



## Carnegie Mellon

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### “Celebration of Education” Honors Top Teacher, Advisor, Lifetime Achiever

■ Bruce Gerson

Roll out the red carpet: it's the Academy Awards, Carnegie Mellon style. “A Celebration of Education” annually rewards the university's best of the best in teaching and advising, and recognizes a scholar for his or her body of work and lifetime achievements. This year's winners are (drum roll please) G. Richard Tucker, Gordon Rule and Melissa Cicozi.

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### Spring Is in the Air



PHOTO BY KEN ANDREYO

SPRING HAS ARRIVED, AND AT CARNEGIE MELLON THAT MEANS ONE THING: PREPARATION FOR SPRING CARNIVAL. AS THE WEATHER TURNED WARMER, WOODEN FRAMES APPEARED ACROSS CAMPUS, ACCOMPANIED BY A SYMPHONY OF HAMMERS AND DRILLS THAT MEANS BOOTH CONSTRUCTION IS WELL UNDER WAY. THE ANNUAL SPRING CARNIVAL FESTIVITIES — THIS YEAR ORGANIZED AROUND THE THEME “SMALL THINGS MADE LARGE” — KICK OFF APRIL 19 AND RUN THROUGH APRIL 21. ACTIVITIES INCLUDE THE BOOTH COMPETITION, SWEEPSTAKES RACES, CARNIVAL RIDES, CONCERTS AND EVEN A FIREWORKS DISPLAY. FOR MORE ON CARNIVAL, SEE [WWW.SPRINGCARNIVAL.ORG](http://WWW.SPRINGCARNIVAL.ORG).

### Getting a Better Read on the Admission Process



PHOTO BY KEN ANDREYO

■ Susie Cribbs

Last week 6,000 high school seniors from across the globe opened their mailboxes to find an envelope that held the potential to change their lives. Some likely opened it with trembling fingers, maybe some put it aside to open later, or others tore into it on the spot. No matter how they reached the letter inside, though, they all discovered the same

thing: an invitation to join Carnegie Mellon's class of 2011.

While only a quarter of those students admitted will actually enroll at Carnegie Mellon, the invitation they all received represents months of work and an intense process that accompanies all applications through the university's Office of Undergraduate Admission.

CONTINUED ON PAGE TWO

STAFFERS IN THE UNIVERSITY'S OFFICE OF ADMISSION WERE NEARLY BURIED IN ENVELOPES LAST WEEK AS THEY STUFFED AND PREPARED 6,000 ACCEPTANCE LETTERS FOR MAILING. ROUGHLY ONE QUARTER OF THOSE STUDENTS ACCEPTED WILL CHOOSE TO ENROLL.



# the PIPER

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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 Enrollment, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-2056.

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/statistics.htm](http://www.cmu.edu/police/statistics.htm).

Obtain general information about Carnegie Mellon University by calling 412-268-2000.

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## Applications Take Complex Ride From Submission to Admission

CONTINUED FROM PAGE ONE

On the surface, that process seems simple. Applications begin arriving in November, either in paper or electronic form, and all relevant data is loaded into a database. But once the data is entered and a folder begun for the student, the real fun begins: reading, reading and reading all those applications.

Associate Director of Admission Cornell LeSane explains that Carnegie Mellon uses a team-based model for reviewing applications.

"We read by college here, and by team. Some schools read by region — if you visit the D.C. area, for example, that's the area you'll read applications for. We read by college. So there's a group of folks who will read for engineering and science, another team is going to read for business and computer science, another team reads for humanities, another for fine arts."

Applications aren't just read, though. They're analyzed.

"We send it to our first readers and they make comments on a voting slip," said Director of Admission Mike Steidel. And while "voting slip" sounds innocuous enough, it's really a sheet of paper readers use to comment on everything and anything about the application, ranging from school rigor and GPA to out-of-class recognition and well-roundedness.

The application's progress doesn't stop at the first reader, regardless of the initial review. Each folder gets at

least two reads, possibly three or four, depending on the situation.

"The second reader has more seniority, more experience," said Steidel. "We read the comments from the first reader and look at the ratings from the first reader and either agree or disagree. If we agree, we post the decision and the file goes on its way to get a letter. If we disagree, it goes to a third reader who actually makes the call

**"WE LOOK FOR REASONS TO ADMIT STUDENTS. THERE'S NO DOUBT ABOUT THAT. WE'RE PUTTING TOGETHER GROUPS OF PEOPLE THAT WILL MAKE A PRETTY DIVERSE COMMUNITY."**

— DIRECTOR OF ADMISSION MIKE STEIDEL

as to what the decision should be."

That decision is heavily influenced by a wide array of factors — SAT scores, GPA, extracurricular activities, essay and recommendations, to name a few. But Carnegie Mellon is most interested in the total package.

"There isn't one factor that is going to make a student admissible or automatically denied," LeSane said. "We take a ton of factors into consideration when we review these applicants. ... We want to make sure that students are not only going to add to the academic environment here, but also to the social environment."

Steidel agrees that the ideal Carnegie Mellon applicant is someone

both academically talented and engaged in the outside community. "We like to see that engagement carry over from the classroom to their community," he said. "They're really making a difference where they are. It's not necessarily just a joiner, but someone who is actually involved in making a difference."

One factor might not deny a candidate admission, but certain elements act as warning signs that an

applicant just might not cut it at Carnegie Mellon. Steidel and LeSane both note that transcripts containing low grades are a clear indication that a student might not succeed at the university — even if they have phenomenal SAT scores.

"There are students who have amazing board scores, but aren't doing anything in the classroom. So that's a kid who probably isn't going to do that well here because while they have all this potential, they're not living up to it."

But for the most part, Steidel and his team want to admit students. "We look for reasons to admit students. There's no doubt about that," he said. "We're putting together groups of people that will make a pretty diverse community."

Their task is harder now than it's ever been, with a record 22,000 applicants this year and an increasingly savvy batch of prospective students. Steidel, who has worked in the Office of Admission for 29 years, says the process now is a far cry from what it was when he first started. Back then, they had roughly 5,000 applicants each year, and the one main criterion for admission was whether or not candidates could do the work.

"Today it's so much more complex," he said. "We've had to be much more sophisticated because the kids are more sophisticated and the process has demanded that we become more sophisticated. So it's no longer 'can they do the work?' Eighty percent of the 22,000 can do the work. We can't admit 18,000, so we have to whittle it down to 6,000 and how do you do that? So it's a lot of these ratings that we actually use."

In the end, though, after the multiple reads, complex ratings and tough decisions, the process comes to a close in late March. What began as 22,000 applications and nearly 250,000 processed documents boils down to 14,000 denials, 2,000 waitlisted students ... and 6,000 high school seniors opening acceptance letters they just found in their mailboxes.

## Attention All Drivers

BE PREPARED TO SEE A BUTTERFLY MEETING ITS END ON A WINDSHIELD OR GROWNUPS FROLICKING THROUGH THE SNOW LIKE CHILDREN ON LOCAL BILLBOARDS. FOUR NEW PUBLIC ARTWORKS CREATED BY SCHOOL OF ART STUDENTS WILL BE DISPLAYED ON VARIOUS BILLBOARDS AROUND PITTSBURGH BEGINNING APRIL 1. THE PUBLIC

ART PROJECT IS A COLLABORATIVE EFFORT BETWEEN LAMAR OUTDOOR ADVERTISING AND CHRISTOPHER SPERANDIO, THE JILL KRAUS VISITING ASSISTANT PROFESSOR OF ART. TWO OF THE CHOSEN WORKS WERE "SPLAT!" AN ABSTRACT IMAGE OF A BUTTERFLY ON A WINDSHIELD (BOTTOM); AND "SNOWBALLS FROM THE FREEZER," A GROUP OF BUSINESS PEOPLE PLAYING IN THE SNOW (TOP). STUDENTS IN THE MAKING MASS MEDIA COURSE HAVE CREATED [WWW.SNOWBALLSFROMTHEFREEZER.COM](http://WWW.SNOWBALLSFROMTHEFREEZER.COM), WHERE PEOPLE CAN LEARN MORE ABOUT THEIR WORK.



IMAGES COURTESY OF RACHEL RENEE STEWART AND THE MAKING MASS MEDIA CLASS



## INTERNATIONAL DISPATCHES

### Botball Begins in Qatar; Al Jazeera's Children's Channel To Cover Upcoming Tournament

Noha Al Afifi, Media Relations Manager, Carnegie Mellon in Qatar

Students from 18 schools in Qatar, Kuwait and the United Arab Emirates recently attended a two-day Botball workshop at Carnegie Mellon Qatar in preparation for a major tournament in April and May, which will be covered by Al Jazeera's Children's Channel.

Botball ([www.botball.org](http://www.botball.org)) is a U.S.-based organization that introduces high school students to robotics. At the intensive workshop, teams were given the necessary background and expertise to build and program their own LEGO MINDSTORM™ robot. During the next few weeks, students will work with teachers and mentors to build and program their robots. The learning experience will culminate in April and May, when the teams compete against each other to see whose robot completes the course first. The winning team must also demonstrate the work they've done to program their robots.

