



the PIPER

CMU'S NEWS SOURCE FOR FACULTY & STAFF

11/11 ISSUE

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Trustee Opens Innovators Forum

■ Abby Ross

Jonathan Rothberg (E '85) has innovation on his mind.

Earlier this month, Rothberg returned to Carnegie Mellon as the first guest of The Innovators Forum, an exciting new series connecting the world's top innovative minds with the university community. Led by Provost and Executive Vice President Mark Kamlet, the conversation with Rothberg spanned topics ranging from his entrepreneurial roots to his innovative work in biotechnology and the "computer programming language of life."

In the last 20 years, Rothberg has founded several companies that sequence DNA and stand to reshape the fields of medicine, agriculture, nanotechnology and alternative fuels. His latest, Ion Torrent, combines genetic biology with integrated chip technology. His

CONTINUED ON PAGE THREE

Face Time With Facebook



PHOTO BY TIM KAULEN

MARK ZUCKERBERG VISITED CMU FOR THE FIRST TIME ON NOV. 8.

Facebook founder and CEO Mark Zuckerberg visited CMU's Pittsburgh campus to recruit students for internships and jobs on Tuesday, Nov. 8. During his visit, he spoke to about 1,000 faculty, staff and students in Wiegand Gymnasium. All of the tickets for the free event were reserved within 30 minutes of being available.

In a press briefing, Zuckerberg said CMU was at the "top of the list" of colleges he wanted to visit. "We have a lot of Carnegie Mellon alums at Facebook and a lot of them are actually our best engineers.... They're really smart and have a really good work ethic," he said.

School of Computer Science

Dean Randal E. Bryant said 57 CMU alumni work for Facebook. He said CMU graduates stand out because they know the basic principles and the practice. "When they show up on the job, they're ready to get going. They also have a deep understanding that continues (with) them through their whole career," he said.

MEMORIES FROM HOME

PHOTO BY JAMES DAVID WHITE



A team from the Entertainment Technology Center traveled to the childhood home of the late Randy Pausch in Columbia, Md., to preserve the artwork on his bedroom walls made famous by his last lecture. See photos and read more on page twelve.

Scientists Reengineer Plants in War on Hunger

■ Chriss Swaney

CMU researchers are taking a scientific approach to combat the malnutrition in Africa.

Phil LeDuc, a professor of mechanical engineering, and Mary Beth Wilson, a Ph.D. candidate in biomedical engineering, won a Grand Challenges Explorations Award from the Bill & Melinda Gates Foundation to explore nutrition for healthy growth of infants and children in underdeveloped countries.

"What we are doing is studying how to alter a plant's cellular and molecular structures to optimize release of nutrients during digestion," said LeDuc, who has courtesy appointments in the Biomedical Engineering, Biological Sciences and Computational Biology

departments. "The idea originated when we became interested in how structural mechanics affect the taste of food. We built off this idea in thinking about how we could apply it in an innovative and meaningful way to tackle global challenges especially for the health of

children in poor regions of the world."

Both LeDuc and Wilson believe that generating widespread acceptance and consumption of nutrient rich plants like African leafy vegetables could significantly improve infant and child nutrition

CONTINUED ON PAGE NINE

Location, Location, Location

Q&A WITH NORMAN SADEH ON HOW TECHNOLOGY AFFECTS YOUR PRIVACY



PHOTO BY TIM KAULEN

NORMAN SADEH

■ Byron Spice

The U.S. Supreme Court is reviewing a case, U.S. v. Jones, that raises important questions about the government's use of GPS technology to monitor the movements of people. In this case, the government argues that it was not required to obtain a warrant before using GPS to track a suspected drug dealer.

But Professor Norman Sadeh, along with other technology experts, has filed an amicus brief, contending that this warrantless use of GPS violates the Fourth Amendment. Sadeh, director of CMU's Mobile Commerce Laboratory and co-director of the School of Computer Science's Ph.D. Program in Computation, Organizations and Society, talked to the Piper about the ways GPS tracking is more invasive than other surveillance technologies that have been legally used without warrants.

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Inquiries concerning application of these statements should be directed to the Provost, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-6684 or the Vice President for Campus Affairs, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-2057.

Carnegie Mellon University publishes an annual campus security report describing the university's security, alcohol and drug, and sexual assault policies and containing statistics about the number and type of crimes committed on the campus during the preceding three years. You can obtain a copy by contacting the Carnegie Mellon Police Department at 412-268-2323. The security report is available through the World Wide Web at www.cmu.edu/police/. Obtain general information about Carnegie Mellon University by calling 412-268-2000.

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GPS is commonplace today in our cars, smartphones and other devices. Why should this not be a routine tool available to law enforcement?

The issue we are talking about is whether it should be available to law enforcement without any warrant. It amounts to saying the police can decide whether they would want to put the GPS unit under a car without the knowledge of the owner of that car or without authorization from a judge.

If you look at the cost of this technology and its progress, and if you take it to the extreme, you could have a GPS unit under every car and police could start tracking us at any point in time.

How does GPS differ from other technologies that law enforcement has used in the past without warrants?

For a long time police have been able to tail suspects and decide if they were seeing something that warranted more investigation. In the '70s, they started relying more on technology that made it possible to potentially tail people from as far as a mile or two.

With GPS, we are looking at the opportunity to scale. You don't need to follow the car anymore, you can just install as many units as you want and have all this information imported back to your computer.

You also have the ability to store this data in a format that can be easily analyzed across large numbers of people and to recoup information with data

mining that would enable you to uncover all sorts of things beyond what could be done with the old technologies.

Do police routinely get warrants for this sort of GPS use?

It's clear that the police have requested warrants to track vehicles, and they have done that selectively.

In this particular case, what's so interesting is that the police did obtain a warrant. That warrant expired at the time they installed the device. When they tried to use the evidence that they had collected, it was noticed that the warrant had expired. Under the Fourth Amendment, without a proper warrant, one would expect the evidence to then be excluded.

The police claimed however that they don't really need a warrant to use this device, which is really an interesting contradiction, given that they had requested one.

If the Supreme Court determines they don't need a warrant, then we are looking at the prospect of potentially all of us having GPS units under our car without our knowledge. Data mining is extremely powerful. Research at Carnegie Mellon has shown how much you can infer by looking at someone's whereabouts.

What can you infer?

If you look at individuals' whereabouts, you can infer which church they are going to, what ailments they might have based on the hospitals they visit, whether they are potentially cheating on their spouse — a lot of very sensitive information.

Someone's location is very much considered personally identifiable information, and it's been identified as sensitive for a very, very long time. What's more interesting is that when you start using location information across populations of people, you can identify social relationships between people. Not too long ago, we published a paper showing that we could do this with a very high level of accuracy.

Many of us carry around GPS units with our phones. If people are able to tap into that sort of information, what might they learn?

Quite a lot. And this is not hypothetical.

About six months ago, an incident that made headlines was that Apple had been collecting location information from people with iPhones. Collecting the information was in line with their recently changed privacy policy. But what was unacceptable was this data was unencrypted on the cell phone. That meant that essentially anyone who had knowledge of that file on the phone would be able to access it. That

included anyone interested in exploiting this information potentially with malicious intent. Think jealous husbands, paranoid employers or criminals.

A very fundamental notion when it comes to information privacy is that obviously information has to at least be secure.

When you look at the technologies available today, for instance on our cell phones, it's clear that organizations are collecting this information. New mobile application development environments such as those offered by Android and Apple have resulted in the launch of tens of thousands of mobile apps that access our location. It's something that people don't fully realize. Until recently "Angry Bird" was requesting your location! This information is then often shared with advertising networks. We've been conducting interviews with people to understand to what extent they were aware of collection practices and to see how they felt about it. People tend to express surprise.

Do we need better laws, regulation or understanding of the problem?

A fundamental principle of information privacy is that data subjects should have adequate control over the information collected about them. The fact that people are expressing surprise about the information collected about them strongly suggests that current practices and interfaces are inadequate.

There's an ongoing debate about whether industry can self-regulate or whether the government has to step in. There are various proposals under consideration in Congress and elsewhere specifically on location privacy. This is really one of those areas where privacy has significantly eroded over the past three years.

