

## Building a ‘bionic suit’ to restore walking

By Erica Rheinschild

People with paraplegia due to spinal cord injury may eventually get a chance to suit up, walk out the door and feel the ground beneath their feet, thanks to a five-year, \$8 million Cyber-Physical Systems Frontier grant from the National Science Foundation. Awarded to three Southern California institutions — the Keck School of Medicine of USC, the University of California, Irvine (UCI) and Caltech — the grant will fund the development of a fully implantable brain-machine interface device that aims

to restore the ability to walk and restore lower extremity sensation. The brain-machine device will transmit commands to a robotic exoskeleton for walking that will, in turn, transmit sensory information back to the brain.

“The restoration of walking is a very significant goal for patients after spinal cord injury,” said Charles Liu, MD, PhD, professor of clinical neurological surgery and neurology and principal investigator at the Keck School, and director of the USC Neurorestoration Center. “New solutions are possible with the

recent advances in neuroprosthetics and regenerative medicine. We’re at the point where we can create solutions similar in concept to Tony Stark’s Iron Man suit, which is neurally integrated with him. Tony Stark’s brain interacts with the suit, and the suit interacts with his brain. Everything the suit feels, his brain feels. That’s the idea.”

The project will draw on the combined expertise of all the collaborating investigators. The first phase of the project will be to decode the signals generated

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“The restoration of walking is a very significant goal for patients after spinal cord injury.”

— Charles Liu, MD, PhD



From left, C. L. Max Nikias, Mark Humayun, Edward Roski, Gayle Roski, Rohit Varma and Tom Jackiewicz are seen during the Sept. 7 unveiling of the remodeled USC Roski Eye Institute clinical space on the Health Sciences Campus.

## USC Roski Eye Institute fetes new space for patient care

By Leigh Bailey

University and hospital leaders gathered during a lively ceremony recently to celebrate the opening of the remodeled clinic space for the USC Gayle and Edward Roski Eye Institute. Keck School of Medicine of USC Dean Rohit Varma, MD, MPH, was joined by USC President C. L. Max Nikias, PhD, USC Trustee Edward Roski and Gayle Roski during the Sept. 7 celebration on the fourth floor of Healthcare Center 4.

Varma, who also serves as director of the USC Roski Eye Institute, presented opening remarks.

“This is a very special day for us because we are unveiling our newly remodeled eye clinic, and for this, we are deeply grateful to Gayle and Ed Roski, whose gift has allowed us to be in this new space,” Varma said.

Nikias added, “Together, we have celebrated

many successes at the USC Roski Eye Institute, but today stands out as particularly special. This beautifully remodeled clinic is all about vision — saving it, preserving it and restoring it. You, the doctors and the staff who bring this clinic to life, stand at the fore of these important efforts and are the finest in the nation.

“Dean Varma and Dr. Mark Humayun, the clinic’s co-directors, have assembled a team of doctors and staff who are expert at lifting the clouds from our vision,” Nikias continued.

Nikias then expressed his profound gratitude to the Roskis for their vision and generosity.

Gayle Roski, a noted artist in addition to her work as a philanthropist, was treated for cataracts by Keck Medicine of USC ophthalmologists, and as a result, “she and Ed

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## Pasadena Magazine honors top doctors in annual ranking

Keck Medicine of USC physicians continue to be recognized among the best in the region in an annual ranking of doctors in the San Gabriel Valley.

In all, 364 physicians have been included in *Pasadena Magazine’s* 2017 roster of “Top Doctors,” representing 36 different specialties, including oncology, radiology, neurology, orthopaedic surgery, ophthalmology and cardiology.

“This recognition is a valuable acknowledgement of our

efforts to provide exceptional patient care with world-class physicians,” said Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine. “We are proud of our physicians and very happy that their accomplishments are being recognized in our community.”

