

Saving the smallest lives

By Lorenzo Benet

Last August, the Davila family was given devastating news: Children's Hospital Los Angeles (CHLA) cardiologists confirmed that their 27-week-old fetus suffered from hypoplastic left heart syndrome (HLHS) with restrictive atrial septum, which prevented blood returning from the fetus's lungs from circulating back into the body.

The parents were told that their child, when born, faced open-heart surgery. Even worse, babies born with this rare condition have a 50 percent neonatal mortality rate.

But the Davilas had another option — a fetal cardiac intervention procedure in utero that would increase the odds of the child's survival when the open-heart surgery took place. The procedure would be coordinated by fetal therapy specialists from the CHLA-USC Institute for Maternal-Fetal Health.

If all went well, baby Grayson would undergo open-heart surgery led by cardiothoracic surgeon Vaughn Starnes, MD, H. Russell Smith Foundation chair for cardiovascular thoracic research at Keck Medicine of USC and co-director of the CHLA Heart Institute.

On Sept. 9, the physicians gathered to perform an in utero atrial septal stent procedure to open the atrium, allowing blood trapped in the lungs and left upper heart

See **LIVES**, page 3



From left, Marco Davila, Samantha Davila and Grayson Davila at Children's Hospital Los Angeles. Grayson was born at 8:29 a.m. Nov. 19 and discharged from CHLA on Dec. 14.

Children's Hospital Los Angeles

Defend Keck against hacks

By Douglas Morino

Cyber attacks against health care systems are on the rise, putting sensitive patient data at risk and law enforcement authorities on alert.

Hackers penetrating networks and then demanding money for encrypted information is a growing trend. In February, Hollywood Presbyterian Medical Center paid a \$17,000 ransom to attackers who had infiltrated and disabled the medical center's computer network using "ransomware," which encrypted data that the attackers held hostage. The data was made available only after the ransom was paid and the encryption key applied. The case remains under investigation by the FBI.

Keck Medicine of USC security experts have established multiple layers of protection to prevent an outside attack.

Staff members are the first line of defense. A common attack against an organization with sensitive data is a "phishing" email.

This email will direct a user to a website or download an attachment that will infect their computer with malware that could spread throughout the organization's network.

"Hackers are trying to lure victims in with something that appears urgent," said David Loo, Keck Medicine of USC data security officer.

Staff members should never open an email or download an attachment from an unknown sender.

The Health Sciences Information Technology Department and Service Desk will never request that you revalidate your account status via an email and/or web form.

A source can be verified by hovering over web links or email addresses.

Another cyber attack can come in the form of a pop-up message on a user's computer screen, saying that the system has been compromised and providing a phone number to call. An operator at the other end of the number typically asks for information and offers to provide remote tech support to fix an infected computer system.

See **HACKS**, page 2

USC Eye Institute opens new location

By Douglas Morino

A new location of the USC Eye Institute is now open at the University Park Campus, offering faculty, staff and their dependents, as well as USC students, a convenient location for their eye care and optical needs.

The office, at 3335 S. Figueroa St., Unit E, is in the University Gateway building near the corner of Figueroa and Jefferson and opened in November. It is the latest expansion of the Eye Institute, which features an office on the fourth floor of Healthcare Center 4 (HC4), 1450 San Pablo St., on the

Health Sciences Campus for all optometry and optical needs.

All USC faculty, students, staff, and their dependents who have purchased vision insurance through USC are eligible for an eye exam at the USC Eye Institute.

The USC Eye Institute has been ranked as a "Top 10 Best Hospital" for adult ophthalmology by *U.S. News & World Report* for the past 21 years.

"We are so excited to have convenient locations at both the UPC and HSC campuses now to serve the entire Trojan family," said Veronica Isozaki, OD, assis-

tant professor of clinical ophthalmology at the Keck School.

In addition to comprehensive eye exams and contact lens fittings, the site offers designer eyeglasses and sunglasses from many major brands, such as Tom Ford, Dior, Ray-Ban, TOMS, Oakley, Prada, FYSH, Silhouette.

Board-certified and experienced opticians will help patients with their selection, measurements and adjustment needs.

All eye examinations are provided by residency trained optometrists.