Three years ago, there were very few apps using your location. The advent of the AppStore and the Android Marketplace have made it very easy today for application developers — who don't necessarily need it — to start collecting location information. For them, the appeal is location-based advertising, the ability to make more money by having access to your location.

People are giving away location information left and right — without their knowledge — and what that means from a commercial standpoint is that all kinds of things could happen that consumers may not expect.

From a government perspective, it means all of this data is stored somewhere, and nothing prevents government from subpoenaing it. Again, that's not something that people fully realize.

Intel Celebrates New Centers at CMU

■ Chriss Swaney

Intel and Carnegie Mellon recently celebrated the opening of two new Intel Science and Research Centers (ISTC) based at CMU that will focus on cloud and embedded computing.

Gregory Ganger and Priya Narasimhan will head the centers. Ganger, the Stephen J. Jatrass Professor of Electrical and Computer Engineering, is a co-PI of the ISTC for Cloud Computing along with Phil Gibbons, an Intel research scientist and an adjunct professor in computer science. Narasimhan, associate professor of electrical and computer engineering and director of Carnegie Mellon's Mobility Research Center, is a co-PI of the ISTC for Embedded Computing along with Mei Chen, senior research scientist at Intel.

"These new ISTCs are expected to open amazing possibilities," said Justin Rattner, Intel chief technology officer. "Imagine, for example, future cars



MEI CHEN, SENIOR RESEARCH SCIENTIST AT INTEL, IS A CO-PI OF THE NEW INTEL SCIENCE AND RESEARCH CENTER FOR EMBEDDED COMPUTING AT CMU.

equipped with embedded sensors and microprocessors to constantly collect and analyze traffic and weather data. That information could be analyzed and

shared in the cloud so that drivers could be provided with suggestions for quicker and safer routes."

Each center involves multiple universities and will receive \$15 million over the next five years. CMU is the only university to be the home site for two ISTCs. Intel and CMU have had more than 40 years of collaboration.

"The ISTCs at Carnegie Mellon are poised for success as they bring top researchers from Carnegie Mellon and many other top research institutions together with Intel Labs and Intel business unit personnel to ensure that projects meet top academic rigor, but are also well positioned to have a broad societal impact as they are streamlined into Intel's product pipeline," said CMU President Jared L. Cohon.

The ISTC for Cloud Computing forms a new research community that broadens Intel's "Cloud 2015" vision with new ideas from top academic

researchers. In addition to CMU, the center includes researchers from the Georgia Institute of Technology, the University of California at Berkeley, Princeton University and Intel. Researchers will explore technology that will have important implications for the cloud from more efficient and effective support of big data analysis to making the cloud more distributed and localized by extending cloud capabilities to the network and client devices.

The ISTC for Embedded Systems forms a new collaborative community to drive research to transform experiences in the home, car and retail environment of the future. In addition to CMU, this center incorporates the expertise of researchers from Cornell University, the University of Illinois at Urbana Champaign, the University of Pennsylvania, Penn State University, the Georgia Institute of Technology, the University of California at Berkeley and Intel.



Trustee Discusses Innovation

CONTINUED FROM PAGE ONE

Personal Genome Machine — named by Science magazine as one of the top 10 breakthroughs of 2008 — is leading to revolutionary discoveries that could one day allow doctors to provide medications personalized to each individual's unique genomic make-up.

WATCH THE INNOVATORS FORUM ONLINE AT: WWW.YOUTUBE.COM/WATCH?v=0N31HNDW-Zk

Rothberg noted that while he has followed in the entrepreneurial footsteps of his father, a chemical engineer who founded Laticrete, it was CMU's interdisciplinary mix that really set him apart.

"I came to Carnegie Mellon, and while I studied chemical engineering, I loved computer science, the cognitive psychology that was going on at the time, and biomedical engineering. So, it was both in my DNA, and then, at Carnegie Mellon, I first started to think about DNA sequencing."

His student days are over, but Rothberg, a member of CMU's Board of Trustees as a life trustee, is still making his mark on the university. This past summer he established and awarded seven Rothberg Research Awards in Human Brain Imaging to allow CMU faculty, post-doctoral researchers and students to push research to further investigate how the brain thinks, learns and ages. He is currently working with Michael Tarr, co-director of the Center for the Neural

Basis of Cognition, and Nathan Urban, head of the Department of Biological Sciences, to bring a conference on imaging to campus early next year.

He also fuels innovative minds through caffeine at Rothberg's Roasters, a coffee corner named for him, in the Maggie Murph Café.

Future editions of The Innovators Forum will continue to host "big thinkers" such as Rothberg. The series is supported by Greenlighting Startups, an initiative that highlights the network of campus resources designed to foster the organic growth of company creation at CMU.



JONATHAN ROTHBERG (E'85) SAID HE FIRST STARTED TO THINK ABOUT DNA SEQUENCING AS A STUDENT AT CMU. READ MORE ABOUT ROTHBERG IN THE JANUARY 2012 ISSUE OF CARNEGIE MELLON TODAY.

\$1 BILLION

\$957.8M
11/1/2011

we
inspire
innovation.
THE CAMPAIGN FOR CARNEGIE MELLON UNIVERSITY

WE ARE MAKING A DIFFERENCE. CARNEGIE MELLON UNIVERSITY IS ON TRACK TO REACH THE \$1 BILLION GOAL OF THE INSPIRE INNOVATION CAMPAIGN. THANKS IN PART TO THE SUPPORT OF THE CMU COMMUNITY, THE UNIVERSITY IS IN THE HOMESTRETCH TO ACHIEVE THIS HISTORIC MILESTONE. VISIT CMU.EDU/CAMPAIGN FOR THE LATEST CAMPAIGN NEWS AND PROGRESS, OR TO MAKE A GIFT TODAY. PROGRESS SINCE JUNE 1, 2011: \$243,701,121.

Veteran's Vision

CARNEGIE MELLON ROTC OFFICER SALUTES FALLEN HEROES

■ Heidi Opdyke

Marine Lt. Col. Stephen Beck has a story to share.

Hundreds of them, unfortunately.

Beck, who joined CMU in 2010, is the executive officer of the Naval ROTC program for Carnegie Mellon, Duquesne University and the University of Pittsburgh and is an associate professor of Naval Science. He wants people to know about the lives of military personnel who are killed during battle.

"A salute to your fallen comrade should take time," is something he told his Marines.

For two years he worked as a casualty assistance calls officer. He knocked on doors and had the mission of sharing news of a soldier's death with family members.

VETERANS AT CMU

10 undergraduate students

41 graduate students

11 faculty members

90 staff members

Jonathan Carreon, a junior engineering major, created a poster recognizing CMU community members who are veterans. Carreon served in the Navy. View the poster at www.cmu.edu/piper.

He approached his mission with an idea similar to that of the Hippocratic oath, "First do no harm."

"Understanding and coming to terms with the death of a loved one is very difficult and it comes in slices of reality that hit you at different, often



unexpected moments," Beck said. "These slices of reality come over time and with the help and support from others, they eventually help you form an understanding through the pictures revealed to you in your mind and the feelings revealed to you in your heart.

"Even language that you use can make a huge difference when talking to a father or a mother and what you would say to them."

His work was the subject of a Pulitzer Prize-winning story in 2006. Jim Sheeler of the now-defunct Rocky Mountain News, followed Beck and his battalion as they worked with families reeling from the loss of a loved one. Sheeler is now a journalism professor at Case Western Reserve University in Cleveland.

"He really was an advocate for the families, and in the circumstances where I saw him, they came first. There was no question of 'can I make this happen.'

It was 'how do I make this happen?'" Sheeler said. "He felt that he needed to take care of them. In many ways I saw that he was still taking care of them."

Officially his billet has ended, but he continues to stay in touch with the people whose lives touched him.

Since then, Beck has worked to find meaningful ways to preserve the memories of service members and honor their families. In 2004, Betty Welke, mother of the late Marine Lance Cpl. Joe Welke, asked him if there was something she could do to help other families.

"I'm not used to saying 'no' to Gold Star mothers," Beck said, referring to a term given to mothers and widows of military personnel who die during war.

