

The Ties That Bind

Pitt Community Bonds Are Strengthened As Many Join Hands in Challenging Times

Numerous people within the University of Pittsburgh community—students, faculty, alumni, staff, administrators, and friends—are looking inward and reaching out to one another during a time of uncertainty on the Oakland campus as a rash of bomb threats against campus buildings has occurred since Feb. 13.

- Professors have opened their homes to hold classes.
- Pitt police are being showered with praise by students, staff, and faculty for their vigilance.
- Students are actively watching out for one another during evacuations.
- The chancellor and other senior administrators are visiting with students at middle-of-the-night residence hall evacuation sites.
- More than 200 local alumni, upperclassmen, and concerned citizens have offered spare couches to those wanting off-campus accommodations.

This coming together has reinforced for many Pitt people the intrinsic value of their University and the importance of maintaining the Pitt community's strengths, especially during times of uncertainty. What follows is a look at just a few segments of the Pitt community and their efforts to help maintain normalcy, safety, and an ability to learn during difficult, challenging times.

Student Government Board

Pitt's Student Government Board (SGB) has initiated two campuswide campaigns: "Keep Calm and Hail to Pitt" and "See Something, Say Something," designed to help empower students to report suspicious



During Spring Fair 2012, Pitt students signed thank-you cards for the University's police officers as well as for the bomb-sniffing dogs used to search buildings during threats. The fair was held April 12 in Schenley Quadrangle.

activity to the police, according to Kenyon Bonner, Pitt associate dean and director of student life as well as an SGB advisor. SGB members continue to spread the mottos on Facebook and Twitter accounts—and, soon, on T-shirts.

On April 9, SGB hosted a "Pitt Pride Day" event on the veranda of the William Pitt Union. Students wearing blue and gold were treated to free pizza and popcorn. More than 600 students emptied 45 boxes of pizza and signed a thank-you poster for the Pitt police.

"It helped students get their minds off everything," said Pitt junior Richard White,

a political science major who chairs SGB's Transportation and Safety Committee. "It was an opportunity to have a good time and be proud of this university."

The thank-you poster will be presented to the University of Pittsburgh Police Department this week, along with a resolution of gratitude drafted by White's committee and a collection of doggie treats for the bomb-sniffing police dogs.

Visible Support for Pitt Police

Pitt students Alexander Rhodes and

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Pitt Is 3rd Among Publics, 5th Among All Universities In Federal R&D Spending

By John Harvith

Pitt ranks third among the nation's public institutions of higher education and fifth among all universities, public and private, in its federally financed research and development (R&D) expenditures, according to the latest figures issued by the U.S. National Science Foundation (NSF).

The annual rankings, just released by the NSF, cover fiscal year 2010. Pitt's federally derived R&D expenditures for that period totaled \$594.7 million. Its total FY 2010 R&D expenditures added up to \$822.5 million. The other two top public universities in the rankings of federally financed R&D expenditures were the University of Washington-Seattle and the University of Michigan-Ann Arbor; the top two private institutions in the rankings were Johns Hopkins University and the University of Pennsylvania.

In rank order, the top five universities in the NSF's annual survey were Johns Hopkins, Washington, Michigan, Penn, and Pitt. The universities ranked in the second five were Stanford, the University of California at San Diego, Columbia, the University of North Carolina at Chapel Hill, and the University of Wisconsin.

"These latest rankings from the National Science Foundation are a testament to the talent and commitment of our researchers, who compete for this funding against the very best faculty members at the very best universities in the country. But these rankings also are very good news for Southwestern Pennsylvania and the Commonwealth as a whole, because they present in clear and concrete terms the major dollars-and-cents impact of Pitt through its power to import hundreds of millions of dollars into the state, funds that now support, directly and indirectly, some 28,000 local jobs," commented Chancellor Mark A. Nordenberg.

"The rankings also unmistakably demonstrate the enormous return on investment the Commonwealth receives through its support of this university as a public institution," added Nordenberg. "The comparison between \$822.5 million in research support with our current state appropriation of \$144.5 million is stark. It is unlikely that the Commonwealth achieves anything close to that level of return on any of its other investments. In addition, these rankings clearly reveal the elite institutions, both public and private, with which Pitt now keeps company, and it is widely recognized around the world that the kind of innovation associated with top research universities will be a key to economic success in the 21st century."

"The University of Pittsburgh's remarkable success in attracting increasingly large amounts of federal support stems directly from the indefatigable efforts of our world-class faculty in pursuing trailblazing research that has made and continues to make life better for millions worldwide, from the development of the Salk polio vaccine in the 1950s to today's advances in the health sciences, basic sciences, and engineering," said Pitt Vice Provost for Research George E. Klinzing. "All of this is as it should be, since Pitt, as our region's premier public research university, not only makes it possible for its students to learn in an atmosphere alive with creative ferment, but also, as part of its public mission, acts as a powerful economic engine."

George E. Klinzing, Pitt Vice Provost for Research, to Return to Faculty

By John Harvith and B. Rose Huber

George E. Klinzing, vice provost for research at the University of Pittsburgh since 1995, has requested to return to the University's faculty, Pitt Provost and Senior Vice Chancellor Patricia E. Beeson has announced. Klinzing—who has been Whiteford Energy Professor since 1990 and professor of chemical and petroleum engineering since 1966—will resume his faculty duties full-time in September 2012.

During his 17 years as Pitt's vice provost for research, Klinzing has helped the University community navigate a period of tremendous growth in funded research and increased governmental regulation of the research enterprise.

"George Klinzing has served as the University's chief research officer during a period in which Pitt's funded research has more than quadrupled, resulting in hundreds of millions of additional dollars flowing into the Commonwealth annually, creating not only untold



advances in the health sciences, basic science, and engineering, but thousands of new jobs," said Pitt Chancellor Mark A. Nordenberg.

"George's personal and creative approach has helped shape the research landscape at Pitt, and he has headed a number of initiatives that have brought the fruits of Pitt researchers out of the laboratories and into the marketplace," the Chancellor added. "In 2001, for instance, he oversaw the development of the Technology Commercialization Alliance's successful process to commercialize the research work of Pitt faculty, staff, and students. Since then, the number of invention disclosures at Pitt has increased sixfold. The University will

always be grateful for the extraordinary range and impact of George's service."

"No one at the

University has done more than George Klinzing to foster collaboration among the best and brightest of Pitt researchers," said

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Beeson. "He has played a key role in the development and expansion of interdisciplinary research through the creation of centers such as the Petersen Institute for Nanoscience and Engineering, the Simulation and Modeling Center, the Center for National Preparedness, and the Center for Energy. He also has facilitated the development of many other interdisciplinary research areas across Pitt

that have successfully obtained outside funding, and he has continued to lead efforts to expand the capability of the Office of

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Relyea Study Is First to Show That Pesticides Can Induce Morphological Changes in Vertebrate Animals

By B. Rose Huber

The world's most popular weed killer, Roundup®, can cause amphibians to change shape, according to research published in the March issue of *Ecological Applications*.

