



# the PIPER

3/11 Issue

## Carnegie Mellon University

- 2 A Q&A ON QA (QUESTION ANSWERING) RESEARCH WITH ERIC NYBERG
- 7 WORDS, FORM TAKE CENTER STAGE IN POETRY SPOTLIGHT SERIES
- 8 PLANNING TO ATTEND SPRING CARNIVAL EVENTS? THINK AHEAD
- 10 CHESS CHAMP KEEPS GAME, STUDIES IN CHECK



ARON RALSTON

## “127 Hours” Survivor Speaks at Commencement

Trapped alone in a Utah canyon for nearly a week, pinned by a half-ton boulder, Carnegie Mellon alumnus Aron Ralston (E'97) had to choose between his hand and his life. He chose survival — amputating his own limb, rappelling 65 feet and hiking seven miles to rescue.

Ralston will bring his amazing inspirational story home to Carnegie Mellon May 15, when he delivers the keynote address at the university's 114th Commencement ceremony.

Ralston's heroic story is the subject of the film “127 Hours,” starring James Franco and directed by Oscar-winning Danny Boyle. Boyle's film, based on Ralston's 2004 New York Times bestselling

CONTINUED ON PAGE FIVE

### Faces of Migration

Immigrant Elvira Arellano's story of seeking sanctuary in a Chicago church is just one of the many profiles found in this year's International Film Festival lineup. See page nine.

## Love a Donor



PHOTO BY TIM KAULEN

MORE THAN 1,500 STUDENTS WROTE THANK YOU NOTES TO DONORS WHO HAVE HELPED SUPPORT THEIR COLLEGE EDUCATION DURING LOVE A DONOR WEEK (FEB. 14-18). DONORS CONTRIBUTE TO THE \$55 MILLION A YEAR THAT CARNEGIE MELLON PROVIDES FOR UNDERGRADUATE FINANCIAL AID. TUITION DOLLARS COVER ABOUT TWO-THIRDS OF EDUCATION COSTS, AND 54 PERCENT OF ALL CMU STUDENTS RECEIVE AID. VISIT [WWW.CMU.EDU/CAMPAIGN/LOVE](http://WWW.CMU.EDU/CAMPAIGN/LOVE) FOR MORE INFORMATION.

## Judy Resnik

### Family, Friends Remember Engineer Who Reached for the Stars

■ Chriss Swaney

Their tears and silent moments said so much.

Family, colleagues and friends of Judith A. Resnik don't want her just to be remembered as one of the seven astronauts who died in the Challenger Space Shuttle breakup 25 years ago.

“We would like her to be remembered for her legacy as the second American woman in space, a diligent student and a wonderful human being,” said Helene R. Norin, of West Akron, Ohio, Resnik's cousin. “She was bright and interested in the sciences. In fact, the large extended Resnik family has always placed great emphasis on academic achievement.”

Resnik, who graduated valedictorian in 1966 from Firestone High School

in Akron, was described by old friends there as a student who excelled in mathematics and classical piano.

“She was a math whiz, but at some point math lost the numbers and she wanted something more tangible so she switched her collegiate major to electrical engineering,” said Michael D. Oldak, another electrical engineering major at Carnegie Mellon, who became her

CONTINUED ON PAGE SIX



JUDY RESNIK

NASA FILE PHOTO

# A Q&A on QA (Question Answering) Research With Eric Nyberg

■ Byron Spice

*Eric Nyberg, a professor in the Language Technologies Institute, builds software applications that can understand and process human language. For the past decade, he has worked on question-answering technology, often in collaboration with colleagues at IBM. Since 2007, he and his CMU colleagues have participated in the Open Advancement of Question Answering, a collaboration with IBM that led to the development of Watson, a question answering computing system that recently defeated human opponents in nationally televised matches of Jeopardy!*

**What was it like to be at the taping of the Jeopardy! episodes? Were you or your IBM colleagues anxious about how Watson would perform?**

We actually arrived (at IBM's Thomas J. Watson Research Center in Yorktown Heights, NY) before the main crowds did. The Watson project leader, David Ferrucci, took Ph.D. student Nico Schlaefer and I inside to see how the Jeopardy! set had been grafted onto the IBM conference room; it looked like it had been beamed down from an alien planet or Los Angeles or something.

But once everybody sat down, it was a very serious environment with palpable tension in the room. The IBM CEO and top executives were in the audience, and for four-and-a-half hours we were literally on the edges of our seats, wondering what was going to happen. It was very exciting and very tense.

**Did Watson meet or exceed your expectations?**

Watson met my expectations, both in terms of what it did well and also where it faltered.

If you watch the matches, you'll see categories where Watson is dominant and where the humans have a lot of difficulty competing, but there are other categories where Watson doesn't get a single correct answer. That's a great outcome, because I would call it an accurate and fair representation of Watson's capabilities.

**Where do we go now with this question and answering capability?**

I think there are two big areas of future research that need our attention.

One is to learn how to build systems like Watson but with fewer resources in terms of time, money and people. While Watson is a wonderful achievement, to have an impact in the business world, we need to build applications with Watson's level of performance in new domains like financial forecasting and health care, and do it cost effectively.

The second area has to do with making Watson smarter.

Watson doesn't grow up in the real world the way that we do, so it doesn't have a base of common sense knowledge. That's one of its weaknesses. An interesting question is going to be how Watson can learn to read and build a knowledge base that's not just factual knowledge, but knowledge about how the world really works. For example, if you asked Watson whether a bathtub can hold a magnum of champagne, it might not be able to answer if there is no literal text in its knowledge base which contains the answer.

**What do you say to people who feel threatened by Watson, who fear machines will replace them at work or supplant humans?**

Whenever anybody expresses that concern I tell them, 'Don't worry, you're smarter than Watson. Watson thinks that grasshoppers eat kosher.' Although it's exciting to contemplate a general machine intelligence that can carry on a dialog, make decisions, etc. Watson is very far from reaching that goal – it's a very specialized piece of software that performs one narrow task – answering factoid questions posed by humans.



ERIC NYBERG, CENTER, SHOWN WATCHING WATSON'S VICTORIOUS PERFORMANCE ON JEOPARDY!.

**We do have a certain number of people sitting at customer service desks, answering questions about products, and librarians helping to find facts. What do you say to those people?**

I think that there may come a day when a question answering system like Watson could automate the help desk; it would be relatively straightforward to let Watson read all the IBM manuals and then answer questions about IBM products on the telephone. Folks at IBM's Tokyo

A typical program like a database query engine can't do anything with the World Wide Web, because the information there hasn't been structured into a relational database.

One of our new projects is focusing on this idea of machine reading: How can we read all of that text and digest it into a form to be used by much simpler programs to look up facts?

For example, I might read through all the websites of all the universities in Western Pennsylvania, and then auto-

---

**"DON'T WORRY, YOU'RE SMARTER THAN WATSON. WATSON THINKS THAT GRASSHOPPERS EAT KOSHER." — ERIC NYBERG**

---

research lab are thinking about this kind of application already. Question answering systems today can operate without human intervention only in simple cases. I don't think we're afraid to let Watson answer a question about an IBM PC or laptop. It might give more than one answer and some might be inaccurate, but it's probably not going to tell the person something harmful.

In cases where we are deciding whether or not to launch the missiles or whether or not to target somebody with a drone, there would never be blind acceptance of the output of a machine. The machine's output would inform a human decision.

All the work we have done for the Department of Defense in this area requires that every answer is tied to the original document and the original source it came from, so that analysts can click on any answer and immediately see where it came from, to verify that the machine used the right reasoning.

**With human knowledge expanding at geometric rates, at some point do we need systems like Watson to cope with it all?**

The real issue is that much of the information being produced is for human eyes. It's not being produced for machines to read.

atically create a database that would allow me to answer questions about them, compare their tuition rates, etc.

The ability to take unstructured information and automatically turn it into structured information is the underlying capability we need. I think that is definitely going to be important as we see the geometric growth of textual knowledge continue.

**With the attention that Watson has attracted, how will that affect the work you do at Carnegie Mellon going forward?**

For us, it's a nice achievement because it shows that IBM made the right decision in coming to us and establishing a research relationship with us.

It is also a success because our students were able to contribute directly, and I think for me as an educator, that's the greater satisfaction.

We're continuing to collaborate with IBM. We were collaborating with them before Watson, and we continue to collaborate with them on the (Defense Advanced Research Project Agency's) new Machine Reading project. What the public sees in Watson is something we have already moved beyond.

For question answering research in general, public attention is very important. In the past there was confusion

CONTINUED ON PAGE TWELVE



## the PIPER

**3/11 Issue**

**PUBLISHER**  
Teresa Thomas

**EDITOR**  
Bruce Gerson

**MANAGING EDITOR**  
Heidi Opdyke

**WRITERS**

Jocelyn Duffy	Byron Spice
Bruce Gerson	Chriss Swaney
Abby Houck	Ken Walters
Heidi Opdyke	Maria Zayas
Shilo Raube	Andrea L. Zrimsek
Eric Sloss	

**DESIGNER**  
Melissa Stoebe  
Communications Design Group

**PHOTOGRAPHY**  
Ken Andreyo  
Stephen Baden  
Tim Kaulen  
The Communications Design and Photography Group

To contact The Piper staff, call 412-268-2900 or email [bg02@andrew.cmu.edu](mailto:bg02@andrew.cmu.edu).

Carnegie Mellon University does not discriminate and Carnegie Mellon University is required not to discriminate in admission, employment, or administration of its programs or activities on the basis of race, color, national origin, sex or handicap in violation of Title VI of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973 or other federal, state, or local laws or executive orders.

In addition, Carnegie Mellon University does not discriminate in admission, employment or administration of its programs on the basis of religion, creed, ancestry, belief, age, veteran status, sexual orientation or gender identity. Carnegie Mellon does not discriminate in violation of federal, state, or local laws or executive orders. However, in the judgment of the Carnegie Mellon Human Relations Commission, the Presidential Executive Order directing the Department of Defense to follow a policy of, "Don't ask, don't tell, don't pursue," excludes openly gay, lesbian and bisexual students from receiving ROTC scholarships or serving in the military. Nevertheless, all ROTC classes at Carnegie Mellon University are available to all students.

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/](http://www.cmu.edu/police/). Obtain general information about Carnegie Mellon University by calling 412-268-2000.