In response, he founded Remembering the Brave, rememberingthebrave.org, with the goal of remembering heroes.

He works with his group of volunteers during nights, weekends and during periods of leave.

"Their stories deserve to be told. If we don't listen, these stories of heroism will be lost to future generations," Beck said.

The group shares the stories in several ways. An annual ceremony allows families to meet Marines and service members from all the branches, who served with fallen soldiers. They listen to detailed stories of their final moments, and the families are presented with the medals and citations due to the person killed. The black-tie ceremonies that rely on donations have occurred in Colorado, D.C. and California. Next year the plans are to be in Orlando, but in the future, he wants to do one in Pittsburgh.

"The costs are \$35,000 to \$110,000 per ceremony," he said. "It's powerful but expensive. This is our gift and our

DURING THE MEMORIAL CEREMONIES MARINES PRESENT FAMILIES WITH IRAQI VOTING BALLOTS, A FULL MOUNTED SET OF MEDALS AND A BOUQUET OF YELLOW ROSES THAT REPRESENTS THE NUMBER OF YEARS A LOVED ONE LIVED.

thank you back to them."

The group also has organized a Run for Remembrance race in Colorado, scholarships and scores of community events involving memorial displays that share photos and stories. A recent one was held in Franklin Park, Pa., where he displayed a portion of his Hall of Heroes project. Donations and an aluminum can drive by Boy Scouts raised enough money to build the first display for a Pa. service member.

The 10- by 8-foot displays are part of a traveling exhibit. Each display includes the fallen hero's name, face and deeds. There's a gold star marking a map where they died. Someday he hopes to have a museum, which could hold six miles of corridors, to honor service members and first responders killed during the global war on terror and tell their stories. The question is if there's an end.

"I want the museum to tell the story from beginning to end, but I don't know whether it's going to have a period or a semicolon at the end of this," he said.

He also wants to have a Hall of Heroes website that's interactive.

"For the high-tech version, I would need help with that," he said.

Beck holds an MBA from Boston University and a master's of military operational art and science degree from the Air Force's Air Command and Staff College in Montgomery, Ala. He is working toward a Ph.D. in organizational management with an emphasis on leadership.



THE HALL OF HEROES, WHICH INCLUDES A DISPLAY FOR DOC CHRISTOPHER ANDERSON OF COLORADO, WAS ON DISPLAY AT THE NATIONAL MUSEUM OF THE MARINE CORPS DURING A REMEMBERING THE BRAVE CEREMONY.

PHOTOS COURTESY OF STEPHEN BECK

Army Enlists CMU's Help To Save Energy

■ Heidi Opdyke

Even the U.S. Army wants to shrink its carbon "footprint."

Large U.S. Army bases have all the intricacies of a small city and all the energy challenges as well. Thousands of people work and live in them, and each base has its own challenges handling energy consumption, water use and waste management.

When it comes to energy costs, the Army is grappling with how to continue to support national security and stay nimble at a time when energy costs are rising and budgets are being reduced.

Overseas, energy and water supplies can face significant threats; therefore, addressing energy security and sustainability are essential to the Army's mission.

"We can't do our mission unless we can operate our facilities economically," said The Honorable Katherine Hammack, assistant secretary of the Army for Installations, Energy, and Environment, during a visit to CMU's Center for Building Performance and Diagnostics (CBPD). Hammack met with CMU thought-leaders engaged by Volker Hartkopf, director of the CBPD.

Hammack focuses on supporting an Army of innovative thinkers to inspire the facilities' performance, so she came to CMU to look for ways to improve energy and the environmentally

effectiveness of Army installations.

Faculty from architecture, engineering, economics and social science, and advancing energy and environmentally effective systems and technologies for best building, community and urban practices participated.

"Many of us practice what we preach and are well-focused on the opportunities to integrate net zero energy, net zero water and waste goals, objectives and practices in holistic regional, urban, neighborhood and building contexts," Hartkopf said.

Additional discussion partners included professionals from major companies such as Affiliated Engineers, Bayer, Chatham University, City of Pittsburgh, Environmental Protection Agency, Government Services Administration, Heinz Endowments, Measuring and Monitoring Services, OSISOFT, PEPCO Energy Services, PPG, Robert Bosch R&D Technology Center, Sasaki Associates, Thar Process, University Energy Partnership, U.S. Army and U.S. Army Corps of Engineers.

"To achieve net zero it requires all of the fields," said James Halpern (A '81), president of Measuring and Monitoring Services, during a presentation on the opportunities for strategic cooperation to meet the goals and objectives of the Army. "This is a place where you can get stuff that works.



PHOTO BY KEN ANDREYO
PROFESSOR VOLKER HARTKOPF TAKES KATHERINE HAMMACK, ASSISTANT SECRETARY OF THE ARMY FOR INSTALLATIONS ENERGY, AND ENVIRONMENT, ON A TOUR OF THE ROBERT L. PREGER INTELLIGENT WORKPLACE, WHICH IS A LIVING LABORATORY IN SUSTAINABILITY FOR WORKERS AND ORGANIZATIONS.

CMU is trying to fundamentally change things to make them better."

Repurposing, recycling and recovering energy are essential to the military's mission, Hammack said. She emphasized the major challenges and opportunities to create Army bases to serve as examples for building the best performing cities of the future. To meet these challenges, the Army has a pilot program for 16 installations to be net zero energy, water and waste by 2020.

"We are creating a culture that recognizes the value of sustainability measured not just in terms of financial benefits, but benefits to maintaining mission capability, quality of life, relationships with local communities, and the preservation of options for the Army's future," Hammack said.

Hartkopf said that the participants are now discussing how they can strategically cooperate with the Army on meeting its net zero challenges.

Play Explores Romanian Revolution

■ Dennis Schebetta

The School of Drama will present "Mad Forest" by Caryl Churchill, Dec. 1-10 in the Philip Chosky Theater in the Purnell Center for the Arts. The production will be directed by Jed Allen Harris, associate teaching professor and undergraduate option coordinator of The John Wells Directing Program.

"Mad Forest" was written shortly after the 1989 fall of Romanian dictator Nicolae Ceausescu. Caryl Churchill traveled to Romania with director Mark Wing-Davey and students from London's Central School of Speech and Drama, and he developed the script based on personal interviews and field research. Churchill uses a blend of theatrical journalism and magical realism to provide an account of this wrenching moment in European history. Part documentary, part bold imagining, "Mad Forest" changes our expectations about the nature of civic revolution, and the people left to pick up the pieces.

For the past five years, Harris has traveled to Smolyan, Bulgaria, to teach in the Leon Katz Rhodopi International Theater Laboratory (only a few hundred miles from Romania). Earlier this year, Harris traveled to Bucharest to conduct research for the production. After various interviews, he learned that many of the Romanians have vast perspectives of what events occurred in those fateful days in 1989.

"Historians will never know 100 percent what actually happened in those first days of the revolution," he said.

Peter Cooke, head of the School of Drama, feels this production will be relevant to the political changes currently happening in the Middle East.

Ticket prices begin at \$15 for adults and \$10 for students. For complete ticket prices, ticket orders and show times call the School of Drama box office at 412-268-2407 or visit www.drama.cmu.edu.

Doubly Good

■ Andrea James

Seniors Laura Chen and Courtney Chin advanced to the doubles championship match at the USTA/ITA Division III Small College National Championships last month. Chen and Chin, who won the Southeast Regional Championship earlier this fall, are the first CMU doubles team to reach the national final since 2004. In the tightly contested title match, the Tartans fell to conference foe Emory University, 6-4, 5-7, 6-4.

"Laura and Courtney had one of the most dominating runs I've ever seen one of our doubles teams make at ITAs," said CMU Head Coach Andrew Girard.

"They were literally points away from being national champions."



PHOTO BY MARTIN SANTEK PHOTOGRAPHY
LAURA CHEN (RIGHT) AND COURTNEY CHIN MADE THE NATIONAL FINALS IN DOUBLES COMPETITION.

Gates, Hillman Centers Earn LEED Gold Rating



PHOTO BY KEN ANDREYO

■ Bruce Gerson

The Gates and Hillman centers are green.

