

## Researchers advance genome editing of blood stem cells

By **Cristy Lytal**

Genome editing techniques for blood stem cells just got better, thanks to a team of researchers at USC and Sangamo BioSciences.

In an upcoming study in *Nature Biotechnology*, co-first authors Colin M. Exline, PhD, from USC and Jianbin Wang, PhD, from Sangamo BioSciences describe a new, more efficient way to edit genes in blood-forming or “hematopoietic” stem and progenitor cells (HSPCs).

“Gene therapy using HSPCs has enormous potential for treating HIV and other diseases of the blood and immune systems,” said co-corresponding author Paula Cannon, PhD, professor of molecular microbiology and immunology, pediatrics, biochemistry and molecular biology, and stem cell biology and regenerative medicine at the Keck School of Medicine of USC. “And using genome editing techniques now allows us to make very precise changes that could repair genetic mutations — the gene typos — that can cause disease.”

Despite the enormous potential of such targeted gene medicine to cure patients, getting genome editing to work has proven challenging in human HSPCs — especially in the most primitive, least differentiated cells with the greatest ability to become any blood cell type.

Cannon’s group, working with a team at Sangamo, has been using “genetic scissors” called zinc finger nucleases (ZFNs) to cut a cell’s DNA at a precise location or sequence. The cell normally uses a copy of the cut DNA sequence as a template to repair the DNA break. During this process, there is the opportunity to introduce

See **DNA**, page 3



Amanda Busick

Djani Robertson, a first-year medical student at the Keck School of Medicine of USC, was a 2014 Bridging the Gaps participant during his time as an undergraduate student at Rutgers.

## For minority students who dream of being doctors, ‘Keck is where you want to be’

By **Amanda Busick**

Attending medical school can seem like a pipe dream for many students, particularly minorities, but the Bridging the Gaps Summer Research Program at the Keck School of Medicine of USC can turn that dream into a reality.

“The program was created to address the underrepresentation of minority students within medicine and the biological sciences and with hopes of attracting them to Keck,” said program director Joyce Richey, PhD, chief diversity officer and assistant dean of educational affairs. In the four years since the program began, 71 minority undergraduate students have participated. To date, more than half of those students have applied to the Keck School and 17 applicants have been accepted. Alumni of the



Vanessa Arientyl is now a second-year medical student at the Keck School.

summer program are now part of the Trojan family and enrolled in the MD, PhD and Global Medicine programs.

In addition to the Keck School students, 95 percent of Bridging the Gaps participants overall have been successful in gaining acceptance and matriculating in their desired medical or graduate programs at other prestigious institutions such as Columbia and Yale.

Bridging the Gaps runs

for eight weeks during the summer in the laboratories of Keck School faculty members who also serve as mentors for the students. During this time, the students work on research projects alongside their mentors. In addition to lab research, students have the opportunity to witness the impact of the diseases they are studying while shadowing faculty physicians. The program embraces a true bench-to-bedside model.

One program participant, Vanessa Arientyl, studied how oxytocin affected social behavior in mice.

“It was nice learning how to really build a project from the beginning. I got to learn how research really works, collect the data and present it,” recalled Arientyl, who is now a second-year medical

See **DREAM**, page 3

## Keck Medicine launches new center focusing on innovation

By **Douglas Morino**

A new center dedicated to developing and translating innovation in the delivery of health care has been established at Keck Medical Center of USC.

The USC Center for Health Systems Innovation (CHSI) will focus on turning research and education into measurable and sustainable improvements in outcomes and experience for patients and staff. It will be led by Executive Director Carol Peden, MD, MPH, a professor in the Department of Anesthesiology at the Keck School of Medicine of USC.

“This is about bridging the gap between innovation and implementation, to deliver health care safely, effectively and efficiently, while ensuring the best possible patient and staff experience,” Peden said. “The center will focus on a very practical approach. We will

See **CHSI**, page 2

## National AYA program honors Stuart Siegel with Trailblazer Award

Professor Stuart Siegel, MD, of the Keck School of Medicine of USC was recently awarded the Archie Bleyer AYA Trailblazer Award by Critical Mass, a leading organization supporting the cause of adolescents and young adults (AYAs) with cancer.

