



Michael Owen Baker

Community members get information at the biotech information booth during a School Supply Giveaway sponsored by USC Civic Engagement, held Aug. 26 on the Health Sciences Campus.

## Neighbors get a helping hand with school supplies

Thousands of families from neighboring schools received back-to-school supplies at the USC Health Sciences Campus on Aug. 26. Students from the Keck School of Medicine of USC, the USC School of Pharmacy and the Herman Ostrow School of Dentistry of USC helped distribute the items and shared their pathway into the science and medical fields.

“It’s a great opportunity to connect university resources with our local community, and emphasize

the numerous science, technology, engineering and math (STEM) programs we offer,” said Zul Surani, executive director of community partnerships for the Health Sciences Campus.

The event was hosted by USC Civic Engagement and supported through the university’s Good Neighbors Campaign, through which USC faculty and staff donate more \$1.6 million each year to support university-community programs.

## Good Neighbors announces new group of grantees

More than 50 community groups have cause to celebrate, as the USC Good Neighbors team has announced the latest recipients for the annual grant program.

USC Good Neighbors provides funding for a variety of groups that strive to enhance educational opportunities, promote health and fitness, enhance public safety and support economic development in the communities around the Health Sciences and University Park

campuses.

“We are excited to support the good work these programs are accomplishing in the communities around both of our campuses,” said Carolina Castillo, EdD, Good Neighbors Campaign director and executive director of development with USC Civic Engagement. “This is just one of the ways USC continues to be a good neighbor and collaborates with organizations that are addressing vital needs within our communities.”

Local nonprofit organizations are united with university faculty and staff to administer educational and healthy activities for families, offer community support groups and develop other programs with a positive impact in the neighborhood. This year’s funded programs on the Health Sciences Campus include the Med-COR program, USC PT Fit Families and the Fuente Initiative.

The programs are funded

See **GOOD NEIGHBORS**, page 5

## Flu vaccine available at Keck Medicine

By Douglas Morino

With flu season approaching, the Keck Medicine of USC community is being reminded that flu vaccinations are an important step toward protecting patients and colleagues.

The flu is a contagious respiratory illness that, in serious cases, can result in hospitalization or death. An annual flu vaccination is the best way to prevent the flu, said Stephanie Hall, MD,

chief medical officer, Keck Medicine of USC.

“A simple yet essential way to protect our patients is to get an annual flu shot,” Hall said. “Getting our patients and ourselves vaccinated greatly reduces the risk of transmission of the flu virus,” which can occur even before the illness is evident.

Free flu vaccines will be available to all patients and staff starting in early

See **FLU VACCINE**, page 5



(Photo/Courtesy UCLA)

Alidad Ghiassi, second from left, reunites with the hand transplant patient and other members of the surgical team.

## Hand transplant transforms both patient and doctor

By Erica Rheinschild

Two years ago, Alidad Ghiassi, MD, assistant professor of clinical orthopaedic surgery at the Keck School of Medicine of USC and a specialist in hand and upper extremity surgery in the Department of Orthopaedic Surgery at Keck Medicine of USC, got an unexpected call from a former colleague, Kodi Azari, MD. Azari, who is the director of the hand transplant program at the University of California, Los Angeles (UCLA), was

gathering a team of expert surgeons to perform a hand transplant, and he wanted Ghiassi to participate in this exceptionally rare procedure.

My immediate answer wasn’t a quick yes or no, Ghiassi said. I had to think about the impact a hand transplant would have on the patient over the long term, and I wanted to consult with the people close to me about it first.

Once Ghiassi learned more about the patient and

See **HAND TRANSPLANT**, page 5

## Study shows relative risk of Alzheimer’s between men and women

By Zen Vuong

White women whose genetic makeup puts them at higher risk for Alzheimer’s disease are more likely than white men to develop the disease during a critical 10-year span in their lives, according to a study headed by Keck School of Medicine of USC researchers.

The findings from one of the world’s largest big-data studies on Alzheimer’s counter long-held beliefs about who is at greatest risk

for the disease and when, suggesting new avenues for clinical trials.

Study results show genetically vulnerable 55- to 85-year-old white men and women have the same odds of developing the memory-erasing disease. One exception: From their mid-60s to mid-70s, these women still face significantly higher risk. That may provide clues to disease causes and potential interventions among these women.

“Our discovery is important

because it highlights how clinical trials could be weighted toward women — a susceptible part of the population — to help scientists more rapidly identify effective drug interventions to slow or cure Alzheimer’s,” said Arthur Toga, PhD, Provost Professor of ophthalmology, neurology, psychiatry and the behavioral sciences, radiology and engineering; Ghada Irani Chair in Neuroscience; and director of the

See **ALZHEIMER’S**, page 5



White women in their mid-60’s to mid-70’s with a certain genetic makeup are more likely to be diagnosed with Alzheimer’s disease than their male peers.

Scientists still don’t know why.

