



the PIPER

CMU'S NEWS SOURCE FOR FACULTY & STAFF

2/12 ISSUE

Carnegie Mellon University

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Shaping New Models

CMU Faculty Present at World Economic Forum

■ Piper Staff

Four Carnegie Mellon faculty members presented at the Annual Meeting of the World Economic Forum (WEF), a prestigious international organization committed to improving the state of the world.

This is not the first time CMU has been asked to join the world's most engaging business, political and academic leaders in shaping global, regional and industrial agendas. Known colloquially as "Davos," a nod to the small Swiss village that has played host to the WEF since 1971, the 42nd Annual Meeting convened Jan. 25-29 in Davos, Switzerland.

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Obituary:

Goodman was World-Renowned

■ Mark Burd

Professor Paul S. Goodman, world-renowned organizational psychologist, researcher, author and filmmaker, passed away at his home in Pittsburgh on Jan. 24 after suffering a stroke earlier this year. He was 74.

Goodman joined the faculty at Carnegie Mellon in 1972, becoming a tenured professor of industrial administration and psychology in 1979. In 2000, he became the Richard M. Cyert Professor of Organizational Psychology and dedicated himself to the globalization of Carnegie Mellon, bringing to the university

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Silver Celebration



PHOTO COURTESY OF THE UNIVERSITY ATHLETIC ASSOCIATION

CARNEGIE MELLON PRESIDENT JARED L. COHON WAS THE MASTER OF CEREMONIES AT THE 25TH ANNIVERSARY CELEBRATION FOR THE UNIVERSITY ATHLETIC ASSOCIATION (UAA) JAN. 11 IN INDIANAPOLIS DURING THE NCAA'S ANNUAL CONVENTION. IN HIS REMARKS, COHON HIGHLIGHTED THE ACADEMIC AND ATHLETIC SUCCESS OF UAA STUDENT-ATHLETES. CMU STUDENT-ATHLETES, ALUMNI AND ADMINISTRATORS JOINED PRESIDENT COHON AT THE EVENT. PICTURED ABOVE POSING AT THE NCAA HALL OF CHAMPIONS WERE (L-R): SOPHOMORE ANNA ALBI (SOCCER) AND JUNIOR PATRICK BLANKS (FOOTBALL); JAMES GARRETT, HEAD OF THE CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT AND CMU'S NCAA FACULTY ATHLETICS REPRESENTATIVE; ASSISTANT DIRECTOR OF ATHLETICS JOSH CENTOR; PRESIDENT COHON; ALUMNI RYAN EINWAG (TPR'09, BASKETBALL) AND RICKY GRIFFIN (TPR'10, SOCCER); VICE PRESIDENT FOR CAMPUS AFFAIRS MICHAEL MURPHY; AND DIRECTOR OF ATHLETICS SUSAN BASSETT. ATHLETICS IS HOSTING FACULTY AND STAFF FAMILY DAY ON SUNDAY, FEB. 19, WHEN THE MEN'S AND WOMEN'S BASKETBALL TEAMS TAKE ON THE UNIVERSITY OF ROCHESTER AT NOON AND 2 P.M.

Melodious Milestone

School of Music Celebrates Centennial Anniversary

■ Dana Casto

For 100 years the sweet sounds of music have been emanating from the College of Fine Arts, and the School of Music, founded in 1912, is celebrating with events throughout the year.

Highlighting the many celebrations are two extraordinary concerts — Saturday, March 31 at the Benedum Center in Pittsburgh, and Monday, April 2 at Carnegie Hall in New York City. The concerts will showcase award-winning School of Music alumni representing six decades, and current students in the world-class Carnegie Mellon Philharmonic, Repertory Chorus and Concert Choir.

Faculty members Ronald Zollman and Robert Page will conduct, and Manu Narayan (BFA'96), screen actor/vocalist, will be master of ceremonies.

The illustrious alumni cast of musicians and vocalists includes Jeffrey

Behrens (BFA'03) and Liam Bonner (BFA'03), who will sing the Belcore/Nemorino duet from Gaetano Donizetti's "The Elixir of Love." Graham Fenton (BFA'05) will sing

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Center for Arts in Society Head Wants To Transcend Borders

■ Shilo Rea

As director of the Center for the Arts in Society (CAS) since 2009, Paul Eiss, associate professor of anthropology and history, brings artists and scholars together in interesting and new ways — all to better understand how art influences society, culture and politics. Eiss' research and teaching focus on uncovering new perspectives on topics such as value, memory and religion.

How do you use a transdisciplinary focus and what are the benefits?

I have always been committed to exploring the possibilities of working betwixt and between multiple disciplines: in my case, the disciplines of anthropology and history. One way we might label such work is with the term “interdisciplinarity.”

Interdisciplinary work places fields in conversation. It is like smuggling across a border — that is, carrying ideas or methods from one discipline into another without necessarily transforming the methods or subjects of either field.

Another term, which I prefer — “transdisciplinarity” — aims at transcending the separation between disciplines.

Transdisciplinary work seeks knowledge of and engagement with the world not through the specialization of fields of knowledge, but through their unification.

For me transdisciplinarity does not imply merely crossing the borders between disciplines, or smuggling ideas between them. It is a transgressive, even utopian, project: one that seeks to inhabit the borderlands, and to imagine the world unconfined by disciplinary borders.

How does this approach impact a collaborative effort like the CAS, which by its very nature is cross-disciplinary?

The center was established at Carnegie Mellon not only to connect distinct disciplines, departments or schools, but to transcend a more fundamental divide: between humanities and the arts.

I have interpreted our mission as also bringing a charge to transcend the borders or barriers that typically separate academe from a world of social, political and artistic engagement beyond the university. Moreover, I think that the center has the potential to help us transcend our own tendencies to separate our creative work as artists or scholars from our work as teachers.

I have tried to foster long-term working collaborations between faculty in the arts and humanities at CMU, and to make those partnerships the centerpiece of the center's efforts to provoke significant changes in scholarship, artistic production, teaching and outreach.

In the process, many of the center's members and visitors have sought out ways to engage with the most important social and political issues of our times: migration, the environment, technological change, war, and protest and political movements.

Since becoming CAS director what has been the center's biggest accomplishment? Toughest challenge?

Our biggest accomplishment over the last four years has been that of successfully carrying out a major organizational reform, centered on the institution of three-year “initiatives” as rubrics for faculty projects, center events and undergraduate education.

The first initiative (2009-2011), organized by Jon Klancher of the English Department and John Carson of the School of Art, was titled “Public Art.” It supported many events, and three successful multi-year faculty projects. Judith Schachter, a professor of history, and Andreea Ritivoi, an associate professor of English, led a project in Controversy and the Arts, which produced a fine series of events as well as an edited collection of essays that will be published by Palgrave Macmillan this year. Wendy Arons, an associate professor of dramatic literature, led a project in performance and ecology that resulted in several talks and performances, as well as an edited collection of essays, also due out this year with Palgrave Macmillan. Jon Rubin, an assistant professor of art, led a project focused on the Waffle Shop and the Conflict Kitchen, which have been sites of extraordinary activity joining faculty, students and community members in innovative ways.

The center also sponsored two resident artists from off-campus: Tavia Lafollette, who brought together artists from Pittsburgh and Egypt in a



PAUL EISS, DIRECTOR OF THE CENTER FOR THE ARTS IN SOCIETY

UPCOMING CENTER FOR THE ARTS AND SOCIETY EVENT

A panel discussion on “New Media/News Media: How New Media are Changing the Way We Make and Consume the News” will be held at 4:30 p.m., Wednesday, Feb. 15 in Baker Hall's Steinberg Auditorium (A53). Panelists are Tony Norman, a columnist at the Pittsburgh Post-Gazette; John Allison, Post-Gazette opinion editor; Chris Potter, editor of the Pittsburgh City Paper; Martha Rial, a Pulitzer Prize-winning photographer at the Post-Gazette; and Deanna Garcia, reporter at Essential Public Radio.

unique collaborative project called “Sites of Passage,” and Anya Martin, who authored, directed and produced “Camino,” a play focused on the experiences of migrants and the use of for-profit detention centers for their internment. Finally, we supported two community projects — the Arts Greenhouse, led by Schachter, Nico Slate, Riccardo Schulz and Natalie Ozeas, and Jóvenes Sin Nombres, led by Michal Friedman — which use artistic forms like hip-hop, mural painting and video production as contexts for education and social and political engagement.

The center's 2011-2013 initiative focuses on media. Why?

Media studies, as a field, is not a recent invention. For several decades, media studies scholars and programs have focused on the study of mass media, such as television and print media.

What “is” a recent development is the striking role that “new media” (i.e. digital, networked, computer-mediated media) and “social media” now play in social life, cultural politics and political mobilizations from Cairo to Wall Street.

Carnegie Mellon houses a remarkable array of faculty whose work focuses on media — whether “old” or “new” — though they are dispersed in diverse colleges and departments. The “Media” initiative, co-organized by Art Professor Jim Duesing and English Associate Professor Kathy Newman, is an attempt to draw those faculty together and support projects.

What can we look forward to from the CAS this spring?

The “Media” initiative is catching fire. Two multi-year projects are set to become active in the spring.

The first, called “Listening Spaces” — led by Assistant Professor of English Rich Purcell and Assistant Professor of Music Theory Richard Randall — explores how the proliferation of portable as well as computerized audio technologies has transformed the way human beings listen, consume and produce music and sound.

The second, called “Gender/Sexuality/Media” and led by Associate Professor of Art Suzie Silver, will explore issues surrounding gender expression, sexuality and gender representation in media in the 21st century. This project will focus on the creation of a Web-based TV variety show series called “Bait and Switch.”

We will select a third project for support later in the semester.

The center also is sponsoring a variety of events related to the media initiative in the spring semester.

