



Carnegie Mellon

- 2 Q&A WITH ADRIEN TREUILLE ON ETERNA: A GAME SCORED BY NATURE
- 3 PAYING IT FORWARD: ALUMNI NAME HISTORY FELLOWSHIP IN TARR'S HONOR
- 4 CMU POLICE EARN RE-ACCREDITATION
- 12 RESEARCHERS, WATSON FEATURED ON NOVA

Reefbot Lets Kids Explore Giant Aquarium

CMU Technology Eventually Could Be Used To Study Deep Coral Reefs

■ Byron Spice

The two-story Open Oceans tank at the Pittsburgh Zoo & PPG Aquarium contains 100,000 gallons of salt water, 30 species of sea life and one submersible robot, or Reefbot, named CLEO.

Young visitors to the exhibit use a control station to remotely pilot CLEO around the tank and use its high-definition video camera to track fish and snap photos. By comparing the images from CLEO with reference photos, visitors can identify the type of fish. In the process, the young explorers are helping researchers at the Robotics Institute develop software that might someday be used by scientists to automatically detect, classify and count fish in natural habitats.

Reefbot is a joint project of the zoo and the Robotics Institute, with funding through Spark, a program of The Sprout Fund, a nonprofit organization that supports innovative ideas and grassroots community projects in Pittsburgh.

Ashley Kidd, an aquarist at the zoo, developed the idea and Justine Kasznica, a local business consultant for high-tech start-ups, managed the project. David Wettergreen, associate research professor of robotics, oversaw the project at the Robotics Institute, where Ph.D. students Mark Desnoyer, Michael Furlong and Scott Moreland and senior research engineer John Thornton built the robot and developed the software.

CONTINUED ON PAGE FIVE

Fitting Fitness In



NISHA SHUKLA, A SYSTEMS SCIENTIST FOR THE INSTITUTE FOR COMPLEX ENGINEERED SYSTEMS, IS ONE OF THE MANY FACULTY AND STAFF WHO PARTICIPATE IN GROUP FITNESS CLASSES OFFERED BY THE DEPARTMENT OF ATHLETICS. ABOVE, SHUKLA STRIKES A WARRIOR II POSE IN AN AFTERNOON YOGA CLASS. READ MORE ABOUT HOW PEOPLE ARE EXERCISING HEALTHIER OPTIONS ON PAGE 10.

Interactions a New Focus of Diversity Initiative

■ Bruce Gerson

Let the diverse converse.

While efforts are still under way to increase minority representation among students, faculty and staff and to promote diversity in all respects, a new social focus has emerged to engage each other in meaningful ways. The "Guiding Principle for University Culture," authored last year by the Diversity Advisory Council (DAC), aims to foster opportunities for interaction.

"It's good to be diverse," said CMU President Jared L. Cohon in his annual State of Diversity address on Martin Luther King Jr. Day, "but we also need meaningful engagements."

In the DAC's 2011 Annual Report — accessible online at www.cmu.edu/diversity-guide/

— President Cohon writes that "a meaningful engagement goes beyond a quick greeting, but rather, it is a conversation with someone from a different country, culture, race, ethnicity, religion, gender, etc., where you learn something you didn't know, maybe question your own long-held beliefs or understanding about a culture or religion.

"It is taking the time to learn and understand, to invest a little of yourself, in order to grow as a person," Cohon says.

In early December 2010, the DAC hosted a retreat to discuss how to create and support meaningful interaction, primarily among the undergraduate student population. The retreat was attended by 80 individuals, including deans, faculty, CONTINUED ON PAGE SEVEN

Q&A With Adrien Treuille On EteRNA: A Game Scored By Nature

■ Byron Spice

Adrien Treuille has always strived to create computer graphics that make the virtual world come alive, whether by simulating the draft of air behind a race car with his Emmy-nominated Draft Track special effect or the folding of proteins in the online game FoldIt. Now the assistant professor of computer science and robotics has developed an online game that literally comes alive.

Called EteRNA, <http://eterna.cmu.edu>, the game first enlists players to design molecules of RNA (ribonucleic acid), which biologists now suspect plays a much more important role in cells than previously recognized. Then the best of the player designs are selected each week to be synthesized in the biochemistry lab of Rhiju Das, Treuille's collaborator at Stanford University.

The complex, three-dimensional shape of RNA is critical to its function, so these real-life tests of the designs developed with computer tools are essential. Does the RNA self-assemble into the desired shape, or does it fold at all? The synthesis provides the answer, giving players a score, while also making them part of the scientific process.

EteRNA, supported by a grant from the National Science Foundation, began beta testing last fall and was launched publicly in January. Treuille and his colleagues expect the game will solve some of the mysteries surrounding RNA, but they also hope to show that science can be crowdsourced.

You are using online games to involve a wide array of people in scientific research. Why is this important and why are you doing this?

There are many more people in the world than there are scientists. Scientists shouldn't have a monopoly on scientific discovery. They have historically because there are huge barriers to becoming a scientist in respect to the time required and the money required to have a Ph.D. And not everyone can do that. One of the broader trends of the Internet is to break down those kinds of barriers and we're trying to do it in science. Essentially, we are creating mechanisms through which advanced science is accessible to non-experts, so they ultimately can contribute to science as well.

And a game is the primary mechanism you are using here?

The hope is that you'll want to play this even if you don't care that you're contributing to science. For reasons that we don't quite understand, people want to have high scores. It's almost like a cave-man instinct. You want to have more stones in your cave than the next person. It doesn't really matter what those stones are. So what we've seen again and again is if you take an activity and attach a score to it, people are extremely passionate about getting high scores and getting whatever recognition they can get. And there is the matter of social capital, which the game tries to give as well, so the better players are respected in the community. Certainly we know that for many of the players the fact that there is a true scientific substrate for their activities also makes the game exciting for them.



ADRIEN TREUILLE MAKES VIRTUAL WORLDS COME ALIVE.

Your new game EteRNA focuses on RNA design. Why did you choose that as a topic for a game?

RNA is one of the trinity of basic molecules that make up life, along with DNA and proteins. We're just starting to understand all of what it does, and it's sort of shrouded in mystery, so it's a very exciting place to be biochemically. But RNA has another interesting property from a game-design perspective. Unlike proteins, it can be synthesized and studied very, very readily. At the moment we understood that, we realized we had the basis for a completely new kind of game in which it would be possible to have experiments inside the game loop and that scores could be based on the results of those physical experiments.

How do novices learn how to design RNA?

One of the main design decisions in EteRNA was determining how much biochemistry the community could handle. We think we've reached a good balance. We've taken the relevant biochemical rules and converted them into a game format that really feels like a game – almost like Tetris.

We have tutorial levels that explain the basic rules of the game, followed by a large number of challenge puzzles that teach people through trial by fire how RNA folds, at least on the computer. Once they've solved those challenge puzzles, players are allowed to go into

“the lab,” where we really don't know the answers.

At this level, we have an experimental road map that starts off with simple shapes that aren't found in nature. We're then going to introduce more and more complicated shapes. If people are going to ace the early shapes easily, then we can rapidly move through the biochemical pipeline. If not, then we'll have to spend more time creating them. Ultimately we want to design RNAs that are biologically interesting.

On this game we have computer scientists here at Carnegie Mellon collaborating with biochemists at Stanford University. How did that arrangement come about?

Rhiju Das, an assistant professor of biochemistry at Stanford, and I knew each other back when we were both post-docs in the David Baker Lab, which is a biochemistry lab at the University of Washington. I was working on FoldIt back then and he was working on RNA.

We subsequently talked about applying the FoldIt idea to RNA. Years later, one of my computer science Ph.D. students here at Carnegie Mellon, Jeehyung Lee, started working on that. He really quickly produced this jaw-dropping demo.

We were all at a small conference in Washington, and we all sat down one night and talked about how this could be really fun — now what can we do with this? That's where we came up with the idea that RNAs could be synthesized readily, and so synthesis itself – experiments with actual RNA — could be part of a game.

From that point on, we knew we had something really exciting and new, and we knew we had to try it.

You say that EteRNA is played by humans but scored by nature, why is that important?

It captures the fact that it is a game based on experimental data and nothing has been tried like that before. More fundamentally, most games have arbitrary rules set by humans. But what's exciting about science is that fundamentally it's a game played against rules that we don't know. We're trying to figure out how the knights move and how the bishops move. EteRNA gets right to the heart of that. In some sense we've taken away what might be the man-made rules of the game and we allow people to play directly against nature and see how well they can do.

You say players don't have to care about the science to play the game, but when they play the game, are they becoming scientists and do they act like scientists?