Produced for Media Relations by The Communications Design and Photography Group, February 2011, 11-407.

# Professor Receives Elite Wolf Prize in Chemistry

■ Jocelyn Duffy

Krzysztof Matyjaszewski, the J.C. Warner Professor of the Natural Sciences in the Mellon College of Science, has been named a recipient of the 2011 Wolf Prize in Chemistry from Israel's Wolf Foundation.

The Wolf Prize is given every year in four out of five categories, in rotation: agriculture, chemistry, mathematics, medicine and physics. One out of every three Wolf Prize Laureates in chemistry, physics and medicine have later received a Nobel Prize.

"The Wolf Prize is a distinguished honor received by only the most elite scientists and artists in the world," said Carnegie Mellon President Jared L. Cohon. "Kris certainly belongs in this category. His work is nothing short of visionary."

Matyjaszewski will be recognized with two other noted chemists, Stuart Alan Rice of the University of Chicago and Ching Tang of the University of Rochester, for their "deep creative contributions to the chemical sciences in the field of synthesis, properties and an



KRZYSZTOF MATYJASZEWSKI

understanding of organic materials." They will accept the award from the President of the State of Israel and the Israeli Minister of Education at a special ceremony at the Israeli Parliament on May 29.

"I feel very flattered by this special recognition from the Wolf Foundation. This award belongs not only to me, but also to the more than 50 graduate students, 100 postdocs and the countless chemists, materials scientists, and chemical, biomedical and civil engineers among CMU's faculty that I have had the pleasure of collaborating with throughout the years," Matyjaszewski said.

The Wolf Prize Committee commended Matyjaszewski for his "ground-breaking research in synthesis of organic materials, and in particular, in the critical area of controlled, efficient, safe and

economical polymer synthesis."

Matyjaszewski invented the process of atom transfer radical polymerization (ATRP), one of the most effective and most widely used methods of controlled radical polymerization (CRP). This method allows scientists to create polymers from many different component parts, called monomers, in a piece-by-piece fashion, precisely controlling the polymer's composition. By assembling polymers in such a manner, scientists have been able to create a wide range of new materials with highly specific, tailored functionalities. This technology also allows for the production of "smart" materials that can respond to altered environments, such as changes in pressure, acidity, light exposure or other variables.

"ATRP has made polymerization easier, less expensive, and more effective, changing how we make materials from paints to plastics and adhesives," said Fred Gilman, dean of CMU's Mellon College of Science. "Kris continues to strive to improve the process and even given the worldwide recognition of his achievements, I would bet the best is

yet to come."

Polymers created using ATRP have been used for coatings, adhesives, lubricants, cosmetics and electronics and are currently under investigation for use in the medical and environmental fields. In 2006, ATRP formed the basis for a Carnegie Mellon spin-off company called ATRP Solutions that uses the technology to develop next-generation materials for evaluation by their customers in their targeted markets.

Matyjaszewski came to Carnegie Mellon in 1985 and was appointed the J.C. Warner Professor of the Natural Sciences in 1998. While at Carnegie Mellon, Matyjaszewski founded the Center for Macromolecular Engineering, served as head of the Department of Chemistry from 1994 to 1998, and was named a University Professor in 2004.

Matyjaszewski is the second Carnegie Mellon professor to receive a Wolf Prize. The late John Pople received the 1992 Prize in Chemistry for his contributions to theoretical chemistry. Pople went on to receive the Nobel Prize in Chemistry in 1998.

## Barry Drives Dreams Forward

### She's Funding an Andrew Carnegie Society Legacy Scholarship for a Student in CFA

Sometimes it takes a little while to fulfill a dream.

As a high school student, Amy Barry dreamed of attending Carnegie Mellon to pursue a singing career. She applied and was wait listed.

She attended Ohio University instead to obtain a degree in music therapy. But an elective course changed her mind, and she graduated with a degree in business.

Fast forward to 2004.

Barry joins the university and today

is the director of human resource services for the university. She helps recruit people to Carnegie Mellon, and has pursued her passion for music by taking lessons with Douglas Ahlstedt, associate professor of voice.

"Pittsburgh is like Disney World for adults," she said. "It's a place where dreams come true and where the future is created."

When bringing people into the city to work, she said she sees the global and regional impacts that Carnegie Mellon makes.

"It's so important to be involved in the campus and give back to the community," she said. "CMU is a special place."

Barry recently joined the Andrew

Carnegie Society, a group of more than 2,300 dedicated alumni, parents, faculty, staff and friends who contribute \$1,000 or more annually to support Carnegie Mellon. Most recently, Barry established an ACS Legacy Scholarship for a student in the College of Fine Arts.

Legacy Scholarships provide a unique opportunity for members of the CMU community to assist students within the school or college of their choice. The funds are not endowed, and entire gifts (four annual payments of \$2,500 each) will immediately benefit the student recipient.

"We need a strong arts community," said Barry, who is a cantor for her church. "When I returned to Pittsburgh,

I was surprised and delighted to see such a vibrant arts community. A thriving cultural climate helps draw top talent to the region."

Barry said her support of an ACS Legacy Scholarship has inspired others to give.

"As a Christmas gift, my staff unexpectedly contributed to the scholarship I've established. Many of them are first time donors," she said.

Barry is a member of Carnegie Mellon's Faculty & Staff Annual Fund Committee. To learn more about ways that faculty and staff can give back, contact Carole Panno in the Office of Annual Giving at [cp1g@andrew.cmu.edu](mailto:cp1g@andrew.cmu.edu) or visit [www.cmu.edu/campaign/involved/faculty.html](http://www.cmu.edu/campaign/involved/faculty.html)

## Leading Innovation: Boston and Beyond

Thursday, June 9, 2011

6:30 to 9:30 p.m.

The State Room, 60 State Street, Boston

President Jared L. Cohon and a panel of faculty experts spearheading Carnegie Mellon's new brain, mind and learning initiative will engage in an evening filled with alumni networking, news and updates about the university and the Inspire Innovation campaign.

Which is smarter: IBM's "Watson" or a human? What can a deeper understanding of the brain teach us about how we think and learn? How will advances in artificial intelligence shape industries from finance to medicine?

For more information, visit [www.cmu.edu/campaign](http://www.cmu.edu/campaign) or contact Susan Tate Hiser at 412-268-6567 or [sjt1@andrew.cmu.edu](mailto:sjt1@andrew.cmu.edu).

\$1 BILLION

1/31/2011  
\$691.5M



**WE CAN MAKE A DIFFERENCE.** CARNEGIE MELLON UNIVERSITY IS ON TRACK TO REACH THE \$1 BILLION GOAL OF OUR INSPIRE INNOVATION CAMPAIGN. THANKS IN PART TO THE SUPPORT OF OUR CAMPUS COMMUNITY, THE UNIVERSITY IS IN THE HOMESTRETCH TO ACHIEVE THIS HISTORIC MILESTONE. VISIT [CMU.EDU/CAMPAIGN](http://CMU.EDU/CAMPAIGN) FOR THE LATEST CAMPAIGN NEWS AND PROGRESS, OR TO MAKE YOUR GIFT TODAY. PROGRESS SINCE JANUARY 31, 2011: \$691.5 MILLION.

# Ridge Calls for Best Practices in Marcellus Drilling

■ Chriss Swaney

Former Pennsylvania Gov. Tom Ridge discussed the risk management involved in today's gas industry as it relates to the Marcellus Shale. But he said it was worth it to help drive economic energy and vitality into rural communities in the state will result in additional income and higher paying jobs.

"We have a chance — if we do it right — to embed the natural gas industry in an environmentally sound, economic significant way," Ridge said.

Ridge's talk focused on his work with the Marcellus Shale Coalition and the sweeping environmental policies he influenced during his tenure as the 43rd governor of Pennsylvania from 1995

to 2001. He developed the Growing Greener Initiative that provided critical funding to preserve the state's rivers and streams, and Clean and Green legislation that helps preserve valuable land for agricultural use.

Ridge's talk was part of the annual Distinguished Lecture Series in Environmental Science, Technology and Policy. The lecture series is co-sponsored by the Steinbrenner Institute for Environmental Education and Research and the University Lecture Series. The theme for this year's talks are around environmental problems for Marcellus Shale extraction.

To watch a video of Ridge's talk visit [http://wms.andrew.cmu.edu:81/nmvideo/CIT/Ridge\\_event2-3-11.mov](http://wms.andrew.cmu.edu:81/nmvideo/CIT/Ridge_event2-3-11.mov).



CIVIL AND ENVIRONMENTAL ENGINEERING FACULTY KELVIN GREGORY (FROM LEFT), PETER ADAMS AND JEANNE VANBRIESEN DISCUSS MARCELLUS SHALE ISSUES WITH FORMER GOV. TOM RIDGE PRIOR TO HIS CMU TALK.

## piper TRIVIA

Congratulations to Krista Campbell, John Matsko and Donna Marano for correctly answering the February 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.

Connect with Internal Communications [f](http://bit.ly/CMUnewsFacebook) <http://bit.ly/CMUnewsFacebook> [t](https://twitter.com/CMUnews) [twitter.com/CMUnews](https://twitter.com/CMUnews)

## Calendar of Events

### Defensive Driving Class

8:30 – 10:30 a.m., Tuesday, March 8  
Connan Room, University Center (UC)  
For more information contact  
Jim Gindlesperger at 412-268-3760  
or [jg57@andrew.cmu.edu](mailto:jg57@andrew.cmu.edu).