Your book “In the Name of El Pueblo” came out in 2010. What are you working on now?

At the moment I have two new book-length projects under way.

The first, provisionally titled “Narcostate,” is a study of what I call the narcomedias: that is, of the convergence of the so-called drug war and the rise of the new media in contemporary Mexico.

The second, titled “Playing Mestizo,” is a study of popular theater in Yucatán focused on the cultural politics of mestizaje, or race-mixing, from the 19th century to the present.



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Diversity Initiatives Focus on Engagement

■ Heidi Opdyke

After years of focusing on efforts to create a more diverse university, the emphasis has turned to focus on meaningful engagement, Carnegie Mellon Jared L. Cohon said during his annual state of diversity address on Martin Luther King Jr. Day.

The “Guiding Principle for University Culture,” authored in 2010 by the Diversity Advisory Council (DAC), aims to foster opportunities for interaction.

“Interestingly we’ve heard from many faculty, staff and students that it’s not clear to them, always, how to engage with people who are different than them. This is true in people of every constituency. Those of us who have lived a life dealing with people who are just like us are not necessarily trained or ready or feel equipped or confident to engage with people who are very different than us,” Cohon said. “We accept this and we are initiating various programs to help people feel more confident and give them the tools to engage.”

In 2011, each dean was charged to initiate a project that would foster and encourage meaningful engagement between the diverse groups of their school. The projects can be found in the DAC’s 2012 report online at www.cmu.edu/diversity-guide/pdfs/2012-dac-report.pdf.

“As parents, we guide and prepare our children so they can go off into the world on their own. As educators, we prepare our students professionally so that they can enter the workplace. The workplace, any workplace, anywhere in the world, is a social environment; no one works in a vacuum,” Cohon wrote in the annual report. “In addition, today the workplace is the world; it is a global



DARRELL LUMPKINS RECITED MARTIN LUTHER KING, JR.'S “I HAVE A DREAM” SPEECH DURING THE UNIVERSITY’S ANNUAL CELEBRATION. LUMPKINS, WHO WORKS FOR ISS FACILITIES SERVICES, HAS DELIVERED THE DRAMATIC MONOLOGUE FOR MORE THAN 34 YEARS AROUND THE WORLD. THIS WAS HIS FIRST PERFORMANCE AT CMU.

workplace that continues to expand with astonishing speed. We would be poor educators, indeed, if we focused solely on providing our students with technical expertise at the expense of professional skills and personal development.”

The focus on improving meaningful engagement will continue for the coming year. While each college is working to address increased and meaningful engagements, the council is working on how to support the initiatives from a university-wide level.

Cohon said the Tepper School has faculty who do research in putting together teams for effectiveness. There are also faculty who have years of experience in putting together project teams of students for work.

“We’ve been taking advantage of

the expertise that exists at the university and spreading it to other faculty so that they can get the benefit of that experience and then benefit in assembling their project teams to promote more engagement and more value for our students,” Cohon said.

Efforts continue to increase minority representation among students, faculty and staff and to promote diversity in all respects. Cohon shared some of the data from the DAC report. He said the highlight has been the undergraduate student body.

“We’ve seen a marked increase in recent years in African Americans, Hispanics and Native Americans, to some extent,” he said.

In this year’s freshman class, traditional underrepresented groups represent

17 percent of the student body, up from 15 percent the last two years and 10-11 percent historically.

Today, there are 808 minority students enrolled out of a student body of more than 5,500, Cohon said, compared to 522 minority undergraduate students 10 years ago.

Retention and graduate rates are remarkably better than they were 20 years ago, Cohon said. He said there used to be a gap of around 20 percent between minority retention rates and majority retention rates. For 2010, first-year retention rates overall were 95.7 percent, with minority rates at 92.5 percent and majority rates at 96.2 percent.

“If you go back say 20 years there would have been a very large gap between majority retention and minority retention,” he said. “Somewhere around 20 percent. That has basically disappeared and is something that is a result of a major effort by this university.”

For faculty, Cohon said that while there have been a number of women and minority faculty who have been recruited, overall rates have been flat because while more are more being hired, more are also leaving. He said each case has its own story.

“We’ve had a lot of recent successes that have been very encouraging,” he said. “But we have a lot more work to do.”

“Overall Carnegie Mellon is much more diverse than it was but there are many areas where more progress is needed, and while we’re continuing to push to increase the diversity of our student body, our faculty and our administration, we are also focused on the cultural aspects, in particular on meaningful engagement.”

SKATING WITH SCOTTY



CARNEGIE MELLON’S MASCOT, WHICH RECENTLY RANKED 10TH IN NBC’S MASCOT POWER RANKINGS, JOINED 29 OTHER COSTUMED CHARACTERS ON THE ICE AT THE SCHENLEY PARK SKATING RINK ON SATURDAY, JAN. 14. THE EVENT, IN ITS 25TH YEAR, DREW MORE THAN 500 SKATERS.

“Call Me Ishmael”

Distant Melville Relative Attends Whale of a Reading Session

■ Heidi Opdyke

A midwinter hunt for whales drew two CMU staffers.

During the 16th annual Moby-Dick Marathon reading at the Whaling Museum in New Bedford, Mass., more than 150 volunteers read the book aloud nonstop for 25 hours.

Among the 2,000 who listened in early January were Ian Ernest Voysey, a teaching assistant in Computer Science, and Vincent Zeng, a photo lab assistant in the College of Fine Arts. They were part of just 36 people who stayed the whole time.

“It was my brother’s idea,” said Voysey, a distant relative of Herman Melville on his mother’s side.

“I’ve read Moby-Dick enough to convince myself that no one has ever really read Moby-Dick. There’s just too much there,” Voysey said. “You can say that about any book to an extent, but the density is on a different level here. Even if you’ve passed your eyes over the text a hundred times, you always shall have missed more than you got. I’ve been going through a quadratic process of reading it and rereading it from the beginning for the last five or six years, though, and am a little bit familiar with it.”

This year is the 160th anniversary of the book.

James J. Lopes, vice president for education and programming at the Whaling Museum, said readers read “Moby-Dick” in Portuguese, Dutch, Hebrew, Spanish and English.

“SMASH” Cast Members Credit CMU for Their Success

■ Tiffany Benson

Three in one.

That’s what you’re getting in this season’s primetime lineup as Carnegie Mellon drama alumni Christian Borle (A’95), Megan Hilty (A’04) and Leslie Odom, Jr. (A’03) — selected by an elite casting team including Executive Producer Steven Spielberg — star in the highly anticipated television show “SMASH” on NBC. The show centers around the behind-the-scenes excitement of creating a Broadway musical about the life of Marilyn Monroe.

“Audiences are going to get smart television, they’re going to get great music, and I think they’re going to see what it really is like behind the scenes,” Borle said.

Hilty plays Ivy Lynn, a feisty Broadway veteran who appears to be the obvious choice for the lead in the show before her chances are threatened by a newcomer.

“I think a lot of people can relate to her because when you meet Ivy Lynn, she’s been in the ensemble for about 10 years and she’s just dying to make that next step to become a leading lady. I think a lot of people can relate to feeling stuck in their jobs; you don’t have to be in theater,” Hilty says of her role as Ivy.

Borle’s character, Tom Levitt, is a composer and half of a successful song-writing team along with Debra Messing’s character Julia Houston, whose music will fuel what they hope will be Broadway’s next big hit.

“We are the artistic soul of the creative team. I think we are the ones that wear our hearts on our sleeves,” Borle reflects about the duo.

Odom, who made his Broadway debut even before coming to CMU, starred as Paul in the hit musical “Rent” at the age of 17. Since perfecting his craft at the School of Drama he has had recurring roles on several television shows and continues to shine in this capacity as Sam Strickland on “SMASH.”

Landing the roles on a primetime network show did not come easily. While they received the roles through an audition process, Borle and Hilty have both worked on Broadway as well, and had smaller television and film roles that have bolstered their careers to this point.

They credit Carnegie Mellon for the foundation of their success. The program often required long days and an intense study of the dramatic arts.

“My time at CMU really helped me in a lot of ways that I wasn’t able to see when I was there, even aside from the techniques I learned. They really prepared us for this hectically creative lifestyle and anytime I have a hard day I look back and think, if I made it through those days, I can make it through anything,” Hilty said.

In addition to studying their craft, the people that they met at Carnegie Mellon guided them and continue to



CHRISTIAN BORLE (A’95)

serve as mentors in their careers. Both Hilty and Borle keep in touch with many of their former professors.

“There are a [few people] that I stay in contact with like Don Wadsworth,

“SMASH,” STARRING CARNEGIE MELLON ALUMNI CHRISTIAN BORLE, MEGAN HILTY AND LESLIE ODOM, JR. PREMIERES FEB. 6 ON NBC. THE SHOW WILL AIR AT 10 P.M. MONDAYS.

he’s both a good friend and a teacher of mine, and Gary Kline taught me how to sing, but really it was everybody. We lucked out when I was there with the faculty; it was an extraordinary group of teachers. They didn’t just make me the actor that I am, they contributed to the man that I am,” Borle said.

Current students can learn a great deal from Hilty and Borle and listening to sound advice that only experience can garner.

“The most valuable bit of advice that I have ever received is, simply put, other people’s success is not your

failure. It’s challenging. It’s hard when you are in the trenches and you’re seeing other people get what you want but you just have to keep focused on your own thing and have faith,” Borle said.

Starring in a network television show is not an easy feat, but Carnegie Mellon certainly provides students with the right foundation to achieve it or any other goal they desire. Hilty, Borle and Odom are proof of that.

“I try to come back to campus as often as I can to let [students] know that you’re doing this for a reason and good things do happen if you stick it through,” Hilty said.

Soccer and Science

CMU Signs New Agreements With Qatar

■ Piper Staff

CMU To Assist With World Cup ...