EteRNA presents the Internet community with a set of challenges that are fundamentally scientific. Even though the players are not for the most part



the PIPER

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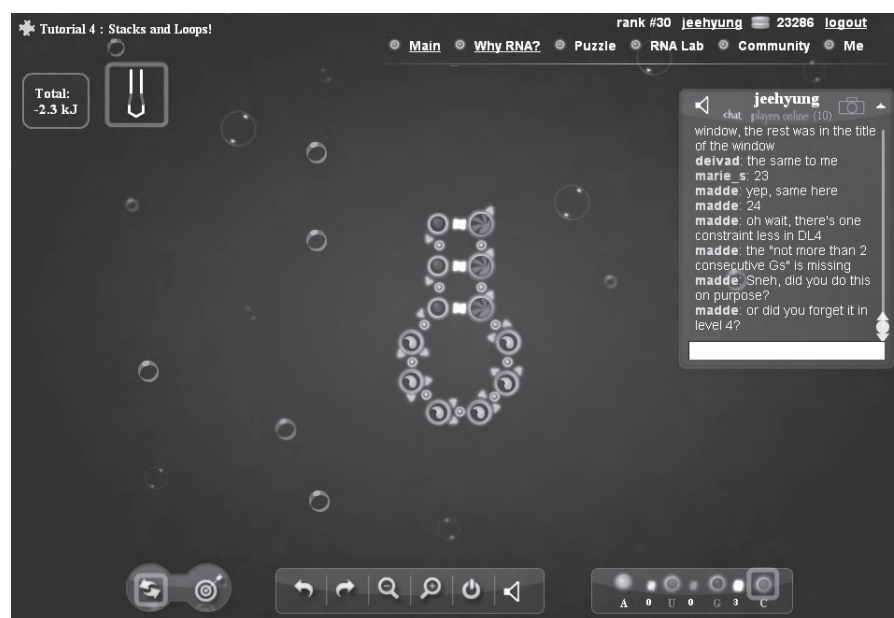
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Inquiries concerning application of these statements should be directed to the Provost, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-6684 or the Vice President for Campus Affairs, Carnegie Mellon University, 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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A SCREENSHOT OF AN ETERNA TUTORIAL SHOWS THE START OF AN RNA MOLECULE DESIGN.

Putting Our Heads Together



EXECUTIVE VICE PRESIDENT AND PROVOST MARK KAMLET (FAR LEFT) MODERATED A PANEL DISCUSSION IN LATE JANUARY TITLED “HOW TO BUILD A BETTER BRAIN,” WHICH ADDRESSED THE UNIVERSITY’S INTERDISCIPLINARY BRAIN, MIND AND LEARNING RESEARCH. PANELISTS INCLUDED PROFESSORS MICHAEL TARR, NATHAN URBAN, MARCEL JUST AND JUSTINE CASSELL. KAMLET SAID CMU IS IN THE MIDST OF AN UNPRECEDENTED EFFORT THAT COMBINES STRENGTHS IN A VARIETY OF DISCIPLINES TO STUDY THE BRAIN, MIND AND LEARNING. HE SAID THE EFFORT WILL SHAPE THE FUTURE OF BRAIN RESEARCH. FOR MORE ON CMU’S UNIQUE INITIATIVE, AND TO SEE A VIDEO OF THE PANEL DISCUSSION, GO TO WWW.CMU.EDU/HOMEPAGE/HEALTH/2011/WINTER/BRAIN-DAY.SHTML

Paying It Forward: Alumni Name History Fellowship in Tarr’s Honor

■ Kara Droney

Rachel Maines (HS’83) has made a career of researching the history of technology. Now a visiting scientist in the Cornell University School of Electrical and Computer Engineering, Maines was at CMU in late January to give a talk as part of the University Lecture Series (ULS). She discussed how engineering safety codes and standards play a major role in how governments can provide for people and help them stay alive.

“From the point of view of keeping citizens alive, the development, incorporation into law, and enforcement of consensus safety codes for the built environment makes safety engineering the instrumental arm of injury epidemiology in industrial democracies,” said Maines, who believes including the concept into college curricula could aid engineering education and help attract students to the profession. She is the author of “The Technology of Orgasm,” a study in women’s health and the best-selling non-fiction book published by Johns Hopkins University Press. The book has been made into a play. Her newest book is “Hedonizing Technologies.”

Maines attributes her success today to her Carnegie Mellon education. But if it weren’t for the support from Joel Tarr, Carnegie Mellon’s Richard S. Caliguiri University Professor of History & Policy, her CMU experience may not have been possible.

“I knew I would not be able to get a doctorate degree without financial aid,” explained Maines, who specializes in issues relating to technology and the body, including sexuality, medicine, technological risk and injury epidemiology. “I had a lot of ambition, but I didn’t have two nickels to rub together.”

Maines met Tarr while exploring the possibility of grad school. She explained

that while she wanted to attend CMU, she had neither the time nor the money to pursue grad school.

Tarr’s response was that if she found the time, he’d find the money.

True to his word, Tarr helped Maines secure a fellowship that made it possible for her to attend graduate school at CMU.

“Professor Tarr probably doesn’t even remember the conversation, but I’ll never forget it,” Maines said. “I give back today, because I would like for some other faculty member to be able to provide the same opportunity to another student.”

That’s why Maines pledged

\$50,000 to endow a fellowship for Carnegie Mellon students — and she named it in honor of Tarr.

“Carnegie Mellon did so much for me. It’s a pleasure to be able to pay it forward,” she said.

Her gift has inspired other alumni.

Terry F. Yosie (HS’75, ‘81) also is thankful he had the opportunity to study at a top-tier university. While attending graduate school at CMU, Yosie was able to build relationships that have been sustained for more than 30 years. He has served as head of the Science Advisory board of the EPA, and as vice president of several major trade organization.

Tarr served as his adviser as well, which is one of the reasons Yosie pledged \$15,000 to the fellowship Maines established in honor of Tarr and

another \$10,000 to establish the Joel Tarr Speaker and Seminar Fund.

“I have a very personal motivation and that’s my respect and admiration for Joel Tarr, who has probably been the single most influential person in my intellectual development,” said Yosie, now president and CEO of the World Environmental Center, an independent non-profit organization that advances sustainable development through the business practices of member companies and in partnership with governments, multi-lateral organizations, non-governmental organizations, universities and other stakeholders.

Yosie also is part of this year’s ULS, and he will deliver a talk titled “Sustainability and the Evolving Global Chessboard,” at 4:30 p.m., Monday, March 21 at Porter Hall 100 (Gregg Hall).

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THE CAMPAIGN FOR
CARNEGIE MELLON UNIVERSITY

\$1 BILLION

\$687.8M

1/1/2011

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AS OF JAN. 1, 2011, CARNEGIE MELLON’S INSPIRE INNOVATION CAMPAIGN HAD REACHED \$687.8 MILLION TOWARD THE \$1 BILLION GOAL. SINCE NOV. 30, 2010, THE CAMPAIGN RAISED \$11,134,232. FOR THE LATEST PROGRESS, VISIT WWW.CMU.EDU/CAMPAIGN/ABOUT/PROGRESS.HTML.

CMU Police Earn First Re-Accreditation in Higher Education

■ Bruce Gerson

They have the right to remain silent, but this achievement by Carnegie Mellon's police force is worth shouting about.

CMU Police recently became the first police force in higher education in the state to be re-accredited for continuing to meet the 132 policy, procedure and operation standards established as best practices by the Pennsylvania Chiefs of Police Association (PCPA).

Standards range from dress code and office procedures to the use of force, gathering evidence and securing a crime scene.

Lt. Leon G. Crone Jr. of the Lower Allen Township Police Department and a member of the Pennsylvania Law Enforcement Accreditation Commission's assessment team, said the re-assessment of CMU Police was one of the smoothest the team has experienced.

"This is an agency that is clearly dedicated to executing police work the right way and has embraced a culture of professionalism that is evident in their performances and presentation,"

Crone said.

First accredited in 2007, CMU Police is one of only three college and university police forces to be accredited by the PCPA. The others are Duquesne and Lehigh universities.

There are 70 accredited police departments in Pennsylvania, which is comprised of 130 in higher education and about 1,200 municipal police agencies.

Under Chief Thomas Ogden, the university's police department includes 24 police officers, 41 security guards, 13 shuttle/escort drivers, four dispatchers and one business manager. The department provides police patrols and call response, criminal investigations, shuttle and escort services, security guard patrols, event security, and educational programming in crime prevention.

"Accreditation with the Pennsylvania Law Enforcement Accreditation Commission establishes that we have adopted professional best practices, policies and standards. I believe it is imperative that police, security and public



CMU POLICE PATROL THE CAMPUS STREETS TO KEEP THEM SAFE. IN 2010, THEY INITIATED 1,673 TRAFFIC STOPS FOR VARIOUS VIOLATIONS, ISSUING MORE THAN 1,000 WRITTEN WARNINGS AND MORE THAN 650 TRAFFIC CITATIONS. PICTURED ABOVE IS SGT. JASON HENDERSHOT.

safety entities endeavor to maintain the highest standards possible to help ensure excellent service and the public trust," Ogden said.

Ogden joined CMU in August 2008, after serving 29 years as a police officer

for Mt. Lebanon, a south hills suburb of Pittsburgh. He was chief of Mt. Lebanon Police for 10 years. Ogden succeeded Chief Creig Doyle who left CMU to become police chief at Plymouth State University in New Hampshire.

Calendar of Events

Learning and Development Session

Patricia Kravetz, associate director for experiential learning and student employment, will deliver a presentation titled "Working with Today's Student Employees: Managing Millennials in the Workplace." Noon – 1:30 p.m., Wednesday, Feb. 9 Connan Room, University Center (UC). Register at <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

"A Number"

Directed by Lillian DeRitter, the School of Drama performance is part psychological thriller, part scientific speculation and part exploration of the nature and responsibilities of fatherhood in an age when cloning is just as much a part of child-rearing as lullabies and bedtime stories. To order tickets call the Box Office at 412-268-2407. Feb. 9-11 Helen Wayne Rauh Studio Theater

Steinbrenner Institute Environmental Distinguished Lecture Series

Christopher Reddy, a scientist at the Woods Hole Oceanographic Institute, will discuss the Deepwater Horizon Oil Spill. 4:30 p.m., Thursday, Feb. 10 Porter Hall 100 (Gregg Hall).