Siegel’s involvement in the AYA movement has been long and productive. In the 1980s, he championed the development of a program at Children’s Hospital Los Angeles called Teen Impact, which was one of the nation’s first support group-based programs focusing on the needs of AYAs and their families.

A professor of pediatrics and medicine at the Keck School of Medicine and the director of the Center for Global Health at CHLA, Siegel is also the founding director of the Children’s Center for Cancer and Blood Diseases and the Center for International Health at CHLA. In addition, he serves as co-medical director of the Adolescent and Young Adult Cancer Program at USC (AYA@USC).

“Dr. Siegel has been a

See **SIEGEL**, page 4

## Community celebrates completion of Hazard Park improvements

By **Teresa Lara**

More than 100 community members celebrated the completion of USC-supported improvements at Hazard Park in Boyle Heights on Oct. 31.

In early spring, USC contributed \$1.1 million toward a new jogging path, outdoor fitness zone and new toddler zone, as well as improvements to the tennis and basketball courts, and \$100,000 for youth sports programming at the park adjacent to the Health Sciences Campus.

City officials, including Sylvia Patsouras, president

of the board of commissioners of the Los Angeles Department of Recreation and Parks, and José Huizar, councilmember for Los Angeles District 14, thanked USC for its commitment to the local community.

“It is a reflection of what we can do in the community when we work together,” Huizar said. “This park has a lot of history for Boyle Heights, Ramona Gardens, Lincoln Heights and El Sereno.

“It’s been great to see Health Sciences and county employees having lunch

See **PARK**, page 3



David Sprague

Neighborhood residents take advantage of a new outdoor fitness zone during the Oct. 31 dedication at the Hazard Park Recreation Center.

## USC researchers profile key gene that keeps stem cells in check

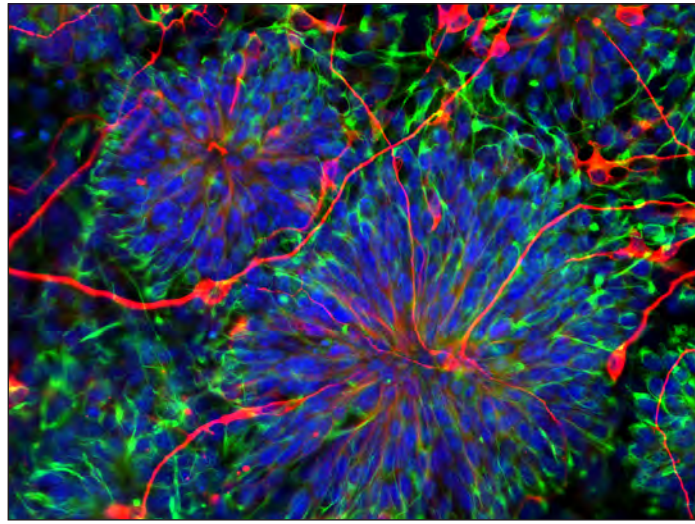
By Cristy Lytal

When it comes to stem cells, too much of a good thing isn't wonderful: producing too many new stem cells may lead to cancer; producing too few inhibits the repair and maintenance of the body.

A key gene in maintaining this critical balance between producing too many and too few stem cells, called *Prkci*, is described in a paper published in *Stem Cell Reports* by USC researcher In Kyoung Mah, PhD, from the lab of Francesca Mariani, PhD, and colleagues at UC San Diego. The gene influences whether stem cells self-renew to produce more stem cells or differentiate into more specialized cell types, such as blood or nerves.

In their experiments, the team grew mouse embryonic stem cells that lacked *Prkci* into embryo-like structures in the laboratory. Without *Prkci*, the stem cells favored self-renewal, generating large numbers of stem cells and, subsequently, an abundance of secondary structures.

Upon closer inspection, the stem cells lacking *Prkci* had many activated genes typical of stem cells, and some activated genes typical



The gene *Prkci* promotes the generation of differentiated cells (red). However, if *Prkci* activity is reduced or absent, neural stem cells (green) are promoted.

of neural, cardiac and blood-forming cells. Therefore, the loss of *Prkci* can also encourage stem cells to differentiate into the progenitor cells that form neurons, heart muscle and blood.

