

\$25 million gift aids children with hearing loss

Business leader and USC Trustee Rick J. Caruso and his wife, Tina, have donated \$25 million to endow and name the USC Tina and Rick Caruso Department of Otolaryngology – Head and Neck Surgery, one of the nation’s largest and most highly ranked for research and treatment of diseases of the ear, nose and throat.

The Carusos’ exceptionally generous gift also names and endows the department’s affiliated treatment center for young children with severe hearing loss. This funding for the USC Caruso Family Center for Childhood Communication will enable the center to expand its leadership as the region’s top resource for testing and therapies that enable children to hear.

“This gift reflects the Caruso family’s far-reaching and passionate commitment to USC,” said USC President C. L. Max Nikias. “As benefactors, Rick and Tina Caruso inspire so many throughout Los Angeles and our nation, and we should all warmly applaud their philanthropic



Rick J. Caruso and his wife, Tina, have donated \$25 million to endow and name the USC Tina and Rick Caruso Department of Otolaryngology – Head and Neck Surgery.

ic vision, their dedication to medical discovery, and the profound breadth of their generosity.”

The USC Caruso Department

serves patients facing a range of conditions affecting the head and neck, such as cancer, thyroid disease, facial paralysis, chronic sinusitis and tumors

of the cranial base. As a key program within the department, the Caruso Family Center’s life-changing technologies and services allow children to experience sounds — from their parents’ voices to music, laughter and nature — often for the very first time.

“Early intervention is critical to ensure that children with hearing loss develop their speech and language skills,” said John K. Niparko, MD, the holder of the Leon J. Tiber and David S. Alpert Chair in Medicine at the Keck School of Medicine of USC and chair of the USC Caruso Department. “There is an early window of opportunity when sound exposure empowers a child to learn to comprehend and connect information from speech and the environment. Tina and Rick Caruso have a profound understanding of these concerns and are compassionate believers in the importance of this work. Generations of children will bear the imprint of their generosity.”

With a daughter impacted by hearing
See **GIFT**, page 3

Soto Street lane closure to stretch through October

By Douglas Morino

Some patience may be needed for commuters and visitors navigating their way this summer to the Health Sciences Campus.

A stretch of Soto Street is being partially closed for construction as part of the Health Sciences Campus Beautification Project.

A south lane of Soto Street will be closed from Alcazar Street to Zonal Street to widen the existing road and add needed sidewalks. This is part of extending Norfolk Street, which is aimed at alleviating future traffic congestion.

“This is a major project that will ultimately benefit the entire campus and surrounding community,” said Robert Scrofano, director of capital construction development.

Because of the construction, traffic delays are expected — especially around peak commute times — during the next five months, Scrofano added.

“Soto Street will be

congested through the summer,” Scrofano said.

The lane closure comes amid a construction boom across the Health Sciences Campus. The beautification project will include 12 phases throughout the 79 acres of campus and stretch through spring 2017. It is among five construction projects currently happening across the Health Science Campus.

The beautification project includes new sidewalks with brick banding, a crosswalk with a traffic signal at San Pablo and Alcazar, trees and lighting.

The next phase of the project — which involves closing the southbound lane of Soto Street — began June 1 and will run through October. Construction crews will be working from 7 a.m. to 4 p.m.

A six-level, 1,200 space parking structure on San Pablo Street, near Valley Boulevard, is on schedule to open by the end of December, Scrofano said.



Daniel Pelletier joined Keck Medicine of USC on April 1.

MS expert joins USC from Yale

Neurologist Daniel Pelletier, MD, has been recruited from Yale University to lead the USC Multiple Sclerosis Center, effective April 1. He began seeing patients this month.

An internationally renowned multiple sclerosis clinician and researcher, Pelletier joins Keck Medicine of USC as professor of neurology, chief of neuroimmunology and multiple sclerosis, and vice chair of research for the Department of Neurology. He will also serve as USC’s liaison to the Race to Erase MS and Cen-

ter Without Walls programs.