Carnegie Mellon Qatar has recently signed two memoranda of understandings (MoU) with Qatar to assist the country with scientific research, capacity building and information systems, and with hosting projects and programs associated with the 2022 FIFA World Cup.

Hassan Al-Thawadi, one of the most powerful sports figures in the Middle East as Secretary General of the Qatar 2022 Supreme Committee, and Carnegie Mellon Qatar Dean Ilker Baybars signed the MoU regarding the world championship soccer event after Al-Thawadi spoke on CMU’s Qatar campus last month. He talked about how sports is a means of socio-economic development during a Deans’ Lecture titled “Qatar 2022 FIFA World Cup: The Path to Success.”

Al-Thawadi recalled Qatar’s bid to host the world’s foremost tournament and shared many of the challenges the country faced to win the bid in late 2010. He advised students to seize chances to become future leaders, innovators and entrepreneurs in Qatar.

“The opportunities that lie ahead are vast and varied. It may seem now that the future I speak of is a long way off, and you might be concerned with the more immediate obstacles and challenges that you face — but I have no doubt that the education you are receiving here is the ideal foundation for success in whichever fields you decide to focus,” Al-Thawadi said.

“What you are experiencing here at CMU and Qatar Foundation is the realization of the innovation and pioneering spirit that Qatar as a nation has exemplified. This pioneering spirit was what convinced us that not only should we bid to host the FIFA World Cup in 2022, but that we were capable of winning.”

“Through this MoU, Carnegie Mellon Qatar is looking forward to being a strategic partner of Qatar 2022 Supreme Committee in national capacity-building efforts ... and Qatar 2022 FIFA World Cup projects, empowering a generation of future leaders in Qatar,” Baybars said.



CARNEGIE MELLON QATAR DEAN ILKER BAYBARS AND HASSAN AL-THAWADI SIGN A MEMORANDUM OF UNDERSTANDING.

And With Research and Education

Carnegie Mellon Qatar also signed a MoU with Qatar’s General Secretariat for Development Planning (GSDP) to enhance future efforts in scientific research, capacity building and information systems.

His Excellency Saleh bin Mohammed Al Nabit, GSDP secretary general, and Baybars, signed the MoU on Dec. 14. The two organizations will work together to explore collaboration to offer joint solutions in the areas of computing, advanced information system services, and education and training for executive leadership. The agreement aligns with the Qatar National Vision 2030 and National Development Strategy 2011-2016.

Commenting on the partnership, Al Nabit highlighted the cooperation as a progressive milestone for GSDP and Carnegie Mellon Qatar. He stressed the MoU’s importance in serving the Qatari community, recognizing Carnegie Mellon Qatar’s role in scientific research and educational initiatives, especially in the field of executive education, which will help prepare nationals to compete in the labor market and support

Stehlik Named Associate Dean at Carnegie Mellon Qatar

■ Byron Spice

After shepherding more than 2,500 students through Carnegie Mellon's undergraduate computer science program, Mark Stehlik will step down this summer as assistant dean for undergraduate education for the School of Computer Science. He then will begin a five-year appointment as associate dean for education at Carnegie Mellon Qatar.

Stehlik, who began teaching undergraduate classes in 1982, has been assistant dean since the undergraduate computer science degree program began in 1988. Tom Cortina, associate teaching professor, will assume the duties of SCS assistant dean and will work with Stehlik this semester to begin the transition.

"Mark has been the heart and soul of our CS undergraduate program for the past two decades," said SCS Dean Randal E. Bryant. "Through his work with both students and faculty, he has been instrumental in our program's rise to the highest heights in its academic quality and its individualized attention.

"We will surely miss him here in Pittsburgh, but I am glad he will be able to work his magic with our students and faculty in Qatar," Bryant added. "I also have full confidence that Tom will keep our program on track here in Pittsburgh."

"This program is like one of my children," said Stehlik, anticipating what could be a painful transition for him. "When you commit to as much as people commit to around here, it's really, really difficult to step away," he added. "It's going to be hard to talk with students I know I won't be around to see graduate."

But he emphasized that he is excited about contributing to the further success of Carnegie Mellon's campus in Doha, Qatar, where he has been a frequent visitor and teacher.

"Mark brings a strong balance of academic and leadership experience to Qatar," said Ilker Baybars, dean of Carnegie Mellon Qatar. "He has been at Carnegie Mellon for 30 years, and his impact in the development of the undergraduate program in computer science is invaluable. I am confident that the students in Qatar will flourish and benefit from his experience and guidance. We are pleased to have someone with Mark's knowledge and enthusiasm join our leadership team."

Stehlik anticipates that the process of handing over the day-to-day operation of the SCS program to Cortina ultimately will strengthen the undergraduate program.

"I'm proud of the way that we have been able to connect undergrads to each other and to the school," Stehlik said. "I'm eager to see that continue at the Pittsburgh campus and to increase those connections in Doha. That said, this transition will allow for changes to happen here that are potentially good and useful."

"Mark leaves big shoes to fill," Cor-



MARK STEHLIK, SEEN HERE WITH A CLASS IN QATAR IN 2011, HAS MADE CLOSE CONNECTIONS WITH STUDENTS IN PITTSBURGH AND DOHA.

tina said. He recalled that when he was offered the position of assistant dean, "I was flattered and stunned at the same time."

Before joining the CMU faculty in 2004, Cortina taught for a combined 16 years at Polytechnic University in Brooklyn, N.Y., and at Stony Brook University. He has been active in the Association for Computing Machinery's Special Interest Group in Computer Science Education (SIGSCE), serving as program co-chair for the SIGSCE Symposium in 2010 and symposium co-chair in 2011. He serves on the advisory board of a joint National Science Foundation-College Board project to develop a new Advanced Placement (AP) Computer Science Principles course. He helped launch the popular CS4HS workshop for computer science

high school teachers and the ACTIVATE workshops for science, technology engineering and math teachers in the Pittsburgh region.

Stehlik taught at the Doha campus during the spring semesters of 2006, 2007 and 2008. Upon returning to Pittsburgh in 2008, he suffered a pulmonary embolism. The episode caused both Stehlik and the school to contemplate life without him as assistant dean and think about what might need to happen to provide stability to the undergraduate program once he eventually left his position.

Another stint in Doha last summer reminded him of the joys of teaching smaller classes than are typical at the Pittsburgh campus. And he became convinced that he could play a role in Baybars' administration and contribute

to the evolution of Education City.

One contribution has to do with the more than 1,000 computer science books that he has accumulated over 30 years and now strain the bookshelves of his Gates Center office. He plans to donate most of them to the Carnegie Mellon Qatar library. "They represent a history of computer science," he explained. "And this way, I only have to pack them once."

Cortina said he already is acquainted with many of the sophomores that Stehlik advises, having taught them as freshmen last year in the Imperative Computation class with Frank Pfenning. He'll be shadowing Stehlik this semester as he takes on more operational duties.

Even after he moves to Qatar this summer, Stehlik said he will always be available and happy to answer questions.

"I bleed plaid," he said.

Stopping Shiga Toxin

Findings Could Provide Basis for Treating Infection

■ Jocelyn Duffy

The deadly bacteria known as Shiga toxin has killed more than 1 million people worldwide. And there is no treatment.

But now there's hope.

Carnegie Mellon researchers have discovered that an element commonly found in nature might provide a way to neutralize its lethal effects.

New results published in the Jan. 20 issue of *Science* by biologists Adam Linstedt and Somshuvra Mukhopadhyay show that manganese completely protects against Shiga toxicosis in animal models.

Produced by certain bacteria, including *Shigella* and some strains of *E. coli*, Shiga toxin can cause symptoms ranging from mild intestinal disease to kidney failure.

The findings could pave the way for research aimed at creating an inexpensive treatment for infections caused by bacteria that produce the lethal toxin. Currently there is no

treatment for such infections that afflict more than 150 million people each year.

Such infections are common in developing countries where they cause waterborne epidemics. The infections can be particularly deadly, especially in children.

In developed countries, Shiga toxicosis is most common during foodborne outbreaks — like the widespread *E. coli* outbreak this past summer in Germany and Western Europe, where more than 3,700 people were infected and 45 died.

After entering the body, Shiga toxin is secreted by the infecting bacteria. The toxin then attaches itself to a surface receptor on a cell's plasma membrane and enters the cell through a process called endocytosis.

Normally, when a harmful substance enters a cell in this way, it's wrapped in a package called an endosome and sent directly to the cell's lysosome where it is degraded and discarded.

"That's exactly the process that Shiga toxin avoids. It would be neutralized if it were to get degraded, so it had to find some way to get out of being sent to the lysosome," said Linstedt, professor of biological sciences.

Linstedt and Mukhopadhyay discovered exactly how Shiga toxin avoided the lysosome as they were doing basic biological research to understand how components of the cell function.

"If we weren't focused on answering fundamental biological questions, we wouldn't have made this discovery," Linstedt said.

The research, an example of how CMU uses government and foundation funding to develop real-world solutions, was funded by a grant from the National Institute of Environmental Health Sciences, part of the National Institutes of Health and an American Heart Association fellowship to Mukhopadhyay.

LECTURE SPOTLIGHT: VIETNAM MEMORIAL ARCHITECT TO SPEAK

■ Cora Wang

Maya Lin, the world-renowned architect of the Vietnam Veterans Memorial in Washington, D.C., is coming to CMU.

Lin's visit is in conjunction with the exhibition "Maya Lin" at the Heinz Architectural Center at the Carnegie Museum of Art (CMOA). She'll deliver the 2012 Robert Lepper Distinguished Lecture in Creative Inquiry as part of the exhibit's opening reception at 6 p.m., Friday, Feb. 10 at Carnegie Music Hall.

As both an artist and architect, Maya Lin has created a remarkable body of work that includes large-scale site-specific installations, intimate studio artworks, architectural works and memorials.