### Staff Development Day

Thursday, March 10  
University Center  
For session descriptions and to register,  
visit [www.cmu.edu/hr/learning/professional/staffdevday](http://www.cmu.edu/hr/learning/professional/staffdevday)

### Learning and Development Session: "Career Tune-Up"

Lola Mason will help participants with their job search. Prior to the workshop, participants must take an online career assessment tool at: <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>  
9 a.m. – Noon, Tuesday, March 15  
McKenna/Peter/Wright Room, UC

### Art Lecture Series

Adam Zaretsky works in the world of bioart and is completing his Ph.D. at Rensselaer Polytechnic Institute.  
5-6 p.m., Tuesday, March 15  
Kresge Theater

### Learning and Development Session: "Punctuation Refresher"

Karen Beaudway will answer questions like, "Comma or semi-colon? Does the question mark go inside the quotes or outside? Why is that dash longer than a hyphen?"  
Noon – 1:30 p.m., Wednesday, March 16  
Connan Room, UC  
Register at: <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>

### International Film Festival

Fifteen films will be presented at the International Film Festival. For more, see page 12.  
[www.cmu.edu/faces/introduction.html](http://www.cmu.edu/faces/introduction.html)  
March 17 – April 10

### W.L. Mellon Speaker Series

Richard A. Noll (MSIA'85), chief executive officer of Hanesbrands, will lecture.  
12:30 – 1:20 p.m., Thursday, March 17  
Mellon Auditorium, Tepper School

### University Lecture Series

Stephen S. Hall of New York University will discuss "Science of Wisdom."  
4:30 p.m., Thursday, March 17  
Porter Hall 100 (Gregg Hall)

### China Today: Economics, Technology and People

China Today is a joint weekend course between the University of Pittsburgh and Carnegie Mellon University.  
March 18-20  
[www.cmu.edu/uls/march/china.html](http://www.cmu.edu/uls/march/china.html)

### CAUSE Lecture Series

Richard Purcell, an assistant professor of English, will give a talk on "The Lost Vernacular of a Vanishing Tribe."  
5 p.m., Friday, March 18  
Location TBA

### Collage Concert

Hundreds of performers from Carnegie Mellon's School of Music will present its third annual Collage Concert, a dramatic event combining theatrical lighting, music and performance.  
Friday, March 18  
8 p.m., Soldiers & Sailors Memorial Hall

### University Lecture Series

Terry Yosie (HS'75, '81) of the World Environment Center will discuss "Sustainability and the Evolving Global Chessboard."  
4:30 p.m., Monday, March 21  
Porter Hall 100 (Gregg Hall)

### Art Lecture Series

Amy Franceschini uses various media to encourage exchange and production. This lecture is co-sponsored by the Human-Computer Interaction Institute.  
5 p.m., Tuesday, March 22  
McConomy Auditorium

### Humanities Lecture Series

Jennifer Gully, Carnegie Mellon Humanities Center Fellow, will discuss "Languages in Conflict: Migrants and the Monolingual Nation-State."  
4:30 p.m., Tuesday, March 22  
Adamson Wing, Baker Hall 136A

### Howard Dean

Noon – 1 p.m., Thursday, March 24  
Hamburg Hall

### Staff Council Presents an Open Forum with the President

12:30 – 1:30 p.m., Friday, March 25  
Scaife Hall 125

### Environment Today: Biodiversity and Environmental Justice

The course brings students together to discuss environmental issues.  
March 25-27  
Mellon Auditorium, Posner Hall  
[www.cmu.edu/weekend-today/environment-today/index.html](http://www.cmu.edu/weekend-today/environment-today/index.html)

### 1000plus

Carnegie Mellon's Day of Service connects members of the CMU community with the Pittsburgh community through service projects.  
Saturday, March 26  
Various locations  
For information and to register, visit  
<http://willyoubecounted.com/>

### School of Architecture Lecture Series

Matias del Campo, principal of SPAN Architecture & Design in Vienna, will talk.  
6 p.m., Monday, March 28  
Carnegie Museum of Art Theater

### Learning and Development Session: "Eating Well for the Planet and Our Health"

Paula Martin will present on how the food we eat affects the health of the planet as well as ourselves. 9 a.m. – Noon, Tuesday, March 29  
Connan Room, UC  
Register online at: <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>

### Poetry Society of America: Spotlight Series

Three poets — Daisy Fried, James Longenbach and Fred Moten — will read from their work and discuss the state of contemporary American poetry. Robert Casper will moderate.  
7 p.m., Tuesday, March 29  
McConomy Auditorium  
Read more about the event on page 7.

### Flora's Lexicon

The exhibition presents books from the Hunt Institute's Library and botanical portraits from its Art Department that examine how plants and blooms have been used to express emotion or to communicate privileged messages within the strict confines of social etiquette.  
March 29 – June 30  
The Hunt Institute for Botanical Documentation  
Fifth floor, Hunt Library

### Learning and Development Session: "Influencing Skills"

Ron Placone will lead a session designed for all who play a leadership role and want to develop their influencing skills.  
9 a.m. – Noon, Wednesday, March 30  
McKenna/Peter/Wright Room, UC  
Register online at: <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>

### "Lulu"

March 30 – April 1  
The School of Drama presents this masterpiece that focuses on a young woman and her psychological downfall under oppressive, wealthy and manipulative men.  
For tickets and show times go to: [www.cmu.edu/cfa/drama/season/current\\_season/index.html](http://www.cmu.edu/cfa/drama/season/current_season/index.html)

### Learning and Development Session: "Estate Planning"

Representatives from PNC Workplace Banking will discuss estate planning.  
Noon – 1:30 p.m., Thursday, March 31  
McKenna/Peter/Wright Room, UC  
Register online at: <https://hr-apps.as.cmu.edu/hrlearn/HRLearn2>

### Show & Tell: The Means to the End

Two alumni working in the entertainment and news industry — Frank Janesh (A'01) in Los Angeles and Nitya Venkataraman Chambers (HS'01) in Washington, D.C. — talk about what it takes to go from an idea to a completely polished work.  
[CMU2304297.html](http://CMU2304297.html)  
6:30 – 8:30 p.m., Thursday, March 31  
Rangos Hall, UC  
Register online at: <https://secure.www.alumniconnections.com/olc/pub/CMU/events/>

### Greek Sing

Fraternity and sorority chapters perform collections of songs or excerpts from a musical or an original script. All proceeds are donated to charity.  
7:30 – 10:30 p.m., Saturday, April 2  
Soldiers and Sailors Memorial Hall

### University Lecture Series

Fritjof Capra of the Center for Ecoliteracy will discuss "A Science for Sustainable Living."  
5 p.m., Monday, April 4  
McConomy Auditorium

### University Lecture Series

Robert Fariss Thompson of Yale University will discuss "Kongo Carolina Kong New Orleans: Where the High-Five Came From."  
4:30 p.m., Thursday, April 7  
Porter Hall 100 (Gregg Hall)

### Humanities Lecture Series

Ali Behdad, professor and chair of the Department of English at UCLA, will lecture on "Moslem Immigrants, Inhospitable Europeans."  
4:30 p.m., Thursday, April 7  
Giant Eagle Auditorium, A51 Baker Hall

### Sustainability and Computer Science Seminar

Tim Killeen, assistant director of the Geosciences Directorate at the National Science Foundation, will speak.  
TBA, Friday, April 8  
Rashid Auditorium, Hillman Center

### University Lecture Series

Nancy Klancher, a doctoral candidate in religious studies at the University of Pittsburgh, will discuss "A Massacre Averted: An Armenian Town, an American Nurse, and the Turkish Army They Resisted."  
4:30 p.m., Monday, April 25  
Porter Hall 100 (Gregg Hall)

# Running Commencement a Real Marathon This Year

## Get Here Early To Avoid Street Closings, Says University Events Director

■ Bruce Gerson

When does a marathon become an obstacle course?

When it falls on Sunday, May 15, and more than 2,000 graduates, their families, guests, faculty and staff will be navigating the crowds and street closings associated with the Pittsburgh Marathon on their way to Carnegie Mellon's 114th commencement and diploma ceremonies.

The Dick's Sporting Goods Pittsburgh Marathon gets under way at 7 a.m. and streets in many Pittsburgh neighborhoods along the route will be closed to vehicular traffic for several hours to allow for the majority of runners to pass through.

CMU's main commencement ceremony begins at 11 a.m. in Gesling Stadium. The portion of the marathon that passes closest to CMU (miles 11-14) includes:

- Forbes Avenue between the Birmingham Bridge and Craig Street;
- Craig Street between Forbes and Fifth avenues;
- Fifth Avenue between Craig Street and Aiken Avenue;
- Fifth Avenue between South Highland and Penn avenues.

Streets along the route will close at rolling intervals as the lead runners approach, according to Pittsburgh Marathon representatives. The elite runners are expected to pass the halfway point (13.2 miles) at Fifth and Morewood avenues between 8 and 8:30 a.m. The slowest runners will most likely reach the midway point between 10:30 and 11 a.m. Marathon reps said they hope that streets in Oakland will reopen by 11 a.m.

"We have been working diligently with the marathon staff to ensure that commencement guests are impacted as little as possible," said Jennifer Logan Boyer, director of University Events.

Boyer and her staff recently met with commencement coordinators from the academic departments to review details and to discuss the marathon's impact.

"We're telling folks who will be affected by the street closings to get to campus that day as early as they can," Boyer said. "If you can arrive on campus by 8:30 a.m. you shouldn't have a problem."

Boyer said marathon organizers are creating a hotline for people to call regarding rolling street closures. She also noted that extensive directions and information will be provided on the commencement website ([www.cmu.edu/commencement](http://www.cmu.edu/commencement)) to help participants and guests navigate to campus and find parking locations. She said she's working with [bobsmaps.com](http://bobsmaps.com) to obtain detailed



maps depicting the affected roads and routes around campus.

University Events will send emails to graduating students with information and encouraging them to monitor the website for updates. Carnegie Mellon also will employ its Facebook and Twitter pages to help get the word out.

"We're asking students to forward this information on to their parents, family members, and guests who will be attending to keep everyone informed," Boyer said.

In addition to the parking locations on campus and in Oakland, she noted that free parking would be available in the Squirrel Hill parking lots near the Carnegie Library and Jewish Community Center at Forbes and Murray avenues. Shuttles to and from campus will be provided for those parking there as well.

Additional signage will be posted on commencement day to direct guests to campus and parking locations. Staff also may be stationed at intersections to help with directions. Boyer noted that

pedestrians would be permitted to cross streets that are closed once a break in the crowds of runners occurs.

A map of the complete marathon route can be downloaded from the commencement website. Also on the site is a listing of diploma ceremonies and other information for students, faculty and visitors attending or participating in commencement weekend activities.

"The early bird gets the worm, or in this case, an easy commute to commencement," Boyer said.

## Ralston To Speak at Commencement

CONTINUED FROM PAGE ONE

autobiography, "Between a Rock and a Hard Place," received six Oscar nominations, including "Best Picture."