Multiple sclerosis, or MS, is an unpredictable and often debilitating disease that interrupts information flow between the body and the brain, affecting an estimated 2.5 million people worldwide, according to the National Multiple Sclerosis Society. Common symptoms include fatigue, visual disturbances and difficulty in moving. Current treatments aim to manage symptoms and delay progression of disability, but no cure yet exists for the chronic disease.

See **PELLETIER**, page 2

Stem cell retreat brings together Broad centers

By Cristy Lytal

Working alone, a scientist or university can only make so much progress in finding answers to basic questions or new treatments for diseases ranging from HIV to cancer to diabetes. That’s why almost 300 scientists from USC, UCLA and UCSF gathered in Santa Barbara for a Tri-institutional Stem Cell Retreat.

Held May 17–19 at the Fess Parker Doubletree Hilton Resort, the retreat showcased some of the most innovative projects from the three universities’ stem cell research centers, all of which were established with support from Eli and Edythe Broad and the California Institute for Regenerative Medicine (CIRM).

“If we want a true measure of success for the meeting, it won’t simply be that we’ve had a good time, but that the scientific interchange between us provides new insights and

See **RETREAT**, page 2



CEO Tom Jackiewicz of Keck Medicine of USC joins Adrian and Kathy Rudnyk, standing arm-in-arm, and others who helped refurbish the garden near the administrative offices at Keck Hospital of USC.

Garden refuge sprouts at Keck Hospital of USC

By Tania Chatila

A small patch of green space behind Keck Hospital of USC’s administrative offices has been transformed into a lush, soothing viewing garden thanks to the generosity of gracious donors.

The Keck Hospital of USC Garden was dedicated during a special ceremony on May 18. It is located just behind Keck Hospital’s administra-

tive suite, between its Gold and Cardinal towers.

“The redesigning of this green space was truly a labor of love on the part of so many generous supporters of our hospital and medical enterprise,” said Keck Medicine of USC Senior Vice President and CEO Tom Jackiewicz. “Not only does this garden provide a much-needed green sanctuary for our

patients but also a wonderful space for our physicians and staff to recharge throughout the day.”

Inspiration for the renovated garden came from Adrian Rudnyk and his wife, Kathy. Adrian Rudnyk was a patient at Keck Hospital when he noticed the small green space with metal seating and patches of grass from

See **GARDEN**, page 3



Above left, Neil Segil and Andy McMahon of USC chat during the Tri-institutional Stem Cell Retreat, which featured a keynote address by Amy Wagers of Harvard University, above right.



Photos by Cristy Lytal

RETREAT: New research is focus

Continued from page 1 collaborative opportunities,” said Andy McMahon, PhD, FRS, director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC.

Keynote speaker Amy Wagers, PhD, from the Harvard Stem Cell Institute detailed an experiment in which she connected the circulatory systems of an old mouse and a young one. The old mouse experienced youthful benefits, including a decrease in heart enlargement and an increase in the regeneration of muscle, neurons and the insulin-producing beta cells of the pancreas. Conversely, the young mouse suffered ailments of age, including a decrease in the regeneration of muscle, neurons and beta cells. Her goal is to find ways to use some of these youthful blood-borne factors to treat age-related dysfunction.

In all, about 30 principal investigators (PIs), post-doctoral scholars and PhD students discussed advances relevant to a variety of diseases.

The cardiovascular system was the topic of several talks and included USC PI Megan McCain, PhD, who discussed engineering micro-scale mimics of human tissues called “hearts

on chips,” which enable scientists to study diseases and screen drugs. USC post-doctoral scholar Michaela Patterson, PhD, presented her hypothesis that multiple genes dictate the number of regenerative cells present in a mammalian heart.

In the neural realm, USC PI Michael Bonaguidi, PhD, highlighted neural stem cells, USC postdoctoral fellow Kate Galloway, PhD, discussed reprogramming skin cells into neurons, and USC postdoctoral fellow Suhasni Gopalakrishnan, PhD, talked about converting skin cells into inner ear sensory cells.

Regarding sensory organs, USC PI David Hinton, MD, summarized plans for a phase 1 clinical trial to treat age-related macular degeneration, the leading cause of blindness in the elderly in the Western world. Built on a partnership with USC colleague Mark Humayun, MD, PhD, and collaborators at UCSB, Caltech and the City of Hope supported by nearly \$40 million from CIRM, the trial uses stem cells to produce some of the key cells that help people to see.