## USC-VHH Emergency Department wins Choi Award

By Douglas Morino

Compassion, efficiency and clinical expertise are at the core of the USC Verdugo Hills Hospital Department of Emergency Medicine's commitment to deliver exceptional care to residents of the Foothills communities.

The department was selected as the team award winner of the Choi Family Awards for Excellence in Patient-Centered Care, which honors exceptional physicians, nurses and staff who hold an unwavering commitment to compassionate patient care.

With a team of 12 physicians, seven nurse practitioners, 42 nurses and a supporting staff, the USC Verdugo Hills Hospital Department of Emergency Medicine provides care to about 75-90 patients a day. Nearly 25,000 patients are served each year.

"Our patient volume is continually rising," said Jessica Thomas, the department's clinical director. "Part of that is the nature of health care, and part is due to word on the street — patients are having a good experience here, and they're telling others."



Members of the USC Verdugo Hills Hospital Emergency Department celebrate after being awarded the Choi Family Award for Patient-Centered Care.

Despite an increase in patient volume, average door-to-provider time is less than 30 minutes, and overall wait times are significantly lower than the national average.

The commitment to providing efficient, compassionate care comes as department leaders look to create a winning workplace culture by focusing

on soliciting feedback from physicians, nurses and staff to create a positive, friendly work environment, said Department Medical Director David A. Tashman, MD, associate professor of clinical emergency medicine at the Keck School of Medicine of USC.

"When you have a happy and satisfied workforce, that translates down to the

patient," Tashman said. "We're always looking at what can we do to give our providers the ability to deliver the best care so they can give our patients their full attention."

To further enhance the patient experience, the department has implemented patient ambassadors to help patients navigate their health care journey.

"When patients are in the ER they are typically scared," Thomas said. "Our ambassadors eliminate that fear factor and help patients communicate with physicians, nurses and staff. They help our patients know what they're waiting for and what they can expect."

The department is consistently looking for ways to improve, including reviewing and learning from comments and feedback from patients.

"We take a close look at everything we do — when things go well and when they don't go well," Thomas said. "Our patients say they have noticed a positive difference and that's a result of our targeted efforts. It's those positive comments from our patients that are the most rewarding for us."

## NCI awards \$2.2 million to fund collaborative research on exosomes

By Elin Kavanagh

Cancer metastasis remains a major treatment challenge and a main cause of morbidity and mortality. A widely accepted explanation for this process is called "the seed and soil" hypothesis, which recognizes the need for the cancer cell, or "seed," to travel to a hospitable environment, or "soil."

To understand metastasis, many investigators have focused on the "seed." Yves DeClerck, MD, professor of pediatrics and biochemistry and molecular medicine at the Keck School of Medicine of USC, has studied this topic for his entire career from a slightly different perspective, concentrating on the "soil."

In recognition of his leadership in this area, DeClerck recently was awarded \$2.2 million from the National Cancer Institute (NCI), to investigate the microenvironment by focusing on a newly identified type of messenger: Extracellular vesicles called exosomes, are small sacs shed by cancerous tumor cells that contain

protein, DNA, RNA and lipids, and are taken in by other cells and can modify behavior of the receiving cell.

According to DeClerck, who also is a pediatrician-scientist at Children's Hospital Los Angeles and director for research education at the Children's Center for Cancer and Blood Disease, healthy cells are typically inhospitable to cancer cells. What causes them to change from foe to friend?

Recently DeClerck, along with collaborators at CHLA and the Keck School, published on this topic. The first paper, in the *Journal of Extracellular Vesicles*, describes research that identified how exosomes induce bone marrow mesenchymal progenitor cells to release factors favorable to cancer cells. A subsequent paper, recently published in *Cancer Research*, describes the mechanisms by which these bone marrow cells, also present in primary tumors, promote the growth of neuroblastoma cells and their resistance to chemotherapy.

"What if you could intervene



Yves DeClerck

early and prevent the cancer cell from modifying the bone marrow, keeping it inhospitable to cancer?" DeClerck asked. "Instead of figuring out how to treat metastatic disease, we could prevent it."

DeClerck, who also is the co-leader of the Tumor Microenvironment Program at the USC Norris Comprehensive Cancer Center, is collaborating on the NCI study with David Lyden, MD, of Weill Cornell Medical College, who originally proposed the role of tumor-secreted exosomes in cancer metastasis.

## Roundtable highlights global medicine

By Ryan Seuffert

"Public health is a relay. I have done my race, so I would like to pass my baton onto you, because there is a lot of unfinished business," Robert Kezaala, MD, MPH, told a rapt audience at the Global Citizenship Roundtable. Hosted by the Master of Science in Global Medicine program, some 200 members of the Keck School of Medicine of USC community attended the Aug. 22 event to learn about global health challenges and share their own stories.

Kezaala, a senior health adviser at UNICEF, was keynote speaker and discussed obstacles to fighting infectious diseases worldwide. He emphasized that unifying stakeholders is critical to effective health policy.