Rick Relyea, University of Pittsburgh professor of biological sciences in the Kenneth P. Dietrich School of Arts and Sciences and director of Pitt's Pymatuning Laboratory of Ecology, demonstrated that sub-lethal and environmentally relevant concentrations of Roundup® caused two species of amphibians to alter their morphology. According to Relyea, this is the first study to show that a pesticide can induce morphological changes in a vertebrate animal.

Relyea set up large outdoor water tanks that contained many of the components of natural wetlands. Some tanks contained caged predators, which emit chemicals that naturally induce changes in tadpole morphology (such as larger tails to better escape predators). After adding tadpoles to each tank, he exposed them to a range of Roundup® concentrations. After 3 weeks, the tadpoles were removed from the tanks.

"It was not surprising to see that the smell of predators in the water induced larger tadpole tails," says Relyea. "That is a normal, adaptive response. What shocked us was that the Roundup® induced the same changes. Moreover, the combination of predators and Roundup® caused the tail changes to be twice as large." Because tad-

poles alter their body shape to match their environment, having a body shape that does not fit the environment can put the animals at a distinct disadvantage.

Predators cause tadpoles to change shape by altering the stress hormones of tadpoles, says Relyea. The similar shape changes when exposed to Roundup® may interfere with the hormones of tadpoles and potentially many other animals.

"This discovery highlights the fact that pesticides, which are important for crop production and human health, can have unintended consequences for species that are not the pesticide's target," says Relyea. "Herbicides are not designed to affect animals, but we are learning that they can have a wide range of surprising effects by altering how hormones work in the bodies of animals. This is important because amphibians not only serve as a barometer of the ecosystem's health, but also as an indicator of potential dangers to other species in the food chain, including humans."

For two decades, Relyea has studied community ecology, evolution, disease ecology, and ecotoxicology. He has authored more than 80 scientific articles and book chapters and has presented research seminars around the world. For more information about his laboratory, visit www.pitt.edu/~relyea/.



Rick Relyea at Pitt's research facility in Pymatuning Laboratory for Ecology (PLE)

George E. Klinzing, Pitt Vice Provost For Research, to Return to Faculty

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Research to meet the demands of a rapidly growing enterprise.

"During his tenure as vice provost, George has continued his work as a scholar, pursuing research and advising students," Beeson added. "His total dedication to the University in all areas of his vast expertise has been and will continue to be an inspiration for us all."

Klinzing served as a Fulbright Lecturer in Barranquill, Colombia, in 2001, and he has taught and consulted in engineering education with the Universidad Technica Federico Santa Maria in Valparaiso, Chile. He holds three U.S. patents and seven copyrights, and he has had 245 peer-reviewed papers and three books published on the topic of materials processing.

Klinzing is a Fellow of the American Association for the Advancement of Science and the American Institute of Chemical Engineering (A.I.Ch.E.). He is the recipient of the Western Electric Teaching Award, the A.I.Ch.E. Particle Technology Forum's Lifetime Achievement Award, the A.I.Ch.E. Award for Leadership and Service, and the McAfee Award from the American Institute

of Chemical Engineers.

Klinzing's service as vice provost for research has included active membership in numerous University committees, including the Technology Transfer Committee, the Conflict of Interest Committee, and the Information Technology Steering Committee. He has chaired the University Research Council, which examines emerging research issues nationally, and the Strategic Corporate Research Committee, among others.

Klinzing received his Bachelor of Science degree in chemical engineering from Pitt in 1959, earning his PhD in chemistry from Carnegie Mellon University in 1963. He joined Pitt as assistant professor on the Ecuador Project in 1963. He also served as the interim director of the University Center for International Studies from 2000 to 2001.

Klinzing will continue to serve as an advisor on interdisciplinary research teams after he resumes his role as a full-time engineering faculty member. A search committee is under way with the intention of identifying Klinzing's successor before the beginning of the fall semester.

"George Klinzing has served as the University's chief research officer during a period in which Pitt's funded research has more than quadrupled, resulting in hundreds of millions of additional dollars flowing into the Commonwealth annually, creating not only untold advances in the health sciences, basic science, and engineering, but thousands of new jobs."

—Mark A. Nordenberg

No More Virtual Pickpocketing of Credit Cards, Thanks to Technology Developed by Swanson School Researchers

By B. Rose Huber

With technology has come ease. These days, thanks to near-field communications (NFC) and radio frequency identification (RFID), consumers no longer have to swipe credit cards through an interrogative machine—they are able to simply wave their credit cards to make purchases or withdraw money from their bank accounts.

Such ease, however, also has brought with it theft and fraud. Researchers at the University of Pittsburgh Swanson School of Engineering have come up with a method to improve security through a new credit card design that allows a card to turn "on" and "off."

RFID tags and NFC credit cards are currently enabled to operate any time they're placed in an electromagnetic field. However, that can be dangerous, says Marlin Mickle, the Nickolas A. DeCecco Professor of Engineering and executive director of the RFID Center for Excellence in the Swanson School. That's because portable readers are now available for less than several hundred dollars, making it possible for thieves to simply pass a reader near an NFC credit

card and charge purchases to it or extract cash from a bank account.

"Our new design integrates an antenna and other electrical circuitry that can be interrupted by a simple switch, like turning off the lights in the home or office," says Mickle. "The RFID or NFC credit card is disabled if left in a pocket or lying on a surface and unreadable by thieves using portable scanners."

With this new technology, consumers would simply hold RFID or NFC credit cards in a specified area—for example, on an emblem or some other identifying mark—when making a transaction. As long as the "switch" is held, the card is turned "on."

When returned to a wallet or purse and tactile contact is discontinued, the card automatically turns "off."

"This solution is simple and very inexpensive to integrate into the RFID and NFC credit card manufacturing process," Mickle says. "We have filed a patent application and hope to see the technology quickly adopted, once approved."

"Our new design integrates an antenna and other electrical circuitry that can be interrupted by a simple switch, like turning off the lights in the home or office. The RFID or NFC credit card is disabled if left in a pocket or lying on a surface and unreadable by thieves using portable scanners."

—Marlin Mickle



Marlin Mickle

225 Stories to Celebrate

Dan Marino: Hometown Hero, NFL Legend



Dan Marino grew up in the shadow of the Cathedral of Learning before going on to stardom at Pitt and the National Football League. Many consider him to be the quintessential quarterback.

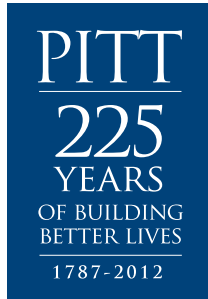
While at Pitt from 1979 to 1982, Marino broke nearly every major passing record in school history and led Pitt to four consecutive top 10 finishes. Marino had one of the most dramatic endings in bowl history when he threw a touchdown pass with seconds left to give the Panthers a 24–20 victory over the University of Georgia at the 1982 Sugar Bowl.

A first-round draft pick of the Miami Dolphins in 1983, Marino went on to gain recognition as one of the greatest quarterbacks in NFL history, with a record-breaking 17-year career. He retired following the 1999 season as the league's all-time leader in passing attempts, completions, yardage, and touchdowns.

Pitt retired Marino's number 13 jersey. He is both a College and Pro Football Hall of Fame inductee.