Several researchers also shared progress in tackling diseases of the digestive and urinary systems. Tracy Grikscheit, MD, a PI at

Children’s Hospital Los Angeles and USC, talked about her work in intestinal regeneration, for example.

Regarding the skeletal system, USC PI Gage Crump, PhD, discussed repairing bone fractures, and USC PI Yang Chai, DDS, PhD, described stem cells that maintain and repair the skull and could potentially be used to treat babies who suffer from fused skull joints, which constrict brain development.

On other topics, USC PI Paula Cannon, PhD, shared progress in developing next-generation tools to genetically edit blood stem cells as a treatment for HIV, immune deficiencies and blood diseases. Cannon and her colleagues have already developed one tool to introduce a gene mutation that confers natural immunity to HIV — an approach that is heading into clinical trials. And USC PI Scott Fraser, PhD, discussed microscopes and imaging tools.

An additional 100 scientists presented their research on posters, with 10 giving brief poster highlight talks.

“I’ve learned so much from this meeting,” said McMahon. “It’s a rapidly moving field, so I think we need a retreat next year as well.”

PELLETIER: Doctor will lead expansion of MS services at USC

Continued from page 1

“It is estimated that 10,000 people in Los Angeles County alone are living with multiple sclerosis but are unable to access the care they need because of limited MS specialists in the area,” said Tom Jackiewicz, senior vice president and CEO of Keck Medicine of USC. “Dr. Pelletier brings with him the leadership, expertise and experience we need to achieve our goal of building one of the largest MS centers on the West Coast — upholding our commitment of providing leading, quality care to those who suffer from this disease.”

Pelletier’s immediate goals include the expansion of MS patient services at USC and the development of MS research programs focused on neuroimaging, genetics, epidemiology, biomarkers and neurodegeneration. Additionally, as MS patients now have access to more complex but highly effective therapies that require close monitoring and MS-specific expertise, Pelletier’s team will provide tailored approaches using state-of-the-art facilities.

Pelletier has published numerous manuscripts in high-impact academic journals such as the *New England Journal of Medicine*, *Annals of Neurology*, *Brain*, and the *Proceedings of the National Academy of Sciences*.

His primary research interests revolve around the implementation of new neuroimaging techniques to predict, monitor and more accurately define factors responsible for MS progression. He brings with him more than \$2 million in research grants from the NMSS and the National Institutes of Health, and he received the prestigious Harry Weaver Neuroscientist Scholar Award from the National Multiple Sclerosis Society in 2005.

A native of Montréal,



Christopher Bazin

‘Dr. Pelletier brings with him the leadership, expertise and experience we need to achieve our goal of building one of the largest MS centers on the West Coast.’

— Tom Jackiewicz, senior vice president and CEO

Pelletier obtained his medical degree from Université Laval in Québec City, where he also completed his residency in neurology, followed by neuroimaging fellowship training at McGill University in Montréal. He also finished fellowship training in MS and metabolite imaging at UC San Francisco before becoming a full-time faculty member in 2001.

Pelletier was recruited to Yale as an associate professor in 2011 and served as chief of the division of neuroimmunology, as well as director of the Yale MS Center and director of advanced imaging in the Yale MS laboratory. He was promoted to professor of neurology and diagnostic radiology with tenure in 2013.

Pelletier is married to Marise Larivière and has three children. He lives in Los Angeles.