In its fifth year, the event reflected on the impact of health from local settings, like remote villages, to global, such as multinational childhood immunization plans. The event allows peers to share insights from studying in Denmark, Panama, South Africa, Uganda and Tanzania.

Recipients of the 2016-2017 Dhablania and Kim Family Global Medicine Fellowship, presented findings from research in Uganda, Panama, Mongolia, Cambodia, India, Tanzania, Armenia, Cameroon and Nicaragua, which examined how genocide and lack of access to care and health education affect treatment of communicable and chronic diseases, among other topics.

"Beyond showcasing the scholarship of our students, this event highlights the importance of sharing lessons we have learned with one another to better inform those who will, through Keck School education and training, help and heal others, at home and around the world," stated Elabe Nezami, PhD, associate dean for graduate affairs (undergraduate, masters and professional programs) and Global Medicine program director at the Keck School.

For information about future events and opportunities, go to [msgm.usc.edu](http://msgm.usc.edu).

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## Calendar of Events

**Tuesday, Sept. 12**  
**Noon.** USC Paleosciences Research Seminar Series. "The Development and Evolution of Bats," Karen Sears, PhD, University of Illinois at Urbana-Champaign. McKibben Lecture Hall. Info: Adam Huttenlocker, (323) 442-2752, [huttenlo@usc.edu](mailto:huttenlo@usc.edu)

**Wednesday, Sept. 13**  
**Noon.** The Saban Research Institute Seminar. "Mitochondrial-Derived Peptides — Implications for Lifespan Health," Pinchas Cohen, MD. Saban Research Building Auditorium, 4661 Sunset Blvd. Info and RSVP: Sandy Wang, (323) 361-7489, [tecpad@chla.usc.edu](mailto:tecpad@chla.usc.edu), <http://chla.org/tecpad>

**Friday, Sept. 15**  
**6:30 a.m.** Department of Anesthesiology Grand Rounds. "Professional Citizenship: A Must to Advance the Specialty and Secure Its Future," Jeffrey Scott Plagenhoef, MD, president, American Society of Anesthesiologists, and chair, Department of Anesthesiology, Baylor Scott & White Hillcrest Medical Center. McKibben Lecture Hall Room 256. Info: Renee Meadows, (323) 409-6856, [rmeadows@med.usc.edu](mailto:rmeadows@med.usc.edu)

**Saturday, Sept. 16**  
**5:30 p.m.-9 p.m.** Department of Neurosurgery Lecture. "2nd Annual Philip Lawler Glioblastoma Foundation Fundraising Event," Steven L. Giannotta, MD. The Prop

House Lounge and Warehouse, Santa Barbara. Info and RSVP: Lisa McDonald, (323) 442-1013, [lisa.mcdonald@med.usc.edu](mailto:lisa.mcdonald@med.usc.edu), <http://www.usc.edu/evsp>, Code: LAWLER

**Monday, Sept. 18**  
**1 p.m.** Visions and Voices Lecture. "Achieving Health Equity: Tools for a National Campaign Against Racism," Camara Jones, MD, PhD, MPH, immediate past president, American Public Health Association. Mayer Auditorium. Info: [http://visionsandvoices.usc.edu/events/listing.php?event\\_id=965696](http://visionsandvoices.usc.edu/events/listing.php?event_id=965696). Reservations requested.

**Tuesday, Sept. 19**  
**11 a.m.** USC Stem Cell Seminar. "The

Developmental and Regenerative Plasticity of Planarians," Alejandro Sanchez Alvarado, PhD, Stowers Institute for Medical Research. Eli and Edythe Broad CIRM Center Auditorium. Info: Crysti Lytal, [lytal@med.usc.edu](mailto:lytal@med.usc.edu), <http://stemcell.usc.edu/events>

**Wednesday, Sept. 20**  
**Noon.** Zilkha Neurogenetic Institute Seminar. "How Metal Ions in the Brain Tip the Toxic Balance of the Killer Prion Protein," Glenn L. Millhauser, PhD, University of California, Santa Cruz. Herklotz Seminar Room, ZNI 112. Info: Emily Chu, (323) 442-3219, [Emily.Chu@med.usc.edu](mailto:Emily.Chu@med.usc.edu), <http://www.usc.edu/zni>

# BACK TO SCHOOL

As classes begin and the school year kicks off, here is some information that students should know for the 2017-2018 school year. Find more on our website, [hscnews.usc.edu/back-to-school](http://hscnews.usc.edu/back-to-school).

## Medical students meet faculty, classmates at reception

The Class of 2021 kicked off the fall semester with their new classmates, administrators and professors at the Keck School of Medicine of USC's Welcome Reception for new and returning medical students.

Keck School Dean Rohit Varma, MD, MPH, Vice Dean for Medical Education Henri Ford, MD, MHA, and Senior

Associate Dean for Student and Educational Affairs Donna Elliott, MD, EdD, were among the school's leaders on hand to greet the students as they arrived at the Aug. 8 event at the Huntington Library.

The event, which included a variety of games, activities and a photo booth, offered students a casual opportunity to meet one other at the beginning of the school year.