The U.S. Green Building Council recently awarded the School of Computer Science facilities Gold Leadership in Energy and Environmental Design (LEED) certificates for its green design, energy efficiency and sustainability.

Andrew Reilly of Campus Design and Facility Development noted many reasons for the gold rating. Among them were:

- > the three acres of green space around the facility;
- > its bicycle storage units and changing rooms for those who bike to work;
- > the centers' reduced storm water runoff rate and quantity;
- > the use of rain water to flush toilets and ultra-low flow urinals;
- > more than 15 percent of building materials used were from recycled materials;
- > nearly 30 percent of the building materials were produced locally;
- > natural lighting in 75 percent of the spaces;
- > and individual temperature and lighting controls in all 310 offices.

Gates Hillman is the 11th CMU building project to receive LEED certification and the fourth to earn the gold level rating.

The Collaborative Innovation Center received a Gold Core and Shell rating in 2006, the Carnegie Mellon Café

earned a gold citation in 2008 and the GSIA West entry addition was awarded a LEED Gold certificate in 2010.

Earning LEED Silver status were Stever House (2003) and Henderson

House (2004) residence halls, buildings at 300 and 407 South Craig Street (2007) Porter Hall 100 (2009) and the Doherty Hall Phase II renovation project (2010). Carnegie Mellon's Posner Center was certified in 2005.

Awaiting LEED rating from the U.S. Green Building Council is the GSIA first-floor project of 2010. Other green building projects, according to Environmental Coordinator Barb Kviz, include the Tartans Pavilion, Welsh Hall, the Solar Decathlon House and the Intelligent Workplace.

The Gates and Hillman Centers were designed by Mark Scogin Merrill Elam architectural firm.



Computer Science Adds Course-Only Master's Degree

■ Byron Spice

"Computer science is everywhere today — in every industry, in every academic discipline," said Jeannette Wing. "No matter what profession you enter, the more computer science you know, the greater the advantage you have over your peers."

It's because of this that the Computer Science Department, which

associate professor of computer science and director of the new master's degree program.

The program is appropriate for anyone who seeks a deeper understanding of computer science to build on their educational background and work experience, and to enhance their professional and career development. Applicants are

"THIS MASTER'S DEGREE CAN GIVE NEW GRADUATES — AND EVEN PROFESSIONALS WHO HAVE BEEN IN THE WORKPLACE FOR A WHILE — A COMPETITIVE EDGE." — JEANNETTE WING

Wing heads, has added a new master of science degree for students who seek advanced coursework in computer science.

The course-only master's degree will begin in fall 2012. The application deadline is Dec. 15.

"Increasingly, top industry recruiters are looking for Carnegie Mellon graduates who have taken specific computer science courses, or even taken courses from particular professors on our faculty," Wing added. "This master's degree can give new graduates — and even professionals who have been in the workplace for a while — a competitive edge."

The course-based master's degree program does not include a research component and does not have highly specific curriculum requirements. Students have the flexibility to develop their own course of study, said Karl Crary,

not required to have an undergraduate degree in computer science.

"We're looking for people who have excelled or could have excelled in our undergraduate program," Crary said. "Successful applicants will need basic analytical skills and a strong aptitude in math, programming and logical reasoning."

It is expected that most students can complete the degree in three semesters. Crary said part-time students can also be accommodated.

For more information on the program and the application process, visit the program website, www.csd.cs.cmu.edu/education/master/index.html.

Horse Play

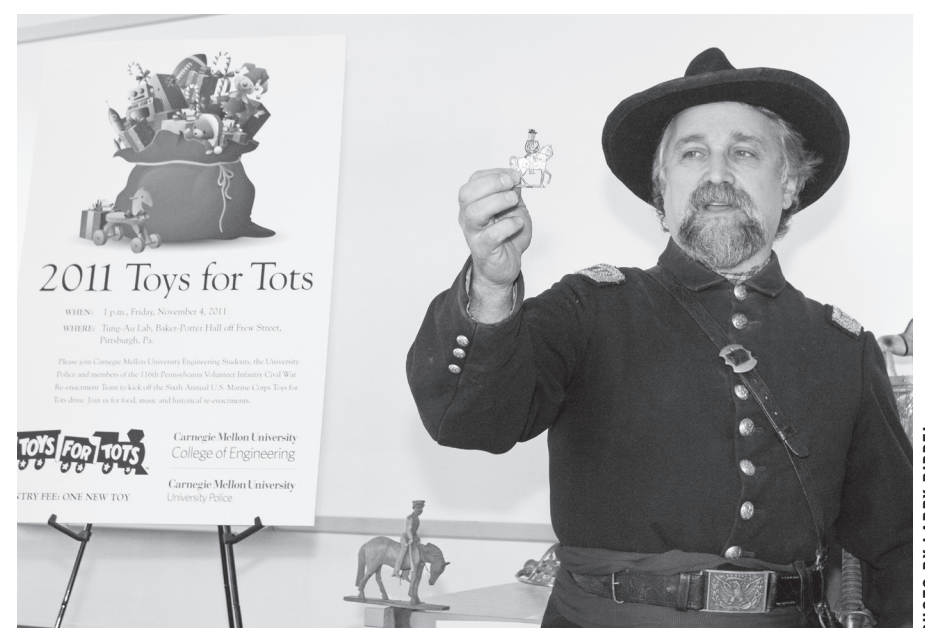


PHOTO BY LARRY RIPPEL

MICHAEL KRAUS HOLDS A TWO-DIMENSIONAL LEAD SOLDIER ON HORSEBACK KNOWN AS A "FLAT" DURING THE SIXTH ANNUAL TOYS FOR TOTS KICK OFF AT CMU.

Civil War-era toys helped spark the gift of giving at this year's sixth annual U.S. Marine Corps Toys for Tots Drive.

The 116th Volunteer Infantry Civil War re-enactment team led by Michael Kraus, curator of the Soldiers & Sailors Memorial Museum in Oakland, brought traditional gifts and antiques to share.

"This project has become our service learning tradition for our First-Year Advisory Board," said Kurt Larsen, assistant dean for undergraduate studies at the College of Engineering. Students work with the CMU Police Department for the annual drive.

Pop Cabaret

SILVER TAKES PERFORMING ART STUDENTS TO THE WARHOL

■ Piper Staff

Students in one art course are learning in an unusual classroom this year — the first floor theater at the Andy Warhol Museum.

“Pop Cabaret: Performance Art at the Andy Warhol Museum,” an advanced level electronic and time-based media course, is a first-time collaboration around a college course for the Warhol and Carnegie Mellon.

Associate Professor of Art Suzie Silver teaches the course and draws from her personal background in performance art for the class. The students create short solo and group performances and their “Pop Cabaret” pieces are inspired by vaudeville, dance and burlesque, Futurists, Dada, some Fluxus and Pop Art, and the downtown New York City performance scene of the 1980s and 1990s.

Their first public performance was a free Halloween variety show, “I Put a Spell on You.”

“The Halloween show was absolutely fantastic. We had a very enthusiastic standing-room-only crowd,” Silver said. “The students were proud and thrilled. They were all incredibly focused, worked incredibly well together, and genuinely enjoyed themselves. While I’m sure the audience had their



A PERFORMANCE ART CLASS MET AT THE WARHOL THIS YEAR TO CREATE “POP CABARET” PIECES. THE CLASS WILL PRESENT THEIR CLOSING SHOW DEC. 16.

favorites among the performances, I thought every single one was really good.”

For anyone who missed the first show, the class will present their closing show Dec. 16 at the Warhol, 117 Sandusky St. on Pittsburgh’s North Side.

“We are creating all new works for the Dec. 16 show,” Silver said. “It will again follow a variety show format.”

Silver says the audience should expect humor and playfulness and at the same time intelligence and poignancy

in the works presented, noting that there will be “some truly post-everything experiments.”

“I thought it would be a good idea to get the students off campus, and Performing Arts Curator Ben Harrison helped to make this possible at the Warhol,” Silver said. “Knowing they have to put on two big public performances this semester has been a fantastic motivator to keep students engaged and committed.”