A highly regarded studio host for CBS's NFL telecasts, he became a Pitt trustee in 2008. That same year, he delivered Pitt's commencement address.

For more stories about Pitt's legacy of achievement or to share your own stories about the University, visit www.225.pitt.edu.



Pitt Community Bonds Are Strengthened

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Sarah Halperin created a "We Support the Pitt Police" Facebook page in early April (www.facebook.com/We.Support.the.Pitt.Police). By the end of its first week, the page had collected more than 4,200 likes and garnered hundreds of wall posts, becoming an unofficial forum for Pitt community members to voice their praise for the Pitt Police.

"When you look at the response to the Western Psych shooting and the vigilance displayed during these [bomb threat] incidents, these men and women absolutely deserve to be recognized for their dedication and hard work in protecting us," Rhodes said.

Rhodes and Halperin, with the assistance of Student Affairs, also designed and hung a 10-by-4-foot banner that reads, "Thank You Pitt Police!" at the entrance of the William Pitt Union.

For Rhodes, who has been evacuated from a University building during one of the bomb threats, the trying times of this semester have shown the resilience of Pitt's students and the expertise of those assigned to protect them.

"Speaking firsthand, it's a very nerve-racking experience, but I believe the situation has been handled well," he said. "I think the overall sentiment is that everyone is really thankful for [the police] and all the steps they've taken to keep us safe here."

Faculty: Regrouping on the Fly

Even under the best of circumstances, the end of Spring Term elevates stress levels, with term papers due, final exams approaching, and course grades on the line. But the recent onslaught of bomb threats and building evacuations have complicated the academic process immeasurably. Nevertheless, faculty and students have together sought solutions to get the job done.

In early April, Provost Beeson offered guidance to faculty regarding options for finishing the semester, and she encouraged accommodation and flexibility. Some faculty members have held classes outside, under the trees on the Cathedral lawn or beneath the canopy at Schenley Plaza. Others have quickly organized virtual class sessions, allowing students to obtain lectures and submit coursework online. And some have opened their front doors, moving classes into their own homes.

An English professor recently convened class in her dining room, with chairs set in rows around the family table. Her children offered pita chips, hummus, candy, and lemonade in the midst of discussions about Shakespeare. "The students have been wonderful," she says. "There's a spirit of community and cooperation, despite the circumstances."

Another faculty member is using a course blog, Twitter, and other digital communication tools to keep students engaged and working cooperatively outside the classroom. And a music professor is using the Internet video/audio service Skype to engage directly with piano-class students who have keyboards in their homes. More traditional options, such as take-home assignments and exams, are also in the mix. There are also spontaneous acts of "TLC" for the students: Last week, Gerald D. Holder, the Swanson School's U.S. Steel Dean of Engineering, with help from staff and faculty, offered a table of refreshments for students in the Benedum Hall lobby.

Jason Dechant teaches an anatomy and physiology class in the School of Nursing. The class consists of more than 200 students—mostly freshmen—from disciplines such as nursing, physical therapy, occupational therapy, pharmacy, and even engineering. In the wake of recent events, he has ramped up his use of online teaching. He's still holding his classes regularly, but he's also offering a video feed of the class in real time, using a conferencing and collaboration platform. Students can access his class remotely and are able to view the class in session, to see Dechant's desktop screen as he teaches, and to ask questions and receive feedback as the class proceeds.

"I've been at Pitt for 21 years and teaching for 15, and this situation is unprecedented," says Dechant. "Taking into consideration what all of these students have been through recently, whatever is better for them is worth doing."

Lab work, too, has been disrupted. Typically, students attend weekly lab sessions, where they work through a variety of activities, including the use of specimens and performing experiments in class, but the recent evacuations have interfered with scheduling and have raised uncertainty. So Dechant has set up a virtual lab environment utilizing a software platform included



Pitt's Officer Riggs (wearing leash, seated on ground) received a lot of attention and many kudos during Spring Carnival 2012, which was held April 12 in Schenley Quadrangle. Riggs and a number of other bomb-sniffing dogs from neighboring communities and governmental entities have been working night and day during the recent rash of bomb threats on campus. Pictured, from left, are Riggs' partner, Pitt Police Officer David Nanz; Riggs; and Pitt sophomore Kristen O'Hara. The fair was sponsored by Pitt's Resident Student Association.

Online Connection Is Modern-Day Town Hall Meeting

Many in the Pitt community have turned to existing and newly created online communities in their daily quest for the latest information about the bomb threats on Pitt's campus.

Pitt's official Facebook and Twitter pages have provided a forum for many, primarily students, to express their opinions and concerns about the spate of threats that began on Feb. 13.

Other sites that have sprung up include various Pitt-related pages on reddit.com as well as the "We Support the Pitt Police" Facebook page (www.facebook.com/We.Support.the.Pitt.Police), launched by Pitt students Alexander Rhodes and Sarah Halperin.

"This page is a small step to show the Pitt Police that their work is noticed and appreciated" during both the Western Psych shooting in March and the continual bomb-threat evacuations, Rhodes said.

stopthepittbombthreats.blogspot.com was created April 3 by a blogger named Andrew, who said he is "an intelligence analyst who wants to take a shot at figuring this out." The site has garnered more than 700,000 page views from posters, some of whom self-identify as Pitt students as well as, on occasion, Pitt professors and Pitt parents. The site includes a detailed listing of the bomb threats as well as a map pinpointing the location(s) of each threat.

"...though it's (obviously) frustrating to deal with the bomb threats, shouldn't we all be thankful that ... the pitt community is becoming so close that students are offering others they've never met couches to sleep at night? i don't think anyone realized the sense of community we have around us and how lucky we are to be part of such a wonderful university. just a thought :) loving on my fellow panthers. H2P!!"

—pittchick122 via blog

Christine Whelan, a visiting assistant professor in the Pitt Kenneth P. Dietrich School of Arts and Sciences' Department of Sociology, said the online communities "provide a safe forum for a modern town hall meeting."

"These are valuable communities," she said, adding that "they're really no different than communities that would have town hall meetings 30 or 40 years ago. But this is the language of this generation." Whelan is the author of *Generation WTF: Getting from "What the #S&%" to a Wise, Tenacious, and Fearless You* (Templeton Press, 2011).

Or as "pittchick122" posted April 11 on stopthepittbombthreats.blogspot.com, "my friend posted a reminder about perspective and i thought it'd be appropriate to post here... though it's (obviously) frustrating to deal with the bomb threats, shouldn't we all be thankful that there hasn't been a bomb? or that the pitt community is becoming so close that students are offering others they've never met couches to sleep at night? i don't think anyone realized the sense of community we have around us and how lucky we are to be part of such a wonderful university. just a thought :) loving on my fellow panthers. H2P!!"

with his textbook to convey anatomy and physiology concepts. For a lab session on digestive enzymes, for instance, the online program enables students to measure and separate enzymes virtually and to complete self-tests about the lab content, with feedback assessments from Dechant. While the situation isn't ideal, he says: "The students are accessing the materials, they're still engaged, they're still able to understand the content."