*Prkci* achieves these effects by activating or deactivating a well-known group of interacting genes that are part of the "Notch signaling pathway." In the absence of *Prkci*, the Notch pathway produces a protein that signals to stem cells to make more stem cells. In the presence of *Prkci*, the Notch pathway remains silent, and stem cells differentiate into specific cell types.

These findings have implications for developing patient therapies. Even though *Prkci* can be active in certain skin cancers,

inhibiting it might lead to unintended consequences, such as tumor overgrowth. However, for patients with certain injuries or diseases, it could be therapeutic to use small molecule inhibitors to block the activity of *Prkci*, thus boosting stem cell production.

"We expect that our findings will be applicable in diverse contexts and make it possible to easily generate stem cells that have typically been difficult to generate," said Mariani, principal investigator at the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC.

Additional co-authors on the study include Rachel Soloff, PhD, and Stephen Hedrick, PhD, from UCSD.

## Bozicks' gift to USC Norris benefits melanoma research

By Carmy Peters

Longtime USC supporters Bobbie and Mike Bozick recently gave \$100,000 to USC Norris Comprehensive Cancer Center to fund purchase of a sophisticated piece of equipment to be used in a project that is investigating the causes of melanoma and seeks to better predict survival.

The device, a Covaris M220, uses high frequency sound waves to shatter DNA that is gently resting in a water bath, an important step in the process that scientists are using to piece together clues about what drives cancer cells to grow uncontrollably.

Mike Bozick, a 1960 graduate of the USC Marshall School of Business, and his wife, Bobbie, own a grape, citrus and vegetable company based in Riverside County. Their children, Nicholas Bozick and Cynthia Bozick Beteta, are both USC graduates who now work for the family business in Mecca, CA.

The Bozicks' devotion to USC Norris includes hosting of a recurring cancer research event that has been held for many years at the Indian Wells Country Club near Palm Springs.

"We are extremely



Covaris M220

honored and grateful to Mike and Bobbie Bozick for their belief in our efforts to conquer cancer and provide compassionate care to our patients," said Stephen B. Gruber, MD, PhD, MPH, the director of USC Norris.

The Genes, Environment and Melanoma Project is led by Gruber. Research scientists Kevin J. McDonnell, MD, PhD, Asaf Maoz, MD, and Marilena Melas, a PhD student, will process samples from more than 600 melanoma patients who previously contributed melanoma biopsies and shared their sun exposure history with the USC investigators.

Melanoma is the deadliest type of skin cancer, and more than 73,000 Americans are expected to be diagnosed with melanoma this year. About 10,000 will die from the disease.

## CHSI: New center will create interdisciplinary programs to improve health care

Continued from page 1

use the wealth of resources across the university, harnessing the knowledge and skills of many of USC's schools to better design and deliver care."

The center will facilitate faculty-led research projects and create new interdisciplinary programs in health care quality improvement. By January 2017, the CHSI will establish fellowships in health systems innovation for medical and non-medical graduate students.

Peden, an anesthesiologist and intensive care physician, joined Keck Medicine of USC in September from the United Kingdom, where she gained extensive experience in leading local and national improvement projects. She is a believer in data for



Carol Peden

improvement and developed a national database for emergency surgery outcomes. Peden chaired the executive board of Global Comparators, a group of 44 of the world's leading institutions that share data for improvement.

Peden said her commitment to improving care across health systems stemmed from her clinical work as a physician.

"Through my work as an intensive care doctor, I sometimes saw critically ill patients in whom a simple step earlier in their pathway could have

prevented disease progression," she recalled. "The enormous challenge of recovering from critical illness for the patient and their family could have been avoided. I started to think about the whole system of health care more."

CHSI developed from a partnership among several USC schools, including the Viterbi School of Engineering, the Pacific Center for Health Policy and Ethics, along with the faculty in anesthesiology. Peden plans to build on these relationships and foster further partnerships across USC to envision, design and develop new ways of caring, and to provide the strategy and tools to ensure successful delivery in the complex environment of health care.