From left, Monika Alem, Gurlen Chadha, Marsha Cheng and Krithika Chennapan, all third-year medical students, greet each other at the First Year and Returning Students Welcome Reception.



The reception, held Aug. 8 in San Marino, included a variety of games and activities, as well as a photo booth.



Medical students also had the opportunity to talk with administrators, including Keck School of Medicine of USC Dean Rohit Varma, right.

## USC School of Pharmacy starts regulatory science department

By Michele Keller

The USC School of Pharmacy has established a new Department of Regulatory and Quality Sciences, appointing internationally renowned regulatory expert Frances J. Richmond, PhD, as its chair.

The new department will build upon the school's longstanding leadership in regulatory science education, which began in 1999, under Richmond's direction, with a master's degree program in Regulatory Science.

Today, the school offers three interdisciplinary master's programs (Regulatory Science, Management of Drug Development, and Medical Product Quality), six certificates and, since 2008, a professional doctorate in



Frances J. Richmond has been appointed chair of the new Department of Regulatory and Quality Sciences at the USC School of Pharmacy.

Regulatory Science — the first in the nation.

"The Department of Regulatory and Quality Sciences will continue to offer first-in-class educational

and research opportunities to students, developing leaders for professions that are just beginning to exist," said Vassilios Papadopoulos, DPharm, PhD, dean of the

USC School of Pharmacy. A nexus for partnerships in Asia, Africa and Europe, the school's regulatory science program is a global leader in producing professionals with the knowledge and skills to manage regulated biomedical products worldwide. The program currently has more than 600 graduates placed in regulatory affairs careers in industry, government and academia around the globe.

The timing is right for further growth of the program, said Richmond, professor of clinical pharmacy.

"The need for regulatory science professionals who can navigate this complex landscape just keeps growing," she said. "This exponential growth continues to create a

pressing need for regulatory science professionals who can both advocate for the patient and guide companies through the business, legal, ethical and marketing complexities of product development and distribution."

Eunjoo Pacifici, PharmD, PhD, assistant professor of clinical pharmacy, will succeed Richmond as director of the USC International Center for Regulatory Science.

The school also recently established a new undergraduate major in clinical pharmacy, which will succeed Richmond as director of the USC International Center for Regulatory Science. The school also recently established a new undergraduate major in pharmaceutical and drug development to meet growing demand from students interested in careers in regulatory and quality sciences and industry need for trained professionals in this field.

## Enrollment begins for inaugural online doctor of physical therapy class

By John Hobbs

The USC Division of Biokinesiology and Physical Therapy is offering two new degree options for students looking to build careers in the physical therapy field.

Responding to an ever-growing demand for highly qualified physical therapists, USC is launching its highly acclaimed Doctor of Physical Therapy (DPT) program into cyberspace.

The new online and on-campus program, called DPT@USC, will offer the same high-quality and academically rigorous training to promising remote doctoral students that they would receive on campus.

The hybrid program will not replace the traditional on-campus degree program; it will only add another way to receive a USC DPT degree.

To graduate, students will be required to

complete 33 courses as well as 50 weeks in full-time clinical internships. They must also travel to USC for more than 65 days of hands-on clinical skills laboratories. The first class is set to begin in fall 2018.

Applicants interested in sports-focused programs will find a new emphasis in sports science within the division's master of science in biokinesiology program.

This new addition aims to prepare graduates for careers as performance scientists, sports performance entrepreneurs and researchers. It will complement other areas of emphasis in the master of science in biokinesiology program such as tendon injury, physiologic testing and concussion, and more.

The first class of master's degree students with a sports science emphasis will begin officially in fall 2018.



Aspiring physical therapists now have a new online and on-campus hybrid program to obtain a Doctor of Physical Therapy degree.

**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.

## Newest courses, programs expand students' options

As the new school year begins across the Health Sciences and University Park campuses, students are taking advantage of the newest courses and programs offered by the Keck School of Medicine of USC. Here are a few details about some of these programs; more information can be found at [hscnews.usc.edu/back-to-school](http://hscnews.usc.edu/back-to-school).

### New online pain medicine program targets clinicians, medical professionals

The Keck School and the Herman Ostrow School of Dentistry of USC have launched the nation's first online master's degree program for working medical professionals and non-medical clinicians interested in advanced education in pain medicine.