Dechant and other professors are also using a traditional online system called Course Web, which has been used at Pitt for nearly a decade. This platform enables faculty to post the text of lectures and lab notes, to add audio content to posted materials, to conduct online assessments of students' knowledge, and even to serve as a site for online office hours so that students can have real-time "chat room" interactions with professors, asking questions, getting feedback, or simply discussing concepts or assignments.

"The response from my students has been overwhelmingly positive," said Dechant. "They want to complete the work and finish the semester."

Student Affairs and Staff

The Division of Student Affairs, under the leadership of Vice Provost and Dean of Students Kathy Humphrey, has been busy tending students during middle-of-the-night evacuations—and parents 24/7.

About a dozen emergency-relocation response teams comprising Student Affairs staff have been formed, one of which is on always call from 9 p.m. to 6 a.m. to directly assist students required to evacuate Pitt facilities. Armed with cots, blankets, beverages, and a heartfelt concern for the students' well-being, response team members—including the "first responder"

residence hall directors—direct and accompany students and manage the evacuation sites designated by the Pitt Police. From creating quiet zones where students can study, rest, or sleep, to distributing water bottles and pretzel packets, to conducting crisis intervention counseling and almost everything in between—the response teams help students cope with an unprecedented situation. It is not uncommon for any of those nighttime teams to be accompanied by Pitt Chancellor Mark A. Nordenberg, Provost and Senior Vice Chancellor Patricia E. Beeson, or other senior University administrators, among them Pitt Athletic Director Steve Pederson and Head Football Coach Paul Chryst, all of whom are putting in evening and overnight shifts in a bid to lend a sense of stability to uncertain times.

Shawn Brooks, associate dean and director of residence life, said he's seen "shining examples of people pulling together" during the unprecedented series of threats.

Student Affairs employees also staff Pitt's call center, which was activated once residence halls became the target of security threats. The call center has received numerous calls, the majority from parents. In addition to listening compassionately and answering questions, the volunteers refer parents to Pitt's Campus Safety Update Web page, www.pitt.edu/campus-safety.html. The page features, including other information, three letters to parents and one to students that Humphrey has written since the bomb threats intensified.

Together, as usual, Pitt people are getting it done.

(Sharon S. Blake, Diane Hernon Chavis, Cynthia Gill, Cara Masset, Anthony M. Moore, and Jane-Ellen Robinet contributed to this story.)

Newsmakers

CHANCELLOR HOSTS BRITISH DELEGATION



Pitt Chancellor (and British Honorary Consul in Pittsburgh) Mark A. Nordenberg hosted a breakfast for a visiting British governmental delegation seeking information on how Pittsburgh became a model for achieving an economic renaissance. The March 29 breakfast, held in the O'Hara Student Center Ballroom, also included as guests Pittsburgh Mayor Luke Ravenstahl and members of the Allegheny Conference on Community Development, among others. Pictured are, from left, Chancellor Nordenberg, The Right Honorable Lord David Trimble, Member of Parliament (MP) Angela C. Smith, MP Christopher Pincher, and MP Derek Twigg.

4TH ANNUAL INCLUSIVE VOICES



Several Pitt alumni served as designated "conversationalists" during the 4th Annual Inclusive Voices luncheon, a signature event of the Program to Aid Citizen Enterprise (PACE), which brings together individuals from different backgrounds, fields, and disciplines to explore ideas with community leaders in various fields. PACE works with local neighborhood-based nonprofits that support African American and economically disadvantaged communities. The March 30 event was held in the Omni William Penn Grand Ballroom, Downtown. Pictured from left are Kevin L. Jenkins (SOC WK '90G), senior program officer and director of community initiatives, The Pittsburgh Foundation; Kelly Kochamba (KATZ '07), a community outreach specialist, FBI Pittsburgh Field Office; and Mario C. Browne (GSPH '05), director, Office of Health Sciences Diversity Programs, University of Pittsburgh.

NUCLEAR CONFERENCE

Pitt's Dick Thornburgh Forum for Law and Public Policy and Swanson School of Engineering cosponsored "From Its Birthplace: A Symposium on the Future of Nuclear Power" March 27-28 in the William Pitt Union Ballroom. **1.** From left, Dick Thornburgh (LAW '57)—Pitt emeritus trustee, former Pennsylvania governor, former U.S. attorney general, and former U.N. undersecretary general, and now counsel to the international law firm K&L Gates in Washington, D.C.—and Harold Denton, former director of the Nuclear Regulatory Commission's Office of Nuclear Reactor Regulation. **2.** William Magwood IV (A&S '91), commissioner of the Nuclear Regulatory Commission, addressing the audience.



C.F. REYNOLDS MEDICAL HISTORY SOCIETY

The C.F. Reynolds Medical History Society recently recognized Jonathon Erlen (third from left) for his longtime service to the organization, including his roles as financial officer, membership chair, and, for the past 20 years, the society's meetings planner. The society is one of the largest regional history-of-medicine societies in the United States. Seen, from left, are David K.C. Cooper, the society's immediate past president and a professor of surgery in the Pitt-UPMC Thomas E. Starzl Transplantation Institute; James Johnston, society president and a professor of medicine in the Renal-Electrolyte Division of the Pitt School of Medicine; Erlen, who also served as the society's honorary secretary and who is the curator of the History of Medicine Collection of the Falk Library and an adjunct assistant professor in the Kenneth P. Dietrich School of Arts and Sciences' Department of History; and Georgia Duker, society president-elect and an assistant professor in the Department of Cell Biology and Physiology in the Pitt School of Medicine. The society presented Erlen with the award he is holding and also voted to designate an annual lecture in his name.



Science & Technology

Oscillating Gel Acts Like Artificial Skin, Giving Robots Potential Ability to "Feel"

By B. Rose Huber

Sooner than later, robots may have the ability to "feel." In a paper published online March 26 in *Advanced Functional Materials*, a team of researchers from the University of Pittsburgh and the Massachusetts Institute of Technology (MIT) demonstrated that a nonoscillating gel can be resuscitated in a fashion similar to a medical cardiopulmonary resuscitation. These findings pave the way for the development of a wide range of new applications that sense mechanical stimuli and respond chemically—a natural phenomenon few materials have been able to mimic.

A team of researchers at Pitt made predictions regarding the behavior of Belousov-Zhabotinsky (BZ) gel, a material that was first fabricated in the late 1990s and shown to pulsate in the absence of any external stimuli. In fact, under certain conditions, the gel sitting in a petri dish resembles a beating heart.

Along with her colleagues, Anna Balazs, Distinguished Professor of Chemical and Petroleum Engineering in Pitt's Swanson School of Engineering, predicted that BZ gel not previously oscillating could be re-excited by mechanical pressure. The prediction was actualized by MIT researchers, who proved that chemical oscillations can be triggered by mechanically compressing the BZ gel beyond a critical stress. A video from the MIT group showing this unique behavior can be accessed at <http://vvgroup.scripts.mit.edu/WP/?p=1078>

"Think of it like human skin, which can provide signals to the brain that something on the body is deformed or hurt," says Balazs. "This gel has numerous far-reaching applications, such as artificial skin that could be sensory—a holy grail in robotics."