Landscape is the context and the source of inspiration for Lin's art. She peers curiously at the landscape through a 21st century lens, merging rational and tech-

nological order with notions of beauty and the transcendental. Her works address how we relate and respond to the environment, and presents new ways of looking at the world around us.

Lin received her master's degree in architecture from Yale University in 1986, and has maintained a professional studio in New York City since then.

Her well-known works include the Vietnam Veteran's Memorial in Washington, D.C.; the Civil Rights Memorial in Montgomery, Ala., "Where the Land Meets the Sea" at the California Academy of Sciences in San Francisco; and the Museum of Chinese in America's new space in Manhattan's Chinatown.

Recent work includes "What is Missing," which is a multimedia multi-site memorial that aims to build

WHAT: THE 2012 ROBERT LEPPER DISTINGUISHED LECTURE IN CREATIVE INQUIRY

WHO: MAYA LIN

WHEN: 6 P.M., FRIDAY, FEB. 10

WHERE: CARNEGIE MUSIC HALL

ONLINE: CMU.EDU/ART/LECTURES

awareness of species loss and highlight what scientists and environmental groups throughout the world are doing to protect species and habitats.

The Lepper Lecture in Creative Inquiry is co-presented by CMU's School of Art, CMU's School of Architecture and the CMOA.

"The Lepper Lecture was created to celebrate the work of artists who expand

the boundaries of artistic thought and who achieve credibility through enduring presence," said John Carson, the head of the School of Art. "Maya Lin certainly fits that definition as one of those exceptional artists whose work has entered the national consciousness."

To see examples of her recent work, visit mayalin.com.

"Intimate Science"

Exhibition Celebrates Startling Connections Between Art and Technology

■ Piper Staff

Sculptures of living matter, reverse-engineered flowers and solar-powered 3D printing intersect at the Miller Gallery's new exhibit "Intimate Science."

The exhibition, curated by Andrea Grover, will be on view in Pittsburgh through March 4, when it heads to San Francisco, Hartford, Conn., and other

technicians, labs, computer time or manufacturers to realize works of scientific or technological complexity, artists now have far greater agency to conduct this kind of work themselves. Even ambitious endeavors such as biological experiments, materials research and micromanufacturing can be conducted by today's working artist.

the network, not the individual, is encyclopedic. The Internet has provided unprecedented access to shared knowledge assets, materials, fabrication processes, microfunding and audiences. This exhibit examines how networked communication and open source culture have contributed to this shift from artists aiding science to 'doing' science, and the impact this imparts on the way scientific knowledge is acquired, used and shared."

Featured artists are:

BCL (Georg Tremmel & Shiho Fukuhara, Tokyo) bio-hacks genetically modified flowers — carnations bio-engineered to have a bluish purple color — back into living plants with the intention of creating an "open source" population of these flowers.

Center for PostNatural History (Pittsburgh) is a project spearheaded by Rich Pell, associate professor of art at CMU, with the objective to advance

"knowledge relating to the complex interplay between culture, nature and biotechnology."

It is a singular natural history museum that is concerned with "Post-Natural" varieties of life normally excluded from scientific taxonomy, such as transgenic organisms that have been altered by humankind via selective breeding, genetic engineering or other methods of biological tampering.

A grand opening for the Center for Post-Natural History will take place at 6 p.m., Friday, March 2, at 4913 Penn Ave.

Markus Kayser (London) takes notions of sustainable micromanufacturing to the extreme through projects like his "SolarSinter," which combines a custom-made 3D printer with solar power to transform sand — on site in the Sahara — into glass objects, and "SunCutter," a low cost laser cutter that makes objects by focusing sunlight into a powerful beam.

Allison Kudla (Seattle) combines computer fabrication technologies and plant tissue culturing to make living installations, which she describes as biological material in collaboration with an engineering mechanism.

Machine Project (Los Angeles) is a "not-for-profit arts organization and community event space dedicated to making specialized knowledge and technology accessible to artists and the general public." Machine describes its terrain as encompassing "art, technology, natural history, science, music, literature and food," and more. Machine's style of presenting promotes hands-on engagement that engineers atypical collisions between different branches of knowledge.

Philip Ross (San Francisco) works in the realm of "bio techniques." Utilizing living organic materials, he makes sculptural and architectural works with plant and fungal materials, as well as videos about micro-organisms. His "mycotecture" series is an experiment using reishi mushrooms as a sustainable construction material.

HOURS: ADMISSION TO THE MILLER GALLERY IS FREE AND OPEN TO THE PUBLIC. HOURS ARE NOON - 6 P.M., TUESDAY - SUNDAY.

U.S. locations through 2013.

As an Andy Warhol Foundation Curatorial Fellow in residence at the Miller Gallery and STUDIO for Creative Inquiry in 2010, Grover researched artists embedded in scientific or industrial environments in the 1960s.

She recognized a shift in discourse and practice. While artists two generations ago were dependent on access to

"Through their engagement with 'Intimate Science' a more knowledgeable public might well be able to influence what research is supported and adopted by the larger culture, and the walls of science can become more transparent," Grover said.

"Unlike the rare 'Leonardo' polymath of the Renaissance, contemporary artists who operate across disciplines employ the expertise of the network:



PHOTO COURTESY PHILIP ROSS

BY CONTROLLING THE GROWTH OF FUNGUS, PHILIP ROSS CREATES SCULPTURES AND ARCHITECTURAL PIECES. HIS WORK IS PART OF THE "INTIMATE SCIENCE" EXHIBIT AT THE MILLER GALLERY.



Statistics Scores Big With Scrabble

■ Shilo Rea

In Scrabble and the online game Words With Friends, the letter “Q” has a high 10-point value, but it’s really more like a five-point penalty.

According to new research from Andrew C. Thomas, visiting assistant professor of statistics and Scrabble aficionado, “Q” is the worst tile to have because you will end up scoring less. The best letters to have are S, Z and X.

Thomas’ findings come from simulating roughly 10 million Scrabble games using an open-source artificial intelligence crossword game called “Quackle.” Thomas conducted the research to determine how to better design a tournament to make the variable of drawing tiles as small as possible.

“I also wanted to find out how much of the variance in score comes from the tile order and board,” he said.

Thomas lined the tiles up in a row instead of putting them in a bag. Each player (not seeing the line of tiles) drew from one end. The alteration allowed for the same pattern to be replicated over multiple games, so that a player’s result could be better compared against others.

He found that when you draw a tile during the course of a game makes a difference; there is a 30-point swing for having a blank tile at the beginning of a game versus the end.

Thomas calculated each tile’s worth as it affected final scores. “S,” the best

letter to have, adds approximately 10 points. “Z” and “X” are also good letters to have. “V” and “U” are not tiles you want to draw very often.

Other findings include:

The blank is worth about 30 points to a good player, each “S” about 10.

“Q” is a burden to whichever player receives it, effectively serving as a five-point penalty.

“J” is essentially neutral point wise.

Thomas’ research and results also correlate to the popular online game Words With Friends. The only main difference in tile values between the two games is with “J.” Words With Friends values a “J” at 10 points; its Scrabble value is eight. Drawing a “J” in a Words With Friends game positively affects your score — in Scrabble, it doesn’t really make a difference.

“What’s interesting about this research is that it used actual statistics — it wasn’t just about having fun with Scrabble,” Thomas said. “The simulations used data-mining and large-scale applications to tell us more about the game than we’ve ever known.”

For more information, visit Thomas’ blog at www.acthomas.ca/comment/2011/07/statistics-and-scrabble-together-at-last.html

Faculty Present at Davos

CONTINUED FROM PAGE ONE

“We are in the era of profound change that urgently requires new ways of thinking instead of more business as usual,” said Klaus Schwab, WEF founder and executive chairman.

The theme of this year’s meeting was shaping new models. Schwab explained, “We need to break out of the mode of purely reactive crisis management, and instead, determine what new models are needed to fulfill the mission committed to improving the state of the world.”

Four critical sub-themes addressed throughout the Annual Meeting were growth and employment, leadership and innovation, sustainability and resources, and social and technological models, according to Lee Howell, managing director and head of Centre for Global Events.

Presenting from CMU were:

Justine Cassell, the Charles M. Geschke Director of the Human-Computer Interaction Institute, presented “Children and the digital world: Partners in learning;” **Pradeep Khosla**, dean of the College of Engineering, and the Philip and Marsha Dowd Professor of Electrical and Computer Engineering, spoke on “Security in digital infrastructure;”

Tom Mitchell, the E. Fredkin University Professor in the School of Computer Science and head of the Department of Machine Learning, discussed “Intelligent machines: When computers read;” and **Manuela M. Veloso**, the Herbert A. Simon Professor in the School of Computer Science, talked about “Companion robots and the workplace of the future.”

They discussed how human-machine collaboration can solve some of the

world’s greatest challenges in areas such as cybersecurity, new models of learning, and how robots and machines may change and improve the way we work.

In CMU’s session — one of a select group the WEF calls “IdeasLabs” — each faculty member had five minutes to convey an idea through the highly visual “pecha kucha” style of presentation, followed by a Q&A discussion with the audience of CEOs and leaders from around the world.

They each had 15 images that automatically rotated every 20 seconds. The images were representational — no charts, graphs or text — and served as background to what each faculty member discussed.

CMU President Jared L. Cohon introduced the discussion, which was facilitated by Tan Chorh-Chuan, president of the National University of Singapore.

President Cohon represents CMU as a member of the Global University Leaders Forum (GULF), a community of leading university presidents from 25 top global universities, only 11 of which are in the United States. The community fosters collaboration between top universities in areas of significance for global policy and helps shape the WEF agenda.

CMU also presented an IdeasLab session at the WEF “Annual Meeting of New Champions 2011,” in Dalian, China, to discuss “Disruptive Health Technologies.”