See **EYE**, page 2

Processed meat may increase breast cancer risk for Latinas

By Zen Vuong

Latinas who eat processed meats such as bacon and sausage may have an increased risk for breast cancer, according to a new study that did not find the same association among white women.

The study, published Feb. 22 in the journal *Cancer Causes & Control*, suggests that race, ethnicity, genetics, culture and lifestyle choices could all affect cancer risk, said Mariana Stern, PhD, senior author and director of graduate programs in molecular epidemiology at the Keck School of Medicine of USC.

The findings come months after the World Health Organization (WHO) declared processed meat a carcinogen



Bruno Bense/Creative Commons

A new study has found that Latinas who consumed processed meat were more likely to be diagnosed with breast cancer.

that increases the risk of colorectal cancer. Stern was among the panel of international scientists who helped come to that conclusion.

"Now, a new study shows there is an association between processed meat

and breast cancer for one understudied population," Stern said. "In light of the WHO report, this discovery could be a wake-up call about the negative health effects associated with consuming processed meat such as

bacon, beef jerky and lunch meats."

In the study, Latinas who consumed about 20 grams of processed meat per day (the equivalent of a strip of bacon) were 42 percent more likely to be diagnosed with breast cancer compared to Latinas who ate little or no processed meats.

Researchers also looked at consumption of red meats, poultry, all fish and just tuna. White women who ate an average of 14 grams of tuna daily (roughly the size of a thimble) were 25 percent more likely to have breast cancer than those who did not. The association for tuna on Latinas was comparable but not statistically significant.



Photos by Douglas Morino

A new clinic of the USC Eye Institute is now open at the University Park Campus, offering faculty, staff and their dependents, as well as USC students, a convenient location for their eye care and optical needs.

EYE: Priority is to provide exceptional care, service

Continued from page 1

“We are very focused on the quality of care we provide each and every patient,” said Lernik Torossian, OD, assistant professor of clinical ophthalmology. “Our priority each day is to provide our patients with the exceptional care and personalized service that Keck Medicine is known for.”

Both locations are open for walk-in purchases of contact lenses or eyewear Monday through Friday from 9 a.m. to 4 p.m.

To schedule an appointment, call (800) USC-CARE.



Lernik Torossian examines a patient at the new clinic of the USC Eye Institute on University Park Campus.

Neurosurgeon leads first BrainPath training session

The Keck School of Medicine USC recently hosted an inaugural one-day resident and fellow training on the comprehensive management of subcortical lesions using the NICO BrainPath Approach, a tool developed by the NICO Corporation for removing deep-seated brain tumors using an exoscopic channel-based approach. Gabriel Zada, MD, assistant professor of neurological surgery and

director of the USC Endoscopic Skull Base Surgery Program, was joined by colleagues from the University of California, Irvine, and Indiana University School of Medicine for the event. Attendees had a chance to engage at stations demonstrating BrainPath and Myriad, tools developed by NICO for use in subcortical brain surgery, as well as participate in various skills labs.

Calendar of Events

Friday, March 11
8 a.m.-4 p.m. Department of Medicine: Hastings Center for Pulmonary Research Symposium. “The Pulmonary Challenge: Innovations in Lung Development, Stem Cells and Regeneration,” Aresty Auditorium. Info and RSVP: Mariana Gonzalez, (323) 226-7923, hcpr@med.usc.edu, <https://hcpr.eventbrite.com>.

11 a.m.-5:30 p.m. Center for Craniofacial Molecular Biology Symposium. Eli and Edythe Broad CIRM Center, First Floor Seminar Room. Info: <http://ccmbsymposium.usc.edu>. RSVP: Patricia Thompson, pathomps@usc.edu, <http://bit.ly/1QuYDkL>

Saturday, March 12
6 p.m. Keck School of Medicine of USC. “Keck Scholarship Gala,” Town and Gown, Univer-

sity Park Campus, Los Angeles. RSVP: <http://usc.edu/ESVP> Code: KeckGala

Tuesday, March 15
5:30 p.m. Ophthalmology Grand Rounds. Natasha Naik, MD. HC4 Conference Room, 6th Floor. Please note the change in location. Info: Tyaisha Christopher, (323) 409-5233, Tyaisha.Christopher@med.usc.edu, <http://usceye.org>.