Silver explained, “The Warhol’s environment makes it feel less like a

class with traditional structures and hierarchies, and more like a performance troupe, like Mickey Rooney and Judy Garland getting all their pals together and exclaiming ‘hey, let’s put on a show!’

Student performers include Adelaide Agyemang, Harrison Apple, Julia Cahill, Murphi Cook, Kinji Cheri Ho, Chelsea Lupkin, Julie Mallis, Ipepe Mori, Stephanie Ross, Tim Sherman, Ann Stone, Mitsuko Verdery and Sonny Topaz as host.

With a strict focus on the performer and experimentation with multiple techniques, students are challenged to create stripped-down character studies and develop multiple acts of five minutes or less.

“All of the students in the class are really supportive of one another. I think that is one of the keys to the success of the course,” Silver said.

A typical week sees students generating and work-shopping their solo and group performances.

“There are multiple reasons why we are focusing on club and cabaret-type performances,” Silver explained.

“But the Pop Art focus of the Warhol and the wonderful, permissive vibe that exists there reinforces that these are performances that can be done almost anywhere.”

MILESTONE VICTORY

The Tartans posted the 500th all-time victory (500-364-28) for the Carnegie Mellon football program with a 28-13 win at the University of Chicago on Saturday, Nov. 5. As a former CMU linebacker, assistant coach and now head coach, Rich Lackner (HSS’79) has been a part of 257 of the 500 football victories. As head coach since 1986, Lackner has led the Tartans to a 175-84-2 record, nine conference championships and two NCAA playoff appearances. This is the 102nd season for the football program and the 85th anniversary of one of its most memorable victories: a 19-0 win over Notre Dame on Nov. 27, 1916, at Forbes Field.



HEAD COACH RICH LACKNER TALKS TO THE TEAM AFTER THE TARTANS’ 500TH ALL-TIME VICTORY.

New Journal Focuses On Emerging Writers and Artists

■ Shilo Raube

A lack of publishing opportunities frustrated two friends.

Up-and-coming writers have few opportunities, so Marci Calabretta (HS' 11) and Inès Pujos (HS' 12) decided to do something about it. The creative writing majors launched their own literary journal.

"We always talked about wanting to start a journal because there are not enough national-based journals out there designed to discover new talent," Pujos said. "New writers — especially undergrad and graduate students — need chances to be published."

Thanks to the Department of English's Charles C. Dawe Memorial Award, an annual \$2,000 grant to encourage innovation in publishing, Pujos and Calabretta were able to start "Print-Oriented Bastards."

For the inaugural edition, Pujos and Calabretta relied mostly on social networking to elicit submissions. It worked — by posting to their Facebook accounts and starting a blog, they received roughly 100 submissions. The issue features 18 literary and art pieces by 13 authors and artists from California to Kuwait.

"It's not just text," Pujos said. "It's art, too. There's a little bit of everything — all different genres, but the works are all punchy."

Calabretta agreed and added, "The pieces are all polished but at the same time



COURTESY OF MARILUZ ORBAY-CERRATO

sharp, distinctive and pretty evocative."

Two hundred copies of the first edition were printed and sent to creative writing programs across the country to encourage submissions for the next issue.

"We don't want the journal to be affiliated with a particular university, class or artist," Calabretta said.

Another part of Pujos and Calabretta's goal is to build an emerging writers' community. Having their writers spread out across the world presents a challenge, but they plan to use technology to make it happen.

"After each issue is out, we'd like to invite an author to come speak or ask all of the authors to submit videos of them reading their work," Pujos said. "Right now, there are few networks for young writers, and it will be good to have a solid community."

For more information on "Print-Oriented Bastards," including how to receive a copy of the first edition and instructions on how to submit work, visit <http://printorientedbastards.wordpress.com/>.

WORK IN THE PREMIERE EDITION OF THE NEW JOURNAL INCLUDES PIECES FROM AUTHORS AND ARTISTS FROM CALIFORNIA TO KUWAIT. AMONG THE ARTWORK IS A PIECE BY CMU PROFESSIONAL WRITING GRADUATE STUDENT MARILUZ ORBAY-CERRATO, TITLED "NINFA."

Golden Opportunity

Olympic gold medalist ice skater Evan Lysacek, 2010 Worlds' Championship all-around bronze medalist gymnast Jonathan Horton and U.S. Paralympic world record holder and runner April Holmes recently visited CMU to talk about leadership and pursuing dreams as part of the U.S. Olympic Committee's campus road show, "It's Your Race, Take the Lead." Students also had the opportunity to meet with Deloitte recruiters and leaders, who helped sponsor the event.

The campus events give students aim to glimpse into Deloitte's culture and commitment to fostering leadership in its professionals. Deloitte's relationships with non-profit organizations, such as the U.S. Olympic Committee, and ongoing commitment to skills-based volunteering and pro-bono service demonstrate to potential recruits that they can make a difference while developing important leadership skills.



PHOTO BY GLENN BROOKES

EVAN LYSACEK, 2010 OLYMPIC CHAMPION, SIGNS AN AUTOGRAPH FOR CMU STUDENTS AT AN EVENT AT SOLDIERS & SAILORS MEMORIAL HALL.

Weighty Decision



PHOTO BY KEN ANDREYO

CONTESTANTS WATCH REMAINS BEING WEIGHED AFTER PARTICIPATING IN CULINART'S APPLE PIE EATING CONTEST DURING ITS APPLEFEST IN LATE OCTOBER. AMANDA PLUMMER WEIRUP (RIGHT), A PH.D. CANDIDATE IN THE TEPPER SCHOOL OF BUSINESS, WON.

CMU-Australia Strengthens Educational Ties With Vietnam

■ Susan Peterson

Carnegie Mellon – Australia is strengthening ties with Vietnam through a new short course program.

The Adelaide-based campus held a 10-day short course in October on Human Capital Management in IT & Communications for 18 delegates from the Vietnamese Government's Ministry of Information and Communication.

The delegates were taking the course as part of Vietnam's Program 165 — a scholarship program funded by the Central Vietnamese Government, and administered by the Central Committee of the Communist Party of Vietnam, to train government leaders and managers abroad.

The course was led by Terry Buss, Carnegie Mellon – Australia's executive director and distinguished professor of public policy.

"The course included presentations from a number of experts in human capital management, IT and communications from Australia and overseas," Buss said.

"Topics included workforce planning, talent management, organizational theory and practice, leadership development, strategic human capital manage-

ment and government ethics, to name a few," he said.

"This is the second time Carnegie Mellon University – Australia has delivered a short course to delegates from the Vietnamese Government and we look forward to further collaboration in the future."

Uyen Bui Nhu, director general of the Department of Personnel and Organization of the Ministry of Information and Communication, who headed the delegation, said the course content was thorough and relevant to the ministry.

"The lecturers were both professional and enthusiastic with not only a good command of knowledge, but also practical experience," he said.

Delegates also undertook study with officials from the South Australian Government, including: Chief Information Officer Andrew Mills; Deputy Chief Executive of the Department of Further Education, Employment, Science and Technology Craig Fowler; and Warren McCann, commissioner for Public Sector Employment from the Office for Ethical Standards & Professional Integrity in the Department of the Premier and Cabinet.



PHOTO COURTESY OF CARNEGIE MELLON-AUSTRALIA

EIGHTEEN DELEGATES FROM THE VIETNAMESE GOVERNMENT RECENTLY VISITED CMU-AUSTRALIA FOR A COURSE ON HUMAN CAPITAL MANAGEMENT IN IT AND COMMUNICATIONS.

They also attended a number of external activities during their stay, including a tour of Parliament House, Victor Harbor and the Adelaide Hills wine region, and attended a farewell dinner hosted by the education organization Study Adelaide, with special guests Lieutenant Governor Hieu Van Le, The Honorable Michael Atkinson, and the

University of Adelaide's Pro Vice Chancellor (International) Professor John Taplin.

Carnegie Mellon – Australia Vietnamese alumna Dao Thi Thuy, who graduated from the Master of Science in Public Policy and Management program in August 2010, also attended the short course as the delegates' translator.