App Aid

United Way Agencies To Implement System Designed by Students

■ Heidi Opdyke

A classroom project is having real-world applications for the United Way of Allegheny County by helping to speed the recovery process for disaster victims.

The United Way, in conjunction with the American Red Cross, Salvation Army, North Hills Community Outreach and Catholic Charities, reached out to the Heinz College to help streamline the assessment process.

Joe Mertz, a professor in the Heinz College, turned the project over to Aaron Gross, Lei Shi, Soundarya Rangaraj, Vidhya Venkatasubramanian, Xue Zhang and Yao Yao for their capstone project in the Masters of Information Systems Management program.

“We had a good team working on it, and the team focused on creating a solution that the program could really use,” Mertz said.

The problem was door-to-door assessments after disasters were recorded on paper, which then had to be entered into a database to be shared with partner

agencies. The process is time consuming, prone to errors and results in slower and less effective assistance to victims.

“The process of assessing the damage of a natural disaster and coordinating the response efforts of agencies can be a lengthy and difficult task at a time when short response times and immediate action are crucial,” said Julie DeSeyn, United Way’s director of programs for financially struggling adults and families; and director of PA 2-1-1 Southwest, a social services helpline recently launched by United Way. “This application will expedite the assessment and information sharing process, and will help agencies to avoid redundancies when addressing the emergency.”

The team’s Web-based application could be used in the field to upload information to a shared Web-based database called VisionLink CommunityOS, the software system of PA 2-1-1.

Partner agencies can then access the information, allowing them to begin

addressing the disaster immediately.

The app is a first of its kind within the national disaster community.

When it goes into use this summer, it could drastically reduce processing information from three days to 30 minutes. The team’s system can be used on smartphones and iPads even when the Internet wasn’t available.

“The students listened well and did two sets of tests in prototype and development,” Mertz said. He said they used feedback from the client. “We always try to teach types of best practices, but given the speed of a semester students don’t always do it that way.”

Expectations for the project are high, and Mertz said the team created something of real value, which has sparked interest from as far away as Philadelphia.

“We learned so much from this process, not just about the tools we needed to create an application from scratch, but also about the disaster community

and the many agencies and individuals in Pittsburgh who serve others,” Gross said. “Being able to say we created this project and give it away, especially when so many people are in need — even when there is not a disaster going on — really makes it all worth while.”

“This new assessment system will help to ensure that no one is forgotten,” said Maria Christina of North Hills Community Outreach. “We will be able to know and share ‘who needs help and what do they need?’ The work of these students may be saving lives.”

DeSeyn is a 1998 graduate of the Heinz College, which she described as being a “sweet spot where public policy and information technology meet.”

“We’re just thrilled. The students were just really into it. They did a fantastic job,” DeSeyn said. “We’re so grateful for the resource that we have in CMU.”

CMU Technology Featured at World-Famous Electronics Show

■ Kristen Sabol

Carnegie Mellon professors and researchers are hoping the adage “What happens in Vegas, stays in Vegas” doesn’t apply to their recent visit to the International Consumer Electronics Show (CES), where more than 150,000 attendees viewed the latest and greatest technology creations.

“CES and the Silvers Summit provide valuable exposure opportunities for the QoLT Center, Carnegie Mellon University and the National Science Foundation — both within the raw science and innovation communities as well as in the public at large,” said Jim Osborn, executive director of the Quality of Life Technology (QoLT) Center. “Of all the positive feedback received at the show, I was most struck by one visitor’s casual observation that Carnegie Mellon is alone amongst its peers as a CES exhibitor. CMU is showing the world’s Consumer Electronics audience what technologies are happening next, while the other leading universities are not present.”

Yun Huang, a postdoctoral fellow at the Robotics Institute, attended the annual Las Vegas extravaganza to exhibit Tiramisu Transit, a real-time, crowd-powered bus-tracker app for iPhone or Android, developed in conjunction with CMU’s Traffic21 Initiative. She said the experience was inspirational.

“Meeting entrepreneurs and getting to know what the newest technologies in industry will be can be tremendously inspiring,” she said. “It really motivates students to work hard on their academic studies in the meantime and to make long-term plans for their career development.”

The QoLT Foundry featured five CMU start-ups and several other innovations and partner collaborations. To see the full list, visit www.cmu.edu/piper.

“Through their QoLT Foundry, the Quality of Life Technology Engineering Research Center (ERC) has developed an exemplary review and vetting process to move university-based research to commercialization,” said Barbara

Kenny, the National Science Foundation program director overseeing the center’s grants. “We’re pleased to see the QoLT ERC bring these engineering innovations, spin-off companies, and translational research projects more directly into the public eye.”

Kristin Hughes, an associate professor in the School of Design, talked about Fitwits, during the CES’s Digital Health Summit.

“It was a really incredible experience having the opportunity to be represented with the Quality of Life Technology Foundry and seeing some of what’s coming out of Carnegie Mellon’s Greenlighting Startups initiative,” Hughes said. “From a design standpoint, it was really interesting to see the trends and see where the future of mobile devices and smart technology is going.”

The Fitwits Program functions not only as an easy-to-use educational tool, but also bridges the gaps in health literacy, education, awareness and advocacy. It puts a strong emphasis on the confluence of individuals, family, community and society in approaching public health interventions.

Hughes said the team is working on a business model to attract investors.

“We received invaluable, positive feedback from the public on the merits of the Fitwits Program. All the hard work is starting to pay off.”

Daniel P. Siewiorek, QoLT acting director, served as a panel judge for the Silvers Summit first annual Sterling Awards. The Silvers Summit is a conference devoted to technological innovations for improving human longevity and vitality held in conjunction with the CES.

One of the winners surprised him. Todd Bernard (CS’88), accepted the award for his company, AutoVerbal ProTalking.

“One of the most gratifying experiences at the 2012 CES was the opportunity to see several products created by CMU students and based on CMU technology successfully entering the global consumer space,” Siewiorek said. “I was



(FROM L-R) AARON STEINFELD OF TIRAMISU TRANSIT; IVO STIVORIC (A’93, MDE’98) OF BODYMEDIA; DANIEL AND KARON SIEWIOREK, AND STEVEN RADNEY (E’96, MPD’07) OF VITALCLIP, VISIT DURING THE CONSUMER ELECTRONICS SHOW.

preparing for a panel presentation when I heard my own name mentioned in the Sterling Awards acceptance speech being played over the winning text-to-speech device. I was surprised to be cited as one of the people who inspired the product’s developer and company founder as an undergraduate; indeed, it was a pleasure to directly witness the education of so many former students coming to full fruition at CES.”

Osborn led the panel “On the Road, On the Go: Mobilizing Your Product Development Efforts to Keep Up with the Fastest Growing Population Group.” Siewiorek, Curt Stone and Aaron Steinfeld were panel participants at other sessions at the conference.

Modular Robotics, another CMU startup founded by Mark Gross, professor of computational design, and Eric Schweikardt, who earned his Ph.D. in architecture in 2008 at CMU, also had a booth at the CES. Modular Robotics makes fun robot construction kits for kids.

Carnegie Mellon is one of the fastest growing entrepreneurial universities in the U.S. Its students and faculty have helped to create more than 300 companies and 9,000 jobs in the past 15 years. Earlier this year, the university launched its Greenlighting Startups initiative, a portfolio of CMU incubator groups designed to speed innovation from the research lab to the marketplace.



KRISTIN HUGHES, AN ASSOCIATE PROFESSOR IN THE SCHOOL OF DESIGN, PRESENTED THE FITWITS PROGRAM AT THE CES. SHE IS WORKING ON A BUSINESS MODEL TO ATTRACT INVESTORS.

Drama Tackles “Sweeney Todd”

■ Dennis Schebetta

Carnegie Mellon’s School of Drama will present “Sweeney Todd: The Demon Barber of Fleet Street,” with music and lyrics by Stephen Sondheim and libretto by Hugh Wheeler, Feb. 23 – March 3 in the Purnell Center for the Arts’ Philip Chosky Theater.

The production will be directed by guest artist Joe Calarco, an award-winning writer and director of “Shakespeare’s R&J,” which won the Lucille Lortel Award and ran for a year off-Broadway, the longest-running production of any version of “Romeo & Juliet” in New York City.

Winner of the Tony Award in 1979, “Sweeney Todd” is considered one of Sondheim’s masterpieces and has enjoyed recent revivals and a film by Tim Burton starring Johnny Depp. This hauntingly chilling story explores love, loss and blood-soaked revenge. Returning to London after 15 years of prison, Sweeney seeks vengeance by system-

atically slicing people’s throats with a razor, while Mrs. Lovett disposes of the bodies by baking them into meat pies.

“When we do something well known like ‘Sweeney Todd,’ I like to approach the work from a completely fresh point of view,” said Peter Cooke, head of the School of Drama. “Bringing in eminent guest director Joe Calarco will ensure that any pre-conceived expectations will go out the window. This show will be intense and intimate, like a séance, starting in a small Victorian setting and out of that will grow this marvelous musical.”

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

Kenya Connection

University Assists in Creating Professional Certification for Software Developers

■ Byron Spice

Computer scientists at Carnegie Mellon are working with the Kenya Information and Communication Technology (ICT) Board to create a credentialing examination that will help employers identify software developers with the skills necessary to step into jobs immediately.

Just as airline pilots, heart surgeons and lifeguards earn their professional credentials by demonstrating on-the-job skills, the examination for the new Software Developer Certification will be what's known as an authentic exam, in that it will require people taking it to perform the kind of tasks encountered in an actual work environment. Exam takers will add software features, correct errors or otherwise make modifications on a model software system.

The exam initially will be implemented in Kenya, but is intended to become an international benchmark for use by employers worldwide.