Black History Month

Ernest Green, a member of the Little Rock Nine, will deliver the keynote address for Black History Month, titled "The Ernest Green Story." 7 p.m., Thursday, Feb. 10 McConomy Auditorium

The Center for African American Urban Studies and the Economy Speaker Series

Nell Irvin Painter, Edwards Professor of American History, U.C. Emerita, of Princeton University, will present a lecture titled "The History of White People." 5 – 6:30 p.m., Friday, Feb. 11 Connan Room, UC

The Society of Women Engineers' Family Carnival

Learn about engineering and science by participating in hands-on activities as part of National Engineers Week. 2-5 p.m., Feb. 13 – 16 Rangos Ballroom, UC Free and open to the public.

Learning and Development Session

Human Resources' Lola Mason will present a course titled "The 7 Habits of Highly Effective People." This uses the principles taught in the national bestseller by the same name by Stephen R. Covey. 9 a.m. – noon, Feb. 13, 16 and March 1 McKenna/Peter/Wright Room, UC. There is a \$100 materials fee to be charged to your department's Oracle string for the three-part course. Register at <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

Learning and Development Session

Human Resources' Freida Kinney will present a course titled "Managing Conflict." The program explores the requirements for effectively managing conflict and will discuss common causes and effects, a management model and five general styles. 9 a.m. – noon, Tuesday, Feb. 15 McKenna/Peter/Wright Room, UC Register at <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

Learning and Development Session

Human Resources' Karen Beaudway will present a talk titled "Grammar Refresher." Noon – 1:30 p.m., Tuesday, Feb. 22 McKenna/Peter/Wright Room, UC Register at <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

The Humanities Center Lectures

Paul John Eakin, Ruth N. Halls Professor Emeritus of English at Indiana University, will deliver a talk titled "When We Say 'I': Identity, Memory, Narrative." 4:30 p.m., Tuesday, Feb. 15 Adamson Wing, Baker Hall 136A

Central Blood Bank Drive

10 a.m. – 5 p.m., Thursday, Feb. 17 Connan Room, UC

Staff Council General Body Meeting

Noon - 1 p.m., Thursday, Feb. 17 Rangos 3, UC

Show + Tell: Sustainability & Government

Join two alumni working in the public sector in Washington, D.C., and Pittsburgh as they share stories of strategic and sustainable planning for the future. 6:30 – 8:30 p.m., Thursday, Feb. 17 Connan Room, UC.

The 25th Annual Putnam County Spelling Bee

The musical follows six semi-pubescent middle schoolers competing to be the best speller, as well as their equally quirky adult moderators. Feb. 17 – 26 New Hazlett Theater, Allegheny Square E, Pittsburgh Purchase tickets at www.cmu.edu/cfa/drama.

University Lecture Series

Dennis Howard, one of Jamaica's most noted musicologists will speak. His talk is titled "Music like dirt rasta! Genre defiance and bonding in the Kingston Creative Echo Chamber." 4:30 p.m., Monday, Feb. 21 Porter Hall 100 (Gregg Hall).

Learning and Development Session

Human Resources' Karen Beaudway will present a talk titled "Grammar Refresher." Noon – 1:30 p.m., Tuesday, Feb. 22 McKenna/Peter/Wright Room, UC Register at <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

"Still Life With Iris"

The play follows young Iris as she struggles to maintain her fragile memories in an inviting shadow-world. Her journey is one of hope, courage and the power of faith. Feb. 23-25 Helen Wayne Rauh Studio Theater Purchase tickets at www.cmu.edu/cfa/drama/.

Learning and Development Session

Ron Placone will lead a course titled "Mastering Change: Building Resilience." The program will discuss process and phases of change, human reactions and techniques for overcoming resistance.

9 a.m. – noon, Wednesday, Feb. 23 Connan Room, UC <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

Learning and Development Session

David Holzemer will present a course titled "PowerPoint Skills: Creating Master Slide Templates." 9 a.m. – noon, Thursday, Feb. 24 Hearth Room, Whitfield Hall. Register at <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>.

Media Focused: Storytelling with Photos

Justin Merriman of the Pittsburgh Tribune-Review will offer a tour of his virtual photo gallery and a workshop about the create use of photos and photo illustrations. Noon-1 p.m., Thursday, Feb. 24 The Singleton Room, Roberts Engineering Hall Sponsored by the College of Engineering and the Department of Media Relations. For reservations contact Chriss Swaney at swaney@andrew.cmu.edu or Abby Houck at ahouck@andrew.cmu.edu.

University Lecture Series

Rochel Gelman, co-director of the Center for Cognitive Science at Rutgers and professor of Psychology, will deliver a talk titled "Early Cognitive Development and Beyond." 4:30 p.m., Thursday, Feb. 24 Porter Hall 100 (Gregg Hall)

Humanities Lecture Series

Mieke Bal, Royal Netherlands Academy of Arts and Science Professor at the University of Amsterdam, will present a talk titled "Thousand and One Voices." Bal also will preview "Separations," a film she co-directed, on Wednesday, March 2, as part of the International Film Festival. 4:30 p.m., Tuesday, March 1 Adamson Wing, Baker Hall 136A

Defensive Driving Class

8:30-10:30 a.m., Tuesday, March 8 Connan Room, UC. For more information contact Jim Gindlesperger at 412-268-3760 or jg57@andrew.cmu.edu.

Reefbot Lets Kids Explore Giant Aquarium

CONTINUED FROM PAGE ONE

Graduate students in the Human-Computer Interactions Methods course taught this fall by Bonnie John, professor in the Human-Computer Interaction Institute, designed the robot's interface and the project website, <http://reefbot.com/>.

CLEO (Children Learning through Education and Observation) was built by adding an HD video camera and making other modifications to a commercially available submersible. Moreland said reliability was a major consideration. Most remotely operated vehicles (ROVs) used by oceanographers operate for only a few hours at a time and are routinely serviced between dives; CLEO, by contrast, will need to operate for a couple of weeks before scheduled servicing.

The foot-and-a-half-long CLEO moves too slowly to chase fish or cause any damage to itself, the tank or the sea life, Moreland said. Navigation software includes safeguards to prevent the tethered submarine from getting caught in crevices, caves and obstructions.

Desnoyer, whose doctoral thesis

will focus on intelligent camera systems, led development of CLEO's smart camera technology, which helps detect fish and may eventually be able to automatically classify fish. Aquarium visitors who use CLEO to identify fish in the tank are helping to train the system.

Though humans are identifying the fish based on photos, what CLEO is learning in this process is a set of attributes that it can associate with particular species, Wettergreen explained.

"It might be the size of a fin and the color of a tail that identifies one species and the pattern of stripes and the body shape that identifies another," he said. "But in fact some of the attributes CLEO learns might not be things that people would even recognize, such as ratios of properties."

Wettergreen said scientists who study deep coral reefs might be particularly interested in the technologies being developed for CLEO. In contrast to corals that flourish in shallow, tropical waters, these deep reefs are difficult for human divers to study in detail. The reefs are threatened with extinction be-



THE REEFBOT TEAM INCLUDES (FROM LEFT) DAVID WETTERGREEN, ASSOCIATE RESEARCH PROFESSOR OF ROBOTICS; JOHN THORNTON, SENIOR RESEARCH ENGINEER; AQUARIST ASHLEY KIDD; MARK DESNOYER, A ROBOTICS PH.D. STUDENT; JUSTINE KASZNICA, REEFBOT PROJECT MANAGER; AND SCOTT MORELAND, A ROBOTICS PH.D. STUDENT. MICHAEL FURLONG, A PH.D. STUDENT ON THE PROJECT, IS NOT PICTURED.

cause of rising ocean temperatures and changing ocean chemistry. ROVs that could autonomously identify and count the creatures and organisms living on

these deep corals could provide invaluable knowledge. Further funding will be necessary to pursue those goals, he added.

Aviary Volunteer is All About the Birds

■ Heidi Opdyke

Gail Newton's volunteer work gives her life wings.

Newton, an IT project manager at the Software Engineering Institute, is the president of the National Aviary's Volunteer Council and has helped with everything from being a docent to cleaning cages for the last five years.

She recently shared her experiences with the aviary at a Carnegie Mellon Women's Association (CMWA) event. As part of her talk, she gave a presentation on African Penguins that was originally designed for a CMU Learning and Development class.

Her passion started with a one-in-a-lifetime opportunity to swim with dolphins at Discovery Cove in Orlando.

"I was so positively impacted by the experience, that I wondered how I might someday help other people make a similar connection," she said.

She called the Pittsburgh Zoo and PPG Aquarium, but they weren't accepting volunteers at that time of year. The aviary, however, started her right away.

"The Aviary training staff are incredibly talented mentors and there are so many ways to help make an impact as a volunteer there," she said.

Newton wasn't alone for her talk. She had a little help from Simon, one of the aviary's penguins.

I had at least a year of volunteering (and guest interactions) under my belt before I had the opportunity to start learning how to work with select birds," Newton said. "Every bird has its own traits and there are protocols that must be followed for the safety of the bird and the handler. You really learn to respect these creatures and their natural behaviors. They are wild animals after all."