The list includes faculty physicians from the Keck School of Medicine of USC, 45 of whom practice at Children’s Hospital Los Angeles or

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**USC NORRIS UPDATE:** Alan Wayne, professor of pediatrics (clinical scholar) at the Keck School of Medicine of USC, gave his first town hall as interim director of the USC Norris Comprehensive Cancer Center on Sept. 12 in Aresty Auditorium. The session was opened by Rohit Varma, dean of the Keck School, who paid tribute to former director Stephen Gruber, professor of medicine and preventive medicine, and Jane and Kris Popovich Chair in Cancer Research. Wayne’s discussion was wide-ranging, providing an overview of both clinical and research activities at USC Norris, as well as insight into recent strategic planning efforts for both the clinical enterprise and the Keck School.



Leaders from Keck Medicine of USC volunteer to serve meals during a recent dinner at the Dolores Mission.

## Employees serve community members at Dolores Mission

By Virginia Baca

Faculty and staff from across Keck Medicine of USC are coming together to provide healthy meals to our local community.

Each month more than 20 staff members, physicians and leaders from the Keck School of Medicine of USC and Keck Medicine spend an afternoon working together to purchase, prepare and serve dinner to more than 60 beneficiaries of Proyecto Pastoral at Dolores Mission.

Proyecto Pastoral is a local nonprofit organization associated with the Dolores Mission, which offers an elderly women’s shelter and adult men’s shelter.

“Preparing the meals is not only a great opportunity to give back to the community, it is a chance to roll up your sleeves and work side by side with colleagues from across our medical enterprise,” explained Paul Craig, chief administrative officer for Keck Medicine.

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# Program offers therapy for older adults, families

By Adriana Cho

Older patients with a mental health diagnosis may feel helpless if traditional weekly therapy no longer meets their needs. For these patients and their families, a holistic therapy program at USC Verdugo Hills Hospital offers a solution.

Stepping Stones is a geropsychiatric program at USC-VHH that is designed to help relieve emotional and personal distress for individuals age 50 or older.

“Caring for our patients’ mental health is a priority,” stated Keith Hobbs, MBA, CEO of USC-VHH. “The Stepping Stones program is an important part of our push to provide holistic medical care for the many communities that surround our medical center, and we will continue to expand the scope of the program’s offerings to reflect the needs of the area.”

Through inpatient and outpatient programs, the experts at USC-VHH employ a variety of therapeutic options, including medical management, cognitive behavioral therapy, psychoanalysis, art, music and movement therapy to help patients.



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Stepping Stones is a holistic geropsychiatric therapy program that is designed to help relieve emotional and personal distress for individuals age 50 or older.

The inpatient unit can accommodate 24 patients, while the outpatient program currently serves 40 patients, with capacity for 75. Outpatients generally attend three or more therapy hours a day for two to four days a week, depending on the need of the patient, for a duration of two to six months.

Stepping Stones provides one-on-one and small group therapy to help patients who are uncomfortable in larger group settings. With techniques like recreational therapy, which involves going for walks and getting outside, patients also slowly learn to socialize again and interact with others.

“Socialization is a huge part of the process in getting patients back into having normal relationships with other people,” said Luke Jackson, MBA, JD, program director of Stepping Stones. “That’s a really important part of their recovery.”

The program continues to strive to improve treatment methods and patient outcomes. The nursing staff uses communication techniques developed specifically for patients with mental health diagnoses or cognitive impairment. The existing forms of therapy, such as music, help patients go beyond passivity to being more interactive.

Stepping Stones also works to help patients with dementia regain their memories through creative therapy methods and allow them maintain as much independence as possible. For example, memories often can be accessed through smell, music or movement.

“There’s something magical about the whole thing,” Jackson said. “It’s so rewarding to see people get better.”

# Psychologist speaks on creating bisexual-positive clinical practice

By Amanda Busick

Noted psychologist, educator and advocate Mimi Hoang, PhD, spoke on the importance of creating a positive, accepting environment for bisexual patients in clinical practice and everyday life before a capacity crowd recently on the Health Sciences Campus.

Using historical information, statistics, research and her own experience as a bisexual clinician and LGBTQ community leader, Hoang, a professor of clinical psychology at Antioch University Los Angeles and staff psychologist at Loyola Marymount University, led the audience through some of the obstacles that bisexual people face.