Wednesday, March 16
Noon. Zilkha Neurogenetic Institute Seminar. “Regulation of Glutamatergic Synaptic Transmission by Wnt Signaling,” Andres Barria, PhD, University of Washington. Herklotz Seminar Room, ZNI 112. Info: Emily Chu, (323) 442-3219, <http://www.usc.edu/zni>

Noon. The Saban Research Institute. “Research Seminar:

Neuregulin Signaling Promotes Intestinal Homeostasis and Reduces Inflammation Through Multiple Mechanisms,” Mark Frey, PhD. Auditorium, Saban Research Building, 4661 Sunset Blvd. Info: Ritu Gill, (323) 361-8715, <http://chla.org/tecpad>

Friday, March 18
8:45 a.m. Office of Student Affairs. “Match Day Class of 2016,” Carmen A. Puliafito, MD, MBA. HSC Quad. Info: Teresa Cook, (323) 442-2419, teresa.cook@med.usc.edu

Saturday, March 19
7:30 a.m.-5 p.m. USC Tina and Rick Caruso Department of Otolaryngology — Head & Neck Surgery, Continuing Medical Education Event. “Breakthroughs in Clinical Otolaryngology: Pragmatic, Cost-Effective Approaches,” Huntington Library,

Researcher receives Broad Fellowship

By Cristy Lytal
For this year’s Broad Fellow, Gabriel R. Linares, PhD, science is personal. “I have to say the turning point that spiked my interest in science was when I was in high school and my grandfather suffered a stroke,” he said. “I remember going to the hospital and he was just incapacitated. There was not really any effective treatment for him. The need for discovering new medical treatments for these patients stimulated my interest in biomedical research.”

Broad Fellows are exceptional senior postdoctoral researchers at the transition point of starting their own stem cell laboratories. The fellowship was established as part of a \$2 million gift from The Eli and Edythe Broad Foundation to USC’s stem cell research center.

As a Broad Fellow in the USC Stem Cell laboratory of Assistant Professor of Stem Cell Biology & Regenerative Medicine Justin Ichida, PhD, Linares is seeking innovative therapies for patients with amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig’s disease. In ALS, patients suffer from the death of the cells that transmit signals from the brain to the muscles, called motor neurons, leading to progressive paralysis and usually resulting in fatal respiratory failure within three to five years of diagnosis.

In the most common form of ALS, patients have a specific mutation, in which their DNA contains hundreds of extraneous repetitions in a gene called C9ORF72. To understand why this particu-

lar mutation causes ALS, Linares is studying diseased motor neurons derived from patients’ skin or blood cells. He also is exposing these motor neurons to thousands of potential drugs to see if any of them halt or reverse the progression of the disease.

“Any drugs that you test in these patient-specific motor neurons could potentially be easily translated to the clinic,” he said.

The clinic is never far from Linares’ mind. After receiving his bachelor’s degree in neurobiology, physiology and behavior from the University of California, Davis, he conducted research into the role of newly discovered genes that regulate bone formation and breakdown as a PhD candidate in the laboratory of Subburaman Mohan, PhD, at Loma Linda University. For this work, he won a young investigator award from the American Society for Bone and Mineral Research.

“Even after being completely absorbed in your research project, you have to step back and look at how the grand scheme of your work will contribute toward the advancement of scientific knowledge for a given disease and ultimately benefit a patient population,” Linares said. “As an additional motivating factor, I would often look at videos of people with osteoporosis to remind myself about the disabling aspects of this disease.”

He then pursued a four-year postdoctoral fellowship in the laboratory of De-Maw Chuang, PhD, at the National Institutes of Health (NIH) before moving to the Ichida Lab at the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC. He is thrilled to join the ranks of the Broad Fellows.

“It’s a distinct honor, and I am privileged to be selected as the recipient for the Broad Fellowship,” Linares said. “I applaud the foundation for their continued generosity and support of stem cell research at USC.”

HACKS

Continued from page 1

Forward suspicious emails to helpdesk@med.usc.edu and call (323) 442-4444.

An important step in combating potential attackers is for personnel to complete the online Cyber Security Awareness training provided by USC at <https://itservices.usc.edu/security/awareness>.

“This short training is our best defense against attackers,” Loor said.