"Botball is a great way for high school students to learn about robots," said Chuck Thorpe, dean of Carnegie Mellon Qatar and former head of the university's Robotics Institute. "It's also an excellent way for students to put their skills in math, engineering and teamwork to use."

In addition to expanding the event from six teams last year to 18 teams this year, Al Jazeera's Children's Channel has shown interest in covering the tournament and plans to produce a four-part documentary on Botball and robotics. Broadcast dates and times have not been announced.

"Al Jazeera's Children's Channel finds in this competition an exciting tool to help inspire students around the region and raise awareness of the creativity level of the Arab child. During last year's event, we witnessed the ability of Arab children to use subjects they learned in school in a meaningful way. They managed to design, build, program and document their robots," says Mostapha Mellouk, deputy general manager of Al Jazeera's Children's Channel.

### Carnegie Mellon, Australian Firm Create Scholarship Program

Working with the Australian telecommunications firm Telstra, Carnegie Mellon will award 15 scholarships to students seeking a master's degree in information technology at the university's Heinz School headquarters in Adelaide, Australia. The degree will offer a mix of technology, management and strategic courses in information technology. The scholarship program is part of a collaborative effort between Telstra and Carnegie Mellon to further develop information technology capabilities in Australia.

### Program Honors Graduates in Kobe

Provost and Senior Vice President Mark Kamlet presided over a March 20 ceremony in Kobe, Japan, honoring the first graduates of a program designed to make this Pacific Rim nation a research and education hub for information security. "The program was extremely helpful to me because I now work as an information security consultant," said Mika Sashikata, one of nine international students to complete the rigorous curriculum. "I really enjoyed the interaction with students, faculty and staff from both Kobe and Pittsburgh."

Carnegie Mellon CyLab Japan was established in 2005 as a collaboration between Carnegie Mellon and the Hyogo Institute of Information Foundation to offer a master of science in information technology — information security (MSIT-IS) track. The 16-month graduate degree program, which prepares students to become leaders in information security, is an initiative of the Information Networking Institute (INI) — the education partner of Carnegie Mellon CyLab — and the Heinz School.

### Boyarski, Loftness Visit Qatar

Digital media and sustainable building were among the topics addressed by faculty Dan Boyarski and Vivian Loftness this past month during their visit to the Qatar campus. Boyarski, head of the School of Design, discussed a decade of change that has prompted communication designers to work with motion and sound in addition to text and images. Loftness, a professor of architecture and a member of the Assurance Group for the World Business Council for Sustainable Development, discussed the challenges and opportunities of sustainable design and engineering. She also visited Qatar as a representative of Faculty Senate.

### Students Experience Russian Culture, Civilization

Naum Kats, an adjunct professor in the Department of Modern Languages, led a group of 13 students on a trip to St. Petersburg, Russia, in March. While in St. Petersburg, the students visited the city's major historic and cultural attractions, including the Hermitage, Peter and Paul Fortress, Russian Museum and presidential palace. The trip is part of Kats' freshman seminar course, "Introduction to Russian Culture and Civilization." This is the second year in which Kats has led students on a trip to Russia. The trip was sponsored by the Division of Student Affairs, the H&SS Dean's Office, and the Modern Languages and History departments. The group also spent a day in Amsterdam on their way back to the U.S.

## Robotics Grad Student Gets Hands (and Feet) Wet With DEPTHX

■ Byron Spice

"Spring break in Mexico" evokes images of Cancun's sunny skies and sandy beaches, but for Nathaniel Fairfield, a Ph.D. student in the Robotics Institute, spring break meant camping in the Mexican state of Tamaulipas along the rim of a 30-meter-wide pond called La Pilita.

No ordinary pond, La Pilita is a geothermal sinkhole. Fairfield can personally testify that its warm waters are great for scuba diving. But its 115-meter depth makes it an even better place to test a NASA-funded robotic submarine, called the Deep Phreatic Thermal Explorer, or DEPTHX. This was the second time Fairfield and his Robotics Institute colleagues — Associate Research Scientist David Wettergreen, Project Scientist George Kantor and Senior Research Programmer Dominic Jonak — visited La Pilita to test the autonomous navigation and mapping software they developed for the autonomous underwater vehicle.

Bill Stone, leader of the NASA-funded DEPTHX mission, said the vehicle performed "phenomenally well." NASA has funded the mission to develop and test technologies that could be used to explore the oceans hidden under the icy crust of Jupiter's Europa moon.



ROBOTICS GRADUATE STUDENT NATHANIEL FAIRFIELD POSES WITH DEPTHX AT LA PILITA IN MEXICO.

Until then, the team will return to Mexico in May to send DEPTHX into El Zacatón, thought to be the world's deepest flooded sinkhole. Human divers have descended as far as 282 meters without hitting bottom.

To aid the exploration, Fairfield has developed a simultaneous localization and mapping (SLAM) algorithm for use underwater. "I'm confident it works if you have enough data and if the data's not too noisy," he said. It remains to be

seen whether the sub's sonar sensors can capture data of sufficient quantity and quality. "The only way to do this is to go out and get your hands wet and collect a lot of data," he said.

PHOTO COURTESY OF MARCUS GARY/UNIVERSITY OF TEXAS, AUSTIN

# OIE: A Home Away From Home

## International Students Quickly Find It's More Than Just Visas

■ Jenni King

Enter the Office of International Education (OIE) on Warner Hall's third floor, and the first thing you'll notice is the wall of official-looking forms and papers. They range from flyers for English classes and social events to forms for visas, permanent residency, marriage licenses and work authorizations. It's clear the OIE is the place for international students to get their logistical ducks in a row. But behind that wall of paperwork is a home away from home.

The OIE staff is sympathetic to the challenges of studying and living abroad, mostly because they've been through it themselves. OIE Director Lisa Krieg; foreign student and scholar advisors Linda Gentile, Jennifer McNabb and Neslihan Ozdoganlar; and Senior Coordinator of Study Abroad and Exchange Programs Eva Mergner have all studied and traveled abroad extensively.

"If you believe in karma, then there's a certain sense that we are giving back in a karmic way to all the many people overseas who showed some special consideration or kindness to us when we were far away from home, from friends and family, from the familiar," Krieg said. "We are genuinely interested with helping to ensure that our students and scholars have positive cross-cultural experiences. Crossing cultures can be wonderful and hard

at the same time. We try to give our students and scholars opportunities for exploring the wonderful things, and tools for understanding and contextualizing the hard parts."

In addition to advising students on academic and immigration issues, organizing the study abroad programs, and making their services available to

The OIE hosts an open house twice a semester, which gives international students, scholars and faculty a chance to mix and mingle with OIE counselors and each other. The OIE also organizes social events for spouses and partners who may feel isolated in their new surroundings and overwhelmed by the prospect of too

go here and there together and set up our own activities."

Du has also found that though her visa does not allow her to work, she can volunteer. She plans to study tax policy and help international students with their taxes.

Volunteering and giving back seem to be themes with the OIE, which has created a community of people who help one another.

"I like to help because I've been helped so much by the OIE," said Kavita Arora, a graduate student who volunteers her time to help with OIE's orientation programs. "Over the years they've become good friends, people I can really count on. If the OIE asked me to volunteer or help out with anything, I'd do whatever they asked."

The wall of paperwork at the OIE is just a façade. Behind it are people helping students feel welcome and comfortable. And they, in turn, are doing the same for others.

**"WE ARE GENUINELY INTERESTED WITH HELPING TO ENSURE THAT OUR STUDENTS AND SCHOLARS HAVE POSITIVE CROSS-CULTURAL EXPERIENCES." - OIE DIRECTOR LISA KRIEG**

spouses and dependents, the OIE hosts workshops to help students acclimate to life in the U.S. and Pittsburgh. The workshops tackle topics like cultural adjustment, reentry issues, career planning, tax filing and employment.

But as doctoral student Rui Huang puts it, "The main advantage of the OIE is that they organize a lot of very good social activities that have helped us make new friends and have made our lives very rich."

much downtime. Huang's wife, Juan Du, has a master's degree in control science and engineering and hopes to enter the chemical engineering Ph.D. program at Carnegie Mellon. In the meantime, she has a lot of time and little to occupy her.

"Because of my visa, which doesn't allow me to work, I have nothing to do," Du said. "But through OIE I can make a lot of friends and we can

## NEWS BRIEFS

### Inspired by Science

School of Art senior Lisa Huyett created a large-scale installation titled "S.E.M. Rose" (Scanning Electron Microscope Rose), a recreation of the surface of a rose petal, at the Children's Museum of Pittsburgh. The artist rendered the magnified image of a rose petal using a scanning electron microscope while a student in the university's interdisciplinary Art and Biology course. In the course, an art studio-biology laboratory hybrid, students explore the fusion of art and biology and experiment creatively with scientific media.