The program will cover a wide range of issues including pain assessment and classification, psychological aspects of chronic pain, pharmacotherapeutics for pain and public policy and legal issues. — **Hope Hamashige**

### New biomedical informatics MS program offered

The Department of Translational Genomics at the Keck School is offering a Master of Science in Translational Biomedical Informatics that begins this fall. This intensive two-year MS program is focused on training individuals who have strong biomedical backgrounds and want to acquire skills in analyzing, processing and managing large-scale data. Under a long-term vision of developing

physician-scientist-informaticians, the program aims to equip graduates for careers within academic research laboratories, clinical research laboratories, pharmaceutical companies and biotechnology companies. — **Amanda Busick**

### Two global health courses are redefining distance education

Distance education courses led by USC faculty are attracting graduate students from USC and other universities around the world to virtual classrooms where they learn about global health leadership and ethics. "Global Health LIVE!" examines how health, foreign policy and leadership relate, and "Ethical Issues in Global Health" teaches ethics as applied to

real-world scenarios. Both courses are offered this fall. — **Larissa Puro**

### New stem cell course teaches how to design an experiment

For future scientists, few skills are more essential than the ability to design a good experiment. In a new spring 2018 course, "SCRM 517 Historical and Contemporary Stem Cell Research," Rong Lu, PhD, assistant professor of stem cell biology and regenerative medicine at the Keck School, will impart this important skill to graduate students at USC. "The goal of the course," Lu said, "is to prepare students for a PhD or an independent research career." — **Cristy Lytal**

## Research opportunities available

Across the university, students at all levels of scholarship have opportunities to participate in the vibrant scientific community. The Keck School of Medicine of USC is ranked among the top biomedical enterprises nationwide, with hundreds of faculty members conducting groundbreaking research in basic science, clinical research and patient care. Students are encouraged to access the state-of-the-art equipment, research space, grant application support and more resources, join an existing research project or conduct their own. Here is a sampling of fellowship and research opportunities available; more information can be found at [hscnews.usc.edu/back-to-school](http://hscnews.usc.edu/back-to-school) and [keck.usc.edu/research](http://keck.usc.edu/research).

### New fellowship funds international travel, health research

The new Breman Global Health Immersion Fellowship for Keck School students supports scholars interested in international health and public service careers. Coordinated by the USC Institute for Global Health, individual grants up to \$5,000 will fund clinical, field or laboratory research experience in foreign countries. Applications are accepted on a rolling basis. Learn more at [hscnews.usc.edu/breman-fellowship](http://hscnews.usc.edu/breman-fellowship). — **Larissa Puro**



Recipients of the Dhablania and Kim Family Global Medicine Fellowship play jump rope with residents during a recent research trip to Panama.

### Global medical needs addressed through fellowship

The Dhablania and Kim Family Global Medicine Fellowship offers funding for Keck School students wishing to embark on research and study related to global medical needs. The funds are intended to support experiential study, research, or clinical experiences that will enrich participants' understanding of health challenges in communities or regions across the world, as well as educate students, researchers and clinicians about the importance of health care in a global context. Nineteen awards were given for the 2016-2017 year, with awardees conducting research in Uganda, Panama, Mongolia, Cambodia, India, Tanzania, Armenia, Cameroon and

Nicaragua. Learn more at <http://keckmed.usc.edu/msgm/Global-Medicine-Fellowship.html>. — **Ryan Seuffert**

### Spend a year with a mentor in Dean's Research Scholars program

Keck School medical students in excellent academic standing who have completed their second year of medical school can take a full year to pursue a research experience with a faculty member through the Dean's Research Scholars Program. Students must partner with a faculty member and submit an application to conduct the research, and receive approval for a leave of absence from their medical school curriculum. Learn more at <http://keck.usc.edu/research/research-training-education/>.



On Aug. 25 at the Health Sciences Campus, 232 Trojan occupational therapy graduate students — who hail from 20 states and 16 nations and who collectively hold undergraduate degrees in more than 50 majors — pledged their commitment to the values and ideals of the health and wellness profession during the USC Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy's 2017 White Coat Ceremony.

## USC Chan's new undergraduate courses help ease students into college life

The USC Chan Division of Occupational Science and Occupational Therapy introduces two new undergraduate courses this semester specifically designed to help Trojans thrive throughout their late teenage years and into their early 20s.

"OT 101: Caring for Your Self: Engaging in Healthy Habits and Routines" covers topics on health-promoting habits and routines including stress-coping strategies, sleep hygiene, sexual health and effective time management. The course, which is conveniently hosted at a residential dorm building on the University Park Campus, is taught by a clinical faculty member who is an expert in lifestyle-based occupational therapy interventions.

By empowering freshman students' capacity for "self-care" — those sustained behaviors and activities that promote physical and mental health — the course affirms USC Chan's proactive

commitment to improving the wellness of Trojans across USC's campuses.

"OT 280: Essential Occupations of Emerging Adulthood" uses an occupational science perspective to analyze "emerging adulthood," the developmental stage between adolescence and full-fledged adulthood. This is characterized by both exploration and instability resulting from changing occupations — the meaningful activities that compose a person's roles, identities and expectations — and can be accompanied by feelings of anxiety and confusion.

Through experiential learning activities, students analyze their personal experiences, reflect upon the significant challenges posed during emerging adulthood, and learn about occupational therapy-based approaches to better prepare themselves to successfully manage these challenges.



Two new courses offered by the USC Chan Division of Occupational Science and Occupational Therapy target undergraduate students and are designed to help these Trojans thrive throughout their late teenage years and into their early 20s.

