

USC breaks ground on cutting-edge stem cell center

By Meghan Lewit

USC is the first of 12 institutions funded by the California Institute for Regenerative Medicine (CIRM) to break ground formally on a facility wholly dedicated to stem cell research.

Groundbreaking ceremonies for a building dedicated to stem cell research were held Sept. 3 on the Health Sciences Campus. The event featured prominent local and state officials among 300 invited guests.

The \$80 million Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC is the product of an innovative public-private partnership between voter-created CIRM, the Keck School of Medicine of USC and the Eli and Edythe Broad Foundation, a Los Angeles-based national philanthropy focused on advancing entrepreneurship for the public good in education, science and the arts.

"We have the best scientists and researchers right here at USC. And with California leading the way in stem cell advances, it's only logical that we create the institutions and facilities around the campus that are going to continue to accelerate stem cell research here in our back yard," said Eli Broad, founder of the Broad Foundation.

Carmen A. Puliafito, dean of the Keck School of Medicine, called the groundbreaking "a very important step in a mission set by the voters of California to place the state at the forefront of stem cell research."

Once completed, the five-story Broad CIRM Center will house basic and clinical researchers working collaboratively on stem cell research in three categories: basic and discovery stem cell research, preclinical research and preclinical development, and clinical research.

"What USC, Eli and Edythe Broad and the Keck Foundation are doing here is not just important to USC, it's important to the entire city and the region as well," said Los Angeles Mayor Antonio Villaraigosa. "Whether it's the effort to invest in infrastructure, or the effort to make L.A. a real center of progress in stem cell research, I want to acknowledge and thank [the Broads] in these efforts."

The new 80,000-square-foot facility will become an integral part of a

"research triangle" on USC's Health Sciences Campus, working with the Zilkha Neurogenetic Institute and the Harlyne J. Norris Cancer Research Tower.

CIRM was established when voters passed Proposition 71 in 2004 to borrow and spend \$3 billion over 10 years

to support stem cell research. The institute awarded USC nearly \$27 million for the new facility earlier this year, supplementing a \$30 million gift made in 2006 by the Broad Foundation. The balance of funding will be raised from private philanthropy.

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Above, from left: Center Director Martin Pera, USC President Steven B. Sample, Eli Broad, Edythe Broad, Mayor Antonio Villaraigosa and Dean Carmen A. Puliafito symbolically break ground on Sept. 3 for the new stem cell research building.

A white coat bestows privilege and responsibility on students



Along with her white coat, Keck School of Medicine first-year student Kimberly DeQuattro received a copy of "On Doctoring," a literary anthology exploring the practice of medicine.

By Sara Reeve

A tradition first introduced to health science schools across the country in 1989, the White Coat Ceremony recognizes first-year students' entry into medical professions and highlights the immense responsibility that comes with that white coat.

Recently, USC's Keck School of Medicine, the School of Pharmacy, the School of Dentistry, and Biokinesiology and Physical Therapy, a division of the School of Dentistry, held their white coat ceremonies to welcome the first-year students.

The Keck School's class of 2012 and honored faculty marched into the Harry and Celesta Pappas Quad to the strains of "Conquest" on Aug. 15 for the annual Faculty Teaching Awards and White Coat Ceremony.

"This is an unparalleled journey that will transform you and equip you with tools that will allow you to exert the greatest impact on the lives of human beings," said Henri Ford, vice dean for medical education. "No other profession can boast such an impact."

Dean Carmen A. Puliafito welcomed the students' family and friends, noting their part in the success of the incoming class.

"Congratulations to all of you for raising and cultivating these wonderful future physicians," Puliafito said. "It is such a great contribution to our society and to the world because we know that these individuals will contribute greatly to the welfare of tens of thousands of individuals."

Keynote speaker Peter Crookes, associate professor of surgery and 2008 Humanism in Medicine Award Recipient, focused his remarks on the honor and responsibility that comes with a white coat.

"Right at the core of this wonderful profession of ours, is the recognition that we are privileged to get right at the center, right at the core of people's lives, where they hurt, where they feel their deepest emotions," he said.