"Aron's incredible story has been, and continues to be, an inspiration to millions around the world," said Carnegie Mellon President Jared L. Cohon. "He turned grave adversity into a learning and teaching experience for all of us. I know our graduates will enjoy and greatly benefit from hearing Aron speak."

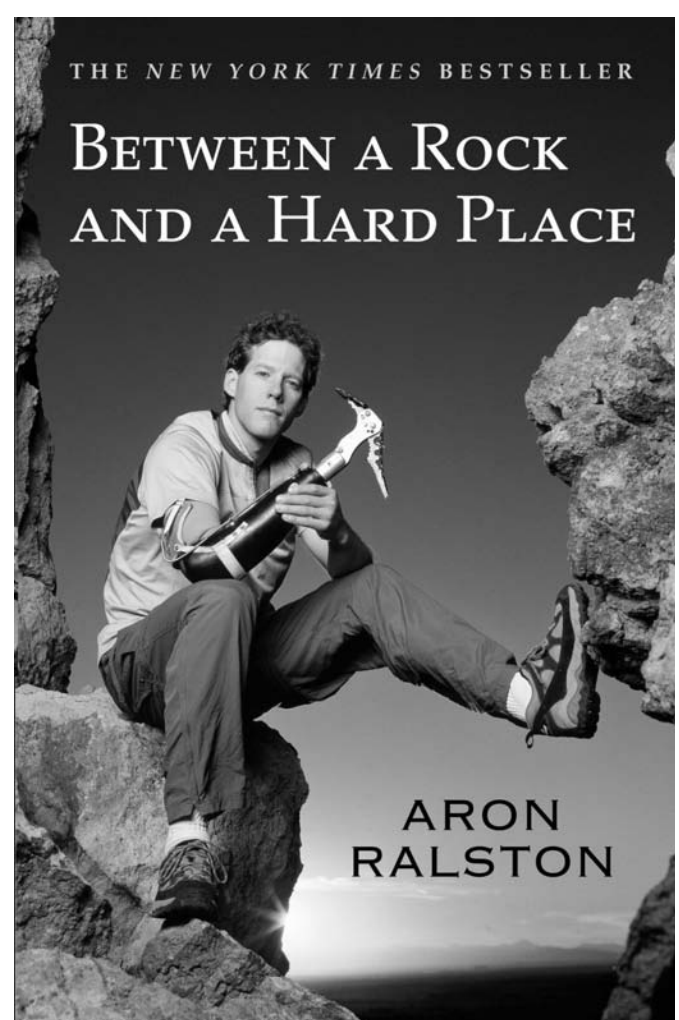
A highly talented student while at Carnegie Mellon, Ralston credits the university with helping him in the canyon. "The analytical and rational problem-solving I honed at Carnegie Mellon played a major role in helping me get out of there," he explained.

But what kept him alive, said Ralston, was more elemental. "It was primarily my family," he explained. "In the end I realized what I survived on, what got me out of there, was love."

At CMU, Ralston majored in mechanical engineering and French, and minored in piano performance. As a resident assistant, he was an important role model for students and earned the respect of his peers for his work ethic, sense of adventure and great humor. He also was active in numerous intramural sports and a member of seven honor societies, including Phi Beta Kappa. He became a member of Carnegie Mellon's Andrew Carnegie Society as a way of giving back to the university for what he describes as "an incredible education."

Ironically, his experience in Utah only caused him to redouble his efforts and intensity. He went on to climb all 59 of Colorado's highest peaks — solo, in winter. He's also drawn on his engineering skills, helping to design prosthetics for companies that have sponsored his climbs.

Today, Ralston lives with his wife, Jessica, and their son in Boulder, Colo. He is an advocate for Utah and Colorado



wilderness.

In late February, he earned \$125,000 for the non-profit organization Wilderness Workshop on the television game show "Minute To Win It."

## Family, Friends Remember Engineer Who Reached for the Stars CONTINUED FROM PAGE ONE

boyfriend and husband. Oldak is vice president and general counsel of Washington, D.C.-based Utilities Telecom Council, a global trade association dedicated to creating a favorable business, regulatory and technological environment for companies that own and manage critical telecommunications systems in support of core business. “She had a great sense of humor and was always willing to try anything. I remember taking her to Kennywood to ride the rollercoasters. At first, she hesitated. But once she took a ride, she was hooked and rode them all.”

Resnik received a bachelor’s degree in electrical engineering from Carnegie Mellon in 1970 and a doctorate in electrical engineering from the University of Maryland in 1977. She worked for RCA beginning in 1971 as a design engineer, which included engineering support for NASA telemetry system programs.

From 1974 to 1977, Resnik was a biomedical engineer and staff fellow in the Laboratory of Neurophysiology at the National Institutes of Health in Bethesda, Md. She worked for about a year as a senior systems engineer in product development with Xerox before being selected by NASA in 1978.

“When she heard NASA was looking to incorporate female astronauts, she asked me what I thought about it, and I encouraged her to apply,” said Angel Jordan, a university professor emeritus,

provost emeritus and Resnik’s faculty adviser and mentor. “She was an amazing person.”

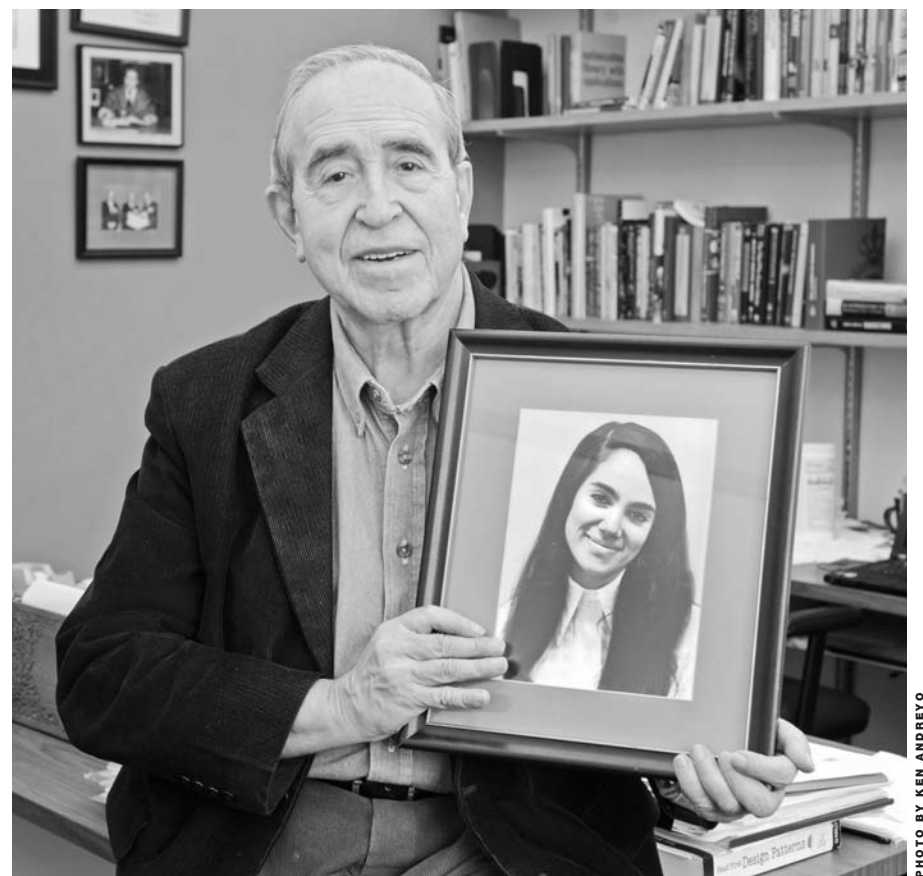
With a long pause and a quick blink to hold back tears, Jordan says he still feels a bit responsible for her loss. “I pushed her to excel, and I live with that memory every day,” he said.

Across campus, Jerome “Jay” Apt III recalls that he spoke with Resnik a few days before the shuttle loss.

“She was an excellent pilot and a superb operator in space,” said Apt, a veteran astronaut who flew four missions aboard the Atlantis and Endeavour shuttles in the 1990s. He also is a professor of technology at the Tepper School of Business and in the Department of Engineering and Public Policy, and executive director of the Carnegie Mellon Electricity Industry Center.

“She was the kind of astronaut that we could all emulate. I’m certain that she would have flown more times if the Challenger had not been lost,” Apt said. “The accident was significant because it ultimately prompted a whole set of changes at NASA.”

Resnik, who was a mission specialist on that flight, had logged more than 145 hours in space. Because many of the family members were involved with Resnik’s first shuttle trip aboard Discovery, when it came time for her to be on the Challenger, it wasn’t on the top of everyone’s mind,



ANGEL JORDAN, A UNIVERSITY PROFESSOR EMERITUS AND PROVOST EMERITUS, WAS RESNIK’S FACULTY ADVISER AND MENTOR. “SHE WAS AN AMAZING PERSON,” JORDAN SAID.

according to Norin, an audiologist. Her brother called her from California to tell her about the explosion that followed the launch.

He said, “Helene, you better sit down,” she recalled. At that instant, her husband and receptionist from her Akron office came in to bring her home because they knew she would not be able to drive herself.

“It was shocking,” she said. “They were all so confident, we never thought anything could go wrong.”

As the nation mourned the loss of Resnik and 16 other fallen astronauts Jan. 28, 2011, at Arlington National Cemetery, solemn, singular remem-

brances continue to unfold for Carnegie Mellon’s famous alum.

And members of Tau Beta Pi will spend an afternoon polishing the Judith A. Resnik memorial at the base of Hammerschlag Hall.

“She loved Carnegie Mellon, and perhaps her pioneering spirit lives on with my 13-year-old grandson Tyler, who wants to be an astronaut and perhaps attend Carnegie Mellon,” Norin said.

*Chriss Swaney offers her personal account of the Challenger explosion and her application to the journalists in space programs at <http://bit.ly/CMU Piper>.*



A MEMORIAL TO JUDITH A. RESNIK RESIDES AT THE BASE OF HAMMERSCHLAG HALL. MEMBERS OF TAU BETA PI, THE NATIONAL ENGINEERING HONOR SOCIETY, HELP MAINTAIN THE MONUMENT.

## Students Create Bridge Between Business and Health Care

■ Maria Zayas

Carnegie Mellon doesn’t have a medical school, but that doesn’t stop students from working on health care solutions.