"CHSI's strength will be the academic input from USC, but the center will be of real relevance to the health system," Peden said. "It will be integrated into patient care and dedicated to improving the experience for everyone in the health system, both our patients and our staff."

Peden was previously associate medical director for NHS England, responsible for clinical quality for 13.5 million people. Her expertise in improvement was developed as a fellow at the Institute for Healthcare Improvement (IHI) in Boston. She has also developed improvement and leadership courses for institutions such as the University of Oxford and University College London.

## Calendar of Events

### Sunday, Nov. 22

**9 a.m.** Special Olympics Southern California 5k. "We Run the City 5k," USC vs. UCLA fundraiser, Rafer Johnson, UCLA alumnus and Olympic gold medalist. Exposition Park. Info: Luke Farnell, (562) 822-1215, lfarnell@sosc.org, <http://www.WeRunTheCity.com>

### Monday, Nov. 23

**Noon.** KSOM Research Seminar Series Seminar. "Where It All Began: An Oral History of Bone Remodeling," Paul J. Kostenuik, PhD, Phylon Pharma Services. Info: Mary Jane Chua, (323) 442-7732, [maryjane.chua@med.usc.edu](mailto:maryjane.chua@med.usc.edu)

### Tuesday, Nov. 24

**5:30 p.m.** Ophthalmology Grand Rounds. Walid F. Abdallah, MD, PhD, USC. HC4

Conference Room, 3rd Floor. Info: Tyasha Christopher, (323) 409-5233, [Tyasha.Christopher@med.usc.edu](mailto:Tyasha.Christopher@med.usc.edu), <http://uscceye.org>

### Tuesday, Dec. 1

**6 p.m.** HTE@USC and Health Technology Forum (HTF) Discussion. "How The Internet of Things Is Revolutionizing Health Care," Sajjad Yacoob, MD, of CHLA and USC, with Hector Rodriguez, national director, health and life sciences technology unit at Microsoft. Harlyne Norris Research Tower, Room 503. Info: Nadine Afari, (310) 999-4029, [nafari@usc.edu](mailto:nafari@usc.edu)

### Wednesday, Dec. 2

**Noon.** Saban Research Institute Seminar. "Fetal Personalized Medicine: Developing Novel Prenatal Treatments to Address Genetic Disorders," Diana W. Bianchi, MD,

Tufts Medical Center. Auditorium, Saban Building, 4661 Sunset Blvd. Parking is available at the main hospital garage. Info: Ritu Gill, [tecpad@chla.usc.edu](mailto:tecpad@chla.usc.edu)

**Noon.** USC Women in Management Luncheon. Sharon Orrange, MD, MPH, USC. \$18 for members, \$20 for non-members. IRD Building, Room 305. Info: Ginger Mayerson, (323) 227-1092, [mayerson@usc.edu](mailto:mayerson@usc.edu), <http://uscwim.org>

### Tuesday, Dec. 8

**7:30 a.m.** Committee on Microbiome-Host Interactions in Disease (CMHID) Symposium. "Microbiome Matters Symposium Series," Jonathan Braun, MD, PhD, UCLA, and David Pride, MD, PhD, UCSD. Harlyne Tower, LG 503/504. Info: Amy Parker,

(978) 500-9269, [parkeram@usc.edu](mailto:parkeram@usc.edu), <http://www.cmhid.org>

### Wednesday, Dec. 9

**Noon.** Zilkha Neurogenetic Institute (ZNI) Seminar. "Flexible Sensory Representations in Auditory Cortex," Jeff Isaacson, PhD, professor, Department of Neuroscience, UCSD. Herklotz Seminar Room, ZNI 112. Info: Emily Chu, (323) 442-3219, [Emily.Chu@med.usc.edu](mailto:Emily.Chu@med.usc.edu), <http://www.keck.usc.edu/zilkha/>

### Thursday, Dec. 10

**1:30 p.m.** Keck Medicine of USC Stroke Support Group Meeting. "Demystifying Stroke," Peggy Nguyen, MD, USC. Keck Hospital, 3 North, Day Room (3261A). Info: Ozyy Obiwuru, (323) 442-0049, [obiwuru@med.usc.edu](mailto:obiwuru@med.usc.edu)

## DREAM: Bridging the Gaps helps minority students pursue med school

Continued from page 1  
student at the Keck School.