"As reliable software becomes ever more crucial to commerce and industry, companies are demanding better ways to identify potential employees with the skills necessary for building and maintaining software," said Mark S. Kamlet, Carnegie Mellon provost and executive vice president. "With the support of Kenya, Carnegie Mellon is developing an innovative solution to this worldwide problem."

Kenya has invested heavily in ICT infrastructure and workforce preparation. The Software Developer Certification would make it easy and cost effective for companies in Kenya's expanding ICT and financial services sector to identify qualified job applicants. It also would signal to the global software sector that Kenya is a source of well-trained workers.

"Kenya is emerging as the epicenter for ICT innovations and a software development hub," said Bitange Ndemo, permanent secretary in the Ministry of Information and Communication and a guiding force behind the expansion of ICT in Kenya. "We want to lead from the front and be the technology partner of choice on the African continent."

Software accounts for a growing percentage of spending in all sectors of the economy. Africa has long been left behind by the IT revolution, but now is taking strides to make up lost ground. The opportunities for Kenya, as well as the continent as a whole, are immense.

Kenya is sponsoring development of the certification through the Kenya Transparency and Communications

Future of Innovation



AUTHOR DON TAPSCOTT VISITED CMU TO DISCUSS THE DIGITAL AGE.

Don Tapscott, author and business management expert, recently visited Carnegie Mellon to talk about his latest book, "Macrowikinomics," in the second of the university's Innovators Forum series. Watch his talk online at cmu.edu/piper.

Tapscott is a leading authority on innovation, media, and the economic and social impact of technology. He advises business and government leaders from around the world.

"I think the future is not something to be predicted, it's something to be achieved," he said to the eager audience of CMU students, faculty and staff gathered in Rashid Auditorium in the Hillman Center for Future-Generation Technologies.

Infrastructure Project, which is funded by the World Bank and headed by Victor Kyalo.

The Kenya ICT Board has dubbed this project CHIPUKA, a Swahili word meaning "to emerge or to spring forth." It is one of a portfolio of projects the government has created to support development of outsourcing services for information technology-based business functions.

"Software engineering holds great promise for our economy, hence our choice to invest in certifying our youth so they can take advantage of the emerging opportunities," said Paul Kukubo, CEO of the Kenya ICT Board. "Kenya's ambitions with this project are to be the leading software development center in Africa and a significant global software player by engaging our latent intellectual capital."

A number of certification programs for software engineers already exist. But many of those programs only test for general knowledge of software, rather than actually requiring the exam taker to write software. Others certify competence for only certain software environments or only a certain vendor's tool set. The Software Developer Certification being created for CHIPUKA would be the first authentic examination that is attuned to the needs of the industry in general and is vendor-neutral in its selection of programming language and professional tools.

"Our challenge is to identify the general skills that software developers must have and then develop model

software systems that will enable us to evaluate those skills during an exam," said Randal E. Bryant, dean of the School of Computer Science (SCS) and one of the researchers developing the certification. "We also must make certain that the exam remains up to date and affordable."

Philip Miller, a project scientist at SCS who is leading the project, said a pilot exam will be ready by March 2013, and the certification should be fully operational in Kenya by October 2013.

It remains to be determined when the exam might be made available worldwide, he added.

In addition to Bryant and Miller, the CMU researchers include Roger Dannenberg, associate research professor of computer science, and Robert Seacord, secure coding team lead at Carnegie Mellon's well-known Software Engineering Institute. Andrew Lewela Mwanyota has primary responsibility for the project at the Kenya ICT Board.

Music Celebrates 100 Years

CONTINUED FROM PAGE ONE

"Can't Take My Eyes Off of You" from the Broadway show "Jersey Boys."

Performing Schumann's "Konzertstück for Four Horns" will be an elite brass quartet: New York Philharmonic's Howard Wall (BFA'72); San Antonio Opera's principal horn Peter Rubins (BFA '86); CMU faculty member and principal horn of the Pittsburgh Symphony Orchestra William Caballero; and Brice Andrus, principal horn of the Atlanta Symphony. Chicago Symphony's principal horn Dale Clevenger (BFA'62), who received an Alumni Association Distinguished Achievement Award in 2011, will conduct.

Highly acclaimed sopranos Lisa Vroman (MFA '81) and Christiane Noll (BFA '90) will also perform. Vroman starred in the Broadway production of "The Phantom of the Opera" as Christine Daae, garnering Theatre Critic's

awards for the role in a record-breaking run in San Francisco. She also played a return engagement at the Ahmanson Theatre in Los Angeles.

Noll was nominated for a Tony Award and Drama Desk Award for her portrayal of Mother in the Kennedy Center Revival of "Ragtime."

Prior to both concerts, cocktail receptions and dinners will be held, offering attendees the special opportunity to meet the featured performers and reconnect with colleagues, classmates and friends. Ricky Ian Gordon (BFA'80), distinguished composer of songs, stage musicals and opera ("Grapes of Wrath"), will perform at the dinners along with Diane Sutherland (BFA'78).

For the latest news and information on the Centennial Celebration, go to www.music.cmu.edu/centennial.

Stroll Through “Native Pennsylvania, A Wildflower Walk” in March

■ Piper Staff

The beauty of wildflowers has captured many a painter, including Richard Crist.

Crist, who attended the Carnegie Institute of Technology, painted the 36 wildflower watercolors now featured in a collaborative exhibition between the Hunt Institute and the Botany Department at the Carnegie Museum of Natural History. Titled “Native Pennsylvania, A Wildflower Walk,” the exhibit on the fifth floor of the Hunt Library runs March 2 through June 29.

The images are coupled with the museum’s significant herbarium specimens, these pieces combine to create a visual wildflower walk through Pennsylvania’s blooming seasons with a focus on endangered, rare and threatened species.

Additional watercolors by artists Lyn Hayden and Andrey Avinoff underscore the exhibition’s emphasis on the importance of herbaria and their contributions toward research, education and conservation.

A series of free talks will take place at 2 p.m. on Sunday afternoons throughout the spring and early summer. Topics include:

“Why do plants bloom when they do? Spring ephemerals and other seasonal flowering patterns”

March 18

Steve Grund, botanist for the Western Pennsylvania Conservancy and the Pennsylvania Natural Heritage Program, will discuss some of the native plants with the paintings of Crist and focus on the diversity of flowering strategies

exhibited by native plants, emphasizing species that will be coming into bloom locally during the next few months.

Grund’s work focuses on the conservation of the flora of Pennsylvania with emphasis on rare species. He is a research associate with the Botany Department at the Carnegie Museum of Natural History and a member of the Pennsylvania Biological Survey, for which he chairs the Pennsylvania Rare Plant Forum.

“Pressing and mounting specimens for a personal herbarium”

March 25

Jeanne Poremski will demonstrate the process of pressing plants for preservation in a personal herbarium. From the selection of the plant to its pressing, arrangement and gluing, Poremski will cover all aspects of plant preservation for both simple and complex specimens.

Poremski is owner of Jeanne Poremski Gardens in Uniontown, Ohio, a landscape firm that uses appropriate native plants in its designs. She also does volunteer fieldwork and plant identification for the herbarium at the Cleveland Museum of Natural History.

“Wildflowers of Pennsylvania”

April 15

Mary Joy Haywood believes that learning and teaching about our wildflowers in Pennsylvania is critical today as so many of our plant communities are being destroyed by coal mining, Marcellus Shale drilling and other environmental

issues. Her presentation will include photographs of rare plants and many of her favorites, such as violets, gentians, lupines, loosestrifes and the prickly-pear cactus.

Many other plants will be shown and discussed.

Haywood is a botanist and plant pathologist and professor emerita of the Biology Department at Carlow College, where she also served as the chair of the Division of Natural Sciences and Mathematics. She is the co-author of the book “Wildflowers of Pennsylvania” (2001), published by the Botanical Society of Western Pennsylvania, for which she served as president for 20 years.

“Wildflowers in the home garden”

April 22

John Totten said a home garden can be another place where art and science meet. Native plants and their wild haunts are powerfully evocative, and, with care, home landscapes can be created. Creatively using these plants in the garden requires the painter’s ability to compose a scene and the scientist’s ability to handle plant selection and care. Learn to evaluate your property with an eye toward selecting suitable plants, purchasing them responsibly and growing them successfully.

Totten is a partner in the garden management and development firm, Gardens! LLC. He is an adjunct faculty member at Chatham University’s Landscape Architecture Graduate Program and Penn State University’s Sustainable Landscape Program.

Gallery tour of Native Pennsylvania, A Wildflower Walk with Hunt Institute curator

May 20

“Rare plants of Pennsylvania”

June 24

Nearly one quarter of the native flora of Pennsylvania is considered rare or endangered. Plants are considered rare for a variety of reasons. Find out what some of the rare plants are and what factors are used to classify a plant as rare in Pennsylvania.

Bonnie Isaac is the collections manager of the Botany Department at Carnegie Museum of Natural History and co-curator of this exhibition. She focuses on the ecology of the phytogeography of rare plants, floristics and herbarium techniques. She also is the current president of the Botanical Society of Western Pennsylvania.

Open House 2012

June 24-25

During its annual Open House, the Hunt Institute will offer talks, tours and opportunities to meet one-on-one with staff to ask questions and see items in the collections. A schedule of events is available online at <http://huntbot.andrew.cmu.edu/HIBD/>.

Hours

The exhibition will be on display on the fifth floor of the Hunt Library and will be open to the public free of charge. Hours: Monday–Friday, 9 a.m.–noon and 1–5 p.m.; Sunday, 1–4 p.m. (except March 11, April 6-8 and May 6, 27 and 28.)

For more information, contact the Hunt Institute at 412-268-2434.

NEWS BRIEFS

CMU Alum Endows HCII Directorship

Charles M. Geschke, who earned his Ph.D. in computer science at CMU in 1973, and his wife, Nancy, have endowed the directorship of the Human-Computer Interaction Institute.