The Sept. 13 event was the latest installment in the Diversity Seminar Series, presented by the Keck School

of Medicine of USC’s Office of Diversity and Inclusion.

Hoang listed common misconceptions, including that bisexuality equals polyamory or promiscuity; that bisexuality is just a phase; and that bisexual people don’t maintain their orientation when in a monogamous relationship. She likened bisexuality to being ambidextrous.

“Just because you are using your right hand or your left hand,” she began, “doesn’t mean that you don’t have that internal capability to use either hand.”

Hoang also shared some serious health care issues that the bisexual community may encounter, such as higher rates of anxiety and mood disorders, and higher occurrences of binge drinking and smoking.

According to many studies, she said, bisexual women in



Ricardo Carrasco III

Mimi Hoang is a nationally recognized psychologist, author and advocate on diversity issues.

particular tend to experience higher rates of depression, eating disorders and suicidal ideation than straight or gay women or men.

In fact, the most basic health care communication can be

challenging: More than a third of bisexual people do not disclose their orientation to their physician, out of fear of facing bias, erasure and discrimination.

Clinicians, she said, must be

aware of how their practice can be influenced by their personal experience.

“You need to have awareness about your own identity, and your own assumptions and biases. Is it your assumption that everyone who walks through your door is straight? Or your assumption that they will tell you?” she asked. “Because if you ask them, you’re letting them know that you care and that you are comfortable talking about that topic.”

Hoang concluded her lecture with comments on how to be inclusive and not marginalize bisexual patients.

“Your job is beyond just numbers and diagnosing,” she said. “Your job is also about compassion, humanity and understanding diverse issues and communities.”

## Calendar of Events

### Monday, Sept. 25

**Noon.** Southern California Clinical and Translational Science Institute’s Workforce Development Core Discussion. “What Issues are Raised by Research on Medical Practices?” Alexander Capron, LLB. Aresty Auditorium. Info and RSVP: Karen Kim, (323) 442-8281, wd@sc-ctsi.org, <http://bit.ly/2xRZm0T>. A light lunch will be provided.

### Tuesday, Sept. 26

**9 a.m.** SC CTSI Workforce Development. “Career Development Seminar Sessions: Communication About Science in the World Today,” Michele Kipke, PhD. Harkness Auditorium. Info and RSVP: Karen Kim, (323) 442-8281, wd@sc-ctsi.org, <http://bit.ly/2w88p9k>  
**11 a.m.** USC Stem Cell Seminar. “The Neural Circuitry of Sex and Violence,” David Anderson, PhD, Caltech. Eli and Edythe Broad CIRM Center Auditorium. Info: Cristy Lytal, lytal@med.usc.edu, <http://stemcell.usc.edu/events>  
**3 p.m.-6 p.m.** USC Tina and Rick Caruso Department of Otolaryngology – Head and Neck Surgery Seminar. “Identity, Function, Dysfunction, and Restoration of Sensory Transduction Channels in the Inner Ear,” Jeffrey R. Holt, PhD, Harvard Medical School. Eli and Edythe Broad CIRM Center

Auditorium. Info: Jacqueline Jimenez, (323) 442-5579, jimenez1@med.usc.edu  
**5:30 p.m.** Department of Ophthalmology Grand Rounds. Tiffany Ho, MD, and Andy Han, MD. USC Roski Eye Institute, HC4, 6th floor conference room. Info: Tyaisha Christopher, (323) 409-5233, tyaisha.christopher@med.usc.edu, <http://eye.keckmedicine.org/grand-rounds/>

### Wednesday, Sept. 27

**11 a.m.** USC/Amgen Seminar. “Nav1.7 drug development for pain,” Bryan Moyer, PhD, Amgen. Eli and Edythe Broad CIRM Center Auditorium. Info: Cristy Lytal, (323) 442-2172, lytal@med.usc.edu, <http://stemcell.usc.edu/events>  
**Noon.** Zilkha Neurogenetic Institute Seminar. “Rare and Common Risk Variants for Late Onset Alzheimer’s Disease Implicate Myeloid Cell Function,” Alison Goate, DPhil, Icahn School of Medicine at Mount Sinai. Herklotz Seminar Room, ZNI 112. Info: Emily Chu, (323) 442-3219, Emily.Chu@med.usc.edu