Balazs says the gel could serve as a small-scale pressure sensor for different vehicles or instruments to see whether they'd been bumped, providing diagnostics for the impact on surfaces. This sort of development—and materials like BZ gel—are things Balazs has been interested in since childhood.

"My mother would often tease me when I was young, saying I was

"Think of it like human skin, which can provide signals to the brain that something on the body is deformed or hurt. This gel has numerous far-reaching applications, such as artificial skin that could be sensory—a holy grail in robotics."

—Anna Balazs

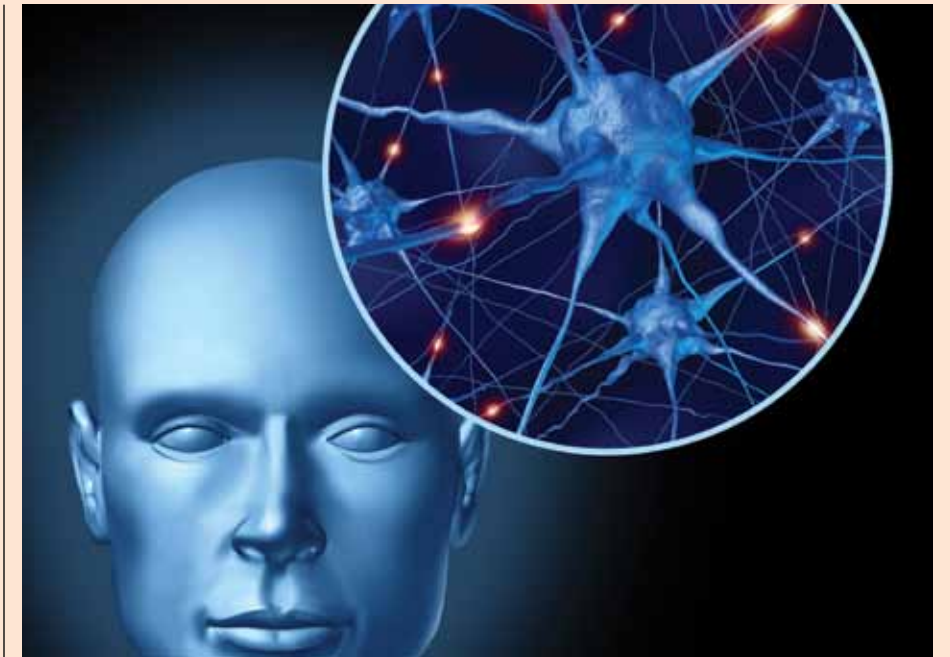


Anna Balazs

like a mimosa plant—shy and bashful," says Balazs. "As a result, I became fascinated with the plant and its unique hide-and-seek qualities—the plant leaves fold inward and droop when touched or shaken, reopening just minutes later. I knew there had to be a scientific application regarding touch, which led me to studies like this in mechanical and chemical energy."

Also on Balazs's research team were Olga Kuksenok, research associate professor, and Victor Yashin, visiting research assistant professor, both in Pitt's Swanson School of Engineering. At MIT, the work was performed by Krystyn Van Vliet, Paul M. Cook Career Development Associate Professor of Material Sciences and Engineering, and graduate student Irene Chen. (Group Web site: <http://vvgroup.scripts.mit.edu/WP/>).

Funding for this research was provided by the National Science Foundation and the U.S. Army.



Pitt Researchers Link Neural Variability to Short-Term Memory and Decision Making

B. Rose Huber

A team of University of Pittsburgh mathematicians is using computational models to better understand how the structure of neural variability relates to such functions as short-term memory and decision making. In a paper published online April 2 in *Proceedings of the National Academy of Sciences (PNAS)*, the Pitt team examines how fluctuations in brain activity can impact the dynamics of cognitive tasks.

Previous recordings of neural activity during simple cognitive tasks show a tremendous amount of trial-to-trial variability. For example, when a person was instructed to hold the same stimulus in working, or short-term, memory during two separate trials, the brain cells involved in the task showed very different activity during the two trials.

"A big challenge in neuroscience is translating variability expressed at the cellular and brain-circuit level with that in cognitive behaviors," said Brent Doiron, assistant professor of mathematics in Pitt's Kenneth P. Dietrich School of Arts and Sciences and the project's principal investigator. "It's a fact that short-term memory degrades over time. If you try to recall a stored memory, there likely will be errors, and these cognitive imperfections increase the longer that short-term memory is engaged."

Doiron explains that brain cells increase activity during short-term memory functions. But this activity randomly drifts over time as a result of stochastic (or chance) forces in the brain. This drifting is what Doiron's team is trying to better understand.

"As mathematicians, what we're really trying to do is relate the structure and dynamics of this stochastic variability of brain activity to the variability in cognitive performance," said Doiron. "Linking the variability at these two levels will give important clues about the neural mecha-

nisms that support cognition." Using a combination of statistical mechanics and nonlinear system theory, the Pitt team examined the responses of a model of a simplified memory network proposed to be operative in the prefrontal cortex. When sources of neural variability were distributed over the entire network, as opposed to only over subsections, the performance of the memory network was enhanced. This helped the Pitt team make the prediction published in *PNAS*, that brain wiring affects how neural networks contend with—and ultimately express—variability in memory and decision making.

Recently, experimental neuroscientists are getting a better understanding of how the brain is wired, and theories like those published in *PNAS* by Doiron's group give a context for their findings within a cognitive framework. The Doiron group plans to apply the general principle of linking brain circuitry to neural variability in a variety of sensory, motor, and memory/decision-making frameworks.

Two Pitt students participated in Doiron's research: Amber Polk (A&S '11), an undergraduate at the time the research took place and now a law student at the University of Illinois, and Ashok Litwin-Kumar, a neural computational PhD candidate with the Center for the Neural Basis of Cognition, a partnership of the University of Pittsburgh and Carnegie Mellon University.

Funding for this research was provided by the National Science Foundation and Sloan Foundations. For more information on Doiron's lab, visit www.math.pitt.edu/~bdoiron/Welcome.html.



Brent Doiron

Happenings



African Music and Dance Ensemble,
Bellefield Hall Auditorium,
April 20

Concerts

Graduate Student Composers Concert, with IonSound Project, Pitt's ensemble-in-residence, performing new music by Pitt's graduate student composers, 8 p.m. **April 16**, free, Bellefield Hall Auditorium, Pitt Department of Music, 412-624-4125.

Cory Weeds Quartet With Joey DeFrancesco, Grammy-nominated saxophonist Weeds with Hammond B-3 jazz organist Joey DeFrancesco, 9 p.m. **April 17**, Cabaret at Theater Square, 655 Penn Ave., Downtown, BNY Mellon JazzLive, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org.

University of Pittsburgh Symphony Orchestra performing Dvorak's *Symphony No. 7 in D Minor*, 8 p.m. **April 18**, free, Bellefield Hall Auditorium, Pitt Department of Music, www.music.pitt.edu.

