

# Artificial heart gives USC patient new lease on life

**'We felt that replacing her heart with an artificial one was the best therapy. She was going to die in the very near future if we didn't do anything.'**

**—Michael Bowdish, assistant professor of surgery at the Keck School of Medicine of USC**

By Alison Trinidad

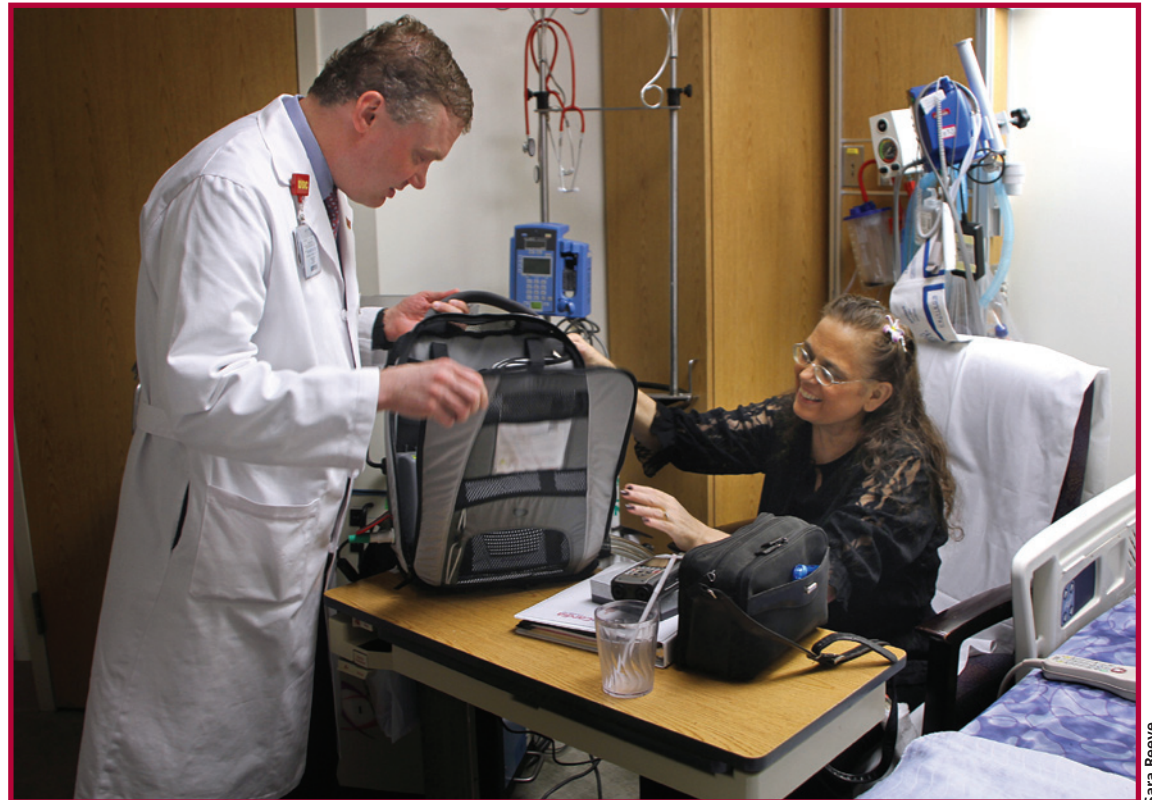
Tammy Lumpkins, 46, has had heart disease for nearly 20 years. She was living comfortably on medication and a pacemaker until early this year. Her health quickly began to deteriorate, landing her in the hospital in July.

Lumpkins' one wish was to see her 19-year-old son, Eddie, graduate from college in December, but doctors said her heart would not last that long. She needed a new heart and fast.

She found one at USC. It's made of plastic.

The Modesto, Calif., resident received a total artificial heart at Keck Hospital of USC in September, and, on Nov. 9, she became the first person on the West Coast to go home with one.

Patients who are implanted with total artificial hearts like Lumpkins' typically have to stay in the hospital while they wait for a donor heart because the air compressor that keeps them pumping weighs more than 400 pounds. But a clinical trial headed by Michael



Sara Reeve

Bowdish, assistant professor of surgery at the Keck School of Medicine of USC, has changed all that.