Arientyl is one of six Keck School medical students from Rutgers University in New Brunswick, N.J.

"We have created a pipeline with Rutgers; each year we've had two students from Rutgers," says Richey with a smile. "It had been difficult to pull students from back east here, and now, with this particular institution, it's almost an unwritten goal: 'Keck is where you want to be.'

Bridging the Gaps students attend weekly seminars that benefit not only their current research but also their futures in the medical field. Students conduct research in a variety of disciplines, some of which include metabolic diseases, oncology, cardiovascular, neuroscience, immunology and stem cell.

"The program has created a powerful national recruitment network among participants. Many of the students come from historically black colleges and universities, such as Xavier, Spelman and Morehouse, as well as Ivy League institutions such as Harvard and Cornell. They all return to their home institutions encouraging classmates to apply to the program, or the Keck School in general, because of their incredible experiences over the summer," Richey said.

Another Rutgers recruit is Djani Robertson. He was a 2014 program participant and is currently a first-year medical student at the Keck School. He says not all of the benefits were from working in the lab, where his research involved children with congenital adrenal hypoplasia.

"I enjoyed the whole program, because even though we did research most of the day, we still got to network with other physicians, and they had students talk to us about what medical school is like," Robertson said.

Arientyl also said the program was about more than just lab work.

"One of the best parts of the experience had to be the people that I met in the program," she said. "I still talk to those people today... the friendships I built here are my favorite."

It's not just students who benefit, Richey said, noting that 80 percent of mentors have been with the program from the beginning.

"These students are highly motivated," said Richard Watanabe, PhD, professor, preventive medicine, physiology and biophysics, who has been a mentor every summer since 2011. "It's been a real pleasure to interact with them. You get the sense they have a real sense of responsibility and purpose, which makes mentoring them that much more satisfying."



The first group of students in the Bridging the Gaps program gather with Keck School leaders Henri Ford, Joyce Richey and others in 2011.



Joyce Richey has led Bridging the Gaps since its inception.

Watanabe also noted another Bridging the Gaps benefit, this one to the Keck School itself: "Like many universities, we have serious problems when it comes to under-represented minority students in the STEM fields."

Watanabe feels kinship with Bridging the Gaps participants.

"I feel my own personal journey parallels many of the students in this program," he said. "I like to think that if my participation in the program helps to bring one additional under-represented minority student to USC or helps others get into programs at other institutions, then it was worth my time and investment."

Ite Laird-Offringa, associate dean of graduate studies

at USC and another mentor who has been with Bridging the Gaps since its inception, has similar feelings.

"I get tremendous satisfaction from the growth I see in our summer interns, with respect to knowledge they gain, the joy they experience in the lab setting, and the expanded vision they will take back to their universities as they continue their studies," Laird-Offringa said.

"We aim to pick an area that hits home with the student and interface that with a clinical experience," said fellow mentor Alicia McDonough, PhD, professor of cell and neurobiology.

Applications for summer 2016 are being accepted through Feb. 12, 2016.

For Arientyl, the dream is almost realized. Soon enough, she'll be working as a third-year medical student at Los Angeles County+USC Medical Center.

"I am excited for third-year, to spend time in County, to spend time in other hospitals, and just learn what the actual parts of being a physician are," Arientyl said.