Masters of the Celtic Harp, featuring Granne Hambly and William Jackson, two of the foremost harpists of Ireland and Scotland, 7:30 p.m. **April 19**, Pittsburgh Center for the Arts, 6300 Fifth Ave., Shadyside, Roots Celler Series, Calliope: The Pittsburgh Folk Music Society, www.calliopehouse.org/legends.htm, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

2012 Pitt Jazz Ensemble Concert, annual spring performance, 8 p.m. **April 19**, William Pitt Union Assembly Room, Pitt Department of Music, www.music.pitt.edu.

African Music and Dance Ensemble, annual spring concert, 8 p.m. **April 20**, Pitt students free with ID, Bellefield Hall Auditorium, Pitt Department of Music, 412-394-3353, www.proartstickets.org.

The Romance of Classical Music, Gianandrea Noseda conducting orchestral portions of Berlioz' *Romeo and Juliet* and Brahms' Piano Concerto No. 2 with soloist Nicholas Angelich, **April 20-22**, Heinz Hall, 600 Penn Ave., Downtown, BNY Mellon Grand Classics, Pittsburgh Symphony Orchestra, 412-392-4900,

www.pittsburghsymphony.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Imagination Movers in Concert! Rock-O-Matic 2012, described as "high-octane rock concert for entire family," 3 p.m. and 6 p.m. **April 21**, Benedum Center, 237 7th St., Downtown, Cohen & Grigsby Trust Presents Series, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org.

Chris Norman and David Greenberg, Celtic and North American folk music with some Baroque tunes, 8 p.m. **April 21**, Synod Hall, 125 N. Craig St., Oakland, Renaissance & Baroque, 412-361-2048, www.rbsp.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Pittsburgh Jazz Orchestra NEA Jazz Masters, Benny Golson, jazz saxophonist, 8 p.m. **April 21**, August Wilson Center for African American Culture,



Cory Weeds Quartet with Joey DeFrancesco,
Cabaret at Theater Square,
April 17

980 Liberty Ave., Downtown, August Wilson Center, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Pitt Men's Glee Club performing a program of classical, folk, and popular music, 8 p.m. **April 21**, Pitt students free with ID, First Baptist Church of Pittsburgh, 159 N. Bellefield Ave., Oakland, Pitt Department of Music, 412-394-3353, www.proartstickets.org.

Pitt Women's Choral Ensemble performing a program of classical, popular, and folk music, 3 p.m. **April 22**, free, Heinz Chapel, Pitt Department of Music, www.music.pitt.edu.

Ascension Day Evensong, featuring The Oberlin Collegium Musicum, 5 p.m. **April 22**, Calvary Episcopal Church, 315 Shady Ave., Shadyside, Music at Calvary, Calvary Episcopal Church, www.calvarypgh.org.

The Magic of Paris, Gianandrea Noseda conducting a program of works by Respighi, Debussy, and Falla, **April 27-29**, Heinz Hall, 600 Penn Ave., Downtown, BNY Mellon Grand Classics, Pittsburgh Symphony Orchestra, 412-392-4900, www.pittsburghsymphony.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Christopher Houlihan, organist, 4 p.m. **April 29**, Saint Bernard Church, 311 Washington Rd., Mt. Lebanon, Organ Artists Series, Saint Bernard Church, www.oas-series.com.

The Priests in Concert, a singing trio of platinum recording artists, three priests from Northern Ireland leading a classical music ensemble, 7:30 p.m. **April 29**, Byham Theater, 101 Sixth St., Downtown, Cohen & Grigsby Trust Presents Series, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

tion, **through May 13**; *Henri Matisse: The Thousand and One Nights*, multi-panel, painted paper cut-out, created when the artist was 81 and confined to his bed, **through July 15**; *Hand Made: Contemporary Craft in Ceramic, Glass, and Wood*, **ongoing**, 4400 Forbes Ave., Oakland, 412-622-3131, www.cmoa.org.

The Warhol, *About Face*, a series of three-dimensional large-format portraits by photographer Anne Svenson; *Warhol and Cars: American Icons*, examining Warhol's enduring fascination with automobiles as products of American consumer society, both **through May 13**; *I Just Want to Watch: Warhol's Film, Video, and Television*, **ongoing**, 117 Sandusky St., North Side, 412-237-8300, www.warhol.org.

Hillman Library, an exhibition of first editions and significant works of famed novelist Charles Dickens, **through May 1**, Room 363; *Pitt—225 Years of Building Better Lives—1787-2012*, exhibition of vintage photographs, maps, and copies of front pages of Pitt's two original state charters, on loan from Pennsylvania's state archives, **through May 18**, ground floor; also on display in glass Audubon case are actual front pages of Pitt's original state charters, University's 225th anniversary commemoration, **through May 18**, 412-953-3298, jeannan@pitt.edu.

The Frick Art & Historical Center, *Draw Me a Story: A Century of Children's Book Illustration*, survey of drawing styles and techniques spanning more than 100 years, including watercolors, pen drawings, and experimental combinations from artists like Randolph Caldecott, Chris van Allsburg, Ernest Shepard, and Maurice Sendak, **through May 20**, 7227 Reynolds St., Point Breeze, 412-371-0600, www.thefrickpittsburgh.org.

August Wilson Center for African American Culture, *Josh Gibson: Negro League Legend*, features a 100-year timeline and photographs of the life of Negro League baseball player Josh Gibson and his continuing legacy, **through June 30**; *Strength in the Struggle: Civil Rights* featuring two distinct displays with text, photography, memorabilia, and film related to the civil rights movement and women's movement in Pittsburgh and the nation from 1967 to 1987, **through June 30**, 980 Liberty Ave., Downtown, 412-258-2700, www.augustwilsoncenter.org.

Hunt Institute for Botanical Documentation, *Native Pennsylvania, A Wildflower Walk*, collaborative exhibition between Hunt Institute and Carnegie Museum of Natural History, **through June 29**, 5th floor, Hunt Library, Carnegie Mellon, 4909 Frew St., Oakland, 412-268-2434, http://huntbot.andrew.cmu.edu.

Exhibitions

Frick Fine Arts Building, *Pitt Studio Arts Student Exhibition*, featuring creative works by graduating seniors alongside pieces by Studio Arts majors and nonmajors, **through April 28**, www.studioarts.pitt.edu.

Carnegie Museum of Art, *Duncan Campbell*, filmic portraits, each unraveling historical narrative through one protagonist, **beginning April 28**; *Maya Lin*, recreations of natural forms transformed into objects of contemplation, **through May 13**, 412-622-3131, www.cmu.edu.



University of Pittsburgh Graduate Student Composers Concert

IonSoundProject

Graduate Student Composers Concert,
Bellefield Hall Auditorium,
April 16



Allaria officinalis, Garlic mustard (*Allaria petiolata* (M. Bieberstein) Cavara & Grande, garlic mustard, Brassicaceae (mustard family)), watercolor on paper by Richard Crist (1909-1985), HI Art accession no. 6615.226. © 2012 Richard Crist Estate, All Rights Reserved Hunt Institute for Botanical Documentation Carnegie Mellon University Pittsburgh, PA 15213-3890

Hunt Institute for Botanical Documentation, *Native Pennsylvania, A Wildflower Walk*, **through June 29**

Carnegie Museum of Natural History, *Warhol's Cats and Dogs Series*, **through June 30**; *M is for Museum*, **through Aug. 30**, 4400 Forbes Ave., Oakland, 412-622-3131, cmnhweb@carnegiemnh.org.