SAE Team Races To Combat Malnutrition

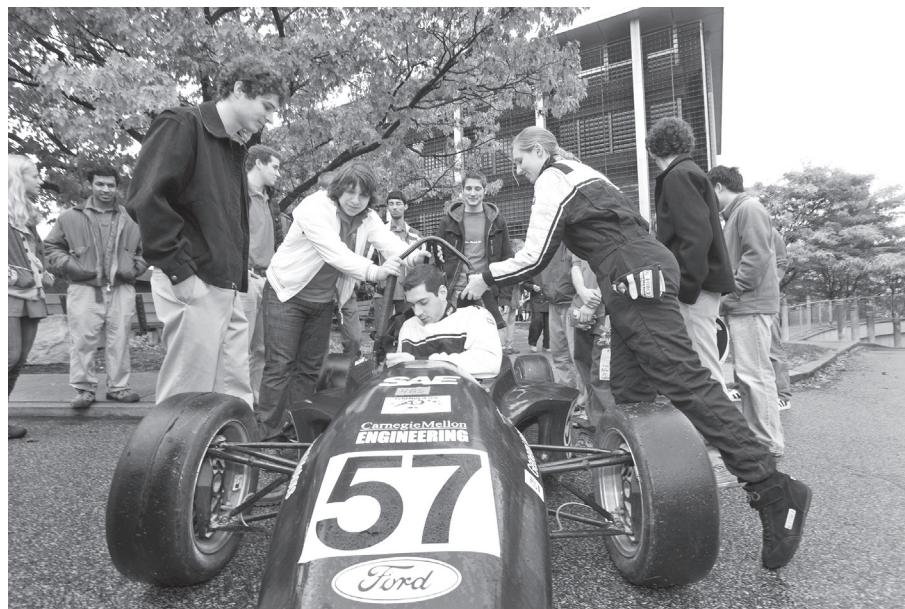


PHOTO BY LARRY RIPPEL

The Society of Automotive Engineering (SAE) Race Team participated in the national USA Weekend's "Make A Difference Day" by collecting food and donating a homemade cookbook to the Greater Pittsburgh Community Food Bank.

Hugh Ross, a mechanical engineering student and head of the SAE race team, or-

ganized "Racing Against Hunger," to raise awareness of the need to combat malnutrition. In honor of this year's racecar number, 57, the H.J. Heinz Company donated its Heinz 57 sauce. Other food contributors included The Oakmont Bakery, the Frick Park Market in Point Breeze and Ruggeri's Deli in Squirrel Hill.



PHOTO BY LARRY RIPPEL

HUGH ROSS, HEAD OF THE SAE RACE TEAM, HOSTED "RACING AGAINST HUNGER" IN OCTOBER.

Researchers Use Science To Fight Hunger

CONTINUED FROM PAGE ONE

while curbing rising food costs. Global food prices hit record highs in February and are expected to become even more volatile. The United Nations reports that more than 900 million people in the world suffer from hunger on a daily basis.

"We have chosen to focus initially on amaranth, a plant indigenous to Sub-Saharan Africa, due to its high content of provitamin A and other micronutrients. We hope that integrating amaranth leaves into feeding strategies as infants transition from breast milk to solid foods could contribute to a reduction in vitamin A deficiency," said Wilson, a CMU Dowd-ICES (Institute for Complex Engineered Systems) fellow from Bridgeport, W.Va.

LeDuc said the work involves significantly changing the palatability of the end food product. "These African leafy vegetables are perceived as 'poor man's food' with a bitter taste," LeDuc said. "We aim to change both taste and perception by reengineering the plant's cellular structure using traditional principles of cell mechanics that have been used for decades in areas such as heart disease and cancer."

CMU researchers say they also are tapping into the modern and cutting-edge methodology of "molecular gastronomy," the study of physical and chemical processes that occur while cooking. Their culinary curiosity will be showcased next year in a new academic course titled "Culinary Mechanics," designed to explore the application of engineering principles to the science of food.

To learn more about Grand Challenges Explorations, visit www.grandchallenges.org.

Alumni Achievers

CLEVER CLEVENGER

Dale Clevenger calls the French horn a “catalyst, protagonist and a culprit” for launching his lifelong love of music. As a child, he said “I saw it from a long ways away. I liked the way it looked and sounded, and it was magical.”

Clevenger, principal horn of the Chicago Symphony Orchestra since 1966, received an Alumni Distinguished Achievement Award during this year’s Cèilidh Weekend.

During a lecture Clevenger said that art pays dividends for those who participate in it.

“The world wants to see baseball and football more than an opera, but a symphony concert can change lives,” he said.



PHOTO BY KEN ANDREYO

DALE CLEVENGER (A’62), PRINCIPAL HORN FOR THE CHICAGO SYMPHONY ORCHESTRA, WORKS WITH EDMUND ROLLETT, A MASTER’S STUDENT IN MUSIC, DURING A MASTERCLASS.



PHOTO BY GLENN BROOKES

“SPIDERMAN” RETURNS

Alumni Achievement Award winner Neil Spisak (A’78) (left) and Alumni Board President Beverly Wheeler pose for a snapshot at the Alumni Awards reception during Cèilidh Weekend. Spisak, a top Hollywood production designer, has created stunning visuals for blockbusters such as the “Spider-Man” trilogy, the Al Pacino/Robert DeNiro thriller “Heat” and the John Travolta/Nicolas Cage action film “Face/Off.” Spisak has returned to Carnegie Mellon’s Pittsburgh campus to conduct workshops and portfolio reviews for students. In Los Angeles, he has helped students to become familiar with the entertainment industry, hired several Carnegie Mellon alumni and hosted fundraising events for the School of Drama. Spisak and Clevenger (left) were two of 16 alumni and students to be honored for achievement and service.

NEWS BRIEFS

United Way Campaign Update

Carnegie Mellon’s 2011 United Way Campaign, which runs through Dec. 16, received more than \$40,000 in pledges as of Nov. 1, and the need has never been greater. Through July of this year, calls to Southwestern Pennsylvania’s United Way 211 HelpLine have increased by 79 percent for folks who lack insurance and are seeking health care, by 100 percent for those seeking food stamps and by 450 percent for those seeking mortgage assistance. If you have not yet had a chance to donate, you can do so online at www.cmu.edu/hr/unitedway.

Discounted Tickets Available

The Pittsburgh Cultural Trust is offering the university community discounted tickets to several performances in November and December. Shows include Dr. Seuss’ *How the Grinch Stole Christmas!* (Nov. 22 and 27 at the Benedum Center), *The Priests in Concert* (Nov. 30 at the Byham Theater) and *PJO Holiday Performance* (Dec. 18 at the August Wilson Center). To order tickets, go to www.culturaldistrict.org and login using the promo code CMU1112 to receive the discount.

Staff Council has arranged for members of the Carnegie Mellon community to purchase discounted tickets to the Pittsburgh Opera’s

2011-12 season. This season’s schedule at the Benedum Center includes “*Tosca*,” March 24, 27, 30 and April 1; and “*The Abduction from the Seraglio*,” April 28, May 1, 4 and 6. For show times and to purchase tickets, go to <http://bit.ly/pnghPw>

Online Training For Faculty and Staff

Carnegie Mellon has an agreement with Lynda.com to provide faculty and staff with on-demand access to more than 50,000 video tutorials from expert authors covering hundreds of courses, including Photoshop, Microsoft Office, email, Flash, Final Cut Pro, design principles, digital photography, print and Web design, digital video, animation, creative inspiration and much more. Visit www.cmu.edu/lynda for instructions and access.

Miller Gallery, STUDIO Publish New Book Sprint

The Miller Gallery and the STUDIO for Creative Inquiry have co-published “*New Art/Science Affinities*,” a 190-page book on contemporary artists that was written and designed in one week by four authors (Andrea Grover, Régine Debatty, Claire Evans and Pablo Garcia) and two designers (Luke Bulman and Jessica Young of Thumb).

“*New Art/Science Affinities*,” which focuses

on artists working at the intersection of art, science and technology, was produced by a collaborative authoring process known as a “book sprint.” The book is available through print-on-demand service Lulu for \$45.75 or a free download at the Miller Gallery website (www.cmu.edu/millergallery/nasabook).