Under the terms of the new endowment, current director Justine Cassell and each succeeding director will receive automatic appointments as the Charles M. Geschke Director of the Human-Computer Interaction Institute. Geschke co-founded Adobe Systems in 1982 with John Warnock, creating software that helped launch the desktop publishing revolution and establishing a company that remains a leader in software and technologies for communications and collaboration. He retired as president in 2000, but he and Warnock continue to share chairmanship of the Adobe board.

Copy Centers Launch Online Ordering Tool

The University Copy Centers have launched WebCopy, a new online ordering tool that makes placing orders easier for the user and the Copy Center. WebCopy accepts most standard file formats and sizes up to 100MB.

If you have hard copy files, you can still go online, complete the form and request pick up of your originals. The site is secure, so confidential matter can be safely submitted via WebCopy. To get started go to <https://web-copy.campuservices.cmu.edu/> and login with your Andrew ID.

If you have questions, would like to set up a demonstration for your department, or schedule one on one instruction time, contact Pat Herbster at 412-268-5772.

Cultural Trust Offers Discounted Tickets to CMU Community

The Pittsburgh Cultural Trust is offering students, faculty and staff discounted tickets to several performances in February and March. They include:

- Cedric Watson & Bijou Creole (Feb. 8 at the Byham);
- National Geographic Live: Ocean Soul Brian Skerry (Feb. 12 at the Byham);
- PJO Pittsburgh vs. Philadelphia (Feb. 18 at the August Wilson Center);
- Dance Works Rotterdam (Feb. 18 at the Byham);
- Cirque Dreams Pop Goes the Rock (Feb. 21-26 at Heinz Hall);
- Between a Ballad and a Blue (Feb. 24-25 at the August Wilson Center);

- Bodiography Red Carpet Rollout (Feb. 24-25 at the Byham);
- Distant Worlds: Music from Final Fantasy (Feb. 25 at the Benedum);
- Armitage Gone! Dance in Three Theories (March 3 at the Byham);
- Blues Brothers Revue (March 8 at the Byham); and
- Dynamic Women of Dance (March 9-10 at the August Wilson Center).

To order tickets, go to www.trustarts.org and login using the promo code CMU1112 to receive the discount.

Tickets On Sale for “From the Top” Taping, Feb. 14

Tickets for the live taping of “From the Top” with host Christopher O’Riley at 8 p.m., Feb. 14 at Carnegie Music Hall in Oakland are now on sale. The live taping is presented by the School of Music and Classical WQED-FM 89.3

“From the Top” is the pre-eminent showcase for young musicians heard weekly on WQED-FM. The popular NPR radio program features the amazing performances and captivating personal stories of extraordinary young classical musicians from across the country. Purchase tickets online at www.showclix.com/event/204745.

Nominations Open for Graduate Student Awards

The Graduate Student Service and Teaching Award nominations are now open and will be due on Friday, Feb. 10.

The committees would greatly appreciate your support in soliciting and submitting nominations of graduate students who have excelled in teaching or service so that their efforts can be recognized by the university community.

Nomination information can be found at <http://www.cmu.edu/celebration-of-education/graduate-student/index.html>. Awards will be presented on Thursday, April 5, at the “Innovation with Impact: Graduate Student Celebration of Research, Teaching and Service” during Graduate Student Appreciation Week. Recipients also will be recognized at the Celebration of Education on Wednesday, April 25.

World Bank President To Speak, Feb. 9

Robert B. Zoellick, the 11th president of the World Bank Group, will be at CMU from 4:30 to 6 p.m., on Thursday, Feb. 9 for “A Conversation on Global Economic Issues with Mr. Robert Zoellick, President of the World Bank.”

The event will be moderated by Professor Kiron K. Skinner.

Light Music

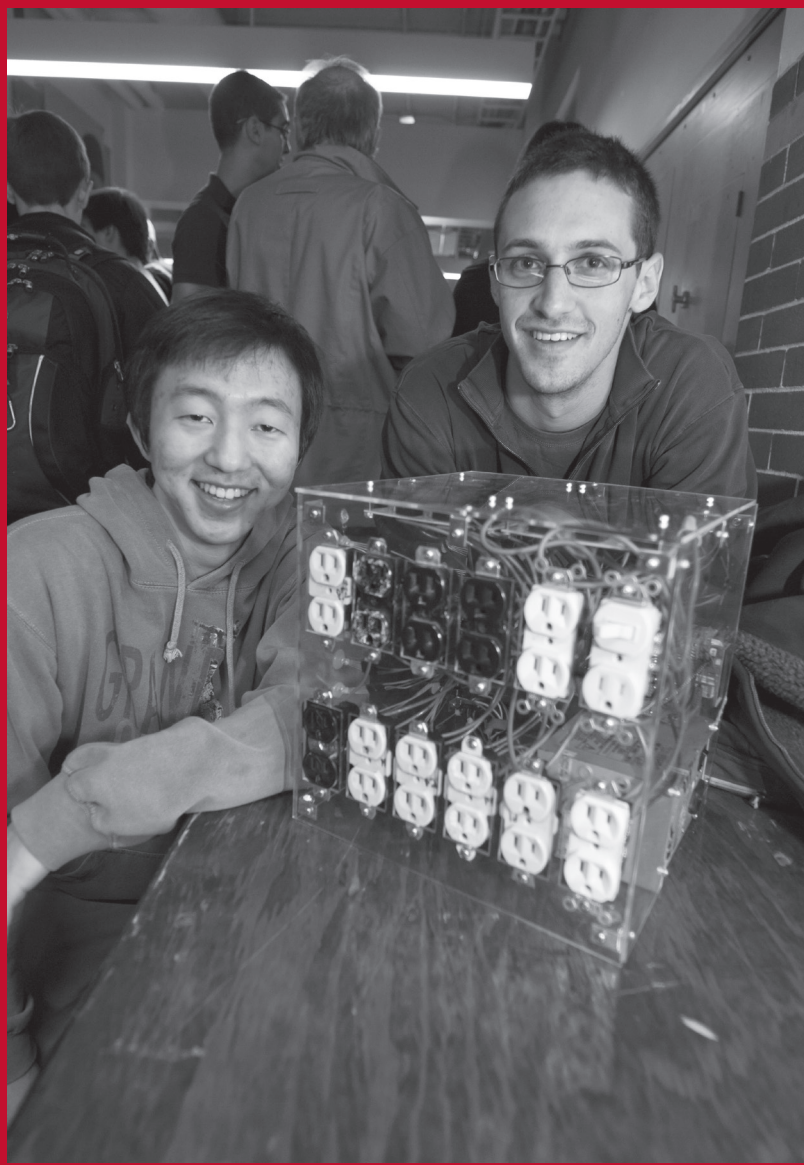


PHOTO BY TIM KAULEN

DAVID CHANG AND KEVIN ELFENBEIN SHOWCASED THEIR GROUP'S PROJECT, "BLINKING CHRISTMAS LIGHTS," DURING THE ELECTRICAL AND COMPUTER ENGINEERING'S BUILD-18 PROJECT SHOWCASE. THEIR GOAL WAS TO HAVE AN ENTIRE HOUSE OR A ROOM LIGHT UP BASED ON RECOGNITION ALGORITHMS THAT DETECT MUSIC. THE CUBE IN FRONT OF THEM HOUSES THE ELECTRONICS.

AIA Recognizes SCS Centers

■ Byron Spice

Carnegie Mellon's Gates Center for Computer Science and Hillman Center for Future-Generation Technologies have been recognized as one of nine projects worldwide to receive the 2012 American Institute of Architects (AIA) Honor Award for Architecture, the profession's highest recognition of works that exemplify excellence.

The Gates and Hillman centers, designed by Mack Scogin Merrill Elam Architects of Atlanta, have been home to four departments of the School of Computer Science since construction was completed in 2009. The buildings also serve as a crossroads for the 143-acre campus, with five main entrances on three levels and two major pedestrian bridges.

"These buildings are visually stunning, but this recognition by the AIA is about more than just beauty," said Jared L. Cohon, CMU president. "The Gates and Hillman centers occupy a key site on our campus and serve to tie the community together as never before. Inside, their spaces foster our culture of collaboration, innovation and hard work. The AIA jurors understood this and we thank them for this award."

The AIA's nine-member jury panel was chaired by Rod Kruse of BNIM Architects in Des Moines, Iowa.

"This project is scaled perfectly within an urban campus and within a uniquely difficult site," the AIA jurors said. The centers enclose 217,000 square feet of offices, classrooms and collaborative spaces in nine stories and straddle a terrain with variations in elevation of

up to 75 feet. Additional site challenges included a large zone of subsurface rock and existing sewer lines that limited where construction could occur.

The centers' zinc exterior skin and distinctive window openings are unlike those of any other building on campus, which is dominated by yellow brick and the historical influence of architect Henry Hornbostel. Nevertheless, the jurors observed that the zinc skin and window openings "surprisingly relate beautifully to the campus fabric without being literal."

The jurors concluded, "Perhaps the most wonderful aspect of the project is a set of views and visual connections created by transparent interior glazing and non-reflective exterior glazing, as well as carefully placed and angled floor plates."

Design criteria established by a faculty-staff committee headed by Guy Belloch, professor of computer science, emphasized the importance of natural light for each office and for common spaces that supported collaboration.

"The Gates Hillman project was successful because our academics knew what they wanted, our administration supported the transformative nature of the effort and architect Mack Scogin knew how to pull it all together," said Ralph Horgan, associate vice provost for Campus Design and Facility Development. "It is a great home for SCS and a fantastic addition to campus. The building only adds to the significant architectural heritage here at Carnegie Mellon."