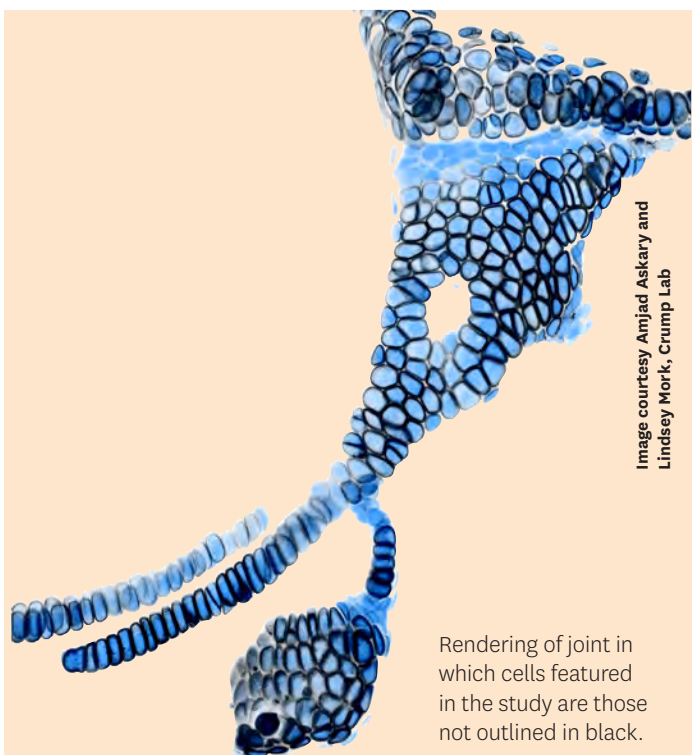


Image courtesy Amjad Askary and Lindsey Mork, Crump Lab

Rendering of joint in which cells featured in the study are those not outlined in black.

## Iroquois genes make cartilage cells act 'oh so immature'

By Cristy Lytal

Arthritis, the leading cause of disability in the U.S., involves the loss of a special type of cartilage cell lining the joints. In a study appearing on the cover of the latest issue of *Developmental Cell*, first author Amjad Askary — a PhD student in the USC Stem Cell lab of Gage Crump, PhD — and his colleagues identify roles for a family of genes, called Iroquois (Irx) genes, in protecting these joint cartilage cells.

Some types of cartilage serve as temporary scaffolds that are later replaced by bone, but joint cartilage remains perpetually cushiony, flexible and immature. In order to better understand how this works, the researchers took advantage of the fact that a joint in the zebrafish jaw, called the hyoid joint, contains high levels of one member of the Irx family, Irx7. When the researchers used gene editing to create mutant zebrafish lacking this gene, the wrong type of cartilage formed at this joint. They then showed that Irx genes promote joint flexibility by turning off genes that stiffen more mature cartilage.

Next, the researchers explored whether Irx genes play a role in species outside the fish tank. To do so, Crump's team collaborated with the neighboring labs of Justin Ichida, PhD, Francesca Mariani, PhD, and Andy McMahon, PhD — all located in the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC — to show that a related Irx gene could repress the maturation of cartilage in mice.

"The Irx genes may be a core machinery that prevents cartilage maturation in species across the animal kingdom," said Crump, the study's corresponding author and associate professor of stem cell biology and regenerative medicine at USC. "This raises intriguing questions: Can we harness the effects of these genes to encourage stem cells to differentiate into new joint cartilage, and do mutations in these genes play a role in inherited osteoarthritis?"

Additional co-authors on the study from USC include Lindsey Mork, PhD; Sandeep Paul, PhD; Xinjun He, PhD; Audrey Izuhara; and Suhasni Gopalakrishnan, PhD; plus Sonja Dabizljevic and Rodney Dale from Loyola University Chicago.

Funding came from the National Institutes of Health, March of Dimes, an A.P. Giannini Foundation fellowship and the Loyola University Chicago's Provost office.

## PARK: Community near HSC to benefit from facility improvements

Continued from page 1

here at the park, to see family picnics and young people exercising," he added.

Martha Escutia, JD, vice president for USC Government Relations, recalled the collaborative process that took place during community outreach meetings on the Health Sciences Campus: "I still remember how the moms especially asked for greater safety as well as for exercise equipment, better lighting and sidewalks."

Added Escutia: "USC looks forward to working with all of you in this effort

to make Hazard Park a beautiful and safe place for all to enjoy. We will continue to build upon our 135 year history in our community."