## Recruitment begins for study exploring impact of culture, genetics on Hispanics with MS

By Erica Rheinschild

The Keck School of Medicine of USC is actively recruiting Hispanics with multiple sclerosis (MS) to participate in a study examining the impact of genetics, acculturation and cultural perceptions on disease severity. "Very little is known about MS within the Hispanic population, and less than one percent of MS studies address minorities," said neurologist and lead investigator Lilyana Amezcua, MD, assistant professor of clinical neurology at the Keck School. "There are large gaps in knowledge that we want to address with this study."

Hispanics are the second-largest group affected by MS, behind whites, according to Amezcua. The actual number of minorities in the United States with MS is unknown, she said.

The multicenter study, which is funded by a grant from the National Multiple Sclerosis Society, will recruit 400 Hispanics who have been diagnosed with MS within

the last two years. Other study sites in the trial include the University of Miami, University of New Mexico and Caribbean Neurological Center in Puerto Rico. Participants will be followed for two years.

As part of the study, participants will take validated questionnaires about acculturation and illness perception. Some participants also will watch a short film about MS. "Studies have shown that Hispanics in the United States who are less acculturated tend to have greater health complications and are less likely to seek medical care in general," Amezcua said. "By asking questions about the extent of acculturation, we can begin to better understand how sociocultural factors influence the degree and severity of MS symptoms in Hispanics."

Participants will also provide a genetic sample that will be analyzed for ancestry. The researchers will assess whether Asian, Native American, European or Afri-



Lilyana Amezcua can genetic markers influence disease severity.

"One of the study's goals is to determine whether Hispanics with a higher proportion of Native American and/or African genetic ancestry have more severe MS than Hispanics with a higher proportion of European ancestry," Amezcua said.

People who are interested in being a part of this study can call Andrea Martinez, MPH, lead project specialist, at (323) 442-6817 or email [andrea.martinez@med.usc.edu](mailto:andrea.martinez@med.usc.edu).

## GOOD NEIGHBORS: announces new group of grantees

Continued from page 1

through the university's Good Neighbors Campaign, USC's annual employee-giving initiative organized by Civic Engagement. The campaign, held in October, sets an annual fundraising goal to support these university-community partnership programs.

Begun in 1994, the USC Good Neighbors Campaign encourages USC faculty and staff

to contribute a portion of their paychecks to support programs that help strengthen local communities. Students, alumni and friends also can participate. To date, the campaign has raised more than \$20 million to support 740 community partnership programs.

For more information or to give online, visit [goodneighbors.usc.edu](http://goodneighbors.usc.edu).

## STUDY: relative risk of Alzheimer's in men and women

Continued from page 1

USC Stevens Neuroimaging and Informatics Institute at the Keck School, a national leader in innovative scientific discovery.

The study was published Aug. 28 in the *Journal of the American Medical Association Neurology*. It included data from 57,979 North Americans and Europeans in the Global Alzheimer's Association Interactive Network (GAIN). This big-data project provides scientists

around the world with shared data and sophisticated analytic tools to address a disease thought to cause roughly 65 percent of the 47 million cases of dementia worldwide.

The results contradict a seminal 20-year-old study that found women with one copy of ApoE4, a gene variant linked to Alzheimer's, were diagnosed with the disease 50 percent more often than men with the same genetic profile.

The findings presented in the USC-led study expand the number of participant data

by ninefold and indicate the critical decade falls between 65 and 75, more than 10 years after the start of menopause. Previous studies in animals and humans have reported a relationship between ApoE4, menopause and cognitive decline.

"So much work has been dependent on one 1997 finding, but with tools like GAIN, we now have the ability to reinvestigate with increased statistical power," Toga said.

## HAND TRANSPLANT: transforms both patient and doctor

Continued from page 1

his fierce commitment to the process, the answer became obvious.

The patient didn't have the use of his hands or legs, and he wasn't able to care for himself, he said. I realized that the procedure could substantially improve the quality of his life and increase his independence.

What Ghiassi didn't know was that his decision to be a part of the hand transplant would transform his own life, too.

Ghiassi, Azari and the UCLA hand transplant team began collaborating on mock hand transplant operations at Keck Medicine of USC and at Ronald Reagan UCLA Medical Center. Ghiassi, whose specialty is wrist and upper extremity surgery, would be responsible for preparing the donor arm for the transplant and attaching the donor's bones to the recipient's bones. He and the other surgeons practiced marking structures in the arm and preparing the tissue for transplant. They figured out all of the details of attaching the bones together in a biomechanically stable way — including how long the bones should be, how the bones would rotate, and how and where to reattach the nerves. It was a balancing act.

As we were practicing, the game plan kept changing until we got it right, Ghiassi said. The surgical team would have one shot at a successful procedure. If you have to make fixes later, you run the risk of flaring the patient's immune response and increasing the chance of rejection. It's really a one-time deal.