The new compressor weighs 13.5 pounds and can be carried in a backpack. The Freedom portable driver, manufactured by Tucson, Ariz.-based

See **TRANSPLANT**, page 2

Above, surgeon Michael Bowdish examines the portable compressor that powers patient Tammy Lumpkins' artificial heart. At right is a close up of a Total Artificial Heart similar to the one implanted in Lumpkins.



Sara Reeve

## Keck Medical Center of USC targets health care market in China as key

By Tania Chatila

The Keck Medical Center of USC is extending its reach into the Far East.

Hospitals Chief Executive Officer Mitch Creem and other Health Sciences Campus leaders are building bridges between the University and medical providers in China, where efforts to modernize the country's health care system are leading to growing privatization of health care.

"The health care market in China is going through a reformation," said Creem, who visited Beijing, Shanghai and Guangzhou in October. "There is a growing opportunity for USC to play a vital role in the changing market through private, public, commercial and academic partnerships."

Creem organized a 10-day trip to coincide with the USC Global Conference, which took place this year in Hong Kong. While overseas, he met with representatives from Fudan University Huashin Hospital, Peking University First Hospital, Shantou Medical University and Changhai Hospital, a teaching hospital of the Second Military Medical University.

"What was truly amazing was how warmly embraced we were by everyone, everywhere we went," said Creem. "The Chinese people

were so receptive to partner with USC, which was well-respected in every circle we traveled."

Creem said the Chinese were particularly interested in faculty and medical student exchange programs, joint ventures to develop medical facilities and other health care business programs, and management training programs, where Keck Medical Center of USC administrators and other USC officials could help train hospital leadership in China.

Early discussions are happening now to develop tailored health management certificate courses—and potentially even degree programs—for interested Chinese leaders.

Hospital administrators are looking to partner with the USC School of Policy, Planning and Development and the USC Marshall School of

See **CHINA**, page 3



Patients line up for care at Peking University First Hospital outpatient clinic and urgent care center. Hospitals Chief Executive Officer Mitch Creem recently met leaders of the hospital, as well as other health care officials from the region, during a 10-day trip to discuss exchange programs and joint ventures.

## USC School of Pharmacy establishes International Center for Regulatory Science

By Susan Wampler

The School of Pharmacy at the University of Southern California has established the International Center for Regulatory Science to help ensure that promising new medical products reach the marketplace faster—while also maintaining proper safety standards. The new center's research is aimed at meeting the challenges caused by increasingly complex regulations that result from rapid changes in technology and economic globalization.

"During my recent visit to universities in Asia, several academic leaders noted USC's preeminent reputation in the study of health care management and regulatory policy, specifically the regulatory science program and the USC Schaeffer Center for Health Policy and Economics," noted USC Provost and Senior Vice President for Academic Affairs Elizabeth Garrett. "The new International Center for Regulatory Sci-

ence further solidifies USC's commitment to transnational collaboration focused on the safety and effectiveness of medical products, practices and devices that enhance the well-being of our global community."

Many pharmaceutical and medical device companies face cost constraints that have only been tightened by the economic crisis. And, unfortunately, agencies such as the Food and Drug Administration (FDA) are threatened with budget cutbacks. Although the FDA collects fees from the pharmaceutical and medical device industries to review their products for approval, it also receives federal funding. Cutbacks to the FDA might have the effect of lengthening the agency's response time for reviewing much-needed products.

"The center's main goal is to help ensure medical products are made faster, safer and better," explained Frances Richmond, the center's director and a USC

See **CENTER**, page 4



# National Hispanic Health Foundation honors Keck School dean, students

By Ryan Ball

In his speech at the Fourth Annual National Hispanic Health Foundation 2011 Gala, Keck School of Medicine Dean Carmen A. Puliafito said, “Every day on my way to work I drive by the statue of Emiliano Zapata astride his horse.”