The aviary is actively involved in a managed breeding program for African Penguins, which has declined by 90 percent in the last 100 years. There are fewer than 60,000 in the wild.

At large, the aviary has more than 500 birds and 200 species.

If anyone has interest in volunteering, Newton recommends they give it a try. Volunteers serve as docents who provide aviary guests with wildlife and ecology information through guided tours and informal talks. They also serve as education volunteers who receive special training above and beyond the docent roles.

"I really didn't know very much about birds when I first started volunteering at the National Aviary," she said. "So don't be hesitant to volunteer because you don't have a 'birding' or zoo background. You will definitely have opportunities to learn about the amazing birds, and what it takes to care for them and train them. You'll also get to meet some great people in the process — Aviary staff and guests."

For more information about volunteering at the National Aviary, visit www.aviary.org/inv/volunteer.php or contact the National Aviary Volunteer Coordinator at 412-323-7235 x476 or volunteer.scheduling@aviary.org.

For more information and for upcoming CMWA events, visit www.cmu.edu/cmwa.



GAIL NEWTON WORKS WITH SIMON, AN AFRICAN PENGUIN FROM THE NATIONAL AVIARY, DURING A RECENT TALK AT CMU.

Q&A with Adrien Treuille

CONTINUED FROM PAGE TWO

scientists, they've responded naturally the way scientists do by forming a community, by discussing, by naming things, and even by having some players who do better, who become sort of experts in different aspects of the field and are respected by others. In some sense the organization of the game community exactly mirrors that of the scientific community. It's a beautiful thing.

What have we learned thus far in the limited time that Eterna has been online? Are you learning things about RNA?

The players have convincingly shown something that we already knew, in that you can design RNAs that work in principle according to our theories, but don't work in practice. They designed RNAs that some theories said should fold some way and they don't. Then they immediately began hypothesizing why certain things work and why some things don't work. And they have successfully designed RNAs now that do fold properly — completely synthetic RNAs that do fold properly. So in some sense we have our first sort of light into this cavern of why RNAs fold properly. That's sort of our opening now to work with the community and try to really explore this space. We ultimately want to come up with a complete and repeatable set of rules to allow us to synthesize RNAs that fold properly in practice.

Social Networks

White House Staffer Uses Innovation To Create Solutions

■ Maria Zayas

When President Barack Obama took office, he wanted government to “do business differently.”

As part of his plan, he created the Office of Social Innovation and Civic Participation (SICP). Sonal Shah, the inaugural SICP director, spoke about her work in mid-January at Heinz College.

Shah said the SICP has three distinct goals to help support grass-roots efforts to solve U.S. challenges: to develop community leadership and to promote service as a solution; to increase investment in innovative community solutions that have revealed real results; and to invest in the development of new models of partnership.

She praised Carnegie Mellon’s focus on interdisciplinary education. Her experience has shown her the necessity of understanding the many facets of problems.

“It is a matter of using what you know with what you have started learning,” Shah said. “It’s not just housing, graduation rates and birth rates. We need to take a more interdisciplinary stance. More holistic views are needed. Is it that we are simply giving a service or that we are solving a problem?”

Shah discussed some of the ways SICP has begun addressing the need for diverse, innovative thinking.

She said the federal government, rather than centrally dictating procedures, will be encouraging community-based efforts and innovation. She said new ways to assess the economic impact of social innovation will be created to drive experimentation in financing those initiatives.

Her speech provided an incomparable benefit to Carnegie Mellon students.

“The monthly speaker series attracts regional, national and international thought leaders to campus to share insights and perspectives on current public interest issues with our graduate students and faculty. Students can then learn how to apply what they learn in class to a real policy issue, broadening their breadth of knowledge,” said Jackie Speedy, Heinz College’s director of student affairs.

Many in the audience were students and faculty from CMU’s Institute for Social Innovation.

“The Heinz College, with its focus at the intersection of public policy, management and technology, was the perfect place to host her inaugural visit to Carnegie Mellon,” said Tim Zak, associate teaching professor and the director of the institute. “I think those of us who had a chance to meet with her briefly prior to the talk got confirmation that CMU’s social innovation efforts are well aligned with — and could contribute to — the Office of Social Innovation’s initiatives.”

Shah’s visit was sponsored by Heinz College and the University Lecture Series.

SPEAKERS SHARE D.C. EXPERIENCES

Washington insiders are common guests at CMU’s Pittsburgh and Qatar campuses.

The university has a strong connection and presence with the capital, thanks to the efforts D.C. programs for the Heinz College and the Department of Engineering and Public Policy (EPP).

Established in 2008, the Heinz College D.C. Campus aims at building connections between CMU and national and international policymakers. The Heinz D.C. Campus offers the Master of Science in Public Policy and Management in DC degree. This highly selective program combines studies, work experience and networking opportunities in the capital. After spending one year at CMU’s main campus, students go on to work full-time apprenticeships four days a week, take night classes twice a week, and spend Friday mornings in classes and workshops.

EPP’s Washington Office opened in June 1997 and works to develop interaction between students and faculty with related policy organizations in the area through video-conference seminars. These link the Washington Office with the CMU Pittsburgh campus.

Dubbed the “classroom in the capital,” these seminars provide undergraduate and graduate students the chance to connect with and learn from experienced Washington policymakers.

Connections like these make networking with high-ranking officials possible. For this reason, Sonal Shah’s visit was more than a lecture, but a key moment in establishing a working relationship.

“We discussed some specific ways that Carnegie Mellon could work with the Office of Social Innovation including, for example, student projects in specific areas of interest, and will be following up on those opportunities,” said Tim Zak, associate teaching professor and the director of the Institute for Social Innovation.

Recent speakers based in Washington, D.C., have included David Radzanowski, NASA Chief of Staff; and Kurt Campbell, assistant secretary of state for East Asian and Pacific affairs. In 2010, three U.S. Cabinet members visited CMU campuses. Secretary of State Hillary Rodham Clinton visited Carnegie Mellon in Qatar, Secretary of Energy Steven Chu spoke in Qatar and Pittsburgh, and Secretary of Commerce Gary Locke spoke in Pittsburgh.

Online: For a list of future speakers visit: <http://www.cmu.edu/uls/> More information about Engineering and Public Policy’s Washington Office, and their video-conference series can be found at: www.epp.cmu.edu/washington/index.html

CMU Among the Talk at Linguists Meeting

Barbara Johnstone delivered the keynote presentation at the national Linguistic Society of America’s (LSA) 85th meeting, in “dahntahn” Pittsburgh where top linguistic scholars gathered in January.

Johnstone, an English professor who works at the intersection of rhetoric, linguistics and critical theory, discussed “Speaking Pittsburghese: The Social History of Pittsburgh Speech.”

In her talk, she examined the many special characteristics of Pittsburgh speech and how in the second half of the 20th century, “Pittsburghese” became identified as a highly visible dialect.

Along with a team of collaborators, Mandy Simons, an associate professor of philosophy who launched Carnegie Mellon’s growing linguistics major, presented “Towards a Taxonomy of Projective Content.” Her talk shared some results of an National Science Foundation-sponsored research project aimed at better understanding different types of linguistically conveyed meaning, using data from a variety of languages.

Also at the meeting, the North American Computational Linguistics Olympiad (NACLO), an annual competition that identifies high school students with linguistic talent while simultaneously acquainting them with the field of



ENGLISH PROFESSOR BARBARA JOHNSTONE DISCUSSED PITTSBURGHESE AS THE KEYNOTE SPEAKER AT THE LINGUISTIC SOCIETY OF AMERICA’S 85TH MEETING.

computational linguistics, received the (LSA) 2011 Linguistics, Language and the Public Award. Lori Levin, NACLO co-chair, is an associate research professor in CMU’s Language Technologies Institute, and Mary Jo Bensasi is the NALCO administrator.

The annual award recognizes people or organizations that have had a demonstrable impact on the public awareness of linguistics.

NACLO is sponsored by the NSF, the North American chapter of the Association for Computational Linguistics, CMU’s Language Technologies Institute, CMU’s Gelfand Center for Service Learning and Community Outreach, the University of Michigan and Brandeis University, among others.

Meaningful Interactions a New Focus of Diversity Initiative



CONTINUED FROM PAGE ONE

staff and students from all seven colleges and schools. Representatives participated in college-specific roundtable conversations to discuss ideas, strategies and tactics. Each college and school will pursue at least one project in 2011.

“In order to have worthwhile and lasting impact, the motivation for change and the ideas to drive it must come from within the colleges themselves, as each has its own unique culture and dynamic. It is not something which can be imposed on them,” Cohon writes in the diversity report.

Throughout the year, the DAC will work with college and schools to help them refine and implement their plans. Progress reports will be issued on MLK Day 2012.