McCandless Chairs Awarded

Carnegie Mellon has awarded the Anna Loomis McCandless Professorship to Amelia Haviland, associate professor in the Heinz College, and the Estella Loomis McCandless Professorship to Ann Lee, associate professor of statistics in Dietrich College of Humanities and Social Sciences. The professorships are given every three years to two junior faculty members who have shown great promise in their field.

The McCandless professorships were established by the late Anna Loomis McCandless with the Estella Loomis McCandless professorship named for her mother. Anna Loomis McCandless was a 1919 graduate of Margaret Morrison Carnegie College. A native of Pittsburgh, McCandless worked for a private investor and then Fidelity Trust Co. after graduating from Carnegie Tech. She became the first female member of the university’s Board of Trustees in 1967 and was named a life trustee in 1973.

Light Shows Debuts on Pausch Bridge

Four lighting designs for the Randy Pausch Bridge, created by student teams in a “light as art” class, and one design created by School of Computer Science Dean Randal E. Bryant premiered as part of Cèilidh Weekend.

“The student shows embody the spirit of Randy Pausch in exploring unknown territory, taking risks and creating a dynamic experience for the campus community,” said Cindy Limauro, professor of lighting design in the School of Drama.

Staff Council Hosts Open Forum With President Cohon

Staff Council will host an Open Forum with the President from noon to 1 p.m., Tuesday, Nov. 29 in Rangos 3, University Center. President Jared L. Cohon will provide a brief update on the state of the university and then answer questions. Attendance is restricted to members of the Carnegie Mellon community only.

Pittsburgh Declares Nov. 20 Randy Pausch Day

Pittsburgh Mayor Luke Ravenstahl has signed a proclamation declaring Sunday, Nov. 20, Randy Pausch Memorial Day in Pittsburgh.

Artistic Endeavors



PHOTO BY KEN ANDREYO

A VISITOR EXAMINES "THE BIG FOUR," A GIGAPAN IMAGE OF AN INSECT SPECIMEN DRAWER MOUNTED IN AN ALCOVE NEAR THE ROBOTICS INSTITUTE'S DIRECTOR'S OFFICE.

Woodcut prints donated by College of Fine Arts alumna Naoko Matsubara and seven large GigaPan prints are now on permanent display in the Gates and Hillman centers.

The woodcuts, titled "Solitude," are inspired by Henry David Thoreau's "Walden," and can be found in the 5200 corridor of the Gates and Hillman center.

The GigaPan prints on the fifth, sixth, eighth and ninth floors feature nature and science inspired scenes. One print, "Barnacle," was created with a scanning electron microscope modified with GigaPan technology. Three additional GigaPans are also on display in Newell-Simon Hall.

The proclamation praises the late CMU professor for raising awareness of pancreatic cancer; meeting with members of Congress as an advocate to increase federal funding for pancreatic cancer research; for helping to found the Entertainment Technology Center and the Alice computer programming curriculum; and for being an advocate and enabler for collaboration between technology and the arts.

The proclamation states, "Now therefore be it resolved that I, Luke Ravenstahl wish to honor the memory of Dr. Randy Pausch for his tireless efforts toward the advancement of research in the field of pancreatic cancer. I do hereby declare November 20, 2011, 'Dr. Randy Pausch Memorial Day' here in our most livable City of Pittsburgh."

Are You a Notary Public?

Human Resources is updating notary public information listed in the online Faculty/Staff Directory. If you are a notary public and willing to provide notary public services free of charge to employees and students for official university business, and would like to be included in the directory, please send email to Darlene Scalese at dscalese@andrew.cmu.edu and include your name, department, location and phone number.

Speaker To Discuss Healthcare in Congo

Paul Brockman will present "Stones for Ihula: Rural Healthcare Provision in Conflict-Affected Eastern Congo" at 4:30 p.m., Monday, Nov. 28 in Porter Hall 100 (Gregg Hall).

Brockman has worked since 2005 with the international humanitarian medical organization Médecins sans Frontières (Doctors Without Borders), most recently managing one of the largest medical interventions in North Kivu, Democratic Republic of Congo.

The event is sponsored by the Modern Languages Department, the Center for International Relations and Politics, and the Vice Provost for Education.

Professors To Discuss 2012 World Ending Prophecy

Amara Solari and Matthew Restall, both faculty members at Pennsylvania State University, will discuss "2012 and the End of the World: The Western Roots of the Maya Apocalypse" at 6 p.m., Monday, Nov. 28 in Rangos 1, University Center.

The event is sponsored by the Center for Arts in Society and will emphasize the role played by 16th-Century Spaniards on how the Maya doomsday prediction has become an international industry.

Board of Trustees Elects 10

Ten new members of the Carnegie Mellon Board of Trustees have been elected to three-year terms through 2014. They include:

Jeanne Cunicelli (HSS'88), a partner in Bay City Capital of San Francisco, a private merchant bank focusing on the life sciences industry, works in partnership with Birchmere Ventures, a life science and technology investment firm in Pittsburgh. Cunicelli holds a bachelor's degree in psychology from CMU and an MBA from the University of San Francisco.

James Gianopulos, co-chairman and CEO of Fox Filmed Entertainment of Los Angeles, oversees all management and creative responsibilities for the studio, including feature film production and the studio's activities in home video, television distribution and all media and technologies. He is a graduate of Boston University and holds a law degree from Fordham University.

Candace Matthews (E'81) is chief global marketing officer for Amway Corporation of Ada, Mi. Matthews has received accolades for community service and work in the marketing industry. She received a bachelor's degree from CMU in metallurgical engineering and administrative and management science, as well as an MBA from Stanford University. Matthews had previously served on the CMU board as a term trustee in 2003.

David McCormick, senior leader at Bridgewater Associates of Westport, Conn., has served at senior levels of business, government and academia, including an appointment at CMU's Heinz College. His government service includes undersecretary positions with the U.S. Treasury Department and U.S. Department of Commerce and offering counsel as a national security adviser. He was president of Ariba and CEO and president of FreeMarkets. He earned a bachelor's degree at the U.S. Military Academy and master's and doctoral degrees from Princeton University.

William Meaney (TPR'86), CEO of The Zuellig Group in Hong Kong, was a successful airline executive and management consultant, holding positions around the world. He holds a bachelor's in mechanical engineering from Rensselaer Polytechnic Institute and a master's degree in industrial administration from CMU.

Attila Molnar is a retired president and CEO of Bayer Corporation of Pittsburgh. Molnar worked his way up through the ranks of Bayer, starting as a plant manager at Leverkusen, Germany. He is active in many professional organizations in the U.S. and Germany. He earned a doctorate from Erlangen University. He is a two-term member of the Board of Trustees, joining the board in 2004.

Roy Shanker (TPR'73,'76) is an independent utilities and natural resources consultant from Potomac, Md. He provides management consulting services in the natural resources industry, particularly to electric and natural gas utilities. He is a physics graduate of Swarthmore College. He earned his master's degree in industrial administration and Ph.D. in business administration from CMU.

Ajit Shetty (TPR'76) is managing director and chairman of the board of Janssen Pharmaceutica in Antwerp, Belgium, which is part of Johnson & Johnson. Shetty completed his undergraduate studies at Cambridge University and earned his Ph.D. from Trinity College, Cambridge. He also earned a master's degree in industrial administration from CMU.

Lip-Bu Tan, chairman of Walden International Investment Group, San Francisco, has been active in the venture capital industry since the 1980s. Tan serves on the boards of numerous private and public companies and is active in many civic and cultural organizations. He received a bachelor's degree from Nanyang University in Singapore, two master's degrees from the University of San Francisco, and another from MIT.

Thomas Tull is founder, chairman and CEO of Legendary Pictures of Burbank, Calif. Legendary Pictures pairs major motion picture products with Wall Street private equity and hedge fund advisers. Legendary Pictures is behind big-budget productions such as "Batman Begins," "The Hangover," "The Dark Knight" and "Inception." A lifelong football fan, he is a minor partner of the Pittsburgh Steelers. He earned his undergraduate degree from Hamilton College.