Lectures/Seminars/Readings

"Renormalization, Course-Graining, and the Fragile Individual," Simon DeDeo, Omidyar Fellow, Santa Fe Institute, 12:05 p.m. **April 17**, 817R Cathedral of Learning, Luncheon Talk Series, Center for Philosophy of Science, 412-624-1052, www.pitt.edu/~pittctr.

"Entrepreneurship: Connecting Students, Researchers, and Managers," Dennis P. Slevin, Tom W. Olofson Chair in Entrepreneurial Studies, Katz Graduate School of Business, 4:30 p.m. **April 17**, Provost's Inaugural Lecture Series, 2500 Posvar Hall.

"The Invention of Latin America: A Transnational History of Anti-Imperialism, Democracy, and Race," Michel Gobat, associate professor, University of Iowa's Department of History, 2 p.m. **April 18**, 602 Cathedral of Learning, Pitt Humanities Center, www.humcenter.pitt.edu/events/announcements.php, humctr@pitt.edu.

"Addressing Obesity in Black Communities: Is Food Justice the Answer?" Monica Baskin, assistant professor, School of Public Health, University of Alabama at Birmingham, noon to 1:30 p.m. **April 19**, Pittsburgh Athletic Association, 4215 Fifth Ave., Oakland, Pitt Center on Race and Social Problems' Reed Smith Spring 2012 Speaker Series, 412-624-6337.

"Online Collaboration: Creative and Civil," Amy Bruckman, associate professor, Georgia Institute of Technology's School of Interactive Computing, 1:30 p.m. **April 20**, 403 Information Sciences Building, iSchool Colloquium Series, Pitt School of Information Sciences, www.ischool.pitt.edu/colloquia/sis-series.php.

"Breaking the Glass Ceiling," Lise D. Vesterlund, Andrew W. Mellon Chair in Economics, Kenneth P. Dietrich School of Arts and Sciences, 4:30 p.m. **April 26**, Provost's Inaugural Lecture Series, 2500 Posvar Hall.

Tom Brokaw, renowned television journalist, 8 p.m. **April 26**, Heinz Hall, 600 Penn Ave., Downtown, Pittsburgh Speakers Series, Robert Morris University, www.pittsburghspeakersseries.org.

"Natural Goals of Action in Aristotle," Hendrik Lorenz, associate professor, Department of Philosophy, Princeton University, 2 p.m. **April 27**, 244B Cathedral of Learning, Pitt Department of Classics, www.classics.pitt.edu/classics-philosophy.

Miscellaneous

National Geographic Live: A Camera, Two Kids, and a Camel, illustrated photographic journey based on memoir of Annie Griffiths, one of *National Geographic's* first female staff photographers, 4 p.m. **April 22**, Byham Theater, 101 Sixth St., Downtown, Cohen & Grigsby Trust Presents Series, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

TIES Informational Luncheon for Researchers and Research Assistants, talk on Text Information Extraction System (TIES), Rebecca Crowley, director, Department of Biomedical Informatics Graduate Training Program, Pitt School of Medicine, 11 a.m. **April 23**, Magee-Women's Hospital, Conference Room CR2131, open to Pitt and UPMC faculty, staff, and students, registration required, http://ties.upmc.com/register/index.html, 412-623-7833.

Gallery Crawl in the Cultural District, free quarterly showcase of art and entertainment in the heart of the Cultural District, **April 27**, throughout the Cultural District, Downtown, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org.

The Frankly Scarlett Comedy Hour, all-female comedy act, 10:30 p.m. **April 28**, Cabaret at Theater Square, 655 Penn Ave., Downtown, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org.

Opera/Theater/Dance

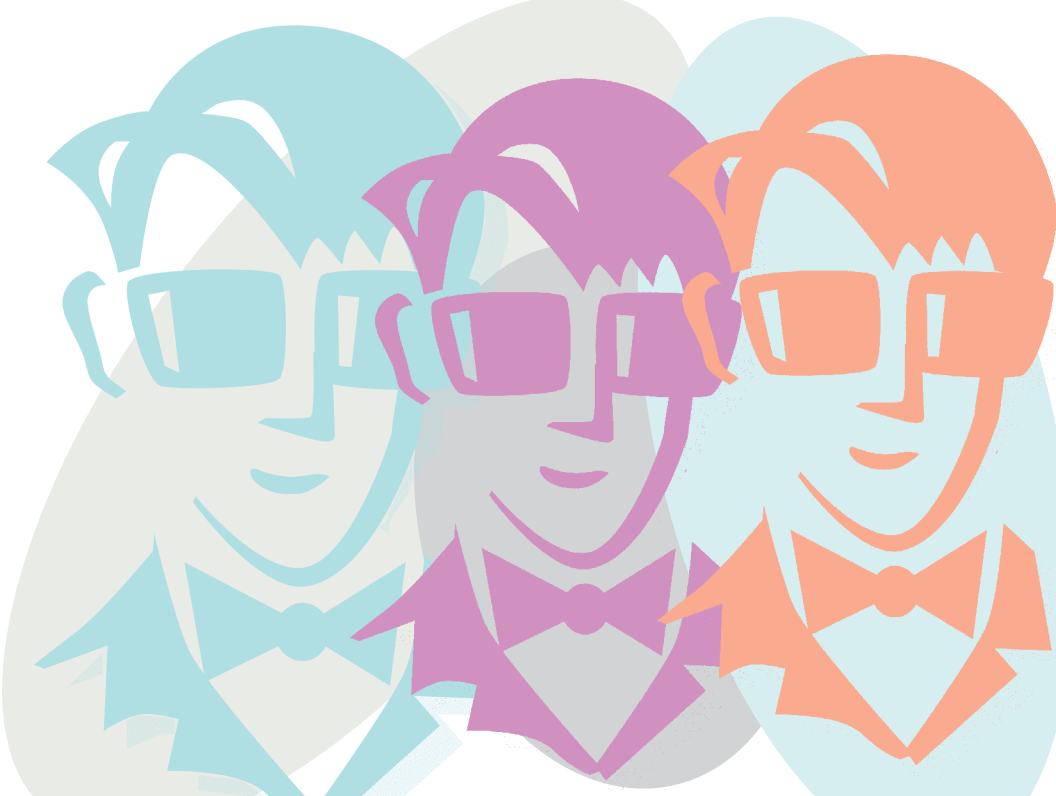
In The Next Room by Sarah Ruhl, Victorian physician Dr. Givings treats "female hysteria" patients with a new electric invention, while in the next room his wife yearns for what's missing in their marriage, **April 19-May 5**, Stephen Foster Memorial, Pittsburgh Irish & Classical Theatre, 412-561-6000, www.pitttheatre.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

The Electric Baby by Stephanie Zadravec, the title character's tale of urban folklore connecting his Romanian mother and his Nigerian father with colorful Americans in Pittsburgh, **through April 22**, The Waldorf School, 201 S. Winebiddle St., Bloomfield, Quantum Theatre, 412-362-1713, www.quantumtheatre.com, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Lily Tomlin, Emmy-, Tony-, and Grammy Award-winning actor-comedian, 7:30 p.m. **April 25**, Byham Theater, 101 Sixth St., Downtown, Cohen & Grigsby Trust Presents Series, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org.