Calendar of Events

Monday, June 8

1 p.m. USC Institute for Global Health Talk. “Uganda Health Systems: Success Stories and Challenges from Mpigi Health Center IV,” John Jubilee, MD, Mpigi Health Center IV, Uganda. SSB 117. Info: Larissa Puro, (323) 442-7233, puro@usc.edu, <http://globalhealth.usc.edu/johnjubilee>

Tuesday, June 9

9:45 a.m. - 6 p.m. The Saban Research Institute. “20th Annual Poster Session,” Auditorium, Saban Building. Info: Harleen Gill, (323) 361-8626, hgill@chla.usc.edu

5:30 p.m. Ophthalmology Grand Rounds. “Senior Residents, USC.” HC4 Conference Room, 3rd Floor. Info: Tyaisha Christopher, (323) 409-5233, Tyaisha.Christopher@med.usc.edu

Thursday, June 11

1:30 p.m. Keck Medicine of USC Stroke

Support Group Meeting. “Activating Your Lifestyle,” Nora Darakjian, PT, DPT, USC. Keck Hospital, 3 North, Day Room (3261A). Info: Ozzy Obiwuru, (323) 442-0049, obiwuru@med.usc.edu

Friday, June 12

7:30 a.m. - Noon. USC Eye Institute — Visiting Professor Lecture Series Lecture. “Pediatric Ophthalmology and Strabismus,” David Hunter, MD, PhD, Harvard Medical School. HC4, 3rd Floor Conference Room. Free continental breakfast will be served at 7 a.m. Info: Tyaisha Christopher, (323) 409-5233 Tyaisha.Christopher@med.usc.edu

Noon. Cardiology Grand Rounds. “Diet & CV Disease: What is the Evidence?” Kim A. Williams, MD, chief of cardiology and James B. Herrick Professor at Rush University Medical Center in Chicago and the newly elected president of the American College of Cardiology. McKibben Lecture

Hall, Room 149. Info: Sandra Gonzales, (323) 442-6135, sandra.gonzales@med.usc.edu

Monday, June 15

Noon. KSOM Research Seminar Series Seminar. “Interplay of Signal Transduction and Mitochondria in Liver Injury: a Sab Story,” Neil Kaplowitz, MD, USC. Aresty Auditorium. Info: Mary Jane Chua, (323) 442-7732, maryjane.chua@med.usc.edu

Wednesday, June 17

Noon. The Saban Research Institute Seminar. “Microtechnology-Enabled Implants,” Ellis Meng, PhD, USC. Auditorium, Saban Building. Info: <http://chla.org/tecpad>

Monday, June 22

Noon. KSOM Research Seminar Series Seminar. “Converging the Physical and Biological Sciences to Improve Cancer

Therapy,” Shannon Mumenthaler, PhD, USC. Aresty Auditorium. Info: Mary Jane Chua, (323) 442-7732, maryjane.chua@med.usc.edu

Friday, June 26

Noon. Pharmacology and Pharmaceutical Sciences Seminar. “Toward In-Vivo Membrane Fusion Using a Biomimetic Model System,” Alexander Kros, PhD, Universiteit Leiden, Netherlands. John Stauffer Pharmaceutical Sciences Center, PSC B13. Info: Ruth Ballard, (323) 442-3400, ellisbal@usc.edu

Monday, June 29

Noon. KSOM Research Seminar Series Seminar. “Beyond ‘There’s an App for That,’” Ida Sim, MD, PhD, University of California, San Francisco. Aresty Auditorium. Info: Mary Jane Chua, (323) 442-7732, maryjane.chua@med.usc.edu

Researchers clarify role of key protein in Alzheimer's disease

By Les Dunseith

Scientists at the Keck School of Medicine of USC have discovered that a protein known as PICALM regulates removal of toxic plaques from the brain, which could be a potential therapeutic target for the treatment of Alzheimer's disease.

PICALM has been previously identified as a highly validated genetic risk factor for Alzheimer's disease (AD), but the mechanism of its impact was not previously known.

Alzheimer's is the most common type of dementia, characterized by the loss of memory and other mental abilities linked to an accumulation of amyloid-beta and other toxic compounds in the brain. The study, which appeared in the May 25 edition of the scientific journal *Nature Neuroscience*, discovered that deficiency in PICALM in cerebral blood vessels, and in *PICALM*-related gene variants associated with increased risk for AD, disable amyloid-beta from being cleared out of the brain across a region known as the blood-brain barrier.