One hundred and eighty seven new students in the School of Pharmacy received their white coats on Aug. 21. The keynote speaker was Michael Wincor, associate professor and director of external programs at the School of Pharmacy, and Associate Professor Julie Dopheide administered the Pharmacists' Oath to the new students.

The USC School of Dentistry White Coat Ceremony, held Sept. 5 in Bovard Auditorium, was a proud occasion for each of the school's 221 first-year

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\$1.7 million NIH grant awarded to study acetaminophen poisoning

By Sara Reeve

Acetaminophen, commonly known as Tylenol, is one of the most widespread pain relievers on the market, but acetaminophen poisoning is also the single most important cause of acute liver failure in the U.S.

The balance between therapeutic dose and overdose is complicated by the fact that people can process toxins in the liver in diverse ways: an overdose can cause slight hepatic injury in one individual, while that same dose can cause complete liver failure and even death in another.

Zhangxu Liu, Keck School assistant professor at the Research Center for Liver Diseases, recently received a \$1.7 million, five-year grant from the National Institutes of Health (NIH) to study how differences in the liver's innate immune system can impact how it responds to acetaminophen toxicity.

"My studies suggest that activation of the liver innate immune system might be an important determinant of an individual's risk to develop severe liver injury caused by acetaminophen," said Liu. "A detailed understanding of precisely what activates the innate immune system and the sequence of events mediated by the innate immune system that lead to severe liver injury may provide therapeutic strategies for acetaminophen hepatotoxicity in humans."

"Acetaminophen toxicity is a significant cause of preventable death," said John Nicoloff, senior associate chair of scientific affairs at the Department of Medicine. "Zhangxu Liu's research should help us understand why one person gets into trouble at a certain dosage level and another person does not."

The project is expected to shed light on how the liver responds to various drug-induced injuries, providing new data to the medical and pharmaceutical communities.

"Drug-induced hepatotoxicity is a major clinical problem leading to discontinuation of drug development and withdrawal of drugs from the market," said Liu. "It is hoped that mechanistic insights from these studies will be relevant to understanding the basis for susceptibility to idiosyncratic drug-induced liver disease."

"Tylenol damage is a model for other liver problems," said Nicoloff. "As doctors, we need to know why some people have liver problems and some do not."

WHITE COAT: Ceremonies focus on students' responsibility and ethics

Continued from page 1

students. Family and friends cheered and applauded as students recited their oath and donned their white coats to mark their entrance into the oral health profession.

School of Dentistry Dean Harold Slavkin administered the oath, shared some of the School of Dentistry's 111-year history and spoke of the school's ultimate goal of producing knowledgeable, trusted dental professionals. "Our primary mission is to develop people," he said. "Ethics and professionalism are the foundations of our journey."

Anahita Taraporewalla, School of Dentistry associated student body president, stated that serving the community as an oral health professional can change attitudes and lives for the better. "One person at a time, we can make a difference," she said.

The Division of Biokinesiology and Physical Therapy welcomed 95 members of the Class of 2010 during the Academic Convocation and White Coat Ceremony on Aug. 28. This was the division's fifth annual White Coat Ceremony, a tradition that "celebrates your true entry into our profession," said Clinical Instructor Robin Burks, who presented the Invited Address.

Division Associate Dean and Chair James Gordon opened the ceremony with a welcome address to the gathered students and their family and friends.

In groups of five, the students took the stage to be coated by faculty, as friends and family cheered and applauded.

Burks offered these parting words to the Class of 2010: "Put on your white coat, roll up your sleeves and make the world a better place."



David Peregrino

Top: New Pharm.D. students recite the Pharmacists' Oath at the School of Pharmacy White Coat Ceremony on Aug. 21. Bottom: The Division of Biokinesiology and Physical Therapy welcomes 95 members of the Class of 2010 Aug. 28 at the Health Sciences Campus Quad.

USC Master of Public Health Program awarded re-accreditation

By Jon Nalick

The USC Master of Public Health Program recently received full re-accreditation from the Council on Education in Public Health (CEPH) Board of Councilors.

In June, CEPH, a Washington, D.C.-based agency that accredits schools of public health and graduate public health programs, awarded USC's program accreditation for seven years—the maximum allowed.