Staff members can login using their USC credentials. The course takes about 45 minutes to complete.

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. Submit items at 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.

School of Pharmacy debuts learning center

By Michele Keller

The USC School of Pharmacy announced the grand opening of its new Walgreens Conference Room with a ribbon-cutting ceremony on Feb. 26.

Nearly 18 months in the making, the state-of-the-art conference and learning center, located on the second floor of the John Stauffer Pharmaceutical Sciences Center on the Health Sciences Campus, features an interactive smart board, multiple large video screens, wireless-enabled workshop stations with modular seating and audio/videoconferencing capability, among many other features.

In addition to serving as a conference and learning center, the Walgreens Conference Room will be the location for the school’s new Margaret and John Biles Leadership Center, which will bring influential voices from the public and private sectors to address pressing health-related concerns and provide students with an opportunity to develop essential leadership and entrepreneurial skills.

It was made possible by a \$250,000 gift from Walgreens as well as more than \$500,000 in funding from the university.

“Walgreens commends (USC School of Pharmacy) on the initiative and the education you provide to students,” said Paul Huynh, Walgreens area health care supervisor.



Chris Jones

At the ribbon-cutting ceremony on Feb. 26 for the USC School of Pharmacy’s new Walgreens Conference Room, from left: Tri Leu, Robbie Jacobs, USC School of Pharmacy Interim Dean Glen Stimmel, Perry Han, Robert Lee and Paul Huynh.

“We will join you and walk with you on this journey of partnership and friendship.”

Interim Dean Glen Stimmel acknowledged Walgreens for its long history of supporting the school’s scholarships, student organizations

and programmatic advances, and said the newly renovated, highly customizable room will be the school’s premier conference space.

“The USC School of Pharmacy has always been a welcoming place where talented individuals solve complex

problems by working collaboratively,” Stimmel said. “We’re proud to open a state-of-the-art facility that encourages innovation and collaboration, and I look forward to the transformative ideas and outcomes that will be generated there.”



Children's Hospital Los Angeles

From left, Jay Pruetz, Samantha Davila, Grayson Davila, Marco Davila, Frank Ing and Ramen Chmait pose at Children’s Hospital Los Angeles.

LIVES: Surgeons used ultrasound to guide needle into heart of fetus in mother’s womb

Continued from page 1

chamber of a HLHS fetus to flow back to the right side of the heart. The successful procedure was a first for the Institute for Maternal-Fetal Health and a first for a Southern California hospital.

The fetal interventionalist conducting the procedure was Ramen Chmait, MD, director of Los Angeles Fetal Surgery, a branch of the CHLA-USC Institute for Maternal-Fetal Health, and associate professor of obstetrics and gynecology at the Keck School. Chmait guided a needle into the heart of the fetus in the mother’s womb. Pediatric interventional cardiologist Frank Ing, MD, co-director of the CHLA Heart Institute and a professor of clinical pediatrics at the Keck School, then deployed a stent device in the developing child’s heart. CHLA fetal cardiologist and Keck School assistant professor of pediatrics Jay Pruetz, MD, used ultrasound to guide the physicians’ movements.

“This procedure contributed to Grayson’s ability to survive after his birth,” Chmait said. “It successfully strengthened his lungs so the surgeons

could do their job after he was born.”

Doctors closely followed mom Samantha Davila, a program manager at an aerospace and defense company, to ensure the stent in the baby’s heart was working properly. By the time the stent appeared to close down in the late third trimester, Grayson’s lungs had strengthened during a critical window of gestation. Grayson was born on Nov. 19 via a planned cesarean section, ten weeks after the procedure.

Following his delivery, Grayson was immediately transported to CHLA, where Starnes’ pediatric cardiothoracic surgery team performed a Norwood surgery, which uses the right heart and pulmonary artery to become the main pathway for pumping blood to the body.

“This coordination of care between the fetal therapy team and CHLA surgeons was extraordinary, starting with the transcatheter fetal cardiac procedure, the monitoring during the pregnancy leading up to the birth, and the surgery,” Starnes said.

Grayson was discharged from CHLA on Dec. 14 and went home with his thrilled parents.

