, and shoulder musculature. A team of students raised cash to buy the model. Getting the needed money was no problem. "The students rushed in and almost knocked down the PBL [problem-based learning] room door" to support the idea, says first-year student Michael Liggon. The school's Office of Medical Education chipped in, as well. The model now resides in the Anatomy Museum in Scaife Hall, but it also has a place in Schumann's heart: "It was one of the greatest honors I've received in my life," he says. *—JM*

Appointments



Bae

Since patenting a new computer-aided method for detecting lung nodules from CT scans as a medical student at the University of Chicago, Ty Bae has drawn on his engineering background to solve problems in the field of radiology. The result has been eight additional patents and the discovery of new imaging biomarkers that grew from nearly two decades of research and clinical work. The University of Pittsburgh MD/PhD professor of radiology and bioengineering and director of the Imaging Biomarker Lab has recently added chair of the Department of Radiology to his title. As chair, Bae is intent on fortifying and advancing the department's research portfolio.



Friedlander

Pitt's new chair of the Department of Neurological Surgery, Robert Friedlander, comes to the University from Boston, where he served as professor of surgery and vice chair of neurosurgery in Harvard Medical School, as well as associate director of cerebrovascular surgery at Brigham and Women's Hospital.

Friedlander begins his tenure at Pitt in June. His clinical interests are the surgical management of aneurysms, arteriovenous malformations, carotid disease, and brain and spinal cord tumors. The surgeon's laboratory work has resulted in new approaches to limiting the impact of cell death in a variety of neurological diseases, such as ALS and Huntington's. He is a member of the American Society for Clinical Investigation and associate editor of the *Journal of Neuroscience and Neurosurgery*.



Sorkin

Alexander Sorkin is now the School of Medicine's Richard B. Mellon Professor and Chair of the Department of Cell Biology and Physiology. He comes to Pittsburgh from the University of Colorado Health Sciences Center.

Sorkin would like the department to focus on "the fundamental issues of cell biology," including the basics of how cell components interact and relate on the molecular level. His own research delves into the cell's endocytotic and postendocytotic activity. Research coming out of his lab is changing conventional thinking about protein signaling. His work has implications for understanding drug addiction, as well as head and neck and lung cancers. (See our p. 18 story.)



Wechsler

At the UPMC Stroke Institute, director Lawrence Wechsler has built a team of experts to advance stroke research and treatment. The institute serves as the stroke team for 15 hospitals via telemedicine, a system that allows doctors to consult on, diagnose, and treat patients remotely. The MD professor of neurology and neurological surgery now assumes the position of chair of the Department of Neurology. He hopes to partner with other departments in future studies to improve understanding of the biological mechanisms of neurological disorders, treat the depression that often accompanies neurological disease, and improve quality of life after stroke. *—TE and JM*