From bioengineering to quality of life technology, collaborations abound.

The latest, the Industry Academics Clinicians Together (IACT), is the brainchild of graduate students in the Tepper School of Business and the College of Engineering.

IACT brings together Carnegie Mellon and University of Pittsburgh graduate students from a variety of schools and majors to focus on ideas for new or improved health care technologies.

Their approach to problem solving is unique in that it addresses the multiple dimensions of clinical technology: the science, the technology and business sense.

“There wasn’t a strong focal point for health care in Pittsburgh with all of its resources,” said Daniel Bishop, a student in the joint medical scientist training program between Carnegie Mellon and Pitt. “I got into medicine in the first place because I am passionate about using engineering and my own knowledge to help others.”

Bishop who will receive a master’s in biomedical engineering and a medical degree and two other students, James Wolfe and Jeffrey Mataya decided to create the organization for people interested in the technological and business aspects of the healthcare industry.

“We take a market-centric focus on problems rather than trying to retrofit technology into a particular problem,” Mataya said.

CONTINUED ON PAGE TWELVE

# Words, Form Take Center Stage in Poetry Spotlight Series

■ Heidi Opdyke

National Poetry Month is April, but Carnegie Mellon is starting its celebration early.

American poets and critics Daisy Fried, James Longenbach and Fred Moten will read their work and discuss the state of contemporary poetry from 7 – 9 p.m., Thursday, March 29 in McConomy Auditorium.

“This is going to be a really great introduction to poetry. I think people will be surprised and satisfied to hear these three different perspectives on poetry,” said Yona Harvey, director of the Creative Writing Program. “They’ll be surprised how they can connect to these writers.”

Co-sponsored by the Poetry Society of America (PSA) and Creative Writing programs at Carnegie Mellon and the University of Pittsburgh, the event is the first of a spotlight series in Pittsburgh. The event will be moderated by Robert Casper of the PSA.

Poetry has thrived in Pittsburgh in recent years. Sherrie Flick, a special instructor in the English Department, was the artistic director for the Gist Street Reading Series, which recently wrapped up after a 10-year run.

“That was a huge loss,” Harvey said. “Lots of our students used to go there. It was a space that was different than most academic spaces. All the students could see that it’s not just students and academics going to hear poetry. We’re going to miss that.”

The last year has been busy for the English Department. Terrance Hayes



DAISY FRIED

won the National Book award for his poetry collection “Lighthouse,” and books have been released by Sharon Dilworth, Jim Daniels and Jane McCafferty among others.

“I am proud to be associated with such an outstanding faculty,” noted Chris Neuwirth, head of the Department of English. “By actively publishing, our creative writing faculty are not only able to share their craft with their students, but can also mentor students as they aim for professional as well as artistic success.”

## Daisy Fried

Fried is the author of two books of poems published by the University of Pittsburgh press, “My Brother is Getting Arrested Again,” a finalist for the National Book Critics Circle Award, and



FRED MOTEN

“She Didn’t Mean to Do It,” which won the Agnes Lynch Starrett Prize.

Recent poems have appeared in *The Nation*, *The New Republic*, *American Poetry Review*, *Poetry*, *Ploughshares*, *The Threepenny Review* and elsewhere.

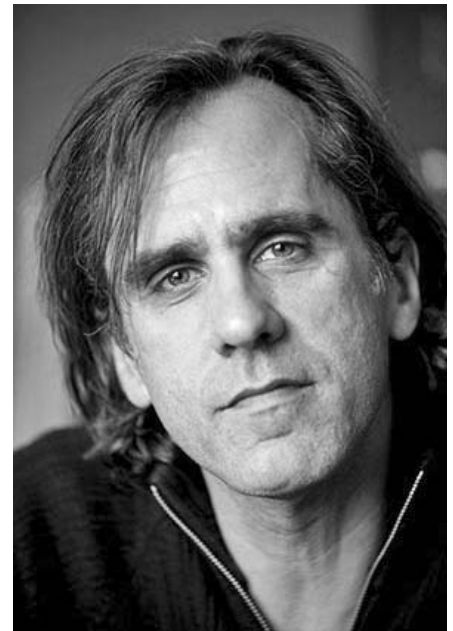
She reviews books of poetry for *The New York Times* and *Poetry* magazine. She lives in Philadelphia.

## Fred Moten

Fred Moten lives in Durham, N.C., where he teaches English and African American Studies at Duke University.

He works at the intersection of black studies, performance studies, poetry and critical theory.

He is author of “Arkansas” (Pressed Wafer), “In the Break: The Aesthetics of the Black Radical Tradition” (University of Minnesota Press), “I ran from it but



JAMES LONGENBACH

was still in it.” (Cusp Books), “Hughson’s Tavern” (Leon Works) and “B Jenkins” (Duke University Press).

## James Longenbach

James Longenbach is a poet and a critic whose most recent collection of poems, “The Iron Key,” is a meditation on the conditions and consequences of beauty. His most recent critical work, “The Art of the Poetic Line,” is an account of work ranging from Shakespeare to Ashbery.

**WHAT:** POETRY SOCIETY OF AMERICA: SPOTLIGHT SERIES

**WHEN:** 7 – 9 P.M., MARCH 29

**WHERE:** MCCONOMY AUDITORIUM

# Diversity of Data Privacy Research on Display at CMU Forum

■ Ken Walters

Posts and tweets may seem harmless by themselves, but together they could paint a negative picture when it comes to privacy.

CMU researchers believe the key to your online safety starts with your keyboard.

“There are two converging trends people need to consider. First, there is more and more self-disclosure online, where we are giving away little pieces of data, and the other side of that is the ability of data mining to scour those pieces to build a complete profile of your life,” said Alessandro Acquisti, Heinz College associate professor of information technology and public policy. “It’s difficult for us as users to predict how those different pieces of data will be used by others.”

Data privacy is becoming increasingly complex, with issues ranging from technology and user behavior to economics, law and public policy. Carnegie Mellon is a hotbed for such research, with faculty studying

various aspects of the subject. The university also is home to CyLab, one of the largest university-based cybersecurity research and education centers in the U.S.

A recent panel discussion as part of International Privacy Day in late January, discussed some of the research in front of a large crowd.

Moderated by Acquisti, the panel included experts from a variety of fields,

**“WE’RE LOOKING AT WAYS TO HELP YOU PROTECT YOUR PRIVACY AND NOT REGRET WHAT YOU’RE DOING.”**

— ASSOCIATE PROFESSOR LORRIE CRANOR

including Assistant Professor Travis Breaux, whose research focuses on how information systems comply with government privacy policies; Associate Professor Lorrie Cranor, who has authored more than 80 research papers on data privacy issues; University Professor Steve Fienberg, who is an expert on protecting confidentiality in census data; Professor Norman

Sadeh, co-founder of Wombat Security Technologies, which commercializes solutions to combat phishing attacks; and Associate Professor Jason Hong, who studies security issues related to mobile devices and applications.

“The interdisciplinary collaboration at CMU is why we are able to do such interesting work in the field,” Cranor said. “We’re looking at ways to help you protect your privacy

and not regret what you’re doing.”

Data mining companies such as Spokeo.com aggregate data and contact information about individuals and make it available on the Internet. It is one of many data warehouses that build extensive portraits of people based on gathered information.

“Don’t think it is a trivial matter,” Fienberg said. “The government is

buying data from data warehouses and using it in the war on terror. It really is a big issue with the government. They need to provide mechanisms to ensure that data is accurate.”

Acquisti notes that it will be important to increase public awareness of the nature of digital data and help people make more informed decisions about sharing personal data online.

“Students today may reveal something online that sometimes they don’t realize could still be available and used years later, say, when they run for office or apply for a job,” he said.

Concerns over unfortunate photos or embarrassing remarks living in cyberspace could lead to a cottage industry of “personal brand management,” Cranor noted.

She sees a business opportunity for cyber experts who could search the Web and delete unflattering information or photos, or at least make it more difficult for a “prospective employer or prospective date” to find, she said.

# Qatar National Research Fund Awards Grants to Three Researchers

■ Andrea L. Zrimsek

Age might only be a number, but for post-doctoral researchers Behrang Mohit, Peter Hansen and Thierry Sans, it was a factor in each of them winning a grant from the first cycle of the Young Scientists Research Experience Program from Qatar National Research Fund.

The grants, \$100,000 each renewable for up to three years, aim to build human capital by supporting scientists age 35 or younger to initiate and lead their own research.

Their projects focus on expanding Arabic content on Wikipedia, creating 3-D maps using robots and developing more secure Web applications. All of these projects will have a great impact on Qatar as well as the rest of the world.

“This is a wonderful result that reflects the high-quality research that is being done by the young faculty and post doctoral research associates at Carnegie Mellon Qatar. They are all under age 35 and are working on amazing projects with real-world impact,” says Majd Sakr, assistant dean for research.

Mohit’s proposal focused on expanding Arabic Wikipedia by statistical machine translation.

“Arabic is one of the top 10 spoken languages, yet the number and the length of Arabic articles is not in the top 20 languages of Wikipedia,” Mohit said. “We plan to train systems that automatically translate Wikipedia articles from English to Arabic and locate those parts with higher translation quality to be used by Arabic Wikipedia authors.”

Hansen’s project involves SLAM, or simultaneous localization and mapping using robots. Since GPS can be fairly unreliable when there are buildings and structures in the way, Hansen is fitting a robot with multiple cameras, then creating a 3-D map of the environment using the images from the cameras.

With multiple cameras, the robot can find its position and determine what has changed from a previous trip. Such technology could be a crucial safety feature at liquid natural gas processing facilities because the robot could automatically do surveillance, check for gas leaks and find structural changes.

Sans’ work focuses on something that affects everyone on a daily basis: Internet security. He is working on a type-safe programming language for the Web called Qwesst that builds safe and secure Web applications.



BEHRANG MOHIT (FROM LEFT), PETER HANSEN AND THIERRY SANS WERE EACH AWARDED \$100,000 GRANTS BY THE QATAR NATIONAL RESEARCH FUND.

PHOTO COURTESY OF CARNEGIE MELLON UNIVERSITY IN QATAR

Since Web applications are becoming more and more complex, it is harder to control how data is disseminated over the Internet. Attackers can steal sensitive information by exploiting Web application bugs. Qwesst will have a built-in security model that will allow programmers to control data dissemination and prevent them from writing unsafe code.