"This endorsement by CEPH is evidence that our pro-

gram is thriving and meeting the challenges of training a new generation of public health leaders and scholars," said Thomas W. Valente, director of the Master of Public Health Program. "It shows the staff, students and faculty have done a tremendous job building and maintaining an excellent academic program."

USC's two-year program trains about 100 students each year to assess community health needs and to design, implement and evaluate health promotion programs for diverse populations.

ETCETERA

The Jewish Family Service (JFS) of Los Angeles, a local nonprofit charity, recently honored two USC faculty members for their service to the community and work at the Aleinu Family Resource Center.

The JFS honored **Robert Adler**, professor of pediatrics and vice chair of the Department of Pediatrics at the Keck School of Medicine, and **Ernest Katz**, professor of clinical pediatrics and psychology, with joint

appointments at the Keck School and the College of Letters, Arts, & Sciences.

The pair were named "Aleinu Heroes of Hope," in recognition of "their compassion and leadership in response to the Jewish Community and for their dedication to the Aleinu Family Resource Center."

Aleinu is a Jewish Family Service program that reaches out to the Orthodox Jewish community to offer

culturally sensitive resources. It provides therapy and intervention services for children, teens, adults, couples and families who need support in times of crisis.

JFS programs serve more than 60,000 people a year to help them overcome poverty, hunger, family violence, homelessness, substance abuse, families in crisis, resettlement of recent immigrants and aging with dignity.

New campus office aims to help with on-the-job problems

A new satellite office is now open on the Health Sciences Campus to provide faculty, staff and students with easier access to the services of the USC Employee Relations Office and the Office of Equity and Diversity.

The new location in the Parkview Medical Building on San Pablo Street is staffed full-time with representatives from both offices: Roxanne Roske, senior personnel investigator for the Office of Equity and Diversity, and Employee Relations Manager Kathleen Warner.

The satellite office will fill the need for a convenient, easier to schedule meeting place when HSC employees or students need to meet with University Park staff from either office.

"Given the increase in the number of employees located on the Health Sciences Campus, and the exciting expectations for continued growth, this is the right time for us to develop a stronger presence here," explained Janis McEldowney, associate senior vice president of administrative operations. Along with McEldowney, the establishment of a satellite office was led by LeVetta Hudson, director of employee relations, and Jody Shipper, director

of equity and diversity.

"We are very excited to have an on-site presence," said Hudson, "and we look forward to providing service and support in a centralized location for staff here at HSC." A weeklong Open House for HSC staff will be Sept. 22-26. Employees will receive an invitation in campus mail.

The Employee Relations Office handles resolution of workplace problems for staff employees and manages the Staff Complaint Procedure to help resolve employment-related disputes.

The Office of Equity and Diversity investigates complaints by faculty, staff, students and applicants who believe they have been harmed by sexual harassment, discrimination, harassment related to issues that have protected class status, and retaliation concerns, and is also the Title IX compliance office for the university.

The HSC office is located in suite B308 in the Parkview Medical Building, 1420 San Pablo Street. The office hours are Monday through Thursday, 8:30 a.m. to 5 p.m.; and Friday 8:30 a.m. to 1 p.m. The office telephone number is (323) 442-2020.

STEM CELL: New building will help advance research

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"We are proud to honor Eli and Edythe Broad for their vision and generosity, which paved the way for this extraordinary facility," Puliafito said. "The facility will be a vital addition to our campus, creating the space for research that holds great promise for advances in patient care."

The groundbreaking event and luncheon featured a number of prominent guests, including Eli and Edythe Broad, CIRM President Alan Trounson and Robert Klein, chairman of the institute's governing board. USC President Steven B. Sample, USC Provost C. L. Max Nikias, Dean Puliafito, Center Director Martin Pera and Los Angeles Mayor Villaraigosa also attended.

The Keck School of Medicine established itself as a leading site for stem cell innovation with the 2006 recruitment of Pera.

An internationally recognized pioneer in the development of embryonic stem cells, Pera has since recruited seven top researchers from around the world who collaborate with USC faculty colleagues at Childrens Hospital Los Angeles and other regional institutions in SC3, the Southern California Stem Cell Scientific Collaboration.