DEAN OF STUDENTS GINA CASALEGNO (FAR RIGHT) LEADS A PROCESSION FROM THE PURNELL CENTER LOBBY TO THE UNIVERSITY CENTER IN A SYMBOLIC MARCH FOR CIVIL RIGHTS. AT THE UNIVERSITY CENTER, MAGGIE SODERHOLM (HSS'12) SPOKE ABOUT HOW MARTIN LUTHER KING JR. IMPACTED HER LIFE AS A PRIVILEGED WHITE GIRL AND HOW HIS WORK HAS AFFECTED THE ENTIRE COUNTRY. APPIAH ADOMAKO (HNZ'11) SPOKE ABOUT HOW SOCIETY SHOULD INVEST IN EDUCATION AND TRAINING. “IF EVERY COUNTRY WOULD ALLOCATE JUST 10 PERCENT OF ITS DEFENSE BUDGET TO TRAIN AND EDUCATE THE POOR AND INVEST IN AGRICULTURAL TECHNOLOGIES, THE FIGHT AGAINST POVERTY AND MALNUTRITION COULD BE WON,” ADOMAKO SAID. JULIANNE MALVEAUX, PRESIDENT OF BENNETT COLLEGE FOR WOMEN, DELIVERED THE KEYNOTE ADDRESS AND DISCUSSED KING'S ECONOMIC LEGACY.

DIVERSITY REPORT HIGHLIGHTS

- In his State of Diversity address, President Cohon noted that 15 percent of this year's first-year class are minority students, making the Class of 2014 the most diverse first-year class in school history.
- In the past 10 years, the total undergraduate minority population has increased 60 percent from 457 to 730. There were 664 undergraduate minority students last year and 610 the year before. President Cohon credited the results to a “concerted effort” by the Admission Office and the “extraordinary success” of the Summer Academy for Math and Science, the CMU program designed to increase the number of college-bound minority students.
- Students and employees now have the opportunity to be recognized as multiracial rather than a single race. Twenty-six percent of the current undergraduate minority students and 16 percent of the current graduate minority students consider themselves multiracial. The opportunity to declare multiracial status began last fall.
- CMU sponsors many diversity programs throughout the year, including Martin Luther King Jr. Day, Black History Month (February), Women's History Month (March), Hispanic Heritage Month (Sept. 15 – Oct. 15), Pride Month (October), Asian Heritage Month (November), International Festival, the MOSAIC Gender Conference, and Speak Your Mind Diversity Discussion and Dinners.
- CMU supports more than 85 multicultural student organizations.

For the full report visit www.cmu.edu/diversity-guide.

World Economic Forum Visits CMU; Cohon Participates in Davos

Michele Petochi, director and head of university community for the World Economic Forum (WEF), visited Carnegie Mellon in December.

His visit preceded the WEF's well-known annual meeting in Davos, Switzerland, which brought together the world's business, political and academic leaders in late January. The meeting's theme was “Shared Norms for the New Reality,” and included discussions which focused on how the world is becoming increasingly complex and interconnected, and experiencing an erosion of common values that undermines public trust in leadership, economic growth and political stability.



Carnegie Mellon President Jared L. Cohon moderated an interactive group session at the Davos meeting, titled “Getting Things Done: Macro and Micro Strategies,” which addressed using technology to help increase productivity at the group and individual level. The session included discussion leaders from the United Kingdom, India, Vietnam and Germany.



MICHELE PETOCHI (CENTER), DIRECTOR AND HEAD OF UNIVERSITY COMMUNITY FOR THE WORLD ECONOMIC FORUM (WEF), TALKS WITH UNDERGRADUATE STUDENTS KATHERINE YANG AND ERIC WU DURING HIS VISIT TO CAMPUS IN DECEMBER.

Students Helping Students

Academic Development Enhances Collaborative Learning Culture

■ Abby Houck

The basement of Cyert Hall is not a typical destination for most faculty or staff, but it's worth a visit in the late afternoon or evening, especially during finals week.

Visitors will see Academic Development's classrooms, offices and hallways filled with students engaging in experiences that reinforce classroom learning and encourage positive study skills.

"We offer a variety of programs for students who are facing academic challenges, as well as those who want to improve their performance," said Linda Hooper, director of Academic Development.

Academic Development's programs are prime examples of how Carnegie Mellon students are taking ownership of their learning experiences, not only by improving their own academic performance, but also by enabling the success of others.

The office has experienced significant growth over the past decade — a clear indication that Hooper and her four full-time staff members have made Academic Development a place where students feel comfortable seeking help. During the 2009–2010 academic year, Academic Development logged 10,885 student contacts (students are counted each time they attend a session), nearly a 38 percent increase over student contacts for 2000–2001.

The team trains and supervises about 140 undergraduate and graduate students who support one of four programs: Academic Counseling, Supplemental Instruction (SI), EXCEL Groups and Peer Tutoring. Students must have an overall QPA of 3.5 and As in the courses they support. They take a semester-long course that covers teaching concepts like multiple intelligence theory and collaborative learning techniques.

"The students are very real about what it takes to succeed in a course," Hooper said. "Their peers listen because they've 'been there, done that.'"

Student employees take away skills that are attractive to graduate programs and employers. "We write a lot of recommendations for students applying for teaching assistantships during graduate school, and other students have talked about their experiences during medical school interviews," Hooper said.

Academic Counseling

Jessica Owens coordinates the Academic Counseling program, which focuses on academic skill development. The student Academic Counselors (ACs) lead group workshops covering topics such as succeeding in the freshman year, managing time, citing sources, prepar-

ing for exams and combating stress. In addition to workshops, ACs provide one-on-one sessions for those interested in developing a personalized plan for academic success. A similar program is being developed at the Qatar campus' Academic Resource Center, and several of the ACs helped to create YouTube videos of individual sessions for training new student employees this fall.

Students enrolled in traditionally difficult courses are encouraged to attend optional, one-hour SI sessions offered twice each week. Chad Pysner, SI/EXCEL program coordinator, reports 76 percent of students enrolled in the seven courses supported by SI this fall attended at least one session.

Supplemental Instruction

Ming-Yang Hung, a senior mechanical engineering major, is the SI instructor for physiology. Two years ago, Hung was enrolled in the same course and regularly attended SI sessions led by Raphael Bertrand.

"Rafael was patient with us," Hung said. "His dedication really moved me, and I wanted to give back a little."

Hung's SI students will tell you that he's gone above and beyond his job description. Nearly 97 percent of physiology students attended at least one of his sessions last semester. He's even answered emails from students at 5 a.m. the day of a test.

Hung meets weekly with faculty member Phil Campbell to discuss what course content is likely to be the most challenging. Student instructors appreciate the ability to better prepare for sessions when faculty submit syllabi or homework sets in advance, although it's not required. Some faculty members also provide access to course content on Blackboard.

EXCEL

While SI typically supports large, introductory courses, EXCEL Groups work well for major-specific courses with smaller enrollments. Up to six students meet with an EXCEL leader each week.

Weronika Balewski, a junior flute performance major, is the College of Fine Arts' first EXCEL leader and supports courses in harmony and solfege.

"Chad Pysner has given me the support and structure to come up with new solutions to support music courses, which focus on skill development," she said.

Faculty members invite Balewski to visit their classes at the beginning of each semester.

"Professor Whipple, in particular, has been very supportive," Balewski said. "He even told me that several of his students raised their grade by a whole letter after getting involved in EXCEL."

Peer Tutoring

Tutoring, coordinated by John Lanyon, is Academic Development's largest program with approximately 100 tutors supporting 20 courses.

Orathai Sukwong has been a peer tutor for nearly eight years and was named the 2010 Graduate Student Employee of the Year. She completed her bachelor's and master's degrees in engineering at Carnegie Mellon and is pursuing a doctorate.

"Some students come to tutoring sessions and really need help connecting the pieces. Others have mastered a concept but just need confirmation that they are using the right process," Sukwong said. "One of the most rewarding experiences is when I see one of my 'tutees'

make a connection."

Walk-in tutoring is the most popular option, although students may request weekly standing appointments. Tutors offer late afternoon walk-in sessions at the Academic Development office, as well as evening sessions in Mudge, Donner and West Wing residence halls. The Engineering and Science Library has been added to the list of walk-in locations for the spring semester.

"We're thankful for the extra space," Lanyon said. "In the past, we've had to contact housefellows to add chairs in popular tutoring locations. In one instance, our administrative assistant, Donora Craighead, carried a folding table over to Donner House, because so many students showed up."



NOAH A. SMITH



SHAWN LITSTER

Investigators Receive NSF Career Awards

The National Science Foundation has recognized the outstanding research of Noah A. Smith and Shawn Litster by presenting them with Career Development awards in recent weeks.

In his recent letter to the university community, President Jared Cohon said that more than 20 of CMU's faculty members have received Career Awards in the last year.

Smith, an assistant professor in the Language Technologies Institute and Machine Learning Department, has received a five-year, \$550,000 Faculty Early Career Development Award to study flexible statistical learning algorithms for natural language processing. Smith's research focuses on computational models of human language: formal aspects, learning such models from data, and applying them to problems like translation and social media analysis.

Smith joined the School of Computer Science faculty in 2006. He earned bachelor's degrees in linguistics and computer science at the University of Maryland and his master's degree and Ph.D. in computer science at Johns Hopkins University.

Shawn Litster was awarded a \$400,000 Career Young Investigator Award from the NSF to pursue fuel cell and lithium-ion battery research.

"I'm delighted to receive this award. It provides important support for studying transport phenomena in fuel cell and battery electrodes using our unique micro-scale approaches. The award also supports my education initiatives in developing new approaches for teaching energy systems," said Litster, an assistant professor of mechanical engineering who teaches undergraduate and graduate courses in energy systems and thermodynamics.

Litster received his bachelor's degree in engineering and his master's degree in mechanical engineering in 2004 and 2005, respectively, from the University of Victoria in Victoria, British Columbia. He earned a Ph.D. in mechanical engineering in 2008 from Stanford University.