JacobTV "The News," video-opera, synthesizing speech, grooves, live music, and video, remixed from international media footage, 9 p.m. **April 27**, Byham Theater, 101 Sixth St., Downtown, Cohen & Grigsby Trust Presents Series, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

The Abduction From the Seraglio, Mozart opera about the adventures of a



Pitt Men's Glee Club,
First Baptist Church of Pittsburgh,
April 21

young Spanish nobleman, his lover, and their servants who are kidnapped and placed into a Pasha's service, **April 28, May 1, 4, and 6**, Benedum Center, 237 7th St., Downtown, Pittsburgh Opera, 412-281-0912, www.pittsburghopera.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Lars Lubovitch Dance Company, acclaimed modern dance company, 8 p.m. **April 28**, Byham Theater, 101 Sixth St., Downtown, Pittsburgh Dance Council, Pittsburgh Cultural Trust, 412-456-6666, www.trustarts.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Ruthless! The Musical, featuring crazy antics of a homicidal eight-year-old aspiring actress, **through May 6**, CLO Cabaret, 655 Penn Ave., Downtown, Pittsburgh CLO Cabaret, www.pittsburghclo.org, 412-325-6766, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Around the World in 80 Days, classic Jules Verne novel brought to theatrical life, **through May 13**, O'Reilly Theater, 621 Penn Ave., Downtown, Pittsburgh Public Theater, 412-316-1600, www.ppt.org, PITT ARTS Cheap Seats, 412-624-4498, www.pittarts.pitt.edu.

Chi Song, Graduate School of Public Health's Department of Biostatistics, "Hypothesis Settings and Methods for Genomic Meta-analysis, 10:30 a.m. **April 16**, 309B Parran Hall.

Leekyoung Hwang, Dietrich School of Arts and Science's Department of Chem-

istry, "Development and Mechanistic Study of a Peptide-Based Methodology for the Preparation of Nanoparticle Superstructures," 10 a.m. **April 17**, 307 Eberly Hall.

Di Mo, School of Medicine's Program in Integrative Molecular Biology, "Endolyn Sorting and Function During Kidney Development," 2 p.m. **April 17**, LHAS Auditorium, 7th Floor, UPMC Montefiore Hospital.

Eun Kyung Lee, School of Education's Department of Administrative and Policy Studies, "Higher Education Expansion and Economic Growth in Japan and Korea," 1:30 p.m. **April 19**, 4321 Posvar Hall.

Pei-sui Luk, Dietrich School's Department of Linguistics, "Transitive and Intransitive Constructions in Japanese and English: A Priming Experiment," 10 a.m. **April 24**, 2809 Cathedral of Learning.

Abigail I. Wald, School of Medicine's Molecular Virology and Microbiology Graduate Program, "Role of microRNA-363 in Human Papillomavirus-Associated Squamous Cell Carcinoma of the Head and Neck," 4:30 p.m. **April 24**, 503 Bridgeside Point II.



Lily Tomlin,
Byham Theater,
April 25



Carnegie Museum of Art,
German Porcelain Service, Permanent Collection,
ongoing

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Pitt Jazz Ensemble's Annual Spring Concert April 19 to Feature International Guest Artists Jimmy Owens, Curtis Fuller

By Sharon S. Blake

The Pitt Jazz Ensemble—a student ensemble comprising nearly 30 musicians—will hold its annual spring concert at 8 p.m. April 19 in the Assembly Room of the William Pitt Union.

Featured guest performers will include legendary trumpeter Jimmy Owens and renowned jazz trombonist Curtis Fuller, both of whom have been frequent guests at Pitt's annual fall Jazz Seminar and Concert. Accompanying Owens and Fuller will be Pittsburgh-area musicians Tony Depaolis (bass), Greg Humphries (drums), Alton Merrell (piano), and Cecil Washington (Latin percussion.)

Concert tickets are \$10 general admission and \$5 for students and are available at the WPU box office or at the door the night of the concert. They can also be purchased from ensemble musicians. For more information, call 412-624-4187.

The Pitt Jazz Ensemble will perform under the direction of interim ensemble director Ralph Guzzi. The group has played at the Montreux Jazz Festival in Switzerland and has toured the southern United States and Trinidad. Since 1990, the ensemble annually spends two weeks in residence in Jamaica, touring area schools and performing at community festivals.

Jazz trumpeter, composer, and educator Jimmy Owens began studying the horn at a young age under Donald Byrd; by the time he was 15, he was sitting in with trumpet legend Miles Davis and playing with the Newport Youth Band. Over the years, he performed with Lionel Hampton, Duke Ellington, Hank Crawford, Count Basie, Herbie Mann, and many others. In the 1960s, he was a member of the New York Jazz Sextet.

His experience covers a wide range of international musical achievements, which include extensive work as a studio musician,



Jimmy Owens (above) and Curtis Fuller

soloist, bandleader, and composer of orchestral compositions and film scores.

Owens received a master's degree in education from the University of Massachusetts. He is an active member of the jazz education community and sits on the board of the Jazz Foundation of America. In 1990, he helped establish the Jazz Musicians' Emergency Fund, which provides musicians in need with medical, financial, and housing assistance.

The Pitt Jazz Ensemble will perform under the direction of interim ensemble director Ralph Guzzi. The group has played at the Montreux Jazz Festival in Switzerland and has toured the southern United States and Trinidad.

Curtis Fuller, who was born and raised in Detroit, picked up the trombone at age 16. Soon, he was playing in a U.S. Army Band led by Cannonball Adderly. When he returned from the service in 1955, he settled in New York City, where word about his unique style and sound spread quickly. A month later, in his early 20s, he recorded his first album as a leader. He performed with Miles Davis, Jimmy Smith, and Bud Powell, and then recorded the celebrated *Blue Train* album with jazz legend John Coltrane. After only eight months in New York City, Curtis had recorded six albums as a leader and was featured on 15 others. He was an original member of the Art Farmer-Benny Golson Jazztet, and his career included stints with Dizzy Gillespie, Lester Young, James Moody, and Quincy Jones. But it was with Art Blakey and the Jazz Messengers that Curtis would reach the pinnacle of his career, contributing *A La Mode* and several other classics to the band's repertoire.

With his legacy as one of the most influential trombonists in jazz well established, Curtis spent the following years performing with jazz greats Count Basie and Jimmy Heath, among many others.

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PUBLICATION NOTICE The next edition of *Pitt Chronicle* will be published April 29. Items for publication in the newspaper's *Happenings* calendar (See pages 6-7) should be received at least two weeks prior to the event date. *Happenings* items should include the following information: title of the event, name and title of speaker(s), date, time, location, sponsor(s), and a phone number and Web site for additional information. Items may be e-mailed to chron@pitt.edu, or sent by campus mail to 422 Craig Hall. For more information, call 412-624-1033 or e-mail robinet@pitt.edu.