The center will be a regional hub for the collaboration, which also includes City of Hope, the University of California, Santa Barbara, California Institute of Technology and the House Ear Institute.

"On behalf of the Governing Board

of the California Institute for Regenerative Medicine (CIRM), established by Proposition 71, and on behalf of all of the patient families of California, I commend USC's leadership in creating a world class stem cell research institute, which will be an asset globally in driving stem cell research and therapy development forward to the clinic," said Robert Klein, chairman of the Governing Board of the CIRM. "USC's leadership represents a model for the nation and the world on mobilizing private sector donations and institutional commitments to this tremendous new frontier of scientific and medical research."

To date, USC researchers working on the Health Sciences campus and at

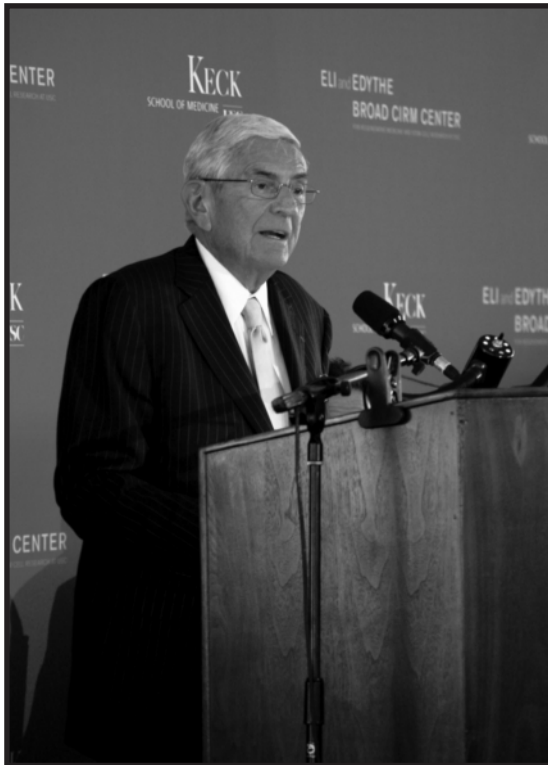
Childrens Hospital Los Angeles have received \$60 million in stem cell grants from CIRM, ranking USC third in the state in such funding, following Stanford University and the University of California, San Francisco.

"The center will provide researchers with outstanding space and facilities for state-of-the-art research aimed at the treatment of a vast spectrum of diseases," Pera said. "The potential applications for stem cell research and regenerative medicine are breathtaking. This new building will enable USC researchers and their colleagues to convert exciting fundamental discoveries into new therapies."

USC's stem cell scientists already are making great strides toward breakthroughs in areas of cancer, cardiology, liver disease, neurology and ophthalmology. Researchers are:

- gathering substantive evidence that certain stem cells are predisposed to becoming cancer cells;
- working to identify cells capable of reversing damage from devastating eye diseases, cardiovascular disease and liver disease;
- developing new drugs that can accelerate tissue repair or stop cancer stem cells from growing; and
- investigating the possibility of making stem cell lines from adult tissue with all the capabilities of embryonic stem cells.

For more information on the Broad CIRM Center and stem cell research at USC, visit stemcell.usc.edu.



Philanthropist Eli Broad discusses his support for stem cell research at the groundbreaking for the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research.

Jon Nalick

School of Dentistry offers accelerated orthodontics

By David Peregrino

Researchers at the USC School of Dentistry say they have improved upon a surgical procedure that rapidly straightens teeth, delivering a healthy bite and attractive smile in months instead of years.

Led by Hessam Nowzari, director of the USC Advanced Education in Periodontology program, the researchers have published the first case study of the successful use of a patient's own bone material for the grafting necessary in the accelerated orthodontic surgical procedure. The report appears in the May 2008 issue of the *Compendium of Continuing Education in Dentistry*.

Accelerated orthodontics is gaining popularity as a way for patients, particularly adults with mature bones, to speed up the time it takes to straighten misaligned bites and fix crowded teeth. Noted periodontist Tom Wilcko, who developed the procedure at his Erie, PA practice, offers courses in the procedure, trademarked as "Wilckodontics."