Autopsies from Alzheimer's disease patients and recent research in experimental models have shown the importance of brain blood vessels in the disease initiation and progression. For more than two decades, the study's principal investigator, Berislav Zlokovic, MD, PhD, and his research team have studied the cellular and molecular mechanisms of brain blood vessels that maintain normal cognition with hopes of developing new treatments for Alzheimer's and other neurodegenerative diseases. One focus of their lab at the Zilkha Neurogenetic Institute at the Keck School of Medicine of USC is on PICALM, or phosphatidylinositol binding clathrin assembly protein, which in humans is encoded by the *PICALM* gene.

"There have been many new genes discovered to be associated with Alzheimer's disease, but the biology of these genes are poorly understood. Our new study shows that a deficiency in PICALM in blood vessels and its variants associated with increased risk for the disease inactivate amyloid-beta clearance from the brain, leading to its accumulation and cognitive impairment," said Zlokovic, director of the Zilkha Neurogenetic Institute and holder of the Mary Hayley and Selim Zilkha Chair for Alzheimer's Disease Research at the Keck School of Medicine of USC. "This new study provides fundamental new information about PICALM and brings to light novel potential therapeutic targets for increasing amyloid-beta clearance in Alzheimer's disease."

By performing an extensive neuropathological study in humans with Alzheimer's and using transgenic animals to model the disease, the group found that low levels of PICALM in brain endothelial cells leads to amyloid-beta accumulation. The animal testing showed that the associated impairments in cognition and daily activities could be corrected by re-expressing PICALM in brain blood vessels.

The team also investigated endothelial cells derived from Alzheimer's disease patients and

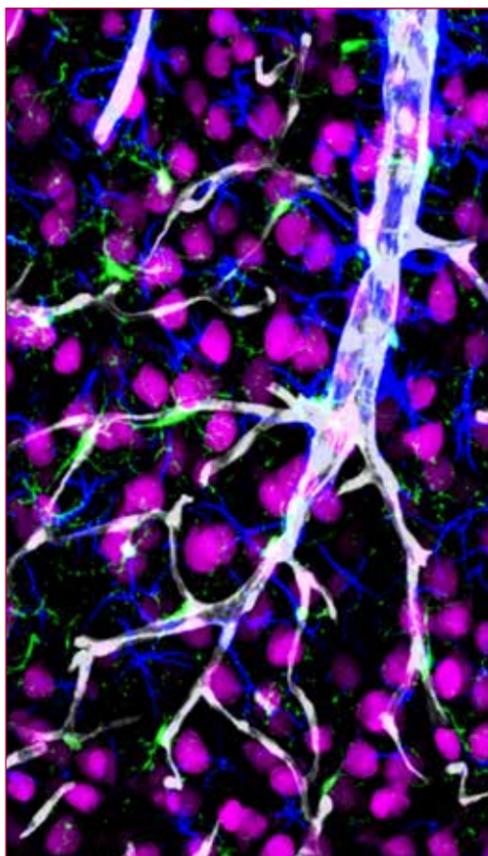


Image by Zlokovic lab

A snapshot of a neurovascular unit, consisting of neurons (pink), astrocytes (blue), resident microglia (green), a penetrating arteriole and capillaries (white) — the site of the blood-brain barrier and amyloid-beta clearance.

found that these cells have reduced PICALM levels and amyloid-beta clearance, which could be corrected using gene therapy to increase PICALM expression.

Genetic variants associated with the *PICALM* gene have been shown to increase the risk of Alzheimer's disease. The researchers also generated human endothelial cells from induced pluripotent stem cells to examine the consequences of a known *PICALM* variant associated with increased risk for Alzheimer's and found that this genetic alteration disrupted amyloid-beta clearance by cerebral blood vessels.

These new findings have prompted Zlokovic to address new questions about the role of PICALM in Alzheimer's disease. Future studies will explore how genetic flaws in the *PICALM* gene influence its expression levels and clearance function at the blood-brain barrier and the general health of cerebral blood vessels. The team also will work on developing therapeutic strategies, including gene therapy, and screening for new drugs to overcome PICALM deficiency.

Co-authors on the study from USC include Zhen Zhao, Abhay Sagare, Qingyi Ma, Matthew Halliday, Pan Kong, Cassandra Kisler, Ethan Winkler, Anita Ramanathan, Nelly Chuqui Owens, Sanket Rege, Gabriel Si, Ashim Ahuja, Carol Miller, Tohru Sugawara and Justin Ichida.