The hand transplant — the second one to be performed

in the western United States — took place in October 2016 at UCLA. The surgical team was composed of highly skilled doctors from Keck Medicine, UCLA, the University of California-Riverside and Kaiser Permanente.

At the beginning of the procedure, Ghiassi assisted with carefully preparing the donor's arm as quickly as possible.

The clock was ticking. We needed to push along quickly so that the blood vessels could be attached to the patient, he said. The sooner you attach the blood vessels, the better the outcome for the patient.

Ghiassi then helped join the bones from the donor to the patient. Once he completed his part of the surgery, other members of the surgical team stepped in to perform the next steps in the intricate procedure.

The extensive preparation and planning paid off. The procedure went smoothly, without any surprises, Ghiassi said. It was like an orchestrated dance.

Nearly a year after the operation, the patient has made incredible progress. He is independent and can drive a car and can participate in activities like tennis and working out at the gym, Ghiassi said.

But the recipient of the new hand was not the only person whose life was changed by the historic procedure.

I witnessed someone who entirely depended on others become a fully independent person, all because of his deep commitment to this extraordinarily difficult procedure and its aftermath, Ghiassi said. As a result of the experience, I look at the world differently now. I appreciate life more.

## Together We Can Beat the Flu

6 Tips to Stay Healthy this Flu Season



## FLU VACCINE: available at Keck

Continued from page 1

September. The Centers for Disease Control and Prevention (CDC) estimates that as many as 3,300 die each year from the flu and recommends everyone aged 6 months and older receive a flu vaccine by the end of October.

Last year, about 5 million flu illnesses were prevented by vaccination, according to CDC estimates.

The Los Angeles County Department of Public Health mandates that health care personnel in acute care hospitals, long-term care facilities and intermediate care facilities in Los Angeles County be vaccinated against influenza or wear a protective mask. The goal of the order is to lower the rates of trans-

mission of influenza among health care personnel and the vulnerable populations they serve.

All Keck Medicine faculty and staff are required to receive a flu vaccine before Nov. 1. Additionally, front-line staff are encouraged to remind patients to get their flu vaccines.

Preservative-free and egg-free vaccines are available on request. Free flu vaccines are available through Employee Health Departments at Keck Hospital of USC, USC Norris and USC Verdugo Hills Hospital.

For more information on how and when to receive the flu vaccine, visit [kecknet.usc.edu](http://kecknet.usc.edu).

**Every day, something amazing happens at Keck Medicine of USC.**

Share it.

Email us at [HSCNews@usc.edu](mailto:HSCNews@usc.edu)

**Keck Medicine of USC**  
BEYOND EXCEPTIONAL MEDICINE™

## 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:

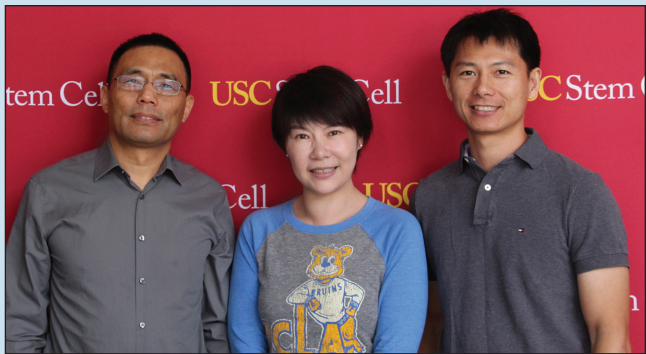


Larissa Puro

Nora Manzanilla, Tobacco Enforcement Operations director for the Los Angeles City Attorney; Councilman Mitch O'Farrell; Jonathan Samet, Lourdes Baezconde-Garbanati, and Mike Feuer, Los Angeles City Attorney.

## City officials honor researchers

Los Angeles city officials honored Keck School of Medicine of USC faculty recently for their public health work in tobacco control, prevention and research. City Attorney Mike Feuer and 13th District Councilman Mitch O'Farrell commended Jonathan Samet, MD, MS, Distinguished Professor and chair of preventive medicine, and Flora L. Thornton Chair in Preventive Medicine at the Keck School, and Lourdes Baezconde-Garbanati, PhD, MPH, professor of preventive medicine for their expert testimony which helped shape the city's 2014 legislative ban electronic smoking devices in smoke-free spaces, making Los Angeles the first major U.S. city to adopt strict e-cigarette rules. — **Larissa Puro**

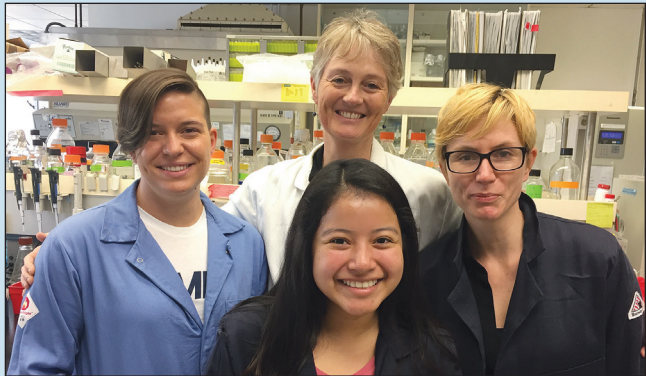


Cristy Lytal

From left: Qi-Long Ying, Min Zhou and Steve Yue, postdoctoral research associate in the Ying lab.