LECTURE SPOTLIGHT: "LITTLE ROCK NINE" MEMBER TO SHARE HISTORIC MEMORIES

■ Abby Houck

Senior math major Kamal Ibrahim is excited to start his career at PNC Bank's Pittsburgh headquarters this summer, although he's spending his final semester at Carnegie Mellon focused on the legacy he'll leave behind for future students.

Ibrahim, an Andrew Carnegie Society Scholar from New York City's Harlem neighborhood, has been involved in a wide range of activities that promote diversity and multicultural awareness. He's served as a resident assistant for ORIGINS, the Carnegie Mellon Advising Resource Center's pre-orientation program for minority students. Ibrahim is the fundraising chair for Carnegie Mellon's chapter of the National Society of Black Engineers and is a member of the University of Pittsburgh's Alpha Phi Alpha fraternity.

Speaking with M. Shernell Smith in the Office of the Dean of Student Affairs, Ibrahim suggested this year's Black History Month focus on "living legacies." He wants to encourage

members of the campus community to reflect on the ways they can make an impact while learning from the personal experiences of contemporary heroes.

Ibrahim's family tree includes one of the civil rights movement's youngest living legacies. Distant cousin Carlotta Lanier and her eight classmates, now known as the "Little Rock Nine," were the first black students to integrate Central High School in 1957. Although Lanier will not be in Pittsburgh this February, fellow classmate Ernest Green will deliver the Black History Month keynote address at 7 p.m., Thursday, Feb. 10 in McConomy Auditorium.

Green will describe the events that took place during his senior year of high school. September 1957 began with Gov. Orval Fabus ordering the Arkansas National Guard to block black students from entering Central High. The governor's refusal to uphold the U.S. Supreme Court decision *Brown v. Board of Education* prompted President Dwight Eisenhower to order the U.S. Army and Arkansas National Guard to

WHO: ERNEST GREEN

WHAT: BLACK HISTORY MONTH KEYNOTE SPEAKER

WHEN: 7 P.M., THURSDAY, FEB. 10

WHERE: MCCONOMY AUDITORIUM, UNIVERSITY CENTER

ONLINE: WWW.CMU.EDU/ULS/FEBRUARY/GREEN.HTML

protect the students as they entered the school. The "Little Rock Nine" encountered violence and verbal abuse throughout the school year.

After graduation, Green earned a bachelor's degree in social science and master's degree in sociology from Michigan State University. He served as assistant secretary of Labor for Employment and Training under the Carter administration and as chair of the African Development Foundation during the Clinton administration. Green is now the managing director of public finance for Lehman Brothers' Washington, D.C., office.

In 1999, President Clinton presented the "Little Rock Nine" with the Congressional Gold Medal, the highest



ERNEST GREEN

honor given to a civilian. Several books, movies and documentaries have been produced about the students' experiences, including the "The Ernest Green Story," which premiered on the Disney Channel in 1993.

It's Electrifying

MCS Staffer Shows Steelers Spirit

■ Amy Pavlak

Rob Dalmasse wants to share a game with the world.

Dalmasse, a lab technician in the Department of Chemistry, runs an electric football league with graduate students and teaches outsiders about the game with a hot-tub-sized model of Heinz Field.

Complete with fans in the stands, current Steelers players on the field and coaches on the sidelines, the model has since been featured in commercials and a local news clip. It travels to Fan Blitz at Heinz Field every year, and now it's been on exhibit at CMU's Miller Gallery.

The exhibition, "Whatever It Takes: Steelers Fan Collections, Rituals, and Obsessions," looks at the ingenious methods Steelers fans use to construct their own personal and social identities in relation to the team. The exhibit will end after the Superbowl.

Dalmasse's homage to Heinz Field is hard to miss. The large model is one of the first things you see as you walk through the gallery's doors. If you look closely, you might spot Art Rooney sitting in his box or President Obama waving a Terrible Towel.

But once the exhibit wraps up, Dalmasse would like to find a permanent home for the display in a museum.

"I don't want to have to store it in my basement, but I would like to donate

it to an organization who would showcase it so Pittsburghers and other people can enjoy it."

He built it with help from his sister-in-law Shawna and her husband, John, who did the bulk of the construction.

Dalmasse did all of the artwork for the replica, including intricately painting figurines of the Steelers players and their opponents, the Cleveland Browns. Over the years, Dalmasse has presented the figurines to several Steelers players,

including Hines Ward, James Harrison, Ryan Clark and the legendary Jack Lambert, for their signatures.

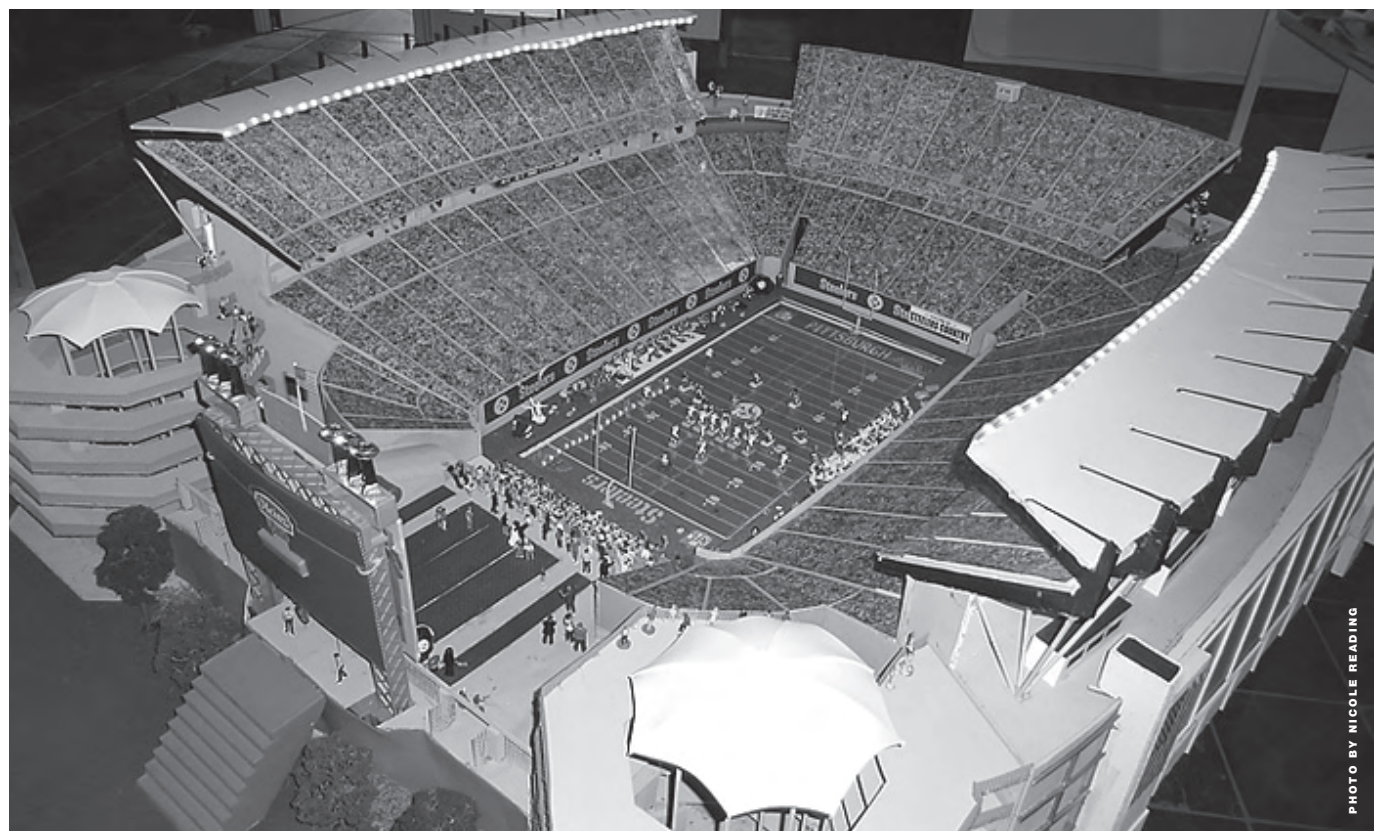
"I've had this electric football game board since I was a kid, and I've always been a Steelers fan. It's been a blast to showcase this retro-childhood game in this wonderful venue, contribute to the Steelers Nation, and share this hobby. Go Steelers!"

If someone does take the game, the student league will still be able to con-

tinue. Dalmasse has more than 10 other electronic football boards with the oldest dating to before 1960.

"It's a lot of fun," he said. "It's a hobby. It's just strange that a game from yesteryear still exists. But just by exposing it to younger people they catch on quickly and really enjoy it."

For more information about the display, contact Dalmasse at rd20@andrew.cmu.edu, 412-268-5394 or 412-268-2341.



THIS ELECTRONIC FOOTBALL GAME IS A HOT-TUB-SIZE MODEL OF HEINZ FIELD IN NEED OF A PERMANENT HOME.

PHOTO BY NICOLE READING

Fit Fitness In: University Community Exercises Healthier Choices

■ Bruce Gerson

Come healthy, leave healthier.

That's the slogan for Carnegie Mellon's fitness program, and by the looks of things, folks are taking it to heart.