For this case study, the USC dentists used periodontally accelerated osteogenic orthodontics. With this technique, a periodontist or oral surgeon uses special instruments to score the bone that holds the teeth in place and then applies bone graft material over the grooves. The procedure is done under local anesthetic in the dental office.

Afterwards, as the bone begins to heal, it softens slightly, allowing teeth to be moved into alignment with dental braces in a matter of months, rather than the years required with traditional orthodontics. The cost for accelerated orthodontics typically ranges from \$10,000 to \$15,000, depending on the course of treatment.

Prior to the USC study, the bone graft material used for this procedure was bovine bone and bioactive glass particles to help the bone strengthen as it healed.

Nowzari said that his team believed they could improve the technique by using the patient's own bone.

"Given a choice for grafts, nothing is better than a patient's own tissue," Nowzari explains. "It encourages new, healthy bone formation in the grafted area. It's very safe and eliminates the risk of any disease transmission."

Nowzari said that surgery to accelerate the movement of teeth is not new—dentists have been attempting it since the 1800s. But techniques and the science behind the surgeries have improved in recent years and are being investigated.

"We're continuing to investigate the technique with other patients as part of our advanced periodontics program curriculum," Nowzari said.

Calendar of Events

The HSC Calendar is online at www.usc.edu/hsc/calendar

Sunday, Sept. 14

1 P.M. "Healthy Minds Across America," Various speakers. NRT Aresty Conference Aud. Info: (800) 829-8289

Tuesday, Sept. 16

NOON. Cancer Ctr. Grand Rounds. "Fasting and Growth Factor-dependent Differential Stress Resistance to Enhance Cancer Treatment," Valter Longo, USC. NOR 7409. Info: (323) 865-3147

Wednesday, Sept. 17

8:30 A.M. "Mechanical Ventilation I," Ricardo Suarez, USC. GNH 11-321. Info: (323) 226-7923

NOON. Renal Grand Rounds Conference. "Renal Stones and Lithotripsy," Matthew Dunn. GNH 6441. Info: (323) 226-7307

3 P.M. Keck Postdoctoral Assoc. Ice Cream Social. Free ice cream for all post-docs. HSC Quad. Info: (323) 442-2767

Thursday, Sept. 18

NOON. "Genetic and Metabolic Control of the Folate-dependent Methionine Cycle," Barry Shane, UC Berkeley. HMR 100. Info: (323) 442-1283

NOON. USC Ctr. for Excellence in Research. "Making a Big Book out of a Big (or not so big) Idea: Paths to Academic Publication," William Deverell, USC. UPC: CUB 329. Info: (213) 740-6709

5 P.M. "Immune Thrombocytopenic Purpura," Naveen Doki, USC. NOR 4444. Info: (323) 865-3950

Friday, Sept. 19

8:30 A.M. "Pleural Catheter/Drainage Systems," Anthony Pureza, USC. GNH 11-321. Info: (323) 226-7923

NOON. Pharmacology and Pharmaceutical Sciences Seminar. "AMPK, Regulation of Liver Gene Expression, and Type 2 Diabetes," Jian Yang, Univ. of South Alabama. PSC 104. Info: (323) 442-2184

Monday, Sept. 22

4 P.M. "Transplant Conference," Various faculty. UH Salerni Rm. Info: (323) 442-9093

Tuesday, Sept. 23

NOON. CTSI Research Development Workshop. "Real-time Assessment of Regional and Systemic Hemodynamics: A Tool for Translational and Clinical Research Enquiry," Various speakers. KAM B21/23. Info: (323) 361-8681

NOON. Cancer Ctr. Grand Rounds. "The Biology of ARORs," Gerhard Coetzee, USC. NOR 7409. Info: (323) 865-3147

Wednesday, Sept. 24

8:30 A.M. "ARDS," Janice Liebler, USC. GNH 11-321. Info: (323) 226-7923

NOON. "FGF23: Friend or Foe in Chronic Kidney Disease?" Alan Yu, USC. GNH 6441. Info: (323) 226-7307

Thursday, Sept. 25

NOON. "The ABC's of BHMT's," Timothy A. Garrow, Univ. of Illinois. HMR 100. Info: (323) 442-1283

Friday, Sept. 26

7:30 A.M. USC Alzheimer Disease Research Center Symposium. "Basic Mechanisms and Treatment Strategies for Alzheimer Disease," Various speakers. HNRT Aresty Conf. Ctr.