Don Millici

John K. Niparko, MD, above left, is the chair of the newly renamed USC Caruso Department, which includes an affiliated treatment center for young children with severe hearing loss such as Roman Carbone, below, shown with audiologist Jamie Glater, AuD.



Van Urfalian

GIFT: Caruso Department of Otolaryngology created

Continued from page 1

loss at birth, the Carusos have experienced first-hand the challenges of early-onset hearing loss. The Carusos' daughter, Gianna, now a teenager, was born with mild to moderate hearing loss, and doctors and therapists have worked closely with her ever since. Although Gianna could hear some sounds with assistance, she relied on reading lips to ensure she understood what was being said. This presented challenges in daily life, including in the classroom. This all changed when Gianna experienced a miracle last year, Caruso said, after she saw the team of USC doctors who provided her with a new highly sensitive hearing device that was inserted into her ear canal.

"The minute the hearing device went in, there was a huge difference. Gianna immediately started crying — all of us started crying," Caruso said. "It was a life-changer."

Caruso said he believes that with the endowment, USC has the potential to help thousands of children — and perhaps millions of people who have suffered hearing loss — to hear for the first time, or to ultimately cure hearing loss altogether. It will also bolster the depth of the department's research and help expand treatment options for hearing loss, which is the third most-common diagnosis affecting mankind, behind arthritis and hypertension. About 30 million Americans suffer hearing loss of varying severity.

"Hearing loss is a shared disability," Niparko said. "And one thing that we have

learned from the Caruso family is that digital hearing devices are responsive and nimble devices that restore tonal hearing. But when paired with the awareness and support of family and friends, the results can be extraordinary."

The USC Caruso Department of Otolaryngology currently ranks among the Top 10 nationwide in federal research funding.

Rick Caruso, a highly respected business and community leader, is the founder and chief executive officer of one of the nation's largest privately held real estate companies, Caruso Affiliated. The company's holdings include The Grove, The Americana at Brand, and The Commons at Calabasas, among others. He graduated with a bachelor's degree with honors from the USC Marshall School of Business. He joined the USC Board of Trustees in 2007 and serves in several leadership positions with the USC board. He also serves on the board of councilors for the USC Sol Price School of Public Policy.

With this gift, the Carusos build on a broad legacy of support to USC that spans nearly four decades and includes more than \$35 million in philanthropic gifts. It also further advances The Campaign for the University of Southern California, a multiyear effort that seeks to raise \$6 billion or more in private philanthropy to advance USC's academic priorities and expand its positive impact on the community and world. Just 4^{1/2} years after its launch, the campaign has raised more than \$4.2 billion.

GARDEN: Former patient leads landscaping effort

Continued from page 1

his hospital window.

"I remember what a sense of tranquility and calm it gave me to see these small areas of grass below," he said. "After I was discharged, my wife and I wrote a letter of gratitude and expressed our interest in giving back to the hospital by volunteering to help ensure a beautiful, serene garden could be seen from patient room windows."

Working with Keck Hospital of USC Associate Director of Development Mary Byrnes, the Rudnyks got brought together an A-list of professional friends to help, including landscape architect Kiki Kurahashi, who created the architectural drawings that provided the foundation for the redesigned garden. Kurapia, Inc. provided the drought-resistant ground cover. The Monrovia Nursery provided all the flowering plants and evergreens. And the facilities staff at Keck Medical Center



Van Urfalian

coordinated the timely completion of the garden in just a few months.

"There is so much evidence on the impact that therapeutic landscapes and nature can have on a patient's recovery," Byrnes said. "We're grateful and excited that we were able to bring the right knowledge, support and people together to create this visually appealing and tranquil refuge."