PHOTO COURTESY OF LISA HUYETT

"S.E.M. Rose" grew out of Huyett's experience using scanning electron microscopy (SEM), which uses a beam of electrons to reveal the nanostructures of material surfaces at up to one million times their normal size. Huyett magnified a rose petal 500 times, revealing bristly, knob-like structures that make up the velvety appearance of the petal. The artist replicated these buds by creating modules out of pipe cleaners. Since October 2006, Huyett has worked with visitors of all ages who attend Saturday workshops at the Children's Museum to help craft the individual buds, which collectively resemble a large field of roses.

### HR's Employee Orientation Program Praised

The Human Resources Department has been named a finalist in the People Do Matter Awards, sponsored by the Pittsburgh Human Resources Association, for its new employee orientation program that uses a CD and online resources to help introduce new faculty and staff to the university. The orientation program also includes a semi-annual luncheon for new employees to meet informally with other university newcomers, and guidance for supervisors on welcoming new hires. Finalists will be recognized and an overall winner named at an awards dinner April 11 at the Sheraton Station Square.

### Carnegie Mellon, Pitt Receive NIH, NSF Training Grants

Carnegie Mellon and the University of Pittsburgh have received three grants totaling more than \$7 million from the National Institute of Drug Abuse and the National Science Foundation to support programs that train undergraduate and graduate students in basic neuroscience, computational neuroscience, multimodal neuroimaging and other interdisciplinary endeavors. The programs will be offered through the Center for the Neural Basis of Cognition, which is jointly run by the universities.

### College of Fine Arts Mourns Loss of Professor Emeritus

Cletus Anderson, professor emeritus in the School of Drama, died at his home March 16. He was 69. Anderson was a member of the faculty for 35 years and retired in 2003. "His incalculable contribution to generations of drama students, his taste and stature as a theatre artist and his deep humanity and friendship will be missed by us all," said Elizabeth Bradley, head of the School of Drama.

While respected and admired for his teaching, Anderson may be best remembered for his work as production designer for the

classic films "Night of the Living Dead," "Day of the Dead" and "Creepshow," directed by George Romero (A'61). He is survived by his wife, Barbara Anderson, drama professor and associate dean of CFA; two children and grandchildren. A memorial service is being planned for April.

### Microsoft, Carnegie Mellon Establish Center for Computational Thinking

Microsoft and Carnegie Mellon have announced the creation of the Microsoft Carnegie Mellon Center for Computational Thinking, made possible through a three-year, \$1.5 million grant from Microsoft. The center will support research in core computer science areas as well as emerging areas in the field, particularly those that can influence the thinking of other disciplines. It will also help support research on topics including privacy, e-commerce, multicore computing and embedded medical devices. The center will develop courses and curricula suitable for both university and K-12 students, and will host a series of "Mindswaps" between Microsoft and Carnegie Mellon researchers for sharing data and resources, solving problems, and collaborating on computer challenges.

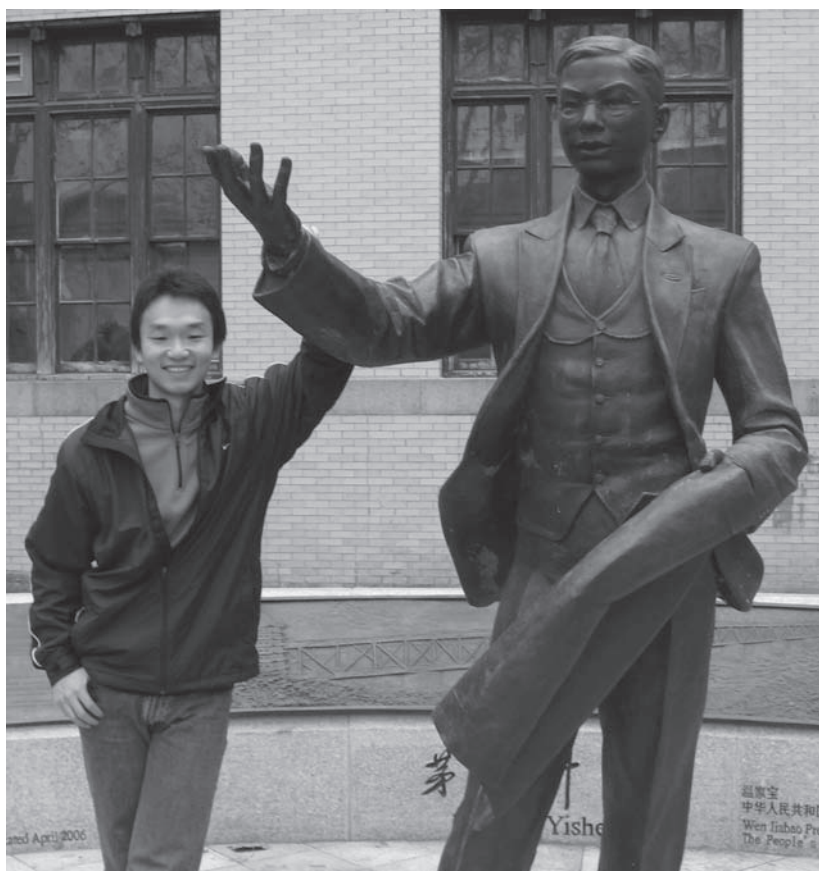


PHOTO COURTESY OF RUI HUANG

■ **Rui Huang** has had a whirlwind year. Married this past June, he traveled from China to Carnegie Mellon in August — it was his first trip to the U.S. — and was joined by his wife, Juan Du, in January. With so much going on in addition to research and studying, Huang was relieved to draw on the help offered by the OIE, and was surprised and encouraged by what its staff had to offer.

“The first person I met when I came to America, to Carnegie Mellon, was from the Office of International Education. They helped me fill out a visa and apply to be a Social Security member, things like that,” Huang said. “Actually, OIE has helped us a lot. Last year when Juan applied for a visa to come into the United States, I asked a lot of questions and they gave us very warmhearted help. It’s difficult to express, but actually they’re very important to us. Without them, I think it would be a lot more difficult to be here as newcomers.”



PHOTO BY KEN ANDREYO

**Correction:** In last month’s “Seeing Science” story, The Piper staff erroneously referred to Dylan Vitone as “Smillie Lab technician.” He is, in fact, the Smillie Lab master printer.

### **Peking University Wins Sustainable Technology Award at McGinnis Venture Competition**

A team from China won the inaugural Sustainable Technology Award at the international McGinnis Venture Competition, hosted by the Donald H. Jones Center for Entrepreneurship at the Tepper School of Business. The team’s business, Dr. Seed LLC, aims to help impoverished farmers in China through a technology that improves seeds by increasing crop yield, improving resistance to drought and reducing the incidence of seed-borne diseases. The Sustainable Technology Award, funded by Tepper School alum Sarosh Kumana (MSIA, 1977), joined the technology and life sciences tracks in the fourth annual McGinnis Venture Competition, March 15–17. For a complete list of winners, see [business.tepper.cmu.edu](http://business.tepper.cmu.edu)

### **PSC Executive Director Retires After 20 Years**

Beverly Clayton, who has served as the Pittsburgh Supercomputing Center’s (PSC) executive director since its founding in 1986, has announced her retirement, effective March 31. She was one of the first people hired when the PSC received funding from the National

Science Foundation. During early years of the center, she led the initial hiring of staff, coordinated the creation of office space in Mellon Institute, and developed organizational policies and procedures that set the PSC off and running.

For many years, she directed PSC outreach efforts and has represented the



center as a speaker at many public functions. In 2006, she led the center’s move into renovated, improved space at 300 South Craig Street and helped organize the center’s 20th birthday celebration. Her activities have been instrumental in obtaining state funding that has totaled \$30 million over 20 years. “All of us at the PSC owe Beverly a tremendous debt of gratitude for her excellent, loyal service,” said PSC scientific directors Michael Levine and Ralph Roskies.

### **Carnegie Mellon To Participate in National Survey of Student Engagement**

For the first time, Carnegie Mellon freshmen and seniors are being asked this spring to participate in the National Survey of Student Engagement (NSSE). The NSSE (pronounced “nessie”) is specifically designed to assess students’ engagement in good educational practices and determine what students gain from their college experiences. Initiated in 2000 with a grant from the Pew Charitable Trust, the survey gathers a variety of information related to student participation in both academic and nonacademic programs and activities. More than one million undergraduates at 609 colleges and universities in the U.S. and Canada will participate in the 2007 NSSE. The survey officially began in February and continues into April. Carnegie Mellon’s participation in NSSE is sponsored by the Office of the Vice Provost for Education. Future administrations of the NSSE are slated to continue on a three-year cycle, which will allow for the longitudinal study of students.

### **West Coast Campus To Offer Program in Software Management**

Carnegie Mellon’s West Coast campus in Silicon Valley, Calif., has begun a new master’s degree

program in software management to supplement its graduate program in software engineering. Offered as a part-time program to working professionals, the interdisciplinary software management curriculum addresses globalization, outsourcing and the many advances in technology that are affecting the field. The program provides students with hands-on, team-oriented education and technical components that build upon Carnegie Mellon’s software engineering courses.