Childhood Dreams

ETC TEAM PRESERVES PAINTINGS FROM RANDY PAUSCH'S HOME

■ Bruce Gerson

James David White and Jon Underwood of the Entertainment Technology Center never knew Randy Pausch, but they recently had the opportunity to sense his spirit and see some of his childhood dreams.

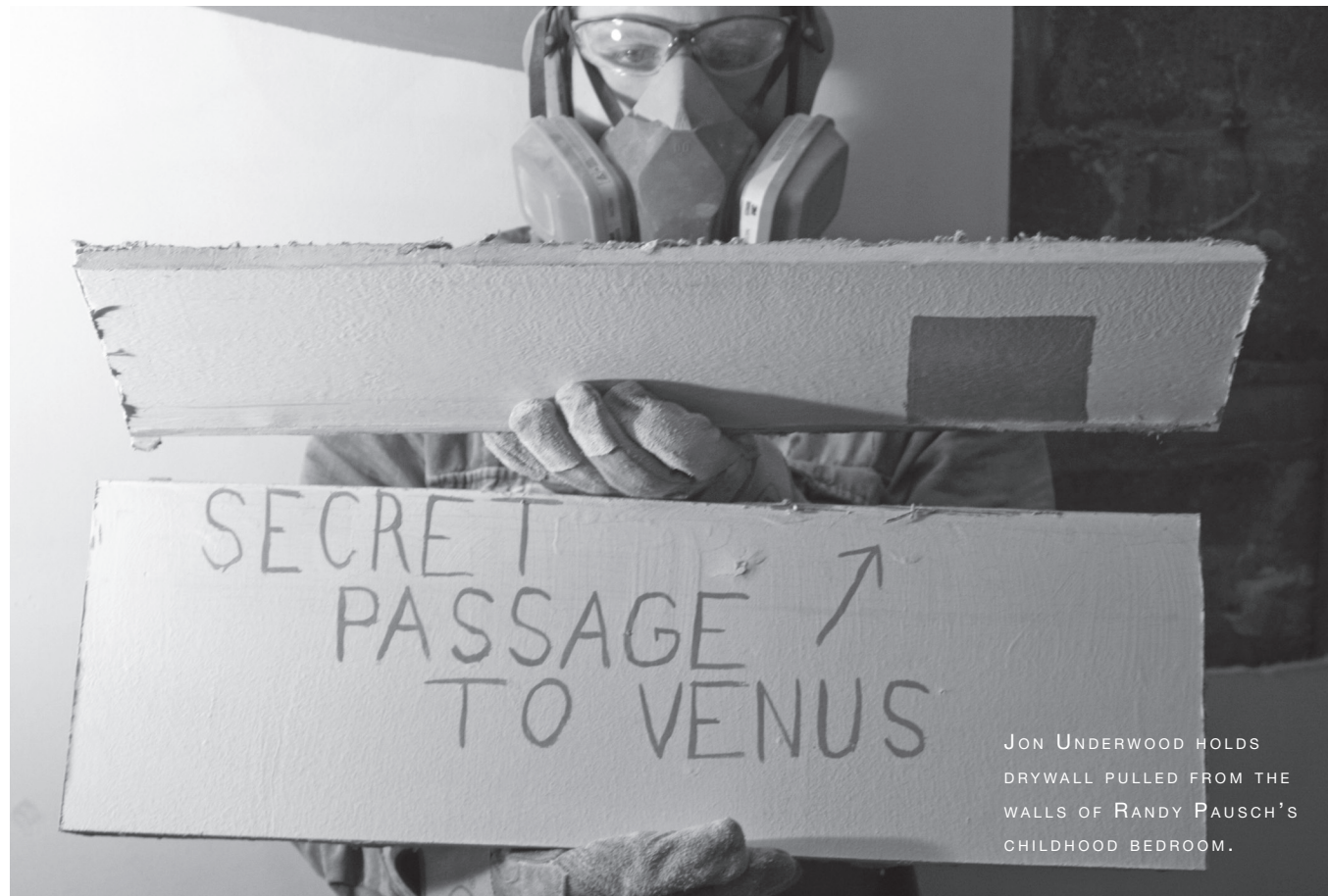
White and Underwood traveled to the late professor's childhood home in Columbia, Md., to extract and preserve his artwork that decorated his bedroom walls before the new owners remodeled. In Pausch's last lecture, he spoke about how his parents had allowed him to paint his walls and encouraged other parents to do the same. "Don't worry about the resale value," he said.

"I only came on staff at the ETC a year ago, so I never knew Randy personally, but I quickly learned how important he was to the ETC and CMU. So going down to his house, it felt kind of like walking onto holy ground," said Underwood, an information technology support associate. "It was exciting being a part of this. It was like being a part of history in the making."

White, a "designgeneer" at the ETC who provides design and engineering expertise to help students build their projects, cut out the art pieces from the walls. The art included a space rocket, a chess piece, an elevator, a mouse hole and a secret passage to Venus.

"It was an emotional thing to do. It was very important to me," White said.

White and Underwood, who met Pausch's mother, Virginia, and sister,

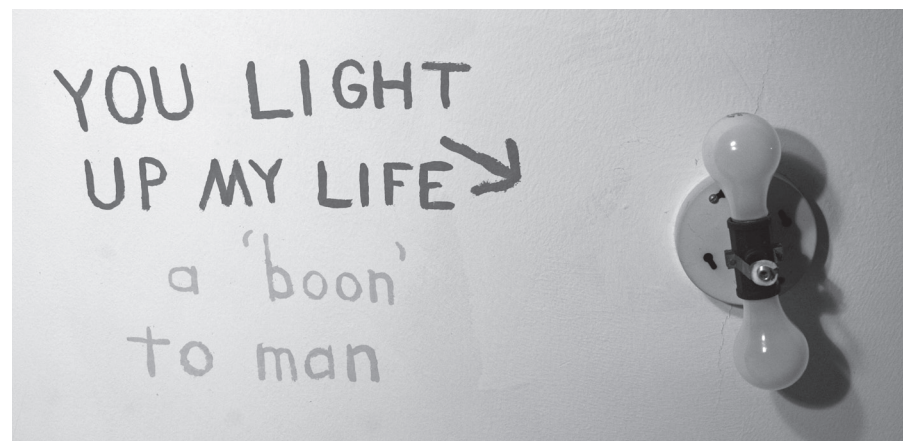


JON UNDERWOOD HOLDS DRYWALL PULLED FROM THE WALLS OF RANDY PAUSCH'S CHILDHOOD BEDROOM.

PHOTOS COURTESY OF JAMES DAVID WHITE AND JON UNDERWOOD

Tammy, at the home, brought the art pieces back to the ETC, where they are being cleaned, restored and examined to see if any ambient light will pose a threat to the integrity of the paint.

All of the pieces will be returned to the Pausch family, except the space rocket, which will find a permanent launching pad at the ETC.



PAUSCH, HIS SISTER AND A FRIEND LEFT MESSAGES ON THE WALLS.

"WHEN I WAS IN HIGH SCHOOL, I DECIDED TO PAINT MY BEDROOM.... IF YOU GO TO MY PARENTS' HOUSE, IT'S STILL THERE AND ANYBODY WHO IS OUT THERE WHO IS A PARENT, IF YOUR KIDS WANT TO PAINT THEIR BEDROOM, AS A FAVOR TO ME, LET THEM DO IT. IT'LL BE OKAY. DON'T WORRY ABOUT RESALE VALUE ON THE HOUSE."
- RANDY PAUSCH, "REALLY ACHIEVING YOUR CHILDHOOD DREAM"



RANDY PAUSCH'S SISTER, TAMMY PAUSCH MASON, PAINTED CHESS PIECES THAT HUNG ON THE WALL. TAKE A GUIDED TOUR OF THE ROOM WITH HER ONLINE AT WWW.CMU.EDU/RANDYSLECTURE/ROOM/.



ONCE PRESERVED, THE SPACE ROCKET WILL BE HUNG AT CMU'S ENTERTAINMENT TECHNOLOGY CENTER.