### Thursday, Sept. 28

**Noon.** Integrative Health Interest Group and USC Institute for Integrative Health Talk. “Medicinal and Recreational Uses of Cannabis,” Rolando Tringale, MD. McKibben Lecture Hall 249. Info: Torey Alling,

(206) 335-2372, ihiguse@gmail.com  
**Noon.** Keck Medicine of USC Discussion. “What Changed the Way I Practice Medicine,” Afsaneh Barzi, MD. LG 503-504, Norris Research Tower. Info and RSVP: Mary Aalto, mary.aalto@med.usc.edu. Seating is limited, RSVP does not guarantee seating for late arrivals.

**1 p.m.** Center for Work and Family Life Workshop. “How to Manage Burnout and Compassion Fatigue in Ourselves and Staff.” Keck Hospital Silver Room 34. Info: Center for Work and Family Life, (213) 821-0800

**4:30 p.m.** Norris Medical Library Film Screening. “It’s Kind of a Funny Story.” Aresty Auditorium. Info: Karin Saric, (323) 442-1125, ksaric@usc.edu. RSVP: <http://bit.ly/2jL7biB>

### Friday, Sept. 29

**Noon.** USC Research Center for Liver Diseases Seminar. “The Central Role of the Liver in Systemic Iron Regulation,” Tomas Ganz, MD, PhD, University of California, Los Angeles. Hastings Auditorium. Info: Dolores Mendoza, (323) 442-1283, dmmendoza@usc.edu

### Sunday, Oct. 1

**7:30 a.m.-4:45 p.m.** USC Quench the Fire 5K/10K Run-Walk-Roll & 1 Mile Fun Walk. 6350 Woodley Ave., Van Nuys. Info: Lynne

Popadak, (818) 288-0754, quenchthefire@gmail.com, <http://www.quenchthefire.org/> Pre-registration fee: \$30, \$10 discount w/code 2017QTFUSC10.

### Monday, Oct. 2

**8-11 a.m.** The DHS Endocrinology Primary Care/Specialty Care Workgroup and USC Office of Continuing Medical Education. “4th Annual Los Angeles County Department of Health Services (DHS) Diabetes Day.” The California Endowment, 1000 N. Alameda St. Info: Lysandro Valenzuela, (323) 442-2555, <https://cmetracker.net/KECKUSC/Catalog>

### Wednesday, Oct. 4

**Noon.** Southern California Clinical and Translational Science Institute. “Digital Scholar Webinar Series: Disseminating Scientific Papers via Twitter: Practical Insights and Research Evidence,” Stefanie Hausteiner, PhD, University of Montreal. Info: Katja Reuter, katja.reuter@med.usc.edu. RSVP: <http://bit.ly/2u5vgRr>

**Noon.** The Saban Research Institute Seminar. “TSRI Core Facility Seminar: Flow Cytometry Core (FACS),” Michael Sheard, PhD. Saban Research Building Auditorium, 4661 Sunset Blvd. Info and RSVP: Sandy Wang, (323) 361-7489, tecpad@chla.usc.edu

**Notice:** Calendar items are due at least 10 days before publication date. Timely submission does not guarantee publication in print. See more calendar entries at [hscnews.usc.edu/calendar-of-events](http://hscnews.usc.edu/calendar-of-events). Submit items at [tinyurl.com/calendar-hsc](http://tinyurl.com/calendar-hsc). Include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number/email address.

# Baxter Foundation backs two early research projects

By Adriana Cho and Zara Abrams

Two junior faculty members at the Keck School of Medicine of USC have each been awarded \$100,000 grants by the Donald E. and Delia B. Baxter Foundation. Crystal Marconett, PhD, from the Department of Surgery, and Hosung Kim, PhD, from the Department of Neurology, were chosen on the basis of their outstanding research during their time as assistant professors at the Keck School.