### **Hunt Institute Hosts Spring Exhibition**

The Hunt Institute for Botanical Documentation will host its spring exhibition, “Virtues and Pleasures of Herbs Through History: Physic, Flavor, Fragrance and Dye,” from March 22 to June 29. This selection of 20 herbs is illustrated by items from the institute’s art, library and archives collections. In conjunction with the exhibition, the Hunt Institute will hold an open house June 3–4 and offer herb-themed talks, a guided gallery tour of the exhibition, tours of the institute’s departments and reading room, and opportunities to meet one-on-one with staff to ask questions and view items in the collections. The exhibit, located on the fifth floor of Hunt Library, will be open Monday–Friday, 9 a.m.–noon and 1–5 p.m.; and Sunday, 1–4 p.m. For more information, call 412-268-2434 or visit [huntbot.andrew.cmu.edu/HIBD/](http://huntbot.andrew.cmu.edu/HIBD/).

# Women Speak

IN HONOR OF WOMEN'S HISTORY MONTH, THE PIPER CONTACTED SOME OF THE UNIVERSITY'S FEMALE FACULTY AND STAFF TO FIND OUT WHAT THEY THINK ABOUT WOMEN IN ACADEMIA, HOW OPPORTUNITIES FOR WOMEN HAVE CHANGED OVER TIME AND WHAT KIND OF WORLD AWAITS TODAY'S FEMALE STUDENTS. SOME OF THEM ALSO OFFER ADVICE FOR THE NEXT GENERATION OF PROFESSIONAL WOMEN.

## Burcu Akinci

ASSOCIATE PROFESSOR OF CIVIL AND ENVIRONMENTAL ENGINEERING,  
COLLEGE OF ENGINEERING

Akinci likes to say that engineering is in her genes. Both her parents and her grandfather were civil engineers. Her mother was one of the first professional female engineers in Eastern Europe, and Akinci recalls that most family dinner conversations centered on civil engineering issues.

"When I was a child, I got a chance to see all the cool construction projects my father worked on, and that really spiked my interest," she said.

Her advice for those wanting to enter the engineering field is simple. "What engineers do every day has a big impact on society, our environment and our lives," she says. "Few people realize that engineers make or design most of what we take for granted and use daily, from being able to take a shower with clean water to being able to commute to our work.

"So, get excited and take the plunge. Every day is an adventure."



## Claudia Kirkpatrick

ASSOCIATE TEACHING PROFESSOR OF BUSINESS MANAGEMENT COMMUNICATION,  
TEPPER SCHOOL OF BUSINESS

Kirkpatrick began her higher education days in 1962 at Smith College. She clearly recalls being told by her college president that the "education of women is very important because it would humanize their husbands and children in a time of increasing dehumanization." Kirkpatrick was not encouraged to think of herself as a professional but rather as a wife and mother.

Things got serious for her professionally when her first husband walked out. The wandering she did among various communications positions in the early going became a useful base for her career. A self-described "hack writer" and "teacher of communications," she has this advice for women looking to get into the field of communications.

"Take opportunities to do different kinds of communication tasks. You will gain from the multiple perspectives and be better able to use your skills where the world takes you."



## Irene Fonseca

MELLON COLLEGE OF SCIENCE PROFESSOR OF MATHEMATICS  
DIRECTOR OF THE CENTER FOR NONLINEAR ANALYSIS, MELLON COLLEGE OF SCIENCE

Since she began her academic career studying the calculus of variations, geometric measure theory and partial differential equations, Fonseca says she's seen more awareness of how important it is to have well-qualified women on the faculty.

"This applies not only to mathematics but to the whole academic community. The place of women in public life and in higher education has dramatically changed, and the example of Drew Gilpin Faust as the next president of Harvard University attests to that."



She also offers this advice to women thinking about entering the mathematics field.

"Be ambitious, set your standards high, and if you succeed in your research and teaching endeavors, be confident that your value will be recognized and appreciated. These are exciting times to go into research in the area of mathematics, when boundaries with neighboring disciplines are getting more and more diffuse, when mathematics is challenged constantly by new advances in technology and biomedicine."

## Anne Mundell

ASSOCIATE PROFESSOR OF DESIGN, SCHOOL OF DRAMA, COLLEGE OF FINE ARTS

Mundell was one of the few female designers to break into the male-dominated theater design field. "When I began designing, perhaps only 15 percent of American set designers were women. I felt like I had to work twice as hard to gain the trust of crews and collaborators. I was harassed and even threatened a couple of times. Fortunately, this situation has improved tremendously in recent years and is the exception rather than the rule. It's exciting to see many young women going into set design these days. I believe that in the not too distant future, we will be very close to parity in the field."

Recently, Mundell received the Henry Hornbostel Award for Excellence in Undergraduate Teaching in the College of Fine Arts. She has this advice for women choosing a career in set design.



"Be courageous. Be respectful of the work, yourself and your collaborators. Take creative risks. ... Seek out projects that are meaningful to you and that you believe will make a difference in some way. ... Never stop growing and actively searching for new ways to tell stories. ... And last but far from least: the world has given you the gift of allowing you to be an artist. Find a way to reciprocate."

## Carol Frieze

SPECIAL FACULTY AND DIRECTOR OF  
WOMEN@SCS, SCHOOL OF COMPUTER SCIENCE

Frieze leads the university's Women@SCS group, a committee of faculty and students that aims to "create, encourage and support women's academic, social and professional opportunities in the computer sciences and to promote the breadth of the field and its diverse community." Here's what she has to say about women in computer science.

"Computer science (CS) has changed for everyone — women and men — as the field has grown in breadth and as technology has become more important in our lives. Creative and high-paying job opportunities are on the increase. But we are not getting this message out, as evidenced by declining CS enrollments in the U.S. for both men and women. This has impacted women's participation more dramatically because fewer women have been exposed to CS in high school and are less likely to be encouraged to go into the field.

"We face the same myths we faced when they said women were not suited for math or medicine or law. At Carnegie Mellon, we've graduated more women with CS bachelor's degrees than any of the other top CS schools. We've shown that women can contribute, participate and be successful in this exciting field."



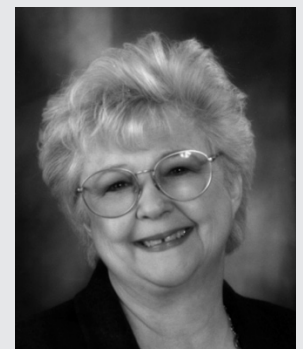
## Gloriana St. Clair

DEAN OF UNIVERSITY LIBRARIES

Since she arrived on campus in 1998, St. Clair has led globalization and technology initiatives like the Million Book Project — a far cry from the card-catalog-organizing librarian image often portrayed in the media.

"Librarianship as a profession has undergone enormous changes from an old stereotype of a single female with a bun saying 'Shhhhh' to the current image of a computer professional who can find nuggets of good information in the morass of advertising and self-promotion on the Web," she said. "In the 1957 movie 'Desk Set,' a bun-wearing Katherine Hepburn bested Spencer Tracey's arrogant computer, but computer technology finally has triumphed. By contrast, in the 2006 movie 'The DaVinci Code,' the characters tackle serious information needs using the computer remotely through a borrowed cell phone. Today, women still predominate and are beginning to reach parity with men in holding the 100 or so best jobs in the field.

"I regularly advise my niece and many other young women I know to become librarians. The field is evolving rapidly with challenges in technology, policy and customer satisfaction. Being a librarian is exciting and gratifying on the everyday helping level. On the global level, the prospect of bringing all knowledge to the Web, where students around the world can reach their educational potential, is thrilling."



# Carnegie Mellon General Counsel Holds Court on Women Lawyers, Work-Life Balance

■ Ken Walters

As Carnegie Mellon's vice president and general counsel, Mary Jo Dively carries a workload that would make Perry Mason run for cover. Whether it's issues regarding research grants, employment, real estate, education, tax laws or all the intricacies involved with operating a worldwide university, Dively and her colleagues tackle a wide range of legal complexities every day.

Dealing with such issues is nothing new for the Kansas native. Before joining Carnegie Mellon in 2002, she worked for the law firm Reed Smith, where she established a practice group in technology, media and communications. While there, she was a noted expert on developing e-commerce law and transitioning traditional business to e-business.

An active member of the Pittsburgh community, Dively is the first woman to serve as chair of the board of trustees at Children's Hospital. She and her husband, Lane, have 11-year-old triplet boys.



PHOTO BY KEN ANDREYO

## How has your profession changed for women since you started?

When I entered law school in 1980, my class was about one-fourth women. Today, law school classes tend to be one-half women. When I started at the law firm, there were no women partners. I was the first woman elected as an equity partner in 1990. Since then, there have been many women partners — not as many as there will be in the future, but there has been a steady progression. And quite a few of the top lawyers in the city are women.

I remember 10 to 15 years ago being asked about the "mommy track," which was all the rage then — women stepping out of their professional careers to stay

home, raise their children and then go back into the workforce. You don't really hear about the mommy track anymore. A lot of that has to do with the changing expectations of couples, and the understanding that work really will be divided in the household and with the children. It's not expected to be only the mom's role.