More than 400 students, faculty and staff participated in group exercise classes and the Fitness Open House during the first week of classes this semester. Participants at the Open House in the University Center (UC) were able to get advice from fitness staff and personal trainers and try out different activities, such as racquetball, squash, yoga, spinning and stability balls and bands.

Nearly 100 signed up for personal training sessions over the next few weeks, and many registered to "Fit Fitness In," this semester's Fitness Challenge, Jan. 24 – March 1. During that six-week period, individuals commit to working out for at least 20 minutes a day, four days a week. Last semester the challenge drew more than 300 participants.

Director of Fitness and Health Donna Morosky, a 35-year veteran at CMU, and Fitness Operations Manager Pat-tye Stragar said they've seen a drastic increase in awareness and interest in the fitness program.

"We try to do more activities to make people aware of what's going on," said Stragar who maintains an email d-list of about 2,000 subscribers to communicate fitness news.

"People love competition so we challenge departments and residence halls to see who can bring the most people to our Fitness Challenge or Walking Wednesdays program. We're seeing a steady trend upward in participation," she said.

Stragar also credits the success of the program to President Jared L. Cohon's commitment to the Healthy Campus

Initiative, an effort he launched in 2006.

"The president works out, he's a big advocate of the program, and it trickles down from there. People are really making time for fitness," she said.

In an email in early January, Barbara Smith, associate vice president and chief Human Resources Officer, and Anita Barkin, director of University Health Services, encouraged supervisors to support their staff's involvement in fitness activities.

"While there are times when the needs of the office and the demands of the work situation make staff participation in an event or activity impossible, we would ask that, if and when flexibility is an option, you support a staff member's interest in participating in a healthy campus activity," they wrote.

"When individuals engage in a healthier lifestyle the positive impact is realized on both the personal and institutional level. Chronic illness . . . lower employee productivity, increase the number of lost workdays and increase health insurance costs. This is clearly a case where what is good for the employee is also good for the employer," Smith and Barkin said.

The Walking Wednesday program, in which participants walk for 45 minutes during the noon hour in the UC Gym during inclement weather and on the Gesling Stadium track when the weather's nice, and the Fitness Challenge are just two components of a multi-faceted fitness menu offered to the university community by the Department of Athletics and Physical Education. There's also the Group X-exercise program (see above) and more than 25 physical education classes.

Courses for students range from

GROUP X-ERCISE PROGRAM

The "Group X-exercise" program offers more than 30 classes each week in everything from step aerobics, kickboxing, pilates and spinning, to swimming, West African Dance, yoga and Zumba.

- Single class cards are \$4 with the exception of yoga, which is \$7 per class.
- Twelve-punch cards are available for \$40 (yoga classes require two punches).
- Cards can be purchased at the UC Equipment Desk across the hall from Wiegand Gym.



African Caribbean Dance, basketball, body sculpting and karate, to lifeguarding, personal fitness, racquetball and squash, tennis and volleyball.

Morosky began CMU's fitness program in the mid-1980s with aerobics classes in the residence halls and in Skibo Gym's Thistle Hall. She recalls adding step aerobics and body sculpting, and then classes that combined aerobics, step aerobics and body sculpting. Circuit training was added in the '90s, followed by spinning, "aquacises," or water aerobics, African Caribbean Dance and yoga.

Zumba, a high intensity, Latin-inspired dance exercise, was introduced in 2007.

"We've seen an explosion of activity and interest among students, faculty and staff, especially with spinning and yoga," Morosky said. "I had 74 students on my waiting list for yoga this semester and 34 on the waiting list for spinning.

"We've certainly become a much healthier campus," she said.

For more information on the fitness program, go to www.cmu.edu/athletics/recreation/fitness/index.html or stop by the UC Equipment Desk.

NEWS BRIEFS

Resnik Café, Tartans Pavilion Eliminate Bottled Water

CulinArt has partnered with Aqua Health Fountain Waters for the spring semester to promote a greener campus by offering flavored water fountain options in the Schatz Dining Room and the Marketplace. Flavors include raspberry, kiwi strawberry, green tea and lemon lime. Bottled water is being eliminated in the Resnik Café and the Tartans Pavilion.

CulinArt Student Activities Director Shelby Cole said the decision supports the CMU students' Tap Water Project, which encourages students to "grab a cup of water, rather than a bottle."

Carnegie Mellon Café Hosts Karaoke Nights

CulinArt is sponsoring competitive and entertainment-only karaoke nights from 6 to 9 p.m., Monday, Feb. 7 and 14. Students wishing to compete must pre-register at least two hours prior to each event with CulinArt's Student Activities Director Shelby Cole at scole@andrew.cmu.edu. Thirty seconds of each performance

will be posted on CulinArt's Facebook page at www.facebook.com/CulinArtCMU.

The two students with the most "likes" will perform in the finale on Monday, Feb. 21. The winner will receive \$100 and the chance to sing the National Anthem at a Washington Wild Things baseball game next season.

Students, faculty and staff interested in singing just for fun are encouraged to participate. Eclipse Entertainment's DJ Joe Wright will provide music.

Natural History Museum Extends Gigapixel Show

The Carnegie Museum of Natural History has extended through July its display of the juried gallery show from last fall's Fine International Conference on Gigapixel Imaging for Science. Prints of the eight stunning high-resolution photos, each up to 17 feet in length, are displayed in the R.P. Simmons Family Gallery on the museum's third floor.

Staff Council Offers Discounts for PSO, Opera

Staff Council has arranged for members of the university community to receive tickets to the Pittsburgh Symphony and Pittsburgh Opera

at discounted rates. For order forms go to the Staff Council website www.cmu.edu/staff-council/Discounts/index.html.

L&D Classes Available For Spring Semester

Learning & Development's spring semester has begun, and sessions are filling up fast. For a full schedule, and to register for courses, visit www.cmu.edu/hr/learning/seminars.html.

Annual Alcohol and Drug Brochure Released

The university's annual alcohol and drug policy brochure can be downloaded at www.studentaffairs.cmu.edu/dean/publications/2010-2011-alcohol-and-drug-brochure.pdf. This publication was compiled as a resource by staff in the Office of the Dean of Student Affairs. Contact the staff at 412-268-2075 with any questions or comments.

First Finance Bulletin Published

The inaugural edition of the Finance Bulletin has been published and can be downloaded at www.cmu.edu/finance/cfo/fincom/files/fin_bull_201101.pdf. A new monthly publication by

the Finance Division, the issue includes news, deadlines, information about tax changes for 2011, and upcoming changes to the business and travel expense policy. The bulletins will be archived on the Finance Division website at www.cmu.edu/finance/cfo/fincom/.

Study: Thinking About Food Can Help Diet

If you're looking to lose weight, think about eating your favorite candy bar. In fact, go ahead and imagine devouring every last bite — all in the name of your diet.

A new landmark study by Carnegie Mellon researchers, published in *Science*, shows that when you imagine eating a certain food repeatedly, it reduces the amount you consume, rather than increasing cravings.

"We think these findings will help develop future interventions to reduce cravings for things such as unhealthy food, drugs and cigarettes," said Carey Morewedge, an assistant professor of social and decision sciences and the lead author of the study, who appeared on ABC News with Diane Sawyer on Friday, Dec. 10. Watch the interview online at <http://abcnews.com/eNXUSS>.

The research team included Young Eun Huh, a Tepper School of Business Ph.D.

Carnegie Mellon Silicon Valley Opens Expansive New Wing

■ Sylvia Leong

Carnegie Mellon Silicon Valley is growing.

The California program celebrated the opening of a new wing with a ribbon-cutting ceremony on Jan. 12.

The new space is located in Building 19, in the 1050-60 section of NASA Ames Research Park at Moffett Field. The wing consists of 11 rooms, which have been renovated to accommodate two conference rooms, one office space, three work areas for 30 graduate students, two work areas for 16 researchers, two offices for Institute Telecom (a partner of Carnegie Mellon Silicon Valley) and one student/faculty lounge.

The project was the final phase of a three-phase renovation plan that began in 2008 with the transformation of Building 23, the main building for the Carnegie Mellon Silicon Valley campus.

During Phase I, a high-tech, point-to-point video conferencing classroom was created to accommodate distance learning, and student work stations were put in place to house the new full-time master's degree and Ph.D. students.

In Phase II, renovations focused on improving audio-quality for remote-classroom capability, and maximization



FACULTY, STAFF AND STUDENTS CELEBRATE THE RECENT BUILDING RENOVATION.

PHOTO BY SYLVIA LEONG

I'm pleased we can provide new accommodations for our graduate students and researchers. The CMU building project team has provided a seamless integration to the new wing," said Martin Griss, director of the Silicon Valley campus and

piper TRIVIA

Congratulations to include Aamir Anwar, Teresa Smith and Marilyn Parker for correctly answering the December Piper Trivia question.

Go online to the Piper+ at <http://bit.ly/CMUpiper> for this month's question. Previous winners are ineligible. Winners will receive a prize from the Carnegie Mellon Bookstore.

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of meeting and office spaces.

Carnegie Mellon shares Building 19 with University of California-Santa Cruz and several start-up companies associated with NASA.

"We've seen tremendous growth in our academic and research areas.

associate dean at the College of Engineering. "It feels like every time we finish construction on a new phase, we immediately outgrow it. This is an exciting time to be at the Silicon Valley campus."

candidate, and Joachim Vosgerau, assistant professor of marketing at the Tepper School.