“The foundation supports researchers at this early stage so they can conduct innovative research that has strong future potential and could have a significant impact,” said Jane Haake Russell, director of the Baxter Foundation. “We are proud to support both Dr. Marconett and Dr. Kim, whose research we believe will lead to new therapies and approaches to disease prevention.”

Marconett’s lab is studying how a novel class of regulatory molecules, lncRNAs, affects the ability of

cancer cells to repair DNA damage in lung cancer.

She hypothesizes that LINC00261, an lncRNA whose function is as yet unknown, works as a tumor suppressor gene and enhances cells’ ability to detect DNA damage as they prepare to divide.

Her lab has found that the reintroduction of LINC00261 into lung cancer cell lines inhibited their mobility and growth, and turned on signals related to DNA damage.

“It is my hope that funds from the Baxter Foundation will enable us to leverage our basic science research insights into the function of LINC00261 toward the development of novel therapies,” Marconett said.

Kim received the grant for his research on predicting neurodevelopmental impairments in early childhood among premature newborns by using magnetic resonance imaging (MRI) technology to document and better understand the impact of

prematurity-related brain injuries on neurological development. First, he’s developing specialized machine-learning algorithms to compute structural and networking features that characterize various aspects of early brain development. He’ll then use this software to predict language, motor and cognitive outcomes two- to four years after birth.

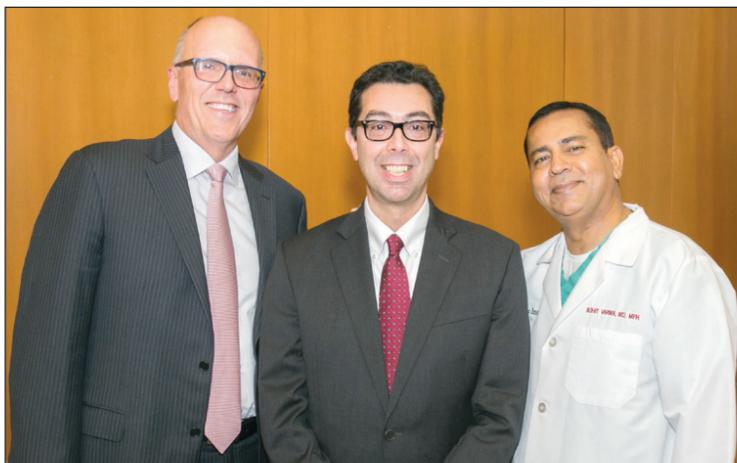
“Even with existing treatments, up to half of premature newborns develop deficits in motor function, language, or IQ,” Kim explained. “We may be able to predict these impairments using brain scans and eventually prevent them.”

Another \$100,000 grant was awarded to the medical student summer research program, currently led by Nuria Pastor-Soler, MD, PhD, associate professor of medicine and assistant dean for research mentoring. The program has received this support from the Baxter Foundation for the past few years.

## Faculty welcome otolaryngology chair

Faculty and staff from both the Keck School of Medicine of USC and Keck Medicine of USC gathered recently to welcome John Oghalai, MD, as the new chair of the USC Tina and Rick Caruso Department of Otolaryngology – Head and Neck Surgery. Oghalai has been serving as chair since Aug. 1.

The reception, which was held Sept. 8 on the Health Sciences Campus, included remarks from Oghalai; Rohit Varma, MD, MPH, dean of the Keck School; and Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine of USC.



From left, Tom Jackiewicz, John Oghalai and Rohit Varma are seen during the Sept. 8 welcome reception for Oghalai.

## DOCTORS

Continued from page 1

Los Angeles County + USC Medical Center.

To be considered for inclusion in the list, physicians in the San Gabriel Valley and Los Angeles area were nominated and then voted on by their peers, who submitted confidential ballots. Doctors cannot pay to be included on the list.

*Pasadena Magazine* serves the greater San Gabriel Valley area. It has published the list since June 2008.