## What advice would you give to young women entering your field today?

Number one, study hard. Number two, apply and go to the best law school where you gain admittance. Number three, be flexible in your first few years about the opportunities your career presents, because it's difficult to know at 23 what kind of law will be interesting to you at 50. And be prepared to work a lot.

## What has been your greatest challenge as a woman in your field?

In the early days, the greatest challenge was being a woman in a man's world. I needed to understand how to talk to them in a way they would listen to. A lot of men at that time, particularly older men, weren't used to taking legal advice from a young woman, so I learned to be very persuasive. I think it was probably good for me.

For young women today, the challenge is that although the world has changed a lot, there isn't a substitute for hard work, responsiveness and courtesy. And I think it's still necessary. I've never come across any substitute for it that works in the long run.

## Tell me about your position at the university. What issues do you deal with?

As a lawyer at Carnegie Mellon, you face every issue that a multinational corporation would face. On top of that, you have all kinds of federal laws that relate to how research is performed that you have to understand and advise on.

The operative word in general counsel is 'general.' You really have to be a generalist. You have to know a little bit about a lot of things, and then you have to make judgments about how the law will work in a particular situation. And you also have to know when to call in legal specialists when you need outside expertise.

When I came here, there were no lawyers in house. We now have three full-time lawyers and one part-time. It's a lot of work, but it's good work. At the end of the day, you really feel you've made a difference, and that's what we all want.

## What are some trends in university law today?

The whole issue of how diversity can be achieved on college campuses is an ongoing constitutional issue. Prior to the Michigan cases from a couple of years ago, there were some really ambiguous laws on that issue. The Michigan cases helped clarify that, but I expect there will be a tug of war for the next few decades.

At Carnegie Mellon, diversity is a significant component to what we are. That's why we joined with about 30 other universities to file a brief with the Supreme Court in the Michigan case. We were very pleased when it turned out the way we hoped it would.

## How did you become involved with Children's Hospital?

I got involved initially because some of the other board members asked me to join in 1994. I was honored to be asked — children's issues are very important to me. Children's Hospital is really one of the jewels of our region, and I felt it would be great to help support their doctors and the wonderful research they do. It's really become woven into my life.

## How do you balance your work life and your family life?

This may sound glib, but the first thing I think of is that I work at the right place and I have the right job. It's a lot easier to achieve work-life balance here than at a law firm. Which is not to say I work less — I probably work more hours. But because Carnegie Mellon itself is so 24/7 and most people communicate by email anyway, I find it much easier to get back to people in a way that's suited to my schedule. The Carnegie Mellon environment allows for a better work-life balance for us all.

## Kristina Straub

PROFESSOR OF LITERARY AND CULTURAL STUDIES,  
ASSOCIATE DEAN, COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

Straub has been on the faculty for 18 years, and is currently the associate dean of H&SS. As chair of the H&SS College Council, she is painfully aware of how few women are in faculty leadership positions.

"There's no simple reason. It's hard to deduce, but I think that in general there is a bias on this campus to think of leadership in masculine terms. It's not like prejudice or anything like that. Part of it has to do with lifestyle choices and that is changing. Men tend to make choices about how they live their lives that enable them to be leaders, and women tend to make choices that disable them from becoming leaders."



# University Honors Top Educators

CONTINUED FROM PAGE ONE

Tucker, the Paul Mellon University Professor of Applied Linguistics and head of the Modern Languages Department, won the Doherty Award for Sustained Contributions to Excellence in Education. Rule, professor of biological sciences, garnered the Ryan Award for Meritorious Teaching. And Cicozi, assistant head of the School of Design, earned the Academic Advising and Mentoring Award.

Tucker, Rule and Cicozi will receive their accolades at “A Celebration of Education” at 4:30 p.m., Thursday, April 5 in Rangos Hall, University Center. The event will also recognize the college teaching award winners (included at far right). Here’s a brief look at this year’s top three winners.

## G. Richard Tucker

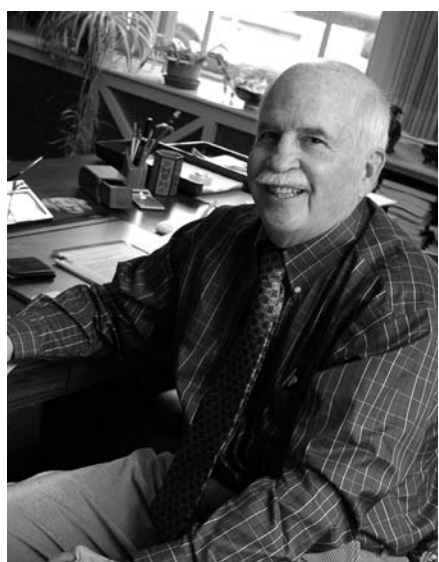


PHOTO BY KEN ANDREYO

G. Richard Tucker does it all. He’s a leader, teacher, mentor and collaborator. He’s creative and astute in his teaching, caring for his students and faculty, and a motivator who leads by example. He’s the quintessential go-to guy.

Tucker joined the Carnegie Mellon faculty in 1992 and became head of modern languages three years later. Under his leadership, the department has prospered, cultivating a reputation as one of the university’s strongest teaching units and developing cutting-edge language-learning technology and curricula. And it’s no surprise that language courses have become popular among undergraduates. Forty-eight percent of last year’s graduating class took one or more language courses during their undergraduate days, compared to the national average of 12 percent.

As a teacher himself, Tucker “walks the walk,” say his co-nominators: College of Humanities and Social Sciences (H&SS) Dean John Lehoczky, Associate Dean Joseph Devine, English Professor and Department Head David Kaufer, Professor and Modern Languages Associate Head Susan Polansky, and Philosophy Professor Wilfried Sieg. “Many students regard him as an academic, personal and professional mentor. ... Dick’s

impact and service in this regard is extraordinarily extensive and positive.”

“Professor Tucker has proved himself a worthy scholar, but at the same time his dedication to his students, his love for the teaching profession, and his leadership positions within the Modern Languages Department all point to what an incredible asset he is to the university,” wrote a student. “I wish most of my professors had this ability to ‘do it all.’”

## Gordon Rule

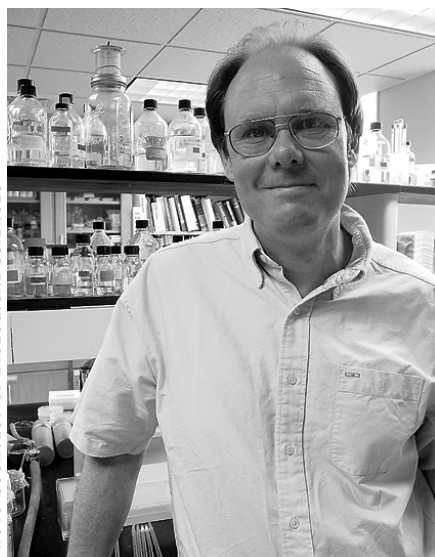


PHOTO COURTESY OF BIOLOGICAL SCIENCES

Rule — who teaches biochemistry, molecular and cellular immunology, and structural biophysics — earned praise from faculty, students and alumni for his exceptional class organization, clarity in lectures and development of outstanding handouts and supportive online materials like virtual labs. Students lauded his ability to relate course work to the “real world” and his willingness to help them succeed.

“I can say without reservation that Dr. Rule’s biochemistry class was the best class I have ever taken,” wrote one student. “The course was impeccably organized, with excellent handouts and effective use of technology. The course Web site was simple, accessible and included digital copies of handouts ... and other visual aids used in class. I also appreciated that he videotaped the lectures and made them available online — I don’t understand why this practice isn’t more common.”

“As a lecturer, Dr. Rule was top-notch,” wrote another student. “He engaged a room full of sleep-deprived college students at 9:30, which any professor would admit is a challenge in itself.”

Another student noted Rule’s personal touch. “The main reason why Dr. Rule is so special is that he invests in each of his students. While I was taking his class, I was diagnosed with a learning disability. ... After finding out, he constantly checked up on me and provided guidance in a tough time. ... He is a phenomenal professor and person.”

## Melissa Cicozi



PHOTO COURTESY OF MELISSA CICOZI

There’s not much Melissa Cicozi hasn’t done in her 19 years at the School of Design. From successfully completing administrative duties to advising and teaching students, she has been a vital cog in the school’s success.

But it’s her knowledge of design course work and the university, and her proficiency at mentoring and counseling students that prompted her nomination for this award.

“When I speak to Melissa, one of the most important things is that she advises me but does not lead me,” wrote an undergraduate. “She will give me her honest opinion, and give me the resources I need to carry out a decision, yet leave me to choose the direction I want to follow. Melissa really understands who I am and what design means to me. I am very grateful to have an advisor that I respect and trust so deeply.”

A graduate student lauded her open-door policy and noted that she had become a role model for many students. “She practices what she preaches: a healthy lifestyle, a balanced work-life perspective, a strong sense of humor, and a sincere and straightforward manner. When talk among graduate students turns to who we admire in the department, we often talk about how we ‘want to be Melissa when we grow up’ — she’s someone we can look to as a standard of excellence.”