NSF Extends Support For ARTSI Program

The National Science Foundation (NSF) will be supporting an alliance of nine major research universities, including Carnegie Mellon, and 19 historically black colleges and universities (HBCUs) that encourages African American students to pursue graduate training and research careers in robotics and computer science.

The NSF's two-year, \$1.5 million extension award will enable the Advancing Robotics Technology for Societal Impact (ARTSI) Alliance to develop additional curricula, outreach activities, and summer research programs.

Participating Carnegie Mellon faculty members include David S. Touretzky, Illah Nourbakhsh and Sara Kiesler.

University Develops Business Ethics Code

As required by recent federal regulations, Carnegie Mellon has developed a Code of Business Ethics and Conduct. The code summarizes and organizes the legal and ethical obli-

gations embodied in existing university policies. Each section of the code sets forth a general legal or ethical principal followed by Web links to related university policies. The code was reviewed and approved by President's Council and the Board of Administration Regulation and Finance. A copy of the code may be found at www.cmu.edu/policies/documents/CodeBusinessEthicsConduct.htm. General questions may be directed to Assistant General Counsel Dan Munsch at dmunsch@andrew.cmu.edu.

Parking & Transportation Seeks PAT Feedback

Parking & Transportation Services is seeking feedback from students, faculty and staff regarding their experiences using Port Authority Transit (PAT) services. Please complete the PAT feedback form at <https://www.cmu.edu/parking/PAT-feedback/> to ensure your concerns are heard.

New Center To Develop Decision-Making Strategies

Uncertainty is a part of life. But a new center at Carnegie Mellon will help consumers and industry better handle those doubts when it comes to issues involving global climate change and energy. The Center for Climate and

Energy Decision Making (<http://cedm.epp.cmu.edu/index.php>), funded by a five-year, \$6 million grant from the National Science Foundation, will develop and implement strategies for protecting things from fragile marine ecosystems to curbing dangerous carbon dioxide emissions.

The center, directed by Ines Lima Azevedo, will tap the expertise of principal investigator M. Granger Morgan, head of EPP, and several other Carnegie Mellon faculty as well as researchers from other institutions.

Zhu Recognized for Magnetic Work

ABB Professor of Engineering and current Data Storage Systems Center Director Jimmy Zhu has received the IEEE Magnetics Society Achievement Award "for contributions to magnetic storage devices through magnetic modeling." It is the society's highest award.

Zhu, who is also an IEEE fellow, is a recognized world leader in modeling magnetic devices, especially for magnetic recording and magnetoresistive memory. His pivotal modeling work on thin film recording media has led the use of the granular microstructure in hard disk drive media throughout the past two decades.

Zhu's pioneering research and modeling are making a significant impact as industry at-

tempts to select the next technology for future hard disk drives.

Mechanism Discovered for Cell Receptor Recycling

An international team of researchers led by Carnegie Mellon's Manojkumar Puthenveedu has discovered the mechanism by which signaling receptors recycle. Writing in the journal *Cell*, the team describes for the first time how a signaling receptor travels back to the cell membrane after it has been activated and internalized.

Signaling receptors live on the cell membrane waiting to be matched with their associated protein ligand. When they meet, the two join together like a lock and key, turning on and off critical functions within the cell. These functions play a role in human health, and each new discovery provides a potential therapeutic target for conditions like heart, lung and inflammatory disease.

Regional Dialects Evident in Twitter Slang



Regional slang and dialects are as evident in tweets as they are in everyday conversations, according to computer science researchers.

Jacob Eisenstein, a post-doctoral fellow in the Machine Learning Department, and his colleagues developed an automated method that analyzed word use in 380,000 geotagged Tweets from 9,500 users. Among the findings: New Yorkers often use “suttin” instead of “something,” San Franciscans think something cool is “coo,” while Angelenos spell it “koo,” and in Philly “mayb” is often used instead of “maybe.”

Using the same data base, they demonstrated they could identify a tweeter’s location with a mean error of 300 miles just by analyzing word choice and topics in tweets.

Automated analysis of Twitter message streams offers linguists an opportunity to watch regional dialects evolve in real time.

“It will be interesting to see what happens. Will ‘suttin’ remain a word we see primarily in New York City, or will it spread?” Eisenstein asked.



Tracing Potholes to Pasta

Students Create Software To Boost Efficiency

■ Shilo Raube

Ask anyone who works for a non-profit organization what they need to more efficiently run their organization, and chances are that a type of expensive software will make the wish list.

Luckily, for a select group of non-profits, the Information Systems Program has made their wish come true.

“During their senior year, our students work with non-profits in the community,” said Larry Heimann, a teaching professor of Information Systems who has been helping lead these projects for the past 13 years.

In the Information Systems Applications course, students spent thousands of hours on software development during the fall semester. Projects included identifying and creating a model system for the United Way of Allegheny County to track and assign funds for after-school programs; creating a way for the community to track and report potholes; and continued work with Pittsburgh Steelers Quarterback Charlie Batch’s “In the Pocket” charity event to streamline registration processes and track game results during the event.

Additionally, the team of Anthony Zhang, Ashwin Hedge, Brandon Tyson, Joey Raudabaugh and Arvind Shrihari worked with CMU’s Housing and Dining Services to address the lack of nutritional information available at campus food locations. To do

this, the team designed and built the “Tartan Food Tracker,” an online Web application that contains all nutritional information for campus restaurants as well as hours of operation, location details and user food logs. The site, which is expected to launch this spring, will be accessible with an Andrew ID.

“It was very difficult to create because there are over 22 dining locations on campus that use between 7-10 vendors, so we had to communicate with them to get accurate information and then find a way to get it into our system,” Tyson said.

Susan Lace and Brandon Sherman worked on the pothole project that involved building a mobile application and website. Lace explained that people will be able to take and upload photos of potholes directly from smart phones.

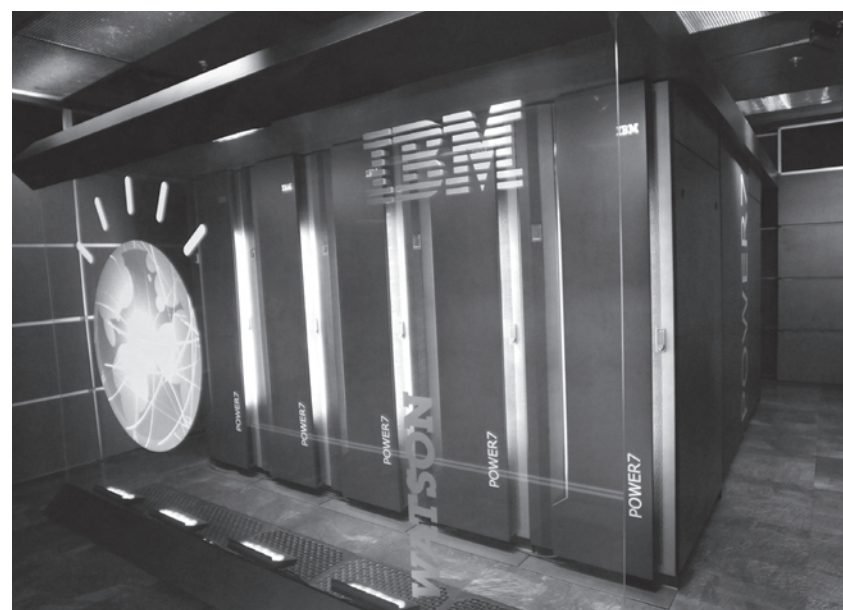
“The phone’s GPS location will tag the pothole’s location,” she said.

Once photos are uploaded, website users can vote for the most problematic potholes. “The votes are shown through heat maps, which are useful to city planners and people who want to avoid potholes,” Sherman said.

“These projects give the students a chance to give back to the community and make a difference,” Heimann said. “The students get excited about it, and it makes for a great, memorable senior year.”

View a video of the students talking about their projects at www.youtube.com/watch?v=8hJxaTVcCcQ.

Researchers, Watson Featured on NOVA



WATSON, POWERED BY IBM POWER7, IS A COMPUTER SYSTEM THAT CAN CORRECTLY ANSWER QUESTIONS COVERING AN UNLIMITED RANGE OF TOPICS.

■ Byron Spice

Researchers from the School of Computer Science are featured in “Smartest Machine on Earth: Can a Computer Win at Jeopardy!?” the Feb. 9 episode of PBS’s top-rated science documentary series, NOVA. The episode focuses on Watson, the computing system that IBM has built to face off against human champions on TV’s Jeopardy! and on the state of artificial intelligence in general.

Eric Nyberg, professor in the Language Technologies Institute (LTI), and his students have worked closely with IBM on Watson and other question-answering systems. Jeopardy! episodes featuring Watson and former champions Ken Jennings and Brad Rutter will air at 7 p.m., Feb. 14-16 on WPXI-TV.

Tom Mitchell, head of the Machine Learning Department; Alex Waibel, an LTI professor; and Luis von Ahn, assistant professor of computer science, are featured in the NOVA episode. Von Ahn also met with TV writers to promote the episode at the PBS Winter Press Tour last month in Pasadena, Calif.

“Smartest Machine on Earth” will air at 10 p.m., Feb. 9 on WQED-TV, capping a special three-hour night of programming for NOVA. An episode of NOVA Science Now regarding animal intelligence, begins at 8 p.m., followed by the final episode of NOVA’s four-part series on materials science, “Making Stuff: Smarter,” at 9 p.m.