Study: Team-based approach still leaves gaps in child care

By Mary Dacuma

While medical home care may be improving primary care for children, these youngest patients may be disadvantaged by this team-based health care approach in other ways, according to a new study.

Researchers at the Keck School of Medicine of USC examined medical home trends in children’s primary care from 2003 to 2012 and found that while this specific health care model has improved children’s primary care overall, certain aspects of children’s patient care experience have worsened. Moreover, uninsured children were subject to more insufficient levels of care.

The medical home is a team-based approach to health care that includes a personal physician who provides accessible, continuous, comprehensive and family-centered care to each patient.

The study was published in the March issue of *Maternal and Child Health Journal*. “Overall, the medical home experience has improved over time for children across the nation, although some aspects have worsened,” said Gregory Stevens, PhD, associate professor of family medicine and preventive medicine at Keck School of Medicine and lead author of the study. “Children have better access to health care and a more continuous experience with their physicians. But children do not always have sufficient time with their physicians, and may not be receiving all the medical care that they need.”

To better analyze children’s medical home experiences, the

team created several sociodemographic subgroups. In situations where children did not have positive medical home experiences, the team identified risk factors that may have contributed to poor outcomes, such as the level of education of the child’s parents, amount of insurance coverage and whether or not the child lived under the poverty line.

One subgroup seemed to fall behind even when other at-risk subgroups improved. Uninsured children had the lowest and most unstable medical home experiences over the past decade. The uninsured subgroup also had the children in most need of constant, quality care.

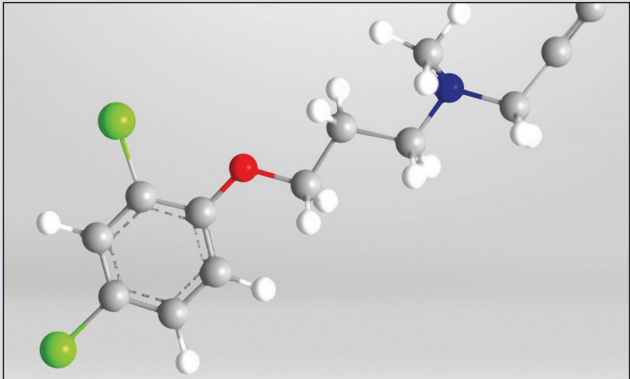
“We need to make extra efforts to ensure that all children have access to quality healthcare,” Stevens said. “Even if the Affordable Care Act is implemented exactly as planned, millions of people are expected to go without insurance, including children. We need to think of other ways to ensure that insurance is available for all children, or we need to expand other community resources.”

The resources to which Stevens refers include federally qualified community health centers (FQHC) and free clinics that cater to those who are not insured.

Because the medical home model is a widely supported as a strategy for delivering high-quality primary care, FQHCs that operate using the medical home model have been entitled to additional federal funding.

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:



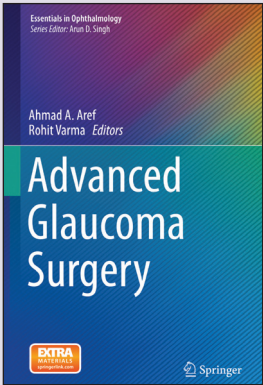
USC School of Pharmacy

Antidepressants may shrink brain tumors, fight cancer, study finds

ANTIDEPRESSANTS CAN SHRINK AND STUNT cancerous brain tumors that are otherwise difficult to treat, an international team of researchers has found. USC School of Pharmacy researchers who led the study on mice found that the drugs stifle the growth of brain cancer, glioma or glioblastoma by suppressing the enzyme monoamine oxidase A, which affects the release of emotional brain chemicals such as dopamine and serotonin. Typically, brain cancer is treated with TMZ — temozolomide — an oral drug that attacks the DNA of the tumor cells. Some tumors become resistant to TMZ. University Professor Jean Chen Shih at the USC School of Pharmacy and the Keck School of Medicine of USC and her collaborators found that the MAO-A inhibitors reduce cell proliferation and increase immune response. Their study was published on Feb. 9 in the journal *Oncotarget*. — **Michele Keller**