# COLLEGE TEACHING AWARD WINNERS

## BENJAMIN RICHARD TEARE JR. AWARD (CIT)

**Irving Oppenheim**, professor of civil and environmental engineering

## HENRY HORNBOSTEL AWARD (CFA)

**Anne Mundell**, associate professor of drama

## ELLIOTT DUNLAP SMITH AWARD (H&SS)

**Larry Heimann**, associate teaching professor of information systems

## MARTCIA WADE AWARD (HEINZ)

**Michael DeKay**, research professor of engineering and public policy  
**Janusz Szczypula**, teaching professor

## EXCELLENCE AWARD FOR THE MISM/MSIT PROGRAMS (HEINZ)

**Edward Barr**, associate teaching professor of professional writing

## JULIUS ASHKIN TEACHING AWARD (MCS)

**John Mackey**, lecturer in mathematical sciences

## MCS AWARD FOR INNOVATION IN EDUCATION

**Jonathan Minden**, associate professor of biological sciences

## RICHARD MOORE EDUCATION AWARD (MCS)

**Stuart Staley**, professor of chemistry

## HERBERT A. SIMON AWARD (SCS)

**Manuel Blum**, University Professor

## BS BUSINESS ADMINISTRATION AWARD (TEPPER)

**Maria Marta Ferreyra**, assistant professor of economics

## BS ECONOMICS AWARD (TEPPER)

**George-Levi Gayle**, assistant professor of economics

## GEORGE LELAND BACH AWARD — MBA (TEPPER)

**Baohong Sun**, associate professor of marketing

## GRADUATE STUDENT TEACHING AWARD WINNERS

**Geoffrey Glover**, English Department

Honorable Mention:

**Michael Benisch**, School of Computer Science;  
**Tiago V. Maia**, Psychology Department

## GRADUATE STUDENT SERVICE AWARD WINNERS

**Arielle Drummond**, Biomedical Engineering

Honorable Mention:

**Aurora Sharrard**, Civil and Environmental Engineering;  
**Zebulun Krahn**, Physics



# Goodbye Crocodiles, Hello Ion Channels

## Chemistry Professor Develops Technology To Aid Drug Development

■ Amy Pavlak

Ancient Egyptians treated a headache by bandaging an herb-stuffed sacred clay crocodile to the patient's head. While things have come a long way since then, modern medicine hasn't progressed quite enough for today's migraine sufferers. But with the help of supercomputers, theoretical chemistry and researchers like Assistant Chemistry Professor Maria Kurnikova, a new drug that offers relief for migraines could be developed quickly — without the help of sacred reptiles.

channel and the movement of molecules and protein parts. The final product is a simple model of the entire protein channel. This large-scale model can then be used to determine how a channel's 3-D structure relates to its function.

"Ultimately, these models can help scientists design drugs that work on ion channels. Half of existing drugs in use work on ion channels, so if you can model ion channels, you can do half of all drug design on computers," Kurnikova said. "Currently,

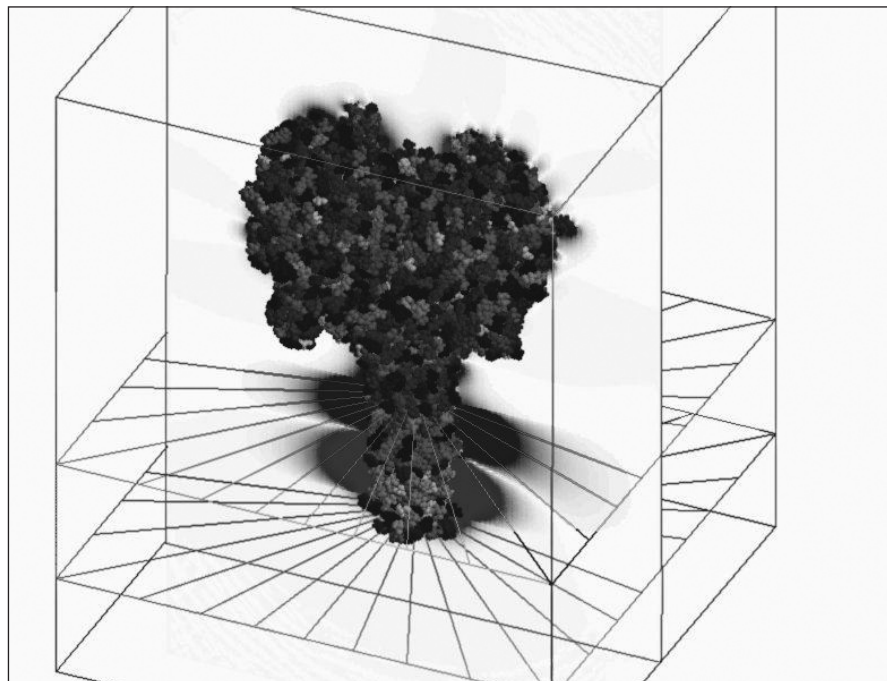


PHOTO COURTESY OF NIKOLAY SIMAKOV

ION CHANNELS PLAY CRITICAL ROLES IN HEALTH AND DISEASE. PICTURED HERE IS A COMPUTER MODEL OF AN ANTHRAX PROTEIN THAT DOCKS ONTO HUMAN CELLS AND FORMS A CHANNEL THROUGH THE CELL MEMBRANE. THE LARGE END OF THE PROTEIN SITS ON THE CELL SURFACE. THE TUBULAR PORTION RUNS THROUGH THE MEMBRANE, ALLOWING LETHAL ANTHRAX PROTEINS INSIDE THE CELL.

**"HALF OF EXISTING DRUGS IN USE WORK ON ION CHANNELS, SO IF YOU CAN MODEL ION CHANNELS, YOU CAN DO HALF OF ALL DRUG DESIGN ON COMPUTERS." — MARIA KURNIKOVA**

Kurnikova studies ion channels, or the tiny portals that control what flows into and out of a cell. These passageways are proteins that span the cell membrane and transport ions — electrically charged atoms or molecules. Defects in these ion channels, or in the molecules that interact with them, can lead to a number of disorders, including migraine headaches, epilepsy, cystic fibrosis and diabetes. Kurnikova says the better scientists understand how ion channels work, the better they can design drugs that alter the function of specific ion channels.

Using ideas from chemistry, biology, physics and computer science, Kurnikova develops computer models of molecules as they interact with and travel through ion channels. But it's difficult to model ion channels using today's computers. From a molecular standpoint, the proteins that make up ion channels are gigantic — tens of nanometers.

"Protein channels are quite large, three-dimensional and made of assorted pieces. Plus they move around in the cell membrane. For these reasons, modeling how ions flow through a protein channel taxes even the fastest supercomputer," Kurnikova said.

To get around this technological limitation, Kurnikova developed a computational hierarchical approach for modeling ion movement through protein channels that's received worldwide attention. She was invited to discuss her work at the 51st Annual Meeting of the Biophysical Society earlier this month.

Using mathematical equations, Kurnikova can simulate the motion of all atoms in a molecule for about 10 nanoseconds, which is a long time by computer-simulation standards. By looking at what's going on at the molecular level over short periods of time, she can extrapolate and create a hierarchical system of models that predict the function of the protein

pharmaceutical companies may scan hundreds of potential drugs to find one that has the desired effect. Determining how drugs interact with the protein channel in a computer model would save tremendous time and money in the drug development process."

Although she doesn't design drugs in her lab, Kurnikova is working toward developing models that may help the

process. The National Institutes of Health are funding research to expand her modeling technology to big proteins that are important to medicine and health.

With Kurnikova's help, headache treatments may evolve more quickly than they have since the days of ancient Egypt and its crocodiles.

## Life Is a Highway



PHOTO BY TOM BUGNITZ

OR AT LEAST A HIGHWAY SIGN! AFTER TWO YEARS, CARNEGIE MELLON WEST HAS ITS OWN FREEWAY SIGN. TO CELEBRATE, FOUR BRAVE SOULS RISKED LIFE, LIMB (AND A POSSIBLE RUN-IN WITH THE LAW) BY HEADING OUT AT 7:45 A.M. ON A SATURDAY TO POSE WITH THE SIGN. FROM LEFT TO RIGHT: JAMES H. MORRIS, DEAN OF CARNEGIE MELLON WEST; DIANE DIMEFF, ASSOCIATE DEAN FOR EXTERNAL RELATIONS AND PROFESSIONAL DEVELOPMENT; ERIC DAIMLER, ASSISTANT DEAN; AND MARTIN GRISS, ASSOCIATE DEAN FOR EDUCATION. DIMEFF SAID THEY'RE ALREADY SEEING RESULTS: CALLS ARE POURING IN ABOUT THE NEW SIGN.

## WE ARE #1

# Carnegie Mellon Police Become First University Force To Earn State Accreditation

■ Bruce Gerson

You may notice that Carnegie Mellon police officers seem to be cruisin', walkin' and standin' a bit taller these days. That's what happens when you're number one.