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:



Dawn Muench

KSOM students, faculty receive Baxter Foundation fellowships

THE DONALD E. AND DELIA B. BAXTER FOUNDATION has awarded \$100,000 to students from the Keck School of Medicine of USC in its summer research fellowship program. The Baxter Foundation also provides annual funding for research by junior faculty members at the Keck School, and this year's recipients are Min Yu, MD, PhD, from Stem Cell Biology and Regenerative Medicine; Jon-Paul Pepper, MD, from Otolaryngology–Head and Neck Surgery; and Kevin S. King, MD, from Radiology. The foundation's mission is to advance charitable, scientific and educational purposes, primarily at medical and scientific schools in California. Pictured with foundation representatives is Dean Carmen A. Puliafito, front.

Van Dam honored by national society at Washington D.C. event

JACQUES VAN DAM, MD, PhD, is the recipient of a Distinguished Service Award from the American Society of Gastrointestinal Endoscopy. Van Dam was recognized May 17 for his notable achievements and significant contributions at the organization's Crystal Awards event in Washington D.C. He is a professor of medicine in the Keck School of Medicine of USC and director of clinical gastroenterology for Keck Hospital of USC. — **Les Dunseith**

Keck School website is revamped

FEATURING A MORE-VISUAL HOME PAGE and user-friendly navigation, the Keck School of Medicine website redesign has launched at keck.usc.edu. Aligning with the school's digital strategy, the site is now mobile responsive to fit the screens of smartphones and tablets. The recent launch marks phase one of a digital transformation that will eventually update all of the Keck School's departments and institutes. The new home page and navigation pages for education, research, patient care and support are now in place, as is an updated news and events portal. Pages for individual departments will be phased in this year. Keck Medicine Web Services produced the redesign with oversight from the Office of the Dean. — **Andrea Aldana**



El-Khoueiry presents liver cancer study results at ASCO meeting

A KECK MEDICINE OF USC INVESTIGATOR presented interim results of a study evaluating a novel treatment for advanced liver cancer on May 30 at the American Society of Clinical Oncology's annual meeting in Chicago. Anthony B. El-Khoueiry, MD, of the USC Norris Comprehensive Cancer Center, is the lead author of an international study that showed that liver cancer tumors responded in an unprecedented manner to the immunotherapy drug nivolumab, which is marketed as Opdivo. The study was conducted at select centers worldwide. Eight of 42 evaluable patients responded to nivolumab with tumor reduction beyond 30 percent, and two showed complete responses, El-Khoueiry reported. Furthermore, another 48% of patients had stabilization of their cancer. Both the responses and the arrest in tumor growth were durable and lasted for several months and beyond one year in several patients. About 70% of the patients in the study had failed treatment with sorafenib, the standard of care. There is no current standard treatment options after failure of sorafenib. The overall survival rate at 12 months was 62 percent with nivolumab, compared to about 30 percent in patients who do not get any treatment in this setting, El-Khoueiry said. "While we have to verify this early signal in larger studies, this is one of the first signs that immunotherapy with immune checkpoint inhibitors will have a role in the treatment of liver cancer," he said. "These results promise to open the door for a novel approach in treating this challenging cancer for which there is only one approved drug with a survival of less than 11 months." This study was funded by Bristol-Myers Squibb.

Tales of hope to highlight Festival of Life

Cancer survivors and family members will gather June 6 for the USC Norris Comprehensive Cancer Center's 25th annual Festival of Life.

Master of ceremonies will be Art Ulene, MD, a USC Norris Cancer Center advisory board member and former "Today Show" medical correspondent.