Cheryl Resnik, DPT, associate professor of clinical physical therapy and associate chair of the Division of Biokinesiology and Physical Therapy at USC, invited community members to participate in Fit Families, a free exercise and nutrition program supported by the Good Neighbors Campaign, at Hazard Park every Saturday morning.

## DNA: Scientists develop better method to edit genetic material

Continued from page 1

new DNA sequences or to repair mutations, effectively fooling the cell into making a genetic edit.

To provide the cell with both the targeted nuclease and the new DNA template, scientists can use a variety of delivery vehicles or vectors, including viruses and a type of genetic material known as messenger RNA (mRNA).

In the study, the team discovered a highly effective way to deliver the DNA repair template using a specific type of viral vector, known as an adeno-associated virus (AAV) serotype 6, which can naturally enter HSPCs. At the same time, they found that delivering the ZFNs as short-lived mRNA molecules allowed the DNA cutting and repair process to occur without disrupting the HSPCs. By combining these two delivery methods, the scientists were able to insert a gene at a precise site in even the most primitive human HSPCs with unprecedented

efficiency rates ranging from 15 to 40 percent.

The team then transplanted these genetically edited human HSPCs into immune-deficient mice; the cells thrived and differentiated into many different blood cell types — all retaining the edits to their DNA.

"Our results provide a strategy for broadening the application of genome editing technologies in HSPCs," said co-corresponding author Michael C. Holmes, PhD, vice president of research at Sangamo BioSciences. "This significantly advances our progress towards applying genome editing to the treatment of human diseases of the blood and immune systems."

Additional co-authors include Nick Llewellyn, PhD, from USC, and Joshua DeClercq, Samuel Hayward, Patrick Wai-Lun Li, PhD, David Shivak, Richard Surosky, PhD, and Philip Gregory, DPhil, from Sangamo BioSciences.

## 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:



Courtesy UKRO

Department of Medicine Chairman Edward Crandall, left, with Provost Michael Quick and UKRO founder Kenneth Kleinberg.

## Goals of new Kidney Research Center are outlined at reception

SUPPORTERS OF THE USC/UKRO Kidney Research Center learned more about the pioneering efforts underway at the newly launched research hub at Keck Medicine of USC during a Nov. 14 reception at the California Club. The founder of the University Kidney Research Organization (UKRO), Kenneth Kleinberg, talked about his personal battle with kidney disease and introduced the various academic and scientific leaders who will carry out his vision to create the country's top facility focused on kidney research. Among the featured speakers was Kenneth Hallows, director of the Kidney Research Center, who noted that government support for biomedical research tends to favor "safe" studies that provide mainly incremental advances in knowledge. That approach tends to limit innovative research. "We want instead to be able to follow the research where it takes us, trying fresh and unanticipated pathways," Hallows told the audience. "Generous private-donor contributions to UKRO to support investigators within the KRC would enable the recruitment of a highly dedicated and talented team of scientists, and promote more open collaborations and the performance of exciting, truly ground-breaking and paradigm-shifting studies to be performed to treat and cure kidney disease."

# Keck Medicine of USC

## Branding site provides templates, logos for Keck Medicine of USC

THE GRAPHIC IDENTITY PROGRAM for Keck Medicine of USC is now online on the Keck intranet site at [https://kecknet.usc.edu/brand\\_central](https://kecknet.usc.edu/brand_central). Brand Central, which is designed to provide quick and convenient access to brand assets, houses Keck graphic standards, presentation guidelines and the USC Graphic Identity Program cheat sheet. Branded PowerPoint presentation templates, logos and printable fact sheets for health care centers and hospitals can be downloaded from the website. Logotypes in a variety of compliant color combinations have been created for each of Keck Medicine of USC's units as part of the University identity system, and detailed instructions and illustrations for proper usage are provided. For questions regarding logo usage or graphic standards, email [identity@med.usc.edu](mailto:identity@med.usc.edu) — **L. Alexis Young**