He said he always found it interesting that a Mexican revolutionary would be such a prominent figure in modern-day Los Angeles, where many people are still struggling for the basic human rights Zapata fought for at the turn of the twentieth century.

The growing income gap and disparities in the quality of health care available to Hispanic communities were cited often at the Nov. 10 event in Santa Monica. The gala honored California’s health professional student scholarship recipients, their families and those with extraordinary leadership.

The mood was celebratory as participants also recognized the strides that have been made by health care professionals dedicated to making an impact on underserved communities.

Puliafito received the foundation’s 2011 National Health Leadership Award during the event. He was joined by two Keck School students receiving scholarship awards. Veronica Ramirez, a third-year medical student whose focus is on primary care, and Melanie Elaine Castillo, a first-year scholar in the Master of Public Health Program, were among 15 medical students from around the state to be honored.

Ramirez thanked the foundation for believing in her potential to become a great physician who will make a difference in the lives of Latinos. “I am the first



Ryan Ball

From left, Melanie Castillo, first-year student in the Master of Public Health Program, Keck School of Medicine Dean Carmen A. Puliafito, and third-year medical student Veronica Ramirez celebrate at the Nov. 10 National Hispanic Health Foundation 2011 Gala, which honored them for their dedication to underserved communities.

**‘A lot of people like to blame immigration for society’s ills. But that’s not what I see.’**

**—Keck School of Medicine Dean Carmen A. Puliafito**

in my family to be pursuing a career in medicine, and I am so thankful for having their endless love and support,” she said.

Castillo remarked, “I promise to make the foundation proud of my efforts in public health.”

Cynthia Ann Telles, director of the Spanish Speaking Psychosocial Clinic at the UCLA Neuropsychiatric Institute and Hospital, told the scholarship recipients, “I know we can count on you to make a difference in the future.”

Telles was there to receive a Leadership Award along with Puliafito and Gary L. Yates, president and CEO of The California Wellness Foundation.

“We have made great strides, but there are still great needs,” Telles said. She pointed out that while Hispanics make up 38 percent of California’s population, they represent only five percent of the state’s practicing physicians.

“A lot of people like to blame immigration for society’s ills,” noted Puliafito. “But that’s not what I see.” He went on to say that ethnic and cultural diversity is one of California’s great strengths: “As physicians, we recognize that building a health care workforce which mirrors our nation’s rich cultural diversity is essential in ensuring health care for all.”

## TRANSPLANT: Heart transplant patient grateful that ‘Now, there is hope’

Continued from page 1  
SynCardia Systems Inc., allows patients with a total artificial heart to leave the hospital and live a normal life at home while waiting for a donor heart. The FDA is evaluating whether it can be safely used at home, and Bowdish felt that Lumpkins was the perfect candidate to try it out.

“Tammy had a very sick

heart,” said Bowdish, director of mechanical circulatory support at Keck Hospital of USC and the USC Cardiovascular Thoracic Institute.

He added, “We felt that replacing her heart with an artificial one was the best therapy. She was going to die in the very near future if we didn’t do anything. And, clearly, it is psychologically

good for her to go home. It has allowed her to very quickly recover.”

And recover she has. Since the surgery, Lumpkins is now able to walk without feeling fatigued and no longer needs to take medicine for her diabetes. She has even gone shopping for Christmas presents.

“I was getting pretty depressed that it wasn’t going



Sara Reeve

Tammy Lumpkins waves goodbye to the Keck Hospital of USC doctors and nurses after being discharged on Nov. 9.

to get fixed,” Lumpkins said. “Now, there is hope. I’m actually looking forward to Christmas this year.”

Doctors plan to look for a donor heart after the holidays.

“Every day, we are performing miracles for the patients we serve, and nothing makes me happier than when we are able to share these amazing stories with the entire community,” said Mitch Creem, CEO, Keck Hospital of USC. “This was an important achievement by Dr. Michael Bowdish and his entire team, and we take pride in that.”

Bowdish applied for the Freedom driver clinical trial in September, when he knew that Lumpkins would qualify.

The application was approved in less than eight weeks.