## SUIT: Electrode implants will control exoskeleton

Continued from page 1

by the brain that tell the legs to walk. Patients with epilepsy who have had electrodes implanted in the brain by Liu as part of their workup for surgical treatment of epilepsy will have brain signals recorded while they are walking. These signals will be decoded to control a wearable robotic exoskeleton by Zoran Nenadic, DSc, professor of biomedical engineering, and An Do, MD, assistant professor of neurology, from UCI.

Richard Andersen, PhD, professor of neuroscience at Caltech, will work on methods of generating artificial sensation from the robotic exoskeleton by applying stimulation to the brain using implanted electrodes, allowing patients to “feel” while they walk.

Payam Heydari, PhD, the project’s lead principal investigator and professor of electrical engineering and computer science at UCI, will develop miniaturized electronics to make these processes fully implantable in patients. In the later phases of the project, these concepts will be tested in spinal cord injury patients.

“We want to create a paradigm shift for what’s possible for patients who are paralyzed by finding engineering solutions to medical problems,” Liu said.

The ambitious project is the culmination of longstanding and ongoing collaborations between Liu and his colleagues at UCI and Caltech through the USC Neurorestoration Center.

“With this grant, Dr. Liu and his counterparts at UCI and Caltech are poised to push the frontiers of medicine and engineering into uncharted territory,” said Rohit Varma, MD, MPH, dean of the Keck School. “It is this spirit of innovation that drives our clinician-scientists to find novel ways to prevent, treat or cure the most challenging health issues.”

The USC Neurorestoration Center is focused on developing new strategies for restoring neurological function for patients with neurological disabilities. This includes repair through regenerative medicine; replacing lost function with neuroprosthetics; and optimizing the function of the nervous system after injury.



Cynthia Ramirez and Charles Liu test a robotic exoskeleton similar to one being developed by the National Science Foundation grant project.

## Massry Prize honors microbiome pioneers

Three pioneers in the study of microbiomes will share the 2017 Meira and Shaul G. Massry Prize and deliver a lecture on the Health Sciences Campus in October, officials announced recently. The three scientists were chosen in recognition of their collective efforts in expanding the medical and scientific communities’ understanding of the importance of microbiomes — distinct constellations of bacteria, viruses and other microorganisms that live within and around us — and methods for manipulating microbiomes for the benefit of human and environmental health.

Rob Knight, PhD, of the University of California, San Diego; Jeffrey Gordon, MD, of Washington University School of Medicine in St. Louis; and Norman Pace, PhD, of the University of Colorado, Boulder, will share the Massry Prize, which is named in honor of Shaul G. Massry, MD, professor emeritus of medicine, physiology and biophysics at the Keck School of Medicine of USC.



Jeff Gordon



Rob Knight



Norman Pace

Courtesy photos

The Meira and Shaul G. Massry Foundation, which promotes education and research in nephrology, physiology and related fields, established the Massry Prize in 1996 to recognize outstanding contributions to the biomedical sciences and the advancement of health.

Twelve Massry Prize recipients have gone on to win Nobel Prizes.

The scientists will deliver lectures on their work at 12:30 p.m. Oct. 5 in Mayer Auditorium on the Health Sciences Campus.

## NEW SPACE: Remodeled clinic includes surgical area, staff lounge

Continued from page 1

resolved to find an institute with the most ambitious goal possible — to eliminate blindness,” Nikias said.

“With their support, the USC Roski Eye Institute is stronger than ever. It’s one of the top two funded eye institutes in the nation and a leader in research funding from the National Institutes of Health,” Nikias continued. “Its residency program runs in the top 10 nationwide, and it just expanded for the first time in years. And in 2016 this institute, my fellow Trojans, treated more than 100,000 patients.”

“It’s an honor to help support people who will be behind the new breakthroughs in the future

of this field,” Gayle Roski said. “And I want you to know that Ed and I are grateful for your presence here today and thankful for the work you do each and every day.”

Among the attendees to the event were USC Provost Michael Quick, PhD; Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine; and USC Trustee Glorya Kaufman.