Carnegie Mellon submitted four of the 11 proposals that were independently evaluated by three internationally renowned peer reviewers. Only six grants were awarded: three to Carnegie Mellon,

two to Qatar University and one to Weill Cornell Medical College.

“We submitted four proposals and were awarded three. And of the six grants that were awarded, Carnegie Mellon received 50 percent. I think that is excellent. With these grants, Carnegie Mellon will continue to be a fundamental component of the growing research culture here in Qatar,” Sakr said.

The first grant cycle was so successful that Qatar National Research Fund has decided to have two funding cycles each year.

# Planning To Attend Spring Carnival Events? Think Ahead

■ Heidi Opdyke

Space won’t be quite as tight as inside a Sweepstakes buggy, but you better make your Spring Carnival reservations early.

“With all reunions happening at Spring Carnival this year, space is at a premium, so many activities are requiring advance registration,” said Dan Barnett, director of on-campus programs for Alumni Relations.

Reservations are being accepted

now through April 8 for Spring Carnival activities.

“Last year, we saw more than 2,000 alumni, students, families and friends attend events. Our goal this year is to have more than 3,000,” Barnett said. “We’re really excited that there is more passion behind the weekend and more alumni wanting to be a part of Carnival. Tepper and Heinz are also doing their reunions as part of this weekend, which adds events.”

The increase in activities and expected attendees will limit parking as well.

“As with every Carnival, parking is limited on campus. We are encouraging people to carpool, make alternative arrangements and avoid having to park on campus that weekend. The hotels we work with will have shuttles to campus and we have added evening shuttle service to those hotels as well,” Barnett said.

Anniversary celebrations this year that are free but require registration include The Tartan’s 105th Anniversary Reception, the WRCT 60th Anniversary Reception and the Scotch’n’Soda fifth Annual Alumni & Student Reception, to name a few.

Additional free events include many college and school programs such as CIT Alumni Buggy Breakfast, the Buggy Alumni Reception, School of Architecture Thesis Reviews & Critiques, SoArch Alumni Reception, the Mellon College of Science Ice Cream Social, H&SS Reunion Lunch, MechE Alumni BBQ, CMARC’s Open House and more. For the complete schedule, visit [www.cmu.edu/alumni/carnival](http://www.cmu.edu/alumni/carnival).

Athletics also is planning an all-university open house, and the School of Music will have an Alumni Sing to honor Robert Page. Dramatic performances this year include the School of Drama’s production of “The Alice Project,” and Scotch’n’Soda’s production of “Cabaret.” More information on those events will be available on the website.

Last year, the Loyal Scots Program was introduced at Spring Carnival. The program recognizes students and alumni who show their dedication, passion and continued commitment to the university. To be eligible, members must update their contact information, attend an event or volunteer, make a gift and advocate for the university. Learn more about the program at [www.cmu.edu/loyalscots](http://www.cmu.edu/loyalscots).

“At each welcome area, we will have information about the program and enable alumni and students to become Loyal Scots,” Barnett said. “We’re excited to celebrate the program’s one year anniversary. We will have several exclusive events for Loyal Scots.

“Everyone’s favorite things will also be back including Mobot Races, Sweepstakes and booths on the Midway,” he said. “We invite the entire university community to the Alumni Association All Campus BBQ which will take place on Friday from 11:30 a.m. to 2 p.m. We look forward to a great Spring Carnival & Reunion Weekend!”



CARNIVAL BOOTHS AND THE MIDWAY ARE PERENNIAL FAVORITES DURING SPRING CARNIVAL.



# Immigrants' Dreams the Focus of CMU Film Festival

■ Shilo Raube

Veteran film and TV producer Esaú Meléndez, a native of Mexico City who now lives in Chicago, sees the United States as a country built by immigrants — generation after generation with people much like himself.

When he saw the intense public reaction and protests to the 2006 federal law that criminalized undocumented citizens and anyone who assisted them, he knew he had to do something.

“The May 1st protest drew a large crowd, over a million people,” Meléndez said. “I was very inspired by that. I’d never seen anything like that in my life. When I turned on the TV, the media wasn’t covering all sides, and I thought ‘Where’s the balance?’”

Meléndez wanted to personalize the story of the modern immigrant rights movement through a character who represented the immigrants’ challenges. He found Elvira Arellano, a single mother who was arrested by federal authorities and ordered to appear before immigration. Facing almost certain deportation, Arellano instead made the decision to seek sanctuary at Adalberto United Methodist Church in Chicago.

“No one did what she did — fight to stay — and her story needed to be told,” said Meléndez.

Meléndez’s resulting documentary, “Immigrant Nation! The Battle for a



ELVIRA ARELLANO SOUGHT SANCTUARY AT A CHICAGO CHURCH WHEN SHE WAS FACING POSSIBLE DEPORTATION. HER STORY IS TOLD IN “IMMIGRANT NATION! THE BATTLE FOR A DREAM,” AS PART OF CMU’S 2011 INTERNATIONAL FILM FESTIVAL, “FACES OF MIGRATION.”

Dream,” combines Arellano’s actions with the larger pro-immigrant movement that primarily began in Chicago, including coverage of anti-immigration activists. The film has won several major independent film awards, including

the 2011 Best Documentary at the Cine Festival of San Antonio, the 2010 Cine Latino Award at the Washington, D.C., Independent Film Festival and the 2010 Best Documentary at the Latino Film Festival in Chicago.

For Meléndez, the film’s biggest accomplishments aren’t the trophies.

It’s having the film serve as a historical reference for the 2006-2009 movement.

“People forget. And, the media and a lot of people in power try to push this movement aside,” he said. “This film is a tool to tell history — told by the people who were there.”

In early April, Meléndez will be in Pittsburgh to debut “Immigrant Nation!” as part of the 2011 Carnegie Mellon International Film Festival, “Faces of Migration.”

“Esaú’s film deals with very important issues regarding American immigration and captures a piece of history from the perspective of an artist,” said Jolanta Lion, festival director. “Having him here will allow us to create a dialog with the audience to understand better and beyond what the politicians and media create.”

For more information about “Immigrant Nation! The Battle for a Dream,” visit [www.cmu.edu/faces/film\\_immigrant.html](http://www.cmu.edu/faces/film_immigrant.html).

## Faces of Migration

Last year, an estimated 214 million people worldwide left their native countries to live elsewhere. Each person has a story to tell — from the initial motivations to migrate to the socio-cultural and personal identity conflicts faced upon entering their new homes. The 2011 Carnegie Mellon International Film Festival will bring the intricacies surrounding migration to life at venues throughout Pittsburgh with “Faces of Migration,” March 17 — April 10.

The festival is sponsored by CMU’s Humanities Center, the Heinz Endowments and PNC Bank. For complete details and to purchase tickets, visit [www.cmu.edu/faces](http://www.cmu.edu/faces).



ESAÚ MELÉNDEZ

## 2011 CMU International Film Festival Schedule

### Thursday, March 17

“The Arrivals” (France, 2009) + Opening Night Reception  
7: 15 p.m., Melwood Screening Room  
477 Melwood Ave.

### Friday, March 18

“Warsaw Available” (Poland 2009) and “Hanoi-Warsaw” (Poland 2010)  
7 p.m., Melwood Screening Room  
477 Melwood Ave.

“Littlerock” (USA, Japan 2010)  
9 p.m., Melwood Screening Room  
477 Melwood Ave.

### Saturday, March 19

“First of All, Felicia” (Romania, Belgium, France, Croatia 2009)  
5 p.m., Melwood Screening Room  
477 Melwood Ave.

### “Norteado” (Mexico 2009)

7:30 p.m., Melwood, Screening Room  
477 Melwood Ave.

### Sunday, March 20

“Plato’s Academy” (Greece, Germany 2009)  
5 p.m., Regent Square Theater  
1035 S. Braddock Ave.

### Friday, March 25

“Pink Saris” (UK, India 2010)  
7:30 p.m., The Kelly Strayhorn Theater  
5941 Penn Ave.

### Saturday, March 26

“Neukölln Unlimited” (Germany, 2010)  
5:30 p.m., McConomy Auditorium  
University Center (UC)

### Thursday, April 7

“Gıtmek: My Marlon and Brando” (Turkey 2009)  
7 p.m., McConomy Auditorium, UC

“Cuban Film Shorts: The Daily Experience of Living”

7: 30 p.m., Future Tenant Gallery  
819 Penn Ave.

### Friday, April 8

“Immigrant Nation! The Battle for a Dream” (USA 2009)  
4 p.m., 105 College Hall  
Duquesne University

“Dooman River” (France 2010)  
7 p.m., McConomy Auditorium, UC

### Saturday, April 9

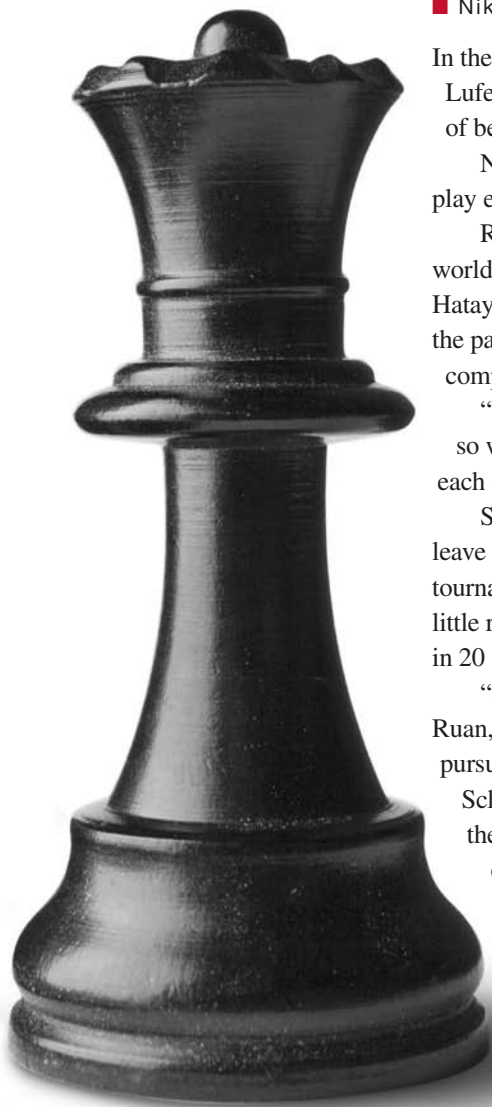
“Immigrant Nation! The Battle for a Dream” (USA 2009)  
6: 30 p.m., McConomy Auditorium, UC

### Sunday, April 10

“The Competitive Shorts Program”  
5 p.m., The Kelly Strayhorn Theater  
5941 Penn Ave.