“This is what the faculty physicians of the Keck School of Medicine of USC do best,” added Carmen A. Puliafito, dean of the Keck School. “They test the boundaries of science, keeping USC at the forefront of medical research, saving lives and restoring hope.”

The artificial heart gives Lumpkins a second chance at life. And, for that, her entire family is grateful.

“It’s made me think about our future more than our past,” said Dale, Lumpkins’ husband of 22 years. “The important thing is that there is a future.”

The Weekly

Next Issue: Dec. 2

The Weekly is published for the faculty, staff, students, volunteers and visitors in the University of Southern California’s Health Sciences Campus community. It is written and produced by the Health Sciences Public Relations and Marketing staff. Comments, suggestions and story ideas are welcome. Permission to reprint articles with attribution is freely given.

**Associate Senior Vice President, Health Sciences Public Relations and Marketing:** Jane Brust

**Executive Director of Communications:** Ina Fried  
**Assistant Director of Publications:** Sara Reeve  
**Editor:** Jon Nalick

**Contributors:** Merrill Balassone, Ryan Ball, Eva Blaauw, Tania Chatila, Amy E. Hamaker, Carol Matthieu, Brian Morri, Kavita Munjal, Alison Trinidad and Susan Wampler

**Senior Vice President, University Relations:** Tom Sayles  
**Vice President, Public Relations and Marketing:** Brenda Maceo



Phone: (323) 442-2830 Fax: (323) 442-2832  
Email: hscwkly@usc.edu Web: theweekly.usc.edu RSS: <http://www.usc.edu/hscw>

## L.K. Whittier Foundation continues support for Nanobiotechnology Initiative

A team of multidisciplinary investigators working under the L.K. Whittier Foundation Nanobiotechnology Initiative at USC gathered this fall at the Keck School of Medicine for its annual retreat. To date, the L.K. Whittier Foundation has given \$5.7 million to the USC nanotechnology program.

From left, Uttam Sinha, associate professor and vice chair of otolaryngology; Mark Thompson, professor of chemistry at the USC Dana and David Dornsife College of Letters, Arts and Sciences; Mark Humayun, professor of ophthalmology, biomedical engineering, and cell and neurobiology; Timothy Triche, professor of pathology at the Keck School and Children's Hospital Los Angeles; Amir Goldkorn, assistant professor of medicine; Edward Crandall, chair of the Department of Medicine, professor of pathology and chemical engineering, and lead investigator on the project; and Richard Roberts, professor of chemical engineering and chemistry at the USC Dornsife College.

The eighth investigator involved with the initiative, Tom Chen, associate professor of neurosurgery, is not pictured.



Kavita Munjal

## CHINA: USC poised to offer training and education to country's hospital leaders

Continued from page 1

Business to make it happen.

"The Chinese have a huge need for professional training in management, health care finance, leadership—all the elements that go into actually running a health provider organization, including hospitals," said Jack Knott, dean of the USC School of Policy, Planning and Development. "There is limited professional training in China that provides this kind of professional education."

With short course programs, Chinese leadership could earn certificates in a variety of topical fields related to health care management.

Eventually, a USC master of health administration or executive master of health administration degree program could also be offered, with curriculum designed around the cultural, financial and organizational climate of China's health care market, said Knott. USC faculty and adjunct faculty would work closely with hospital administrators and physicians to help design the programs, as well as teach in them. They would also collaborate with Chinese universities and health care leaders to create the curriculum.

"The kind of training and education Mitch Creem has we feel is the exact kind of training people wanting to and already running hospitals and health care organizations in China need," Knott said. "This would be a wonderful opportunity for the schools, faculty and the hospitals at USC to collaborate with each other on a joint venture that would

be very meaningful to the University and China."

Creem said the Chinese also were interested in opportunities for Chinese patients and families to travel to the Keck Medical Center of USC for care and respite—a practice commonly referred to as "medical tourism."

It makes sense, according to Creem and other USC leaders, because of the location of the medical center: Southern California and in close proximity to densely populated Asian communities like Alhambra and Monterey Park, where family ties extend on both sides of the Pacific Ocean.