With the conclusion of remarks, the Roskis officially unveiled the clinic’s striking signage, and Varma invited attendees to tour the new, state-of-the-art facilities, which include 31 rooms for patient care, an outpatient surgical area, labs, a staff lounge and more.

## MISSION

Continued from page 1

Keck Medicine also hosts a weekly farmers market in Hazard Park each Tuesday. Profits from the market provide funding for fresh fruits and vegetables for the local community.

“There are many volunteer opportunities coming up that Keck Medicine faculty and staff can participate in to help our local community,” added Char Ryan, Keck Medicine chief patient experience and employee engagement officer. “We have events happening year-round.”

Upcoming opportunities include Boxes of Love, which provides a complete Thanksgiving dinner to families over the holidays; Adopt a Family, which provides holiday presents to members of the community; and the annual holiday toy drive. Additionally, volunteers are needed to cook and serve food at Dolores Mission each month.

For more information, contact [Lusine.Davtyan@med.usc.edu](mailto:Lusine.Davtyan@med.usc.edu).

## HSC Newsmakers

A roundup of news items related to Keck Medicine of USC, which may include philanthropic donations, research grants, publication in academic journals and mentions in the news media:



Heather Wipf

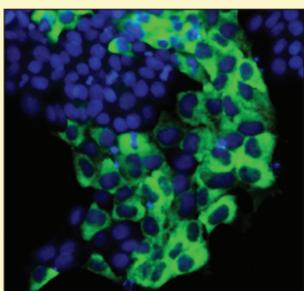
USC students, faculty, staff and alumni traveled to Uganda's rural Oyam district Aug. 8-12 to provide public health services.

## USC students, faculty lead public health camp in Uganda

AN INTERDISCIPLINARY TEAM OF PHARMACY and public health students traveled to northern Uganda from Aug. 8-12 to lead a public health camp alongside free soccer training clinics and tournaments for more than 1,000 youth. Nonprofit organization Ray United FC (RUFU) organizes the annual camp to promote healthy kids and communities through soccer and education. Each year, USC students and alumni participate as educators and facilitators to teach children and adolescents living in rural communities a variety of lessons in public health, citizenship and leadership. Donations garnered by RUFU and the USC students provided campers with free bags, shirts, public health workbooks, pens and pencils, as well as meals and clean water. The team of 15 Master of Public Health and Doctor of Pharmacy candidates, faculty, USC School of Pharmacy staff and USC alumni worked alongside students at Uganda's Makerere University. — **Divya Yerwa Mary and Larissa Puro**

## Protein TAZ sends 'mixed signals' to stem cells

JUST AS BEAUTY EXISTS IN the eye of the beholder, a signal depends upon the interpretation of the receiver. According to new USC research published in *Stem Cell Reports*, a protein called TAZ can convey very different signals — depending not only upon the variety of stem cell, but also which part of the stem cell receives it. PhD student Xingliang Zhou and colleagues in the laboratory of Qi-Long Ying, MD, PhD, associate professor of stem cell biology and regenerative medicine at the Keck School of Medicine of USC, demonstrated that naive mouse embryonic stem cells (ESCs) don't require TAZ in order to self-renew and produce more stem cells. However, they do need TAZ in order to differentiate into slightly more differentiated mouse epiblast stem cells as well as so-called human ESCs — which may not be true ESCs at all. — **Cristy Lytal**



Image/Xingliang Zhou

The protein TAZ (green) is seen in the cytoplasm (the region outside of the nuclei, blue).



Courtesy USC Hillel Art Gallery

Visitors attend an artist's reception for a series of artwork by Joel Schechter, featured at the USC Hillel Art Gallery.

## Professor opens art exhibit at USC Hillel Art Gallery

JOEL SCHECHTER, PHD, PROFESSOR OF cell and neurobiology at the Keck School of Medicine of USC, recently opened an art exhibit at the USC Hillel Art Gallery featuring select drawings from his "Synagogue and Cathedrals" series. The exhibit, titled "An Artist's View of the World," is a religious and architectural series curated by Susie Gesundheit and Anne Marie Hromadka. It will be on display through Dec. 3 at the gallery, located on 3300 S. Hoover St. near the University Park Campus. Admission is free and open to the public.