Carnegie Mellon's Police Department recently became the first college or university police force in the state to earn accreditation from the Pennsylvania Chiefs of Police Association for meeting more than 300 standards established as best practices by the association. Carnegie Mellon Police join the Findley Township Police Department as the only state-certified police departments in Allegheny County. And they're one of 45 state-accredited police departments in the commonwealth.

Carnegie Mellon Police Chief Creig Doyle said they received the accreditation following an extensive review of the department's operations manual and an intensive two-day on-site assessment and inspection by representatives of the Pennsylvania Law Enforcement Accreditation Commission. He said the visit included an inspection of their facilities, interviews with police officers and dispatchers, examinations of personnel files and case records, vehicle inspections, and ride-alongs with on-duty patrols.

"There are 123 standards and 184 sub-standards that must be met for accreditation, everything from dress code to use of force and securing a crime scene," Doyle said. "You also must show evidence that the department is following proper procedure and supporting its written policies, procedures and operations with appropriate actions. You can't just say you do it right, you have to prove it."

The Accreditation Commission's Assessment Team Leader David



Holl commended Carnegie Mellon Police for the quality and depth of its written operations manual, attention to details, commitment to the university community, professionalism and service.

"The accreditation says to our clients that we are committed to following police best practices and we hold ourselves accountable to following professional standards. It's an official stamp of approval,"

Doyle said.

Doyle credited Lt. John Race for leading the department's accreditation effort and emphasized the support from the university's administration as an integral component of his department's

success. Since joining the university in 2005, Race has spent the better part of his time writing the department's operations manual, researching cases and documenting evidence of appropriate police action.

and video-monitored interview room, that were required. We would have never passed this test in our previous headquarters."

Carnegie Mellon Police moved from its location in the now-demolished

**"THE ACCREDITATION SAYS TO OUR CLIENTS THAT WE ARE COMMITTED TO FOLLOWING POLICE BEST PRACTICES AND WE HOLD OURSELVES ACCOUNTABLE TO FOLLOWING PROFESSIONAL STANDARDS. IT'S AN OFFICIAL STAMP OF APPROVAL." – POLICE CHIEF CREIG DOYLE**

"Without the administration's support of our efforts and the new facility they've renovated for us, we would have never received accreditation," Doyle said. "There were many physical requirements, such as a secure evidence room and an audio

Student Center to its new digs at 300 S. Craig Street in January 2006.

The university's Police Department includes 24 police officers, 37 security guards, 12 shuttle escort drivers, five dispatchers and one administrative associate.



CARNEGIE MELLON POLICE PERSONNEL INCLUDE (L-R) OFFICER LEROY ADAMS, GUARD PAUL STELLITANO, CHIEF CREIG DOYLE, LT. JOHN RACE, SGT. WILLIAM RICCI, OFFICER PAUL HELFFRICH, GUARD JACQUELINE MERRANKO, OFFICER DONALD CAMPBELL, DETECTIVE SHARON HUTCHINGS, OFFICER IVAN HOWARD, ADMINISTRATIVE ASSOCIATE MICHELLE LOCKARD AND GUARD MARGARET WILLIAMS.

PHOTO BY BRUCE GERSON

## Upcoming Events

For a complete list of April events, see the Public Events Calendar at <http://my.cmu.edu/site/events/> and click on "view events" at the bottom of the page.

### Thursday, April 5

"A Celebration of Teaching"  
Carnegie Mellon's Doherty, Ryan and Advising awards will be presented, as well as the college teaching awards.  
4:30 p.m., Rangos Hall, University Center (UC)

### Wednesday, April 11

Carnegie Mellon Philharmonic Concert  
8 p.m., Heinz Hall

### April 11-28

"The Oresteia Project"  
Philip Chosky Theater, Purnell Center for the Arts  
Call 412-268-2407 for tickets and show times.

### Thursday, April 12

School of Design Lecture Series  
"Book Covers Unwrapped"  
John Gall, vice president and art director for Vintage/Anchor Books.  
7 p.m., Breed Hall, Margaret Morrison Carnegie Hall 103

### Sunday, April 15

Carnegie Mellon Baroque Ensemble  
5 p.m., Alumni Concert Hall, College of Fine Arts

### Monday, April 16

University Lecture Series, "The Last Lecture"  
Carnegie Mellon Vice Provost for Research Peter Lee  
4:30 p.m., Adamson Wing, Baker Hall 136A

### April 19-21

Spring Carnival  
"Small Things Made Large"  
For a schedule of events, visit [www.springcarnival.org/](http://www.springcarnival.org/)

### Tuesday, April 24

University Lecture Series  
"High Tunnel Technology — A Tool for Economic Development, Job Creation and Increased Quality of Life Through Urban Architecture."  
William James Lamont Jr., professor, Penn State University  
5:30 p.m., Rangos Hall, UC

### Thursday, April 26

University Lecture Series,  
"Social Solutions to Poverty"  
Scott Myers-Lipton, associate professor, San Jose State University  
4:30 p.m., Adamson Wing, Baker Hall 136A

# Carnegie Mellon Eyes New Ways to Fight Crime

■ Chriss Swaney

Criminals and terrorists beware. Carnegie Mellon is getting your number.

The university is joining forces with the National Biometric Security Project (NBSP) to develop advanced biometric technologies like the use of fingerprints, iris recognition and hand geometry to help deter terrorist and criminal activity. The two organizations signed a memorandum of understanding earlier this month.

The new collaboration will focus on identifying and resolving new biometric challenges. Researchers will also work together to participate in industry symposia, develop and distribute reports on biometric topics, and test and evaluate technology at the NBSP's West Virginia laboratories.

The NBSP is a non-profit biometrics testing, training, and research and analysis organization created to improve the security of the U.S. national infrastructure and enhance identity assurance. It's also a leading advocate of using biometrics to defend the U.S. civil infrastructure against terrorist attacks.

"Because of Carnegie Mellon's reputation for excellence in engineering technology, it is an ideal complement to the NBSP's efforts to accelerate the

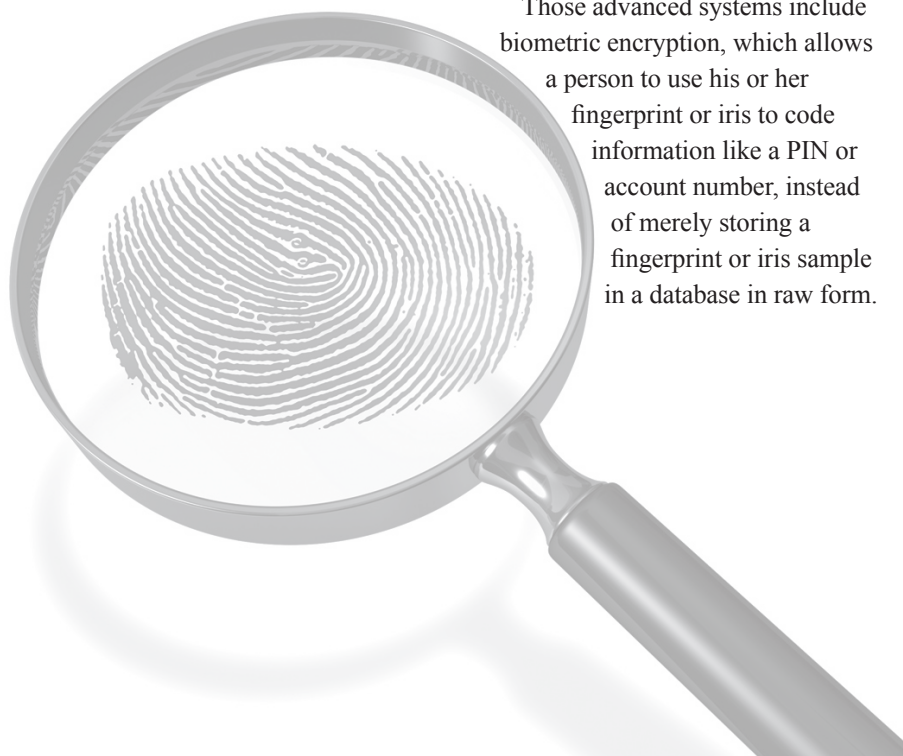
growth, acceptance and use of biometric technologies," said Michael Yura, NBSP senior vice president. "We look forward to working with them to conduct studies on biometric technology, usage, biometric curricula development, and the legal, social and policy issues that may arise from large-scale deployment of biometrics."

Pradeep Khosla, dean of the College of Engineering and co-founder of Carnegie Mellon CyLab, said biometrics is one of this century's leading security technologies. "Our university research in many new areas of information technology and cybersecurity during the past two decades makes this an excellent research match."

Since 2005, more than 100 researchers at Carnegie Mellon CyLab have been working to develop new technologies for trustworthy, sustainable computing and communication systems.

"We are also developing advanced, state-of-the-art biometrics systems to augment face and iris recognition," said Marios Savvides, a research scientist in the Electrical and Computer Engineering Department and director of the university's Biometrics, Security, Research, Engineering and Training Lab (BIOSECRET).

Those advanced systems include biometric encryption, which allows a person to use his or her fingerprint or iris to code information like a PIN or account number, instead of merely storing a fingerprint or iris sample in a database in raw form.