USC Eye Institute Director Varma releases new glaucoma book

ROHIT VARMA, MD, MPH, has released a new educational book, *Advanced Glaucoma Surgery*. Varma, the director of the USC Eye Institute and chair of the Department of Ophthalmology at the Keck School of Medicine of USC, co-edited the book with Ahmad A. Aref, MD, and covers the spectrum of techniques for surgical treatment of glaucoma. *Advanced Glaucoma Surgery* provides in-depth information on indications, preoperative considerations, potential intra- and postoperative complications, and strategies for reducing the incidence of such adverse events. — **Sherri Snelling**



Physical therapy researcher: More therapy is not always better

RECOVERING THE ABILITY to move arms and hands after a stroke often requires hours of physical therapy, though clinicians lack science-based evidence as to which type and amount of therapy is most effective. But a new study led by Carolee Winstein, PhD, and published in the Feb. 9 issue of the *Journal of the American Medical Association* has changed that, providing some much-needed scientific data for clinicians. In short, more therapy doesn't necessarily provide better outcomes. In the study, called the Interdisciplinary Comprehensive Arm Rehabilitation Evaluation (ICARE), researchers compared two different rehabilitation strategies to determine each one's effectiveness. After one year, the groups were tested on their arm and hand movements, and researchers discovered there wasn't that much of a difference between the two interventions. "We were surprised that (intensive, high-repetition therapy) did not, in fact, accelerate motor outcomes," Winstein said. "We were also surprised that more than doubling the dose of usual occupational therapy did not appear to have an impact either." — **John Hobbs**



Carolee Winstein



Douglas Morino

Traffic lanes have been modified on Alcazar Street as part of the ongoing HSC Beautification Project. The lanes will be modified through May.

Traffic lanes modified to adjust for HSC Beautification Project

USC Capital Construction and Development (CCD) recently modified traffic lanes on Alcazar Street as part of the ongoing HSC Beautification Project. The modifications will be in place through May to accommodate sidewalk and street construction on the south side of Alcazar between San Pablo and Soto streets. Employees entering the campus from Soto Street are encouraged to use Norfolk Street as an alternate to Alcazar Street. In order to maintain two-way traffic in the affected areas, parking meters will be taken down and "Tow Away No Stopping Any Time" signs will be posted.

An additional LADOT Traffic Control Officer will be located on Alcazar Street at the back entrance to the Keck Hospital Parking structure (UHP) from 6:30 to 8:30 a.m. Other Traffic Control Officers will continue to assist with rush hour traffic control at the intersections of San Pablo and Alcazar; Eastlake and San Pablo; and Zonal and San Pablo streets. In addition, LADOT-approved traffic control measures will be in place throughout the project to assist vehicles and pedestrians approaching the area. For more information, contact USC CCD at hscbeaut@usc.edu.

Grant to help create education program for underserved diabetes patients

By Leslie Ridgeway
The USC Westside Center for Diabetes, under the direction of Anne Peters, MD, CDE, professor of medicine, Keck School of Medicine of USC, has been awarded a \$1.25 million grant from The Leona M. and Harry B. Helmsley Charitable Trust to create an educational program for underserved adults living with Type 1 diabetes.

Peters and her team are currently recruiting focus groups to review existing educational materials and develop new materials aimed at low literacy groups, in English and Spanish.

The timeline calls for STEPP-UP tools to be completed by June and a two-year clinical trial of 100 patients to begin in July to evaluate the tools and curriculum.

The grant, to be awarded over a three-year period, will fund a project called STEPP-UP (Specialized Technology Education for Pumps & Pens in Underserved Populations with Diabetes). A curriculum will be developed to teach lower literacy adult patients who are currently injecting insulin how to use insulin pumps and pens now available to them through the Affordable Care Act.

While the pumps and pens can help patients better manage their diabetes, the learning curve is steep, and follow-up is recommended to ensure proper use of the pumps for optimal results. The program aims to reduce health disparities among the underserved, and to measure the increase or decrease of severe hypoglycemia and other emergency conditions experienced by Type 1 patients as they transition to pumps and pens.

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Los Angeles, CA 90032

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HSC News

HSC News is published for the faculty, staff, students, volunteers and visitors in the University of Southern California's Health Sciences Campus community. It is produced by the Health Sciences Public Relations and Marketing staff. Permission to reprint articles is available upon request. No artwork may be reproduced without the creator's consent.



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Next Issue:
March 25