# Anesthesiology department kicks off partnership in Russia

By Adriana Cho

Holly Muir, MD, chair and professor of anesthesiology at the Keck School of Medicine of USC, has been named co-chair of the Vladimir Zelman Department of Anesthesiology of the Novosibirsk State University (NSU) Institute of Medicine and Psychology in Russia, as a part of a collaborative project between the Keck School and NSU.

"I am truly excited to be a part of this international collaboration," Muir said. "I believe this project will foster the growth of both anesthesiology departments and encourage the advancement of global health."

The project, called the ZELMAN project (Zeal, Education, Labor, for MANKind), establishes mirror departments of anesthesiology and resuscitation at the Keck School and NSU, which is located in Siberia. Focusing on lectures, discussion of clinical cases and research aimed at international collaboration on mutual interests, the ZELMAN project strives to create bridges for humanity and health care across borders, according to project leaders.



Courtesy Department of Anesthesiology

From left, Michael Kearns, Sergey Astrakov, Steven Sener, Vladimir Zelman, Holly Muir, Janak Chandrasoma and Andrey Pokrovsky are seen during a recent visit from Novosibirsk State University officials to Los Angeles.

To that end, the program will feature distance education opportunities, including lectures over Skype, an exchange of students and teachers, and remote working meetings with the heads of the two departments.

Andrey Pokrovsky, MD, PhD, dean of the NSU medical institute, and Sergey Astrakov, MD, PhD, chair of the Department of Anesthesiology at NSU, visited the Keck School this summer and met with leading educators to work on the comprehensive program.

"This is the first time that a mirror Department of Anesthesiology and Resuscitation has been established in Russia," Pokrovsky noted. "In this

project, the emphasis is on the educational process."

The project was spearheaded by Vladimir Zelman, MD, PhD, clinical professor of anesthesiology (part-time) at the Keck School and honorary professor of the NSU Department of Anesthesiology. As a former student of NSU, Zelman wanted to give back to his alma mater, where he began his medical journey to become one of Siberia's first anesthesiologists.

"USC is already well-known as a leader of international cooperation," Zelman said. "Now the Keck School of Medicine will be on stage as a frontrunner in international medical education and life sciences."

## Behind the scenes of surgical skills lab

By Lex Davis

The Surgical Skills Simulation and Education Center is a cornerstone of the training program for the Keck School of Medicine of USC Department of Surgery. Students hone their technique on everything from suturing to open-heart surgery. Simulation Specialist and Lab Manager Mike Minneti has kept the Center at the top of the field in part by building new simulation devices from scratch. He recently spoke with *HSC News* about his work and experience.

**What first brought you to the surgical skills lab?**

I spent 15 years in pediatric critical care and extra-corporeal membrane oxygenation (ECMO) at the University of Minnesota. ECMO is a procedure that uses a machine to pump and oxygenate blood outside the body. I saw a presentation on ECMO simulation and my world changed. Within a week, I developed a pediatric critical care and ECMO simulation lab in a storage room.

But, it was cold in Minnesota. ... I met Dr. (Craig) Baker during a visit to Los Angeles and was taken immediately by his passion for simulation. He walked me over to the Surgical Skills Simulation and Education Center to meet Dr. (Maura) Sullivan and Angela Martinez. I knew I could fit in and add value to the team.

I converted another storage room into an ECMO and critical care simulation lab. When Dr. Baker saw the ECMO simulator, he said,

"We should put a heart in there." So we did.

**Why did you start rigging up your own equipment?**

I began fabrication when I needed something that didn't exist the way I wanted it to. If I can make a mental representation of what is needed, I can usually come up with the solution.

**What do you do when**

**you're not in the lab?**

I began my first classes at the USC Rossier School of Education toward a master of education degree this fall, on my way to a doctorate of education if all goes well. After work and studying, I have just enough time to spend late evenings with my wife Lara and the best dog in the world, Zoe.

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## HSC News

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