Douglas Morino

## Military veterans are honored

U.S. MILITARY VETERANS gathered Nov. 11 for the annual Veteran's Day Breakfast at Keck Hospital's Hoffman Café to hear remarks from Rod Hanners, CEO of Keck Medical Center of USC. Hanners, a veteran of the Navy, thanked the employees for their service in the Armed Forces and their dedication to help patients at Keck Medical Center. "As you know, your service did not end when you left the military," Hanners said. "Today, you continue to serve the public and help Keck Medical Center provide the type of exceptional care that our patients deserve." — **Douglas Morino**

## Stanczyk chosen as Distinguished Researcher

Frank Z. Stanczyk, PhD, professor of research at the Keck School of Medicine of USC, is the recipient of the 2015 Distinguished Researcher Award from the American Association of Reproductive Medicine (ASRM).

This award recognizes an ASRM member who has made outstanding contributions to clinical or basic research in reproduction published during the previous 10 years. Recipients must demonstrate sustained long-term commitment to advancing the frontiers of research in reproductive sciences and educating future scholars in the field.

In a letter of congratulations, ASRM President Rebecca Z. Sokol, MD, MPH, recognized Stanczyk's role in educating other members of the organization, and she noted his "many fundamental contributions that have advanced our knowledge of the biology of the human reproductive system and the development of contraceptive technologies."

Stanczyk received the award Oct. 19 during the 2015 ASRM annual meeting in Baltimore, MD.

As the association's Distinguished Researcher, Stanczyk will present an exchange lecture about his research in July 2016 when the Society for the Study of Reproduction



Courtesy ASRM

Frank Z. Stanczyk received the award from Rebecca Z. Sokol, ASRM president.

holds its annual meeting in San Diego.

Stanczyk is the director of the Reproductive Endocrine Research Laboratory and the technical director of the USC Reproductive Endocrine Clinical Laboratory, which are part of the Department of Obstetrics and Gynecology. An internationally recognized expert in steroid biochemistry, he has been a listed contributor to more than 400 academic papers. In addition, Stanczyk has provided laboratory training and didactics to more than 80 fellows who received board certification in Reproductive Endocrinology and Infertility.

## STIEGEL: Organization honors pioneer in AYA medicine

Continued from page 1  
trailblazer and loyal supporter for more than a decade, defining standards of clinical care delivery for [AYA] patients, translating them at a local level, and communicating them nationally and internationally," wrote one of his colleagues in nominating Siegel for the AYA Trailblazer Award.

Another nominator wrote: "He thinks big, moves swiftly, and gets a lot accomplished... seemingly effortlessly and with a big smile on his face."

Siegel has long pushed to develop new talent to support and benefit the field, and he has helped develop innovative AYA oncology training programs for fellows and medical students. He was instrumental in the 2006 formation of the LIVESTRONG Young Adult Alliance (which later was renamed Critical Mass), and the organization's announcement of the award noted that he has "worked tirelessly to develop standards for AYA oncology care and expand formal education in AYA oncology, as evidenced by his leadership on seminal position papers in these areas."

The award is named for Archie Bleyer, MD, another AYA advocate whose academic career spans four decades, during which he has worked at NCI, the University of Washington, the Fred Hutchinson Cancer Research Center and the University of Texas MD Anderson Cancer Center. The award was made possible through funding by the Leukemia and Lymphoma Society.

Siegel is the second recipient of the award, following Bleyer. It was created to honor the individual who has the most impact in the field during a particular year.

Siegel's selection was based on national online voting by Critical Mass members, with the final choice made by Critical Mass leaders. The formal presentation

of the award took place Nov. 4 during the annual Critical Mass conference in Chicago.

David R. Freyer, DO, MS, professor of clinical pediatrics at the Keck School, first shared the good news about the award in an email to colleagues in September.

Freyer wrote, in part, that the "choice of Stu for this award truly reflects the broad impact he has had nationally on so many individuals and the field itself through influencing development of studies, publishing of key data, disseminating important findings, creation of care standards, and advancing public policy — all in addition to the transformational AYA-focused work we know he has carried out over the course of many years leading to AYA@USC."



Courtesy Critical Mass

Stuart Siegel holds the AYA Trailblazer Award he received on Nov. 4 from Critical Mass.

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Next Issue:  
Dec. 4