Prior to joining the bank, Zoellick was vice chairman-international of the Goldman Sachs Group. He served in President George W. Bush's cabinet as the 13th U.S. trade representative from 2001 to 2005 and as deputy secretary of state from 2005 to 2006. From 1985 to 1993, Zoellick served at the departments of Treasury and State and briefly in the White House.

The event is sponsored by the Center for International Relations and Politics, the Thomas M. Kerr Jr. Pre-law Program and the Global Studies Major.

Frazer Co-edits Book On Electoral Violence

Jendayi Frazer, director of the Center for International Policy and Innovation and a distinguished public service professor, and E. Gyimah-Boadi, executive director of the Ghana Center for Democratic Development, have edited a new book published by CMU Press titled "Preventing Electoral Violence in Africa."

The publication, which coincides with a number of recent tense, highly contested elections, offers timely guidance on what can be done to prevent violence from disrupting elections in Africa.

Students Organize Hackathon

A new student group, ScottyLabs, has organized a 24-hour hackathon designed to introduce first-timers to the joys of hacking — building or modifying software that is useful, interesting or just cool.

TartanHacks, www.tartanhacks.com/, will begin at 6 p.m. Feb. 10 on the sixth floor of the Gates and Hillman centers. To encourage first-timers, a four-evening series of skill-building sessions is scheduled Feb. 2-6. More than 100 participants are expected and will form into teams once the event begins.

ScottyLabs partnered with the School of Computer Science's Project Olympus, Women@SCS and the SCS undergraduate program to include a number of prominent sponsors — Microsoft, Twitter, online retailer Ideeli, Yahoo!, Google and Facebook. Engineers from each will be on hand to help teams use their company's open APIs — source code that developers use to access software components they need to create apps.

Global Pittsburgh Honors Project Olympus

Project Olympus has received an award from Global Pittsburgh "in appreciation of its distinguished service to the Greater Pittsburgh region for serving as a partner resource organization." The award recognizes Olympus Senior

Business Adviser Kit Needham for her work with Global Pittsburgh in creating entrepreneurial events for global visitors, such as the visit to Project Olympus by Russian mayors.

16th Annual Swimming Challenge To Benefit CMU's Swimming Teams

Carnegie Mellon's swimming teams are hosting the 16th annual 1,650-yard swim challenge fundraiser on Sunday, Feb. 26 in the University Center pool.

The entry fee is \$25 and all proceeds benefit CMU's men's and women's swimming and diving teams. Entries are due Feb. 10. For an entry form, contact Jimmy Goldman at 412-683-0856 or jpgsports@aol.com.

Barr Named Educator Of the Year

Ed Barr, an adjunct marketing professor at the Heinz College, has been named the Distinguished Educator of the Year by the Pittsburgh chapter of the American Marketing Association. Barr taught full-time as an associate teaching professor at the Heinz College from 2000-2011 before he was appointed chief marketing officer for iCarnegie, a CMU spin-off. Barr taught courses in non-profit marketing, health care marketing, strategy, entrepreneurship and professional writing.

Sciannameo To Edit Book

Franco Sciannameo, director and principal faculty of the BXA Intercollege Degree Programs, has been signed by Rowman & Littlefield, Publishers (Scarecrow Press) to edit a collection of essays on controversial Italian composer and philosopher Giacinto Scelsi (1905-1988). The book will comprise critical essays written from 1980-2011 in French, Italian, and German that have been translated into English for the first time. Sciannameo, a world authority on Scelsi, collaborated with the composer in the making and recording of some of his best-known works.

Massalski Honored By Polish President

Thaddeus Massalski, a faculty member emeritus of the Department of Materials Science and Engineering, was recently awarded the Commanders Grand Cross of the Polish Republic by the President of Poland, Bronislaw Komorowski, for his outstanding contributions to science and to advancing academic contacts and cooperation between Poland and the United States. Massalski received his award from Minister Jacek Michalowski, chief of the president's Chancery, at a ceremony at the Warsaw Technical University.

an international focus in education and research.

“Paul was a strong conduit for the university with audiences and organizations around the globe,” said Mark S. Kamlet, provost and executive vice president at Carnegie Mellon. “He was successful in developing strategic partnerships in Asia, Latin and South America, the Middle East and South Africa. He has been a champion of the university around the world, helping to greatly expand Carnegie Mellon’s reach and influence while raising education standards in developing countries.”

“He was a beloved teacher and colleague,” said Robert M. Dammon, dean of the Tepper School of Business. “His commitment to advancing international business issues through his research and teaching, and his passion for working on innovative projects will have a lasting impact throughout the world.”

In Brazil and Chile, he explored projects on environmental issues with leading universities and using technology to enhance learning. In India, the National Program for Technology Enhanced Learning that he helped to establish was designed to improve the quality of regional engineering schools. In Israel, he worked to develop a program to build a leadership institute to facilitate Jewish-Arab co-existence. In Latin America, he was instrumental in the creation of an educational network across seven countries to improve the



PROFESSOR PAUL S. GOODMAN, WORLD-RENOWNED ORGANIZATIONAL PSYCHOLOGIST, RESEARCHER, AUTHOR AND FILMMAKER, PASSED AWAY AT HIS HOME IN PITTSBURGH ON JAN. 24.

quality of education in public secondary schools. And in Singapore, Goodman worked to help establish a new School of Information Systems. In 2003, he was recognized by the American Council on Education for his innovative use of technology to promote international learning.

In the 1980s, Goodman designed and initiated the Center for the Management of Technology, which conducts joint research with industry, and served as director throughout the center’s existence. He also served as director for the Institute for Strategic Development, which facilitates the globalization of research and educational activities, and his achievements have

been noted around the world.

Goodman worked exhaustively in the United States to raise awareness of conditions in emerging economies as they relate to established methods of production in modern industrial nations. He produced more than 20 educational films and documentaries, including a three-part series of documentaries about work in developing countries.

Goodman has authored or co-authored nine books and chapters in dozens of publications and monographs. His most recent book, titled “Organizational Learning Contracts: New and Traditional Colleges,” was published in 2011.

Goodman was a fellow of the Society for Industrial and Organizational

Psychology, the American Psychological Society and the Academy of Management. In 2001, he received the Distinguished Educator Award from the Academy of Management. In 2009, he was presented with Carnegie Mellon’s Doherty Award for Sustained Contributions in Excellence in Education.

Goodman is survived by his wife, Denise M. Rousseau, a University Professor at Carnegie Mellon and the H.J Heinz II Professor of Organizational Behavior and Public Policy at the Heinz College and Tepper School of Business; three daughters, Jennifer Goodman, Heather Cooke and Jessica Cooke; and two sons, Jonathan Goodman and Daniel Goodman.

Swiss Poster Collection

Benefactor Leaves Legacy of Excellent Design

■ Piper Staff

Dan Boyarski says there’s two ways to look at design: “You can hit someone on the head, or you can whisper.”

There’s a lot of whispering going on in German, Italian and French at Hunt Library, where hundreds of Swiss posters, often cited as examples of excellent graphic design, are stored. At any given time, five of the posters are on display near Kirr Commons in the University Center.

“It was terrific. The collection continued to grow, it continued to document Swiss design as it’s evolved,” Boyarski said. “That’s one of the beauties of this poster collection is that now you have four decades of Swiss posters, and that’s pretty unique.”

Born in Zurich, Rüeegg worked as a graphic designer and later co-owned the Müller-Brockmann studio. He spent time in the United States and in Japan. He served as the president of the Swiss

Mary Kay Johnsen, special collections and design librarian, maintains the collection and brings items out when classes come to visit.

During one class Johnsen swept her hands over the glossy posters to show the power of a black, red and white pallet and the effect of vibrating colors on the eye.

“They’re really big, huge, floppy and ungainly,” Johnsen said. She said that digitizing the posters, which was started in 1996, was one of the first digital projects handled in-house by the library.

The posters were designed to promote cultural and civic events and advertisements, so they were not created for long-term use. In Switzerland, they are displayed in outdoor kiosks throughout the country, which led to the standardization of the size.

Boyarski said much can be learned from the collection of how design has evolved. But the impact of their seemingly simple designs remain the same. He described Swiss design as visualizing concepts instead of “hitting someone on the head” with explicit images to convey a message.

“In the ’60s and beyond, Swiss graphic design to many American designers looked well-organized, well-



A POSTER BY RUEDI RÜEGG ANNOUNCING A PERFORMANCE OF “MEDEA,” IS PART OF THE UNIVERSITY’S SWISS POSTER COLLECTION. RÜEGG DONATED 500 POSTERS, WHICH WERE CITED BY THE SWISS GOVERNMENT AS EXCELLENT EXAMPLES OF GOOD DESIGN.

presented and often dependent on a grid,” Boyarski said. “But if that’s all one says about Swiss posters, then that’s doing them a disservice because they’re also incredibly inventive in how they visually communicate an event.”



ALL OF THE POSTERS CAN BE FOUND ONLINE AT
[HTTP://SWISSPOSTERS.LIBRARY.CMU.EDU.](http://swissposters.library.cmu.edu)

The posters were given to the university by Ruedi Rüeegg, who Boyarski, former head of the School of Design, met when he was studying in Switzerland 35 years ago. Rüeegg died last October.

Rüeegg contacted Boyarski in 1987 about finding a home for a set of 300 posters that had been on display in Japan and were winners of Switzerland’s Ministry of Home and Cultural Affairs annual poster design competition. He would send additional posters each year for the collection.

section of the Association Graphique Internationale from 1976 to 1981, and opened the Baltis and Rüeegg joint studio in 1977, which later became Design Alltag Zurich.

The collection, now at 500 posters, was donated with the intent that they be made available for research for the university and for the public.

You can find them online, but their impact is greater in person. Each poster measures roughly 36” x 50,” and they can be found in flat map drawers in Hunt Library’s Special Collections.