The invitation-only event features testimonials by can-

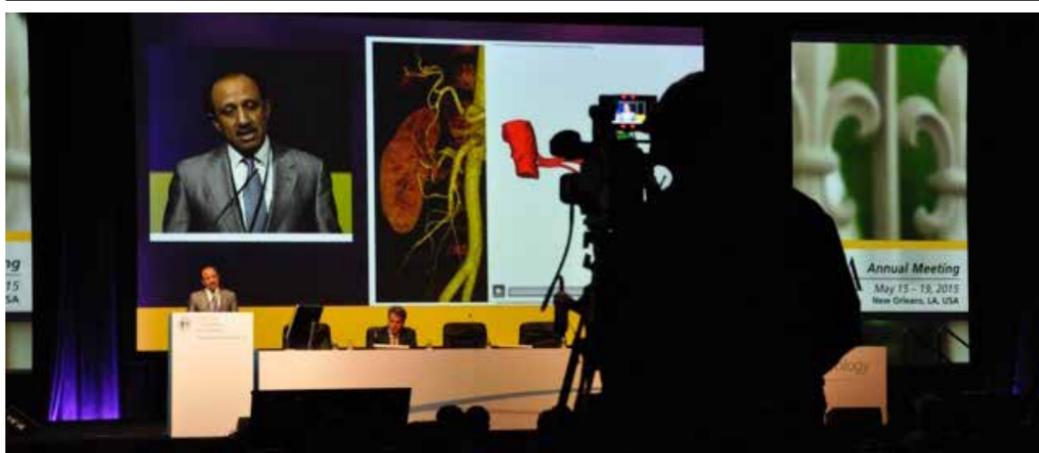
cer survivors. Educational booths staffed by cancer survivors, hospital employees and representatives of community organizations will line Harry and Celesta Pappas Quad. And the festival will also include words of encouragement from physicians such as Afsaneh Barzi, MD, PhD, who is an assistant professor of clinical medicine at the Keck School of Medicine of USC and an

oncologist at Keck Medicine of USC — Pasadena.

Festivities will include music, a magician and more, said event organizer Alicia M. Syres, director of volunteer services at USC Norris Cancer Hospital.

Attendees also will have a chance to have photos taken with USC's mascot, Traveler.

The event concludes with the release of a hundred white doves.



A cameraman records the May 18 speech by USC's Inderbir S. Gill, MD, to the American Urological Association.

Surgeon examines past, future of robotic surgery

By **Les Dunseith and Douglas Morino**

Keck Medicine of USC's Inderbir S. Gill, MD, has been even busier than usual lately. On Monday, May 18, he delivered the annual Ramon Guiteras Lecture at the 2015 meeting of the American Urological Association (AUA) in New Orleans, the seminal invited lecture of this society. By Friday, May 21, he was back in Los Angeles to host a visiting delegation from Africa.

Gill, professor and chair of the Catherine & Joseph Aresty Department of Urology and founding executive director of the USC Institute of Urology at the Keck School of Medicine of USC, focused his lecture on advances in the field of minimally invasive robotic and laparoscopic surgery for urologic cancers. A few days later, he explained the benefits of being at USC to apply and teach those techniques during his meeting with a delegation of officials and VIPs from Buganda, a kingdom within the African country of Uganda.

"USC is among the finest research and educational institutions in the country," Gill said as the 14-member delegation sat down to a lunch reception he hosted with Keck Medicine of USC leaders at the Edmondson Faculty Center. "Getting into USC for students is difficult, but getting into the Keck School of Medicine of USC is especially difficult."

The delegation included 1st Deputy Prime Minister Ambassador Emmanuel Ssenduala and Deputy Speaker of Buganda's Parliament Ahmed Lwasa. Buganda is the kingdom of the Ganda people, Uganda's largest ethnic group, and is among the largest kingdoms in the central African nation.

In Gill's department, advanced robotic surgery complements open sur-

gery for all major urologic cancers: kidney, prostate, bladder, testis. This has underpinned remarkable growth: Robotic surgery has grown from being only 1 percent of all urologic cancer operations in 2006 to 77 percent in 2013. These USC numbers handily exceed national data.

In New Orleans, Gill told fellow urological surgeons attending his AUA lecture that "there is not a single oncologic operation today where robotic outcomes have been shown to be any worse than open surgery, yet with superior patient recovery." The AUA meeting is the largest urologic meeting in the world, attended by over 20,000 urologists.

Despite two decades of advances, Gill said the best is yet to come. "Advances are not just technical and surgical. Newer technologies are giving surgeons far more real-time data points in the operating room, allowing more precise surgery. For example, we are beginning to super-impose 3D modeling onto the surgical field, thus providing augmented reality information to the surgeon," he said.

"In 2015, the only thing that should always be open is our minds," concluded Gill, who was also recently appointed by the AUA Board of Directors to the new position of Chair, Global Initiatives. He will assume this role on June 1.

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