8 A.M. Pathology and Laboratory Medicine Grand Rounds. "Using Gene Expression Microarray Technology to Diagnose Tissue of Origin," W. David Henner, Pathwork Diagnostics, Inc. NOR 7409. Info: (323) 442-1180

New LAC+USC clinic tower to open Sept. 15



Jon Nalick

OPENING FOR BUSINESS—The new seven-story LAC+USC Medical Center clinic tower is scheduled to open to the public on Sept. 15. The clinic tower, which houses outpatient clinics, pharmacy, radiation oncology, laboratory and diagnostic neurology, is the first phase of the new replacement facility to open. All clinic appointments scheduled for Sept. 12 have been canceled, and the move into the new clinic tower will take place Sept. 12 and Sept. 13.

Professor receives prestigious Poiseuille Medal

Herbert J. Meiselman, professor and vice chair of physiology and biophysics, recently received the prestigious Poiseuille Medal from the International Society of Biorheology.

The award is given every three years to recognize an individual's important and continuous contributions to biorheology, a discipline that deals with the deformation and flow of matter of biological materials including substances such as biopolymer solutions, blood and blood cells, bone, cell suspensions, gels, skin and tissue.

The award honors Meiselman's career in biorheology and clinical hemorheology—a related field that focuses on the behavior of blood and blood components—which spans a period of over 45 years, including a doctoral program at MIT, post-doctoral training at Caltech, and service since 1972 as a faculty

member at the Keck School.

Meiselman, who is president-elect of the International Society for Clinical Hemorheology, has published over 200 peer-reviewed papers, edited three books including a 2007 *Handbook of Hemorheology and Hemodynamics*, and has previously received the Fahraeus Award from the International Society for Clinical Hemorheology.

His current research interests include the mechanisms involved in red blood cell aggregation and cell-cell adhesion, the circulatory correlates of abnormal blood rheology, sickle cell disease, and comparative hemorheology.

Meiselman accepted the award and the gold Poiseuille Medal at the 13th International Congress on Biorheology held in July at Penn State University, State College, PA.



Herbert J. Meiselman

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 HSC Weekly, KAM 400 or fax to (323) 442-2832, or e-mail to eblaauw@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.

HSC NEWSMAKERS

Complete listing at: www.usc.edu/uscnews/usc_in_the_news/

A Sept. 4 *Los Angeles Times* article quoted Keck School Dean **Carmen A. Puliafito** about the groundbreaking of the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC. KABC-TV interviewed stem cell expert **Martin Pera**, and Univision, KPCC-F.M., City News Service, and the *Los Angeles Business Journal* also covered it.

A Sept. 4 *U.S. News & World Report* article quoted cardiologist **Robert Kloner** about how erectile dysfunction can be a harbinger for heart disease.

An Aug. 31 *USA Weekend* article highlighted research led by USC suggesting that fasting can strengthen cells to better withstand the toxic effects of chemotherapy.

An Aug. 30 *Los Angeles Times* obituary remembered **Robert Maronde**, a USC alumnus and professor emeritus of the Keck School. The *San Francisco Chronicle* also remembered Maronde.

On Aug. 26, KABC-TV ran an interview with vascular surgeon **Fred Weaver** and nephrologist **Mitra Nadim**

about clinical trials on a device that lowers blood pressure.

An Aug. 24 *Los Angeles Times* article quoted surgeon **Howard Kaufman** about incontinence.

An Aug. 23 *Los Angeles Times* article quoted CHLA radiologist **Vicente Gilsanz** about how X-rays could determine if the Chinese Olympic gymnasts lied about their ages.

In August, diabetes experts **Anne Peters** and CHLA's **Francine Kaufman** were featured in the show "Diabetes: Demystifying the Myths," on Discovery Health.

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