In fact, the demand for medical tourism is so high, Creem and others are preparing to develop a multispecialty international referral program that could help facilitate patient referrals from China and develop and maintain business relationships with Chinese health care providers.

Chief Medical Officer Don Larsen is working to standardize processes now focused on business development, the operational details of an international patient referral, hospitality for patients and families when they get here and aftercare when they return to China. He and Creem are looking for Mandarin-speaking staff and physicians who may be interested in serving as liaisons, clinical practitioners and in administrative roles in this new program.

"There are so many outreach efforts happening now," said Larsen. "Many of our physicians travel internationally and have a strong international presence.

It's a matter of tying all of these efforts together with patient referrals."

### An East-West Alliance

The focus on Chinese relations comes at a significant time for the University as a whole, as it works to create alliances with the Pacific Rim, a top priority under USC President C. L. Max Nikias. On the USC Health Sciences Campus, Creem is one in a large number of leaders traveling to China to help build relationships and improve health care in that country.

Earlier this spring, USC's Institute of Urology, led by founding executive director Inderbir Gill, offered a series of live-surgery symposia to more than 1,800 Chinese urologists. Then, over the summer, Larsen and Chi-Shing Zee, professor of neuroradiology at the Keck School of Medicine, among other USC physicians, attended the 2011 Oriental Congress of Radiology. Zee is leading an effort to send USC doctors to China and vice versa. He helped coordinate a visit from 12 Chinese physician leaders to Keck Hospital of USC in September.

"The medical environment in China is very sophisticated from a technological standpoint, but it needs catching up with regard to health care delivery systems," said Larsen. "The U.S. isn't a perfect model, but there are things that we can show them to help deliver more efficient care in such a large country."

For Zee, the learning experience is key. "Through these exchanges, USC physicians can also learn from Chinese [physicians]—seeing medicine from a different perspective and establishing

research collaborations," he said.

I-Jey Wang, a nurse at Keck Hospital of USC who has studied in China, agreed that increased ties could help "enhance our understanding of the Chinese people and improve our care for them. As health care professionals, we could really benefit from culturally based, individualized care."

There are also opportunities to learn from China's experiences with managed health care, according to Creem. He highlighted the country's aggressive approach toward preventive medicine and the use of technology in the home to monitor and record health.

He also emphasized China's ability to care for its massive population—estimated at 1.3 billion—for less than 4 percent of its gross domestic product. Health expenditures in the U.S. top 17 percent of the nation's total economic output.

"These partnerships we are developing are so important for the Keck Medical Center of USC," said Creem. "Not only will these relationships help us increase our reputation on a global level, but they will also inform our thinking about the services we provide and how we manage our own care."

*If you are interested in participating in an international patient referral program with China, speak Mandarin and/or have had medical training in China, contact Mitch Creem or Don Larsen via email at Mitchell.Creem@med.usc.edu or Donald.Larsen@med.usc.edu.*

*Sara Reeve contributed to this story.*

## The Weekly NEWSMAKERS

A Nov. 13 article in the *Los Angeles Times* quoted **Thomas Mack**, professor of preventive medicine and pathology at the Keck School, about government plans to stockpile an experimental smallpox drug. He called the plan "a waste of time and a waste of money."

A Nov. 12 column in *The Modesto Bee* quoted **Michael Bowdish**, assistant professor of surgery at the Keck School and director of mechanical circulatory support in the Department of Surgery at Keck Hospital of USC and the USC Cardiovascular Thoracic Institute. Bowdish implanted a total artificial heart in Tammy Lumpkins, who became the first patient on the West Coast to go home with an artificial heart on Nov. 9. The story also was covered by the *Los Angeles Times*, CBS News' Los Angeles affiliate

KCBS-TV, CW News' Los Angeles affiliate KTLA-TV, the Associated Press and Fox News.

A Nov. 11 story in *The New York Times* quoted **Geoffrey Joyce**, associate professor of clinical pharmacy and pharmaceutical economics and policy at the USC School of Pharmacy, about Pfizer's effort to block drugstore prescriptions of a generic version of the company's brand name drug Lipitor.