## April 26-29

Perspectives on the Arts in Society Series  
"The Art of Pinhole Photography, A Lensless Imaging Symposium"  
Featuring roundtable discussions on using lensless imaging techniques, the "DIY aesthetic" and the use of "alt-process" techniques. Presenters include Alan Greene, author of "Primitive Photography"; Terry King, FRPS chairman of the Historical Group of the Royal Photographic Society; and Patricia Katchur, director of the Center for Alternative and Historical Processes. Sponsored by the Center for the Arts in Society, McConomy Auditorium, UC

## Sunday, April 29

Department of Choral Studies Concert, featuring the Concert Choir and Repertory Chorus  
3 p.m., Rangos Hall, UC

# Campus Conversation Continues on Public Art

■ Jonathan Potts

The university's installation last year of "Walking to the Sky" provoked a rancorous debate on the role of public art on campus. So the topic seems ready-made for the latest Campus Conversation, which takes place at 5 p.m., April 11 in Baker Hall A53. The event is open to the campus community.

Campus Conversations are a series of events at which students, faculty and staff spend time discussing issues of importance to the campus community. For the first time, alumni will participate.

"We are recruiting alumni from the Pittsburgh area to participate in person, but we're also going to invite 10 or 15 alumni from around the country to participate in a live online forum," said Robert Cavalier, a teaching professor of philosophy and co-director of the Southwestern Pennsylvania Program for Deliberative Democracy. The

Southwestern Pennsylvania program is co-sponsoring the event with the Coro Center for Civic Leadership and the University Libraries.

Each Campus Conversation takes the form of a Deliberative Poll®, in which a representative sample of the community studies an issue, discusses it among themselves and with an expert panel, and then registers its opinion. About 100 people will discuss the development of public spaces and the university's desire to create an environment that recognizes excellence in the arts.

The expert panel will consist of John Carson, head of the School of Art; Student Body Vice President Andrea Hamilton; Ralph Horgan, associate vice provost of Campus Design and Facility Development; and Robbee Kosak, vice president for University Advancement.



## ASK ANDREW

Dear Andrew,

**With the application season coming to a close and a new group of prospective Carnegie Mellon grads set to receive their acceptance letters, I started to wonder about the first group of students at Tech. What did a student need to do back in the 1910s to be accepted to the Carnegie Technical Schools?  
K.W., a prospective student**

Dear K.W.,

In those days, there tended to be more night school students than day students attending Carnegie Tech, which featured programs that offered a two-year certificate or three-year diploma. Many of the day students were not high school graduates, and most of the night school students had only elementary school educations.

Despite this, Carnegie Tech's admission requirements were still quite stringent, especially for the School of Applied Science, which offered engineering courses. The requirements included:

- A personal interview;
- Completion of an approved high school or preparatory school course;
- Passing entrance examinations in four of five subjects, which included algebra through quadratics; plane geometry, solid geometry or trigonometry; English; and physics.

For day school students, entrance exams were conducted during two full days, with testing beginning at 10 a.m. and ending at 4 or 5 p.m. Requirements varied among other Carnegie Tech schools, with interviews, completion of approved course(s) and entrance exams serving as primary factors in how the school selected students.

One more fun fact: tuition for day school students in 1908 was \$43 for Pittsburgh students and \$53 for individuals from outside the area. Night school students from Pittsburgh paid \$8, while students outside the area paid \$10.

(For more on how the current admission process works, see the story on page one.)

**Have a question for Andrew?**

Send it to [cribbs@andrew.cmu.edu](mailto:cribbs@andrew.cmu.edu)



## LECTURE SPOTLIGHT: NOBEL LAUREATE DAVID GROSS DELIVERS BUHL LECTURE

■ Amy Pavlak

During the last two decades, physicists have discovered startling evidence that has changed the way we look at the universe.

“The questions we ask today are as exciting, if not more so — certainly in elementary particle physics — than they were 25 years ago. That’s because we’ve learned enough to be ignorant,” says David Gross, a 2004 Nobel Laureate who will discuss some of these questions during Carnegie Mellon’s annual Buhl Lecture. His talk, “The Future of Physics,” will be held at 4:30 p.m., April 26 in the Mellon Institute Auditorium.

Stunning discoveries always spawn new questions. For example, physicists have recently learned that the bulk of the universe is made of dark energy and dark matter, which begs the question: what is the nature of this dark energy and matter? And physicists worldwide are posing fundamentally new questions

that stretch beyond the confines of space and time.

Gross will discuss 25 of these questions — from multiple universes to quantum matter — that might guide physics in the broadest sense over the next 25 years.

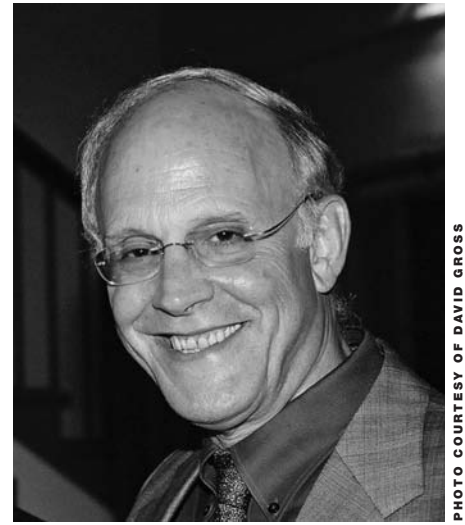
For Gross, the most interesting question facing physicists today is if physics is an environmental science.

“Can we calculate all the dimensionless parameters of nature (in principle), or are some determined by accident?” he wonders. “This is a question I would most like to know the answer to, partly because the complete answer to this question would require answering all the others as well.”

Winner of the Nobel Prize in Physics in 2004, Gross is the Frederick W. Gluck Professor of Theoretical Physics and director of the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara. He has been a leader at the forefront of

theoretical physics for decades. He won the Nobel Prize for his 1973 work on understanding the strong interactions that bind quarks and nuclear matter. He’s received numerous honors and awards, including a MacArthur Fellowship, the Dirac Medal, and France’s highest scientific honor — the Grande Médaille D’Or — in 2004.

The Buhl Lecture is sponsored by Carnegie Mellon’s Department of Physics. The lecture is funded under the auspices of the Buhl Professorship in Theoretical Physics, which was established at Carnegie Mellon in 1961 by The Buhl Foundation.



DAVID GROSS

PHOTO COURTESY OF DAVID GROSS

**WHO:** David Gross delivers The Buhl Lecture

**WHEN:** 4:30 p.m., Thursday, April 26

**WHERE:** Mellon Institute Auditorium

Read more about what’s going on at Carnegie Mellon in the Upcoming Events on page 10.

## Urban Pollution Not Just an Urban Problem

■ Chriss Swaney

Clouds of soot spewed into the air by industry, power plants and vehicle exhaust don’t just linger in the area where they were produced and then magically disappear. In fact, a new study from Carnegie Mellon researchers shows that the tiniest bits of airborne soot have the potential to affect the global climate and take a much bigger toll on human health than previously realized.

**“WE’RE SEEING THAT URBAN POLLUTION DOES NOT STAY CONTAINED IN THE CITIES, BUT IMPACTS RURAL AND OTHER DOWNWIND AREAS.”**

— ASSOCIATE PROFESSOR OF MECHANICAL ENGINEERING ALLEN ROBINSON

Professors Allen Robinson and Neil Donahue found that the microscopic particles are altered by chemical processes in the atmosphere, so they produce more clouds, are potentially more toxic, and their contributions to unhealthy pollution are larger and spread over a wider area.

“We’re seeing that urban pollution does not stay contained in the cities, but impacts rural and other downwind areas,” said Robinson, an associate professor of mechanical engineering.



PHOTO BY BRUCE GERSON

NEW CARNEGIE MELLON RESEARCH SHOWS THAT CLOUDS OF AIRBORNE PARTICLES THAT ARE SPEWED INTO THE AIR TAKE A MUCH BIGGER TOLL ON HUMAN HEALTH THAN PREVIOUSLY REALIZED.

Airborne particles or soot have long been the least understood components of the global climate system, but ones that pose a serious risk because they are breathed deep into the lungs.

“The more we understand particulate matter, the more we realize that complexity has been masking our ability to calculate how big a role greenhouse gases have played in inducing global warming,” said Donahue, an associate professor of chemical engineering and chemistry.

“Moreover, the new mechanism we found changes the chemical properties of particles, making them more likely to participate in cloud formation. Therefore, particulate matter may be having a stronger influence on global climate than previously thought.”

The research, which was published last month in the journal *Science*, also raises questions about the effectiveness of federal particle regulations that were just tightened in September and concludes that the government needs

new ways of measuring and regulating smoke and soot. The U.S. Environmental Protection Agency (EPA) estimates that each ton of soot boosts health costs by \$100,000 annually.

The study also shows that the fine airborne particles also play a big role in climate change by forming droplets in clouds that affect how much sun is able to pass through and the amount of moisture that is returned to the earth’s surface. That strong influence on cloud formation can alter the global climate.