“Diplomat” (Israel 2009)  
7 p.m., SouthSide Works Cinema  
425 Cinema Dr.

# Chess Champ Keeps Game, Studies in Check



■ Niki Kapsambelis

In the royal world of professional chess, Lufei Ruan came within just a few moves of being crowned queen.

Not bad for someone who doesn't even play every day.

Ruan came in second at the women's world chess championship last December, in Hatay, Turkey, to 16-year-old Hou Yifan. In the past, the two women have been teammates competing for their native China.

"We are both familiar with each other, so we know the strategy to fight against each other," Ruan said.

She was able to combine a few days' leave with the winter holiday to play in the tournament, though the experience offered little relaxation. She enjoyed only one break in 20 straight days of play.

"It was much better than I expected," said Ruan, 24, who is in the midst of her first year pursuing a Ph.D. in accounting at the Tepper School. "Everyone congratulated me when they saw me after I came back, and they even sent an e-mail to all the students to announce my victory."

A professional chess player for eight years, Ruan started playing when she was 6 years old with the encouragement of her

father, Miqing Ruan, an associate professor at the Nanjing University of Aeronautics and Astronautics. She earned the title of woman grandmaster (WGM) in 2007, and under the tutelage of her coach, Xu Jun, broke into the world's top 20 female chess players in January 2008.

She reached the 2010 final by winning tiebreakers in every round and eliminating the previous champion, Alexandra Kosteniuk.

Though she belongs to the Pittsburgh Chess League, and practices on a computer, Ruan's primary focus is now her studies.

her doctorate with an eye toward becoming a professor in China. In fact, she credits her coach with encouraging her to continue her studies full time, something she said is a rarity in her homeland.

She arrived at the Tepper School with an interest in corporate finance, but developed an interest in accounting and now thinks she may study the intersection of the two disciplines. Either way, she believes the strategic mindset she has developed as an elite chess player will influence her perspective.

"Chess is about thinking right," Ruan

## INTERESTED IN PLAYING CHESS?

**LUFEI RUAN IS A MEMBER OF THE CMU TARTANS CHESS TEAM IN THE PITTSBURGH CHESS LEAGUE, WHICH RUNS FROM SEPTEMBER TO APRIL.**

**FOR MORE INFORMATION ABOUT THE CMU TARTANS, CONTACT TEAM CAPTAIN**

**JEFF QUIRKE AT [JEFF.QUIRKE@GMAIL.COM](mailto:JEFF.QUIRKE@GMAIL.COM).**

"Before I came here, I spent half my time in study and half in chess," explains Ruan, who attended Tsinghua University in Beijing. "If I am in school, I focus on school study. If I'm in tournaments, I focus on chess. The most important thing is to be efficient and effective. I focus on something and don't get distracted by other things."

Although the game has provided some social opportunities — Ruan enjoys sharing her love for chess with others, and teaches friends who ask — her priority is pursuing

said. "I can apply the similar math to both fields. For the chess player, we do calculations and judgments in everything. We do it round after round, and it's helpful for me to do accounting in a similar way."

Now that she has resumed her studies, she has switched her focus away from chess, but she'll never give up the game.

"Chess is part of my life," she said. "I won't give it up totally, but I can play it when I want to do so. I just want to enjoy the tournaments."

## NEWS BRIEFS

### Applications Set New Record

A record number of prospective students have applied for undergraduate admission to Carnegie Mellon for the 2011-2012 school year.

As of Feb. 1, the university's Office of Undergraduate Admission reports that 16,497 students have applied for fall 2011. This is a 6.5 percent increase over the previous record of 15,496 applicants for the 2010-2011 school year.

"This applicant pool is by far the most talented and diverse in our history," said Michael Steidel, director of undergraduate admission. "It will make our work in selecting a class the most challenging we've experienced to date."

### Klepper Earns Award for Entrepreneurship Research



Steven Klepper, the Arthur Anton Hamerschlag Professor of Economics and Social Sciences, has received the esteemed 2011 Global Award for Entrepreneurship Research for his significant and

influential contributions to the understanding of the birth and growth of new industries. The award carries a prize of 100,000 Euros (\$136,531) and is widely regarded as the most prestigious entrepreneurship research award.

Klepper, who has been on the CMU faculty since 1980 and has appointments in the College of Humanities and Social Sciences and Tepper School of Business, studies the

evolution of industries, particularly the role new companies play in innovation and economic growth. He explores why innovative industries experience shakeouts and end up dominated by a small number of producers and why some industries become clustered geographically, such as the concentration of semiconductor producers in Silicon Valley.

### Study: Despite Higher Price Diesel Vehicles a Better Value

A new Carnegie Mellon study, reveals that despite the sticker shock associated with diesel-engine vehicles, they are a better value compared to vehicles with gasoline engines because of their lower operating costs and higher resale value over time.

The study by researchers at the Tepper School of Business, underwritten by Bosch, noted diesel's better fuel efficiency and a residual value up to 30 percent higher than traditional port-fuel injection (PFI) gasoline-powered vehicles. It also found that the price differential between a clean diesel passenger car and a traditional PFI gasoline-powered vehicle could be recouped in less than 18 months of driving.

### University Libraries Offers New Images Databases

The University Libraries is offering a suite of new, renewed and longstanding databases that support teaching and learning with images. These databases provide high-quality images for presentations and educational use, and some provide tools for organizing images, adding personal images and structuring presenta-

tions. The databases built at Carnegie Mellon — the Image Collection and The Swiss Poster Collection — are powered by Luna Imaging software.

The six databases: AP Images, ARTstor, Bridgeman Education, Catalog of Art Museum Images Online, Image Collection: CMU Libraries, and the Swiss Poster Collection are available at <http://guides.library.cmu.edu/vr>.

For more information or assistance contact Beth Kellogg at 412-268-3511 or [kellogg@cmu.edu](mailto:kellogg@cmu.edu).

### New Shuttle To Bakery Square Added

CMU's Shuttle-Escort service has added a new shuttle to Bakery Square at 6425 Penn Ave. The Bakery Square Shuttle runs from 8:30 a.m. to 6:30 p.m., Monday through Friday. It makes two stops on campus — on Forbes Avenue between the Collaborative Innovation Center and Hamburg Hall and at the University Center circle. The shuttle can be tracked by utilizing Google Latitude at <https://sites.google.com/site/bakersquareshuttle/how-to-follow>.

For more, go to <https://sites.google.com/site/bakersquareshuttle/>. Questions and comments may be sent to [campuspd@andrew.cmu.edu](mailto:campuspd@andrew.cmu.edu).

### RecycleMania 2011 Updates Available Online

RecycleMania 2011 runs through April 2. Throughout the competition, colleges and universities will report their recycling and trash weights to receive an overall ranking, which you can follow at [www.recyclemaniacs.org](http://www.recyclemaniacs.org).

Recyclables include mixed office paper, cardboard, bottles and cans. A complete list of recyclables can be found on the Green Practices website at [www.cmu.edu/greenpractices/](http://www.cmu.edu/greenpractices/).

To order a large recycling cart for your office paper, send email to [ppOp@andrew.cmu.edu](mailto:ppOp@andrew.cmu.edu). Questions should be directed to Barb Kviz, FMS environmental coordinator, at [bk11@andrew.cmu.edu](mailto:bk11@andrew.cmu.edu).

### CMU To Host Children's Frisbee Camp

This summer, Carnegie Mellon will again host Camp Spirit of the Game, Pittsburgh's Ultimate Frisbee camp for boys and girls between the ages of 7 and 14. Professionally run by Andy Norman, a teaching instructor in the Philosophy Department, Camp Spirit features an introduction to the sport, an assortment of swimming and games, and lessons in constructive conflict resolution. Sessions are June 27 – July 1 and July 4 – 8.

For more information and to register, go to [www.campsog.com](http://www.campsog.com) or call 412-242-7117.

### Daniels Releases New Book of Poetry

In English Professor Jim Daniels' latest book of poetry, "Having a Little Talk with Capital P Poetry," he tackles a variety of topics from living in Detroit and Pittsburgh and differences between childhood and parenthood, to meditating on memory and loss and



## GM Foundation Supports Fund



PHOTO BY KEN ANDREYO

WALT DORFSTATTER (FROM LEFT), EXECUTIVE DIRECTOR OF INTEGRATED VEHICLE HEALTH MANAGEMENT FOR GM RESEARCH & DEVELOPMENT, PRESENTED ED SCHLESINGER, HEAD OF THE ELECTRICAL AND COMPUTER ENGINEERING DEPARTMENT, AND GAURAV BHATIA, A RESEARCHER AT THE CMU COLLABORATIVE LABORATORY, WITH A \$70,000 SCHOLARSHIP GRANT FROM THE GENERAL MOTORS FOUNDATION FOR STUDENTS ON FEB. 10. AT THE PITTSBURGH AUTO SHOW. "AUTOMOTIVE COMPANIES ARE MAKING GREAT STRIDES IN DEVELOPING AND ADOPTING NEW TECHNOLOGIES AND CARNEGIE MELLON'S EXCEPTIONAL PROGRAMS FOSTER A NEW GENERATION OF TALENT THAT CAN SIGNIFICANTLY ACCELERATE THE PACE OF AUTOMOTIVE INNOVATION," DORFSTATTER SAID.

## Cohon Joins Prestigious Global Leaders Forum

Following his participation at the World Economic Forum (WEF) meeting in Davos, Switzerland, Carnegie Mellon President Jared L. Cohon has been invited to join the Global University Leaders Forum (GULF).

At the 2011 Davos meeting, Cohon moderated an interactive group session, titled "Getting Things Done: Macro and Micro Strategies," which addressed using technology to help increase productivity at the group and individual levels. The session included discussion leaders from the United Kingdom, India, Vietnam and Germany.

Since 2006, GULF is a global community of heads of universities under the auspices of the World Economic Forum. The group engages in issues of high impact to higher education, and works to facilitate collaboration among universities and other sectors of society in areas of significance for global governance.