## Biotech entrepreneur gives funds to Ying Lab

CHINESE BIOTECH ENTREPRENEUR MIN ZHOU, MD, gave \$500,000 in unrestricted funds to the lab of Qi-Long Ying, MD, PhD, associate professor of stem cell biology and regenerative medicine at the Keck School of Medicine of USC, which studies how stem cells self-renew or differentiate into many specialized cell types. Zhou, a medical doctor and founder of Kedgene Biology, has a first-hand understanding of the serendipitous nature of early scientific discovery. "I hope our gift can help accelerate breakthrough findings in stem cell research," Zhou said. — **Christy Lytal**



Courtesy Ite Laird-Offringa

From left, Laura St. Pierre, Julya Mestas, Ite Laird-Offringa and postdoctoral fellow Ryan Stueve are seen in Laird-Offringa's lab.

## Grant supports anti-tobacco research, community outreach

Ite Laird-Offringa, PhD, associate professor of surgery and associate dean for graduate affairs at the Keck School of Medicine of USC and her team were awarded a \$495,000 grant from the Tobacco Related Disease Research Program to support research into the role of genetic variants in lung cancer. Julya Mestas, a Bravo High junior, will join the research team and work with PhD student Laura St. Pierre, and Laird-Offringa will give a series of lectures at Bravo High on the value of secondary education, developments in lung cancer research and the dangers of smoking. Bravo High on the value of secondary education, the latest developments in lung cancer research and the dangers of smoking. — **Mary Dacuma**

# Celebrities arrive for International Medicine program event

Keck Medicine of USC held a celebration recently to honor the enterprise's International Medicine program. Attendees to the Aug. 23 event in Beverly Hills included René Sotelo, MD, professor of clinical urology at the Keck School of Medicine of USC and medical director of international medicine at Keck Medicine; Rohit Varma, MD, MPH, dean of the Keck School; Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine; and USC Provost Michael Quick, PhD.

The Keck Medicine International Medicine program is committed to international collaborations in education, research and clinical care.



Nilio Jiménez

From left, USC Provost Michael Quick, PhD; René Sotelo, MD, professor of clinical urology at the Keck School of Medicine of USC and medical director of international medicine at Keck Medicine of USC; Maria Valverde, actress; Gustavo Dudamel, music and artistic director, Los Angeles Philharmonic; Rohit Varma, MD, MPH, Keck School dean; and Tom Jackiewicz, MPH, senior vice president and CEO, Keck Medicine of USC, attend a Keck Medicine event celebrating the International Medicine program, held Aug. 23 in Beverly Hills.

# Internationally renowned podiatric surgeon joins Keck Medicine



David Armstrong

Courtesy David Armstrong

By Lex Davis

Every 20 seconds, someone in the world loses a limb to diabetes. David G. Armstrong, DPM, MD, PhD, is working to change that.

Armstrong, professor of clinical surgery at the Keck School of Medicine of USC, joined the faculty in August. He is an internationally lauded diabetic wound-care expert, the first podiatric surgeon to join the Society for Vascular Surgery and the Royal College of Physicians and Surgeons of Glasgow, and the youngest person ever inducted into the Podiatric Medicine Hall of Fame.

Elevated blood sugar levels put people with diabetes at higher risk for gradual nerve damage, or neuropathy. As Armstrong puts it, they can "lose the gift of pain." Without careful nightly checks, someone with neuropathy can have a wound or ulcer on the bottom of the foot and not realize it until the wound becomes severely infected.

Amputation of the foot or lower limb is often the result, but Armstrong believes that a combination of next-generation wound healing techniques and state-of-the-art vascular therapy is almost always a better solution for the patient. Podiatric surgeons and vascular surgeons tend to make an ideal team for limb salvage — a model colloquially known as "toe and flow" — because people with diabetes are prone to peripheral artery disease (PAD) as well as foot ulcers. Working together,

they can often preserve the patient's limb and thus his or her ease of mobility. Armstrong is off to a running start and is already working closely with fellow vascular division surgeons Christian J. Ochoa, MD, assistant professor of clinical surgery, and Vincent L.

Rowe, MD, professor of clinical surgery at the Keck School and director, pediatric vascular surgery at Children's Hospital Los Angeles.

"We have a world-class vascular surgery team here," Armstrong said. "They provide the irrigation; I provide the landscaping."

Armstrong is the founder and co-director of the Southwestern Academic Limb Salvage Alliance (SALSA), an organization that already operates at colleges and universities in more than a dozen countries. Part of his mission is to expand the organization further, with Keck Medicine now the primary hub. Over the next generation, the team hopes to reduce and eventually eliminate preventable diabetes-related amputations.

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