A Nov. 10 broadcast on ABC News' Los Angeles affiliate KABC-TV quoted **William Magee**, assistant professor of clinical surgery at the Keck School, who performed surgery on a 16-month-old Egyptian girl who had two mouths.

"We had one chance of making this right," said Magee. "We worked very hard in the pre-operative

phase to make sure that things would go well, so we're very happy with the results."

A Nov. 5 episode of MTV's "True Life" documentary series featured **Alfredo Sadun**, professor of ophthalmology and Flora L. Thornton Chair in Vision Research at the Keck School, and his patient Jeremy Poincenot. Poincenot, 20, has a genetic eye disease and is legally blind. "Of course, there is damage to the nerve but it would still be in the range of mild to moderate," Sadun told Poincenot during an eye exam. "The usual news in this disease is pretty bad. One, it's not going to get any better. Two, it's going to keep getting worse and expand out. The good news is that although most patients with this disease are profoundly blind, your blindness is not as bad as theirs."



## CENTER: Chief aim is to speed medicines' approvals while ensuring safety

Continued from page 1

School of Pharmacy professor. "We're concerned with the successful transition from laboratory discoveries to the ultimate outcome of a patient's treatment."

Richmond and her collaborative team at USC believe the International Center for Regulatory Science's mission is vital, and the timing for its launch critical. The center will work with companies to understand and improve best practices to help their FDA

submissions proceed more quickly. The center also will facilitate communication between industry and government regulators.

"We'll work to understand the problems facing both sides—the regulator and the industry—that could become bottlenecks to product development," Richmond said.

Since the marketplace is now global, the center will work not only with the FDA and U.S. companies, but also with their counterparts

around the world in increasing speed while ensuring safety for medical products. Memoranda of understanding with programs in China and Korea, as well as visiting scholar opportunities, complement exchange programs for students who are pursuing education in regulatory, quality and clinical sciences.

"The center promises to be a proactive voice impact-

ing how pharmaceutical and medical device products are brought to market," said School of Pharmacy Dean R. Pete Vanderveen. "The university offers tremendous collaborative opportunities, including our own Leonard D. Schaeffer Center for Health Policy and Economics that will surely work with Dr. Richmond and her group."

The Schaeffer Center will

house the School's Quintiles Chair in Pharmaceutical Development and Regulatory Innovation, made possible by a gift from Quintiles Transnational. A search for the holder of this chair is currently underway, and collaboration with the eventual chair and the International Center for Regulatory Science presents unique opportunities for research.

## Calendar of Events

This Calendar of Events is also online at [www.usc.edu/hscscalender](http://www.usc.edu/hscscalender) for the Health Sciences Campus community

### Monday, Nov. 21

**9 a.m. – 1 p.m.** ZNI Mini-Symposium. "Advancing Biomedical Technologies," various speakers. ZNI 112. Info: (323) 442-2144

**Noon.** KSOM Research Seminar. "Neural Stem and Progenitor Cells in Human Development," Arnold Kriegstein, UC San Francisco. NRT Aresty Auditorium. Info: (323) 442-7732

### Tuesday, Nov. 22

**8:30 a.m. – 5:30 p.m.** Molecular Microbiology and Immunology and Institute for Emerging Pathogens and Immune Diseases Symposium. "Frontiers in Immunity and Cancer Vaccines with Nobel Laureate Dr. Rolf Zinkernagel," various speakers. NRT Aresty Auditorium. ESVP: [usc.edu/esvp](http://usc.edu/esvp) (code: immunity22). Info: (323) 442-1710

### Tuesday, Nov. 29

**Noon.** Deans Translational Medicine Seminar. "The Art and Future of Medical Technology Innovation," Josh Makower, Stanford. NRT Aresty Auditorium. Info: (323) 442-7732

**1 p.m.** ZNI Lecture. 2nd Annual Zach Hall Lecture honoring, in person, Zach Hall. ZNI 112. Info: (323) 442-2144

### Friday, Dec. 2

**8:30 a.m.** Center for Lung Biology Research Seminar. "New Perspective on the Distribution of Pulmonary Blood Flow and Ventilation," Robb