GULF includes heads of more than two dozen universities from nine countries and has task forces working on five thematic tracks: capacity building in universities in developing countries; environmental sustainability; digital dissemination of university content; Middle East partnership and challenges; and intellectual property.

The university is playing a greater role in the WEF since Michele Petochi, WEF's director and head of university community, visited Carnegie Mellon in December.

confronting issues in everyday life.

Daniels also riffs on popular music with "Esperantos," poems attempting to capture what is universal about music, and introduces a new character — "the Tenured Guy" — to examine some of the less noble aspects of academia. For more: [www.cmu.edu/news/archive/2011/February/feb1\\_jimdaniels.shtml](http://www.cmu.edu/news/archive/2011/February/feb1_jimdaniels.shtml)

### Assistant Professor Platzer Receives CAREER Award

The National Science Foundation has awarded



Andre Platzer, assistant professor of computer science, a five-year, \$400,000 Faculty Early Career Development (CAREER) Award to study "Logical Foundations of Cyber-Physical Systems."

Platzer develops methods for verifying the performance of cyber-physical systems, including hybrid systems and distributed hybrid systems, in which embedded computers interact with an ever-changing real world. Examples include applications such as distributed adaptive cruise controls in automobiles and robotic surgery devices.

### Baybars Receives George Leland Bach Chair

Ilker Baybars, deputy dean and professor of operations management at the Tepper School of Business, has been awarded the George Leland Bach Chair in honor of his contributions to Carnegie Mellon and the discipline of

management science. The chair is named for the late, founding dean of the Graduate School of Industrial Administration at Carnegie Mellon, who was a pioneer in the revolution that created modern management education.

Baybars received his master's degree and Ph.D. at Carnegie Mellon and joined the university faculty in 1978. Among many awards, he received the Tepper School's Outstanding Achievement Award for Leadership in 1997 and was the first recipient of the Emil Limbach Teaching Award for Excellence in the Classroom in 1981 at SUPA, which is now the Heinz College. Baybars also was the architect and founder of the business school's FlexTime and FlexMode MBA programs.

### Ganger Awarded ECE Professorship



Gregory R. Ganger was awarded the Stephen J. Jatras Professorship in Electrical and Computer Engineering for cutting-edge work in computer systems. The professorship is named for the late Stephen J. Jatras (E'47), former chairman of the Telex Corp. and a leader in a variety of academic, civic and community organizations stretching from Pittsburgh to Tulsa, Okla.

Ganger, who recently testified in Washington, D.C., about the risks and benefits of cloud computing, is internationally recognized for his work in computer systems, such as storage systems, distributed systems and operating systems.

Since 2001, Ganger has served as director of the Parallel Data Lab, where he is collaborating with HP labs on a research initiative focused on cloud computing issues through the prestigious HP Labs Innovation Program.

### Wats:ON? Is All About Speed

The Jill Watson Festival Across the Arts, also known as wats:ON?, will be held March 17-19. This year's theme will examine speed in relation to the production and presentation of creative work encompassing a range of interdisciplinary events.

Events include a high-speed camera photo booth, an exhibit of Beethoven's Ninth Symphony stretched to 24 hours by Scandinavian artist Leif Inge, a collaborative dance-video project and a time-lapse video project that will be choreographed, shot and edited on campus with students.

The festival's curators are Assistant Professor Pablo Garcia, the Lucian and Rita Caste Chair in Architecture, and Spike Wolff, an adjunct assistant professor of architecture. For more information, visit [www.cmu.edu/cfa/watson](http://www.cmu.edu/cfa/watson).

The series is named in memory of Watson, a Carnegie Mellon alumna, adjunct faculty member in the School of Architecture, and acclaimed Pittsburgh architect who died in the TWA Flight 800 plane crash on July 17, 1996.

### Two Professors Named To National Engineering Academy



Carnegie Mellon's Nadine N. Aubry and Chris T. Hendrickson have been elected to the National Academy of Engineering (NAE), one of the highest professional honors an engineer can achieve. Member-

ship in the NAE honors people who have made important contributions to engineering theory and practice, and who have demonstrated unusual accomplishments in pioneering new and developing fields of technology.

Aubry, the Raymond J. Lane Distinguished Professor and head of Carnegie Mellon's Mechanical Engineering Department, was elected to the academy for her contributions to low-dimensional models of turbulence and microfluidic devices, and for leadership in engineering education.



Hendrickson, the Duquesne Light Professor of Engineering and co-director of Carnegie Mellon's Green Design Institute, was elected to the academy for his leadership and contributions in transportation and green design engineering. Read more at [www.cmu.edu/news/archive/2011/February/feb11\\_nae.shtml](http://www.cmu.edu/news/archive/2011/February/feb11_nae.shtml).

## LECTURE SPOTLIGHT: CELLS BECOME FACTORIES FOR DICKSON PRIZE LECTURER

■ Jocelyn Duffy

Thirty years ago, David Tirrell influenced young, talented scientists to come to Carnegie Mellon. This month, those faculty members are returning the favor.

Tirrell, a world-renowned chemist and materials scientist, and former Carnegie Mellon faculty member, has been named the recipient of the 2010 Dickson Prize in Science.

Given annually since 1970, the Dickson Prize in Science is awarded by Carnegie Mellon to an individual who has made outstanding contributions to science in the United States. Tirrell, who is the Ross McCollum-William H. Corcoran Professor and a former chairman of the Division of Chemistry and Chemical Engineering at the California Institute of Technology, will give the Dickson Prize Lecture, titled “Reinterpreting the Genetic Code,” at 4:30 p.m., Monday, March 21 in the Mellon Institute Auditorium.

“David is a pioneer among scientists,” said Krzysztof Matyjaszewski, the J.C. Warner Professor of Natural Sciences, who nominated Tirrell for the award. “He has elegantly demonstrated how macromolecular science donates to,



PHOTO COURTESY OF DAVID TIRRELL

DAVID TIRRELL WILL DELIVER THIS YEAR’S DICKSON PRIZE LECTURE TITLED “REINTERPRETING THE GENETIC CODE.”

yet also benefits from, molecular biology and bioorganic chemistry.”

A member of CMU’s Department of Chemistry from 1978 to 1984, Tirrell was highly regarded by both his students and colleagues at the Mellon College of Science. Scientists, including Matyjaszewski, have said that Tirrell influenced their decision to come to CMU. His students and colleagues recognized him with the college’s Julius Ashkin Teaching Award. After leaving CMU, he maintained ties with the Chemistry Department, serving on its advisory board.

**WHAT:** DICKSON PRIZE LECTURE

**WHEN:** 4:30 P.M., MONDAY, MARCH 21

**WHERE:** MELLON INSTITUTE AUDITORIUM

Tirrell is best known for creatively using principles of biology and chemistry to solve one of the most critical problems in polymer synthesis — creating polymer chains that are identical in weight, composition and structure. He developed a technique whereby he is able to reprogram biological cells so that they make artificial, protein-like macromolecules with new and useful properties. Using this technique, Tirrell programs the cells to tailor-make molecules for use in biomedical technologies.

“David essentially re-wrote the genetic code and turned the cells into factories capable of using non-biological monomers,” Matyjaszewski said. “A number of biomedical devices based on his work will be commercialized in the near future.”

Tirrell’s early research also is notable. While he was a faculty member at CMU and the University of

Massachusetts, Tirrell made important macromolecular discoveries that have made the development of “smart” materials — those that respond to external cues like light, pH or temperature — possible.

Tirrell has received numerous awards and honors, including the American Chemical Society Award in Polymer Chemistry, the G.N. Lewis Medal from the University of California, Berkeley, and the Arun Guthikonda Memorial Award from Columbia University. Tirrell is a fellow of the American Chemical Society, the American Association for the Advancement of Science and the American Academy of Arts and Sciences; and is a member of the National Academy of Sciences and the National Academy of Engineering.

The lecture, which is free and open to the public, will be followed by a reception in the Mellon Institute lobby.

GO AHEAD  
**BRAG**  
A LITTLE.

**It’s OK to brag a little — when you’re part of the CMU community.**

Get your free decal and display it on your car, bike, laptop or guitar case. Start the conversation — let the world know what university you call home.

Show your CMU pride and request your decal at [www.cmu.edu/freedecal](http://www.cmu.edu/freedecal).



magnet



window cling



sticker

## Students Create Bridge CONTINUED FROM PAGE SIX

Founded last August, the group has had more than 120 students and professionals attend workshops and networking events.

“This is a grassroots organization. It is driven at the student level. Our success thus far is only as good as the engagement we receive,” Bishop said. “Our future success depends on future engagement from our community.”

IACT also has attracted supporters and sponsors such as The Quality of Life Technology (QoLT) Center and the Donald H. Jones Entrepreneurship at Tepper’s School of Business.

One mentor has been QoLT Executive Director Jim “Oz” Osborn. He helped the students make IACT a reality and inspired them to focus on technology innovations for older or disabled adults. IACT’s current theme is “Health care Technologies for an Aging America.”

“Our work is fundamentally about technology development but it is informed by clinicians, sociologists and other practitioners who better understand the target populations that we are making the technology for, and those are people with disabilities and older adults. All three ingredients, the clinical side, the technological side, and the business side are equally important to our center,” Osborn said. “Hence, IATC fits our mission perfectly. In fact, it’s almost a mirror of the work that we do.”

Mataya said one of the group’s goals is to have mentors to help get ideas off the ground.

“He said the group wants to develop the workshops to be a place where people could come and pitch ideas that could spur innovation. “Maybe two of the four people in the group will decide, ‘Wow, I’d really like to run with this and see if it can work,’” Mataya said.

For information about IACT and upcoming events, visit <http://iactpgh.com/>.

## Q&A with Eric Nyberg CONTINUED FROM PAGE TWO

about how question answering is different from Google. After this, everyone will know what question answering is and why goes beyond Google. Question answering has to get the exact answer; it has to pinpoint the answer for you and do it very quickly. A human with Google would not be able to compete on Jeopardy! You wouldn’t be able to sift through the documents quickly enough.

I think Watson is going to vitalize research in question answering. People are going to realize that question answering can be fast enough and good enough to do real world tasks. That’s going to help us as we apply the Watson technology to other areas.