Glenny, University of Washington. IRD 732-734. Info: (323) 226-7923

### Monday, Dec. 5

**11:40 a.m.** Keck School Research Advancement: Faculty Town Hall Meeting. Various speakers. NRT Aresty Auditorium. Info: (323) 442-7874

**11:45 a.m.** Southern California Environmental Health Sciences Center Seminar. "Adult Glioma: Genome Wide Association Studies Expand Research Horizons," Margaret Wrensch, UC San Francisco. SSB 116. Info: (323) 442-7732

### Tuesday, Dec. 6

**Noon.** Psychiatry Grand Rounds. "The LORS Enabled Dialogue: A Collaborative Intervention to Promote Insight and Recovery in Psychotic Disorders," Sharon Sousa, University of Massachusetts, Dartmouth. ZNI 112. Info: (323) 442-4065

### Wednesday, Dec. 7

**2 – 4 p.m.** Center for Excellence in Research Workshop. "Developing NIH Grant Applications," Steve Moldin, USC. NML West Conference Room. Info: (213) 740-6709

### Friday, Dec. 9

**8:30 a.m.** Center for Lung Biology Seminar. "Getting the Most from Pleural Fluid Analysis," Steven Sahn, Medical University of South Carolina. IRD 732-734. Info: (323) 226-7923

**Notice:** Deadline for calendar submission is 4 p.m. Monday to be considered for that week's issue—although three weeks' advance notice of events is recommended. Please note that timely submission does not guarantee an item will be printed. Send calendar items to *The Weekly*, KAM 400 or fax to (323) 442-2832, or email to [ebalauw@usc.edu](mailto:ebalauw@usc.edu). Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number for information.



### AWARDS RECOGNIZE KECK SCHOOL OF MEDICINE'S BEST AND BRIGHTEST—

Student leaders from the Keck School of Medicine were recognized at an awards ceremony on Oct. 19 for their achievements in the classroom and community. Dean Carmen A. Puliafito hosted the ceremony in the Edmondson Faculty Center and honored 47 members of the Classes of 2013 and 2014. A full list of honorees is online at <http://tinyurl.com/6na3n8n>. Pictured, Caitlin Carroll (right) hugs her mother, Tamie, at the Oct. 19 event.

## USC researchers launch collaboration on STEM education

By Merrill Balassone

It's become an urgent mantra: The United States must produce more scientists and engineers to maintain its edge in an increasingly competitive global economy.

On Nov. 14, USC researchers and administrators from seemingly disparate disciplines strategized how to foster interest among the nation's students in science, technology, engineering and math—the so-called STEM fields—and encourage the pursuit of careers that will keep the nation on the forefront of innovation.

The daylong summit was the debut of the USC STEM Education and Research Consortium, a new initiative to bring the university's interdisciplinary research to bear on concerns about the nation's future STEM workforce.

Academic deans participating in the discussion included Carmen A. Puliafito of the Keck School of Medicine of USC, Karen Symms Gallagher of USC Rossier School of Education, Howard Gillman of the USC Dornsife College of Letters, Arts and Sciences, and Yannis C. Yortsos of USC

Viterbi School of Engineering.

The speeches were interspersed with small group brainstorming sessions focusing on future collaborations on STEM education and research across the university. Attendees included USC STEM active faculty members and officials from local public schools, community organizations, federal

agencies and national foundations.

John Brooks Slaughter, who holds a joint appointment at Rossier and Viterbi, helped develop the consortium. He said the discussions were a starting point for USC's future work in advancing the nation's capacity for innovation in science and technology.

USC Health Sciences  
Public Relations and Marketing  
1975 Zonal Ave. KAM 400  
Los Angeles, CA 90033

Non-Profit Organization  
U.S. POSTAGE PAID  
University of Southern California



## In case of an emergency...

**Call the Emergency Information Phone: (213) 740-9233** The emergency telephone system can handle 1,400 simultaneous calls. It also has a backup system on the East Coast.

**Visit the USC Web: <http://emergency.usc.edu>** This page will be activated in case of an emergency. Backup Web servers on the East Coast will function if the USC servers are incapacitated.