Cancer survivors’ strength celebrated at Festival of Life

By Amanda Busick

A bright, sunny morning provided a joyful backdrop for a celebration of resilience and tenacity at the 26th annual Festival of Life on the Health Sciences Campus.

Hosted by the USC Norris Comprehensive Cancer Center on June 4, the event was both upbeat and introspective, providing more than 700 cancer survivors and their supporters with a place to share their experiences and talk about their hopes for the future.

Prostate cancer survivor Felipe Arias attended the event with several loved ones, and he appreciated the sense of community that he felt at the event. “This means everything to me, the happiness, the joy,” he said. “I am happy to celebrate with all of the people here. It’s very nice and very helpful to me.”

Attendees had the opportunity to interact with some members of the animal community as well. Traveler, the Andalusian horse who is the USC mascot, was available for photo opportunities and two canine ambassadors from the Paws 4 Life program were in attendance, accepting love and affection from all who approached them.

USC Norris Ambassador Art Ulene, MD, who has attended the event and been master of ceremonies almost every year since the festival’s inception in 1990, led a program of speakers and entertainment.

“Twenty-nine years ago, the National Cancer Survivors Day Foundation established a worldwide celebration of cancer survivorship. It was something, in those days, that was a bit of a surprise,” Ulene told the crowd. “Today, we almost take it for granted. I think it’s a mistake to take survivorship for granted. Because your survivorship is the result of decades of work that have gone on in science centers like this around the country and days, weeks, hours, and months of effort.”

Among the speakers was the wife of prostate cancer survivor Gordon Case, Amaryllis. Case died in 2015, but his wife has attended the event since its inception and has spoken about their family’s journey. “I am here today to celebrate hope,” she said.

Arius also spoke to the audience about how welcomed they felt and for the festival. She spoke to the audience about how welcomed they felt and for the festival. She spoke to the audience about how welcomed they felt and for the festival. She spoke to the audience about how welcomed they felt and for the festival.

Los Angeles to host international stem cell conference

By Cristy Lytal

In recognition of its growing stature as an incubator for the biosciences, Los Angeles will be the host city for the 2019 International Society for Stem Cell Research (ISSCR) Conference. With the generous support of the Choi Family, USC Stem Cell will co-host the conference, and the city-owned Los Angeles Convention Center will serve as the venue.

“We are extremely excited to welcome the International Society for Stem Cell Research to Los Angeles for the first time ever and look forward to their 17th annual meeting in 2019,” Mayor Eric Garcetti said. “L.A. is the latest and most innovative bioscience hotspot in the state, and ISSCR’s choice is a reflection of the scientific advances occurring in our city today.”

Previous host cities include Barcelona, Boston, San Francisco, Stockholm, Toronto, Vancouver, Yokohama and Philadelphia.

Rohit Varma, MD, MPH, interim dean of the Keck School of Medicine and director of the USC Gayle and Edward Roski Eye Institute, updated faculty and staff on past accomplishments and future plans for both the medical school and the clinical enterprise.

Varma detailed the school’s long-term vision to rise to No. 20 in rankings, explaining, “There’s a linear relationship between funding and rankings, which entails setting aggressive goals to recruit and retain NIH-funded principal investigators.”

He highlighted the integration required between medical school and medical center as being an essential catalyst for growth. Keck Medicine of USC has experienced exponential clinical growth, with patient volumes up 40 percent since USC ownership.

Leaders address state of health sciences

By Meg Aldrich

In front of a full house at Aresty Auditorium on the morning of June 9, Thomas E. Jackiewicz, MPH, senior vice president and CEO of Keck Medicine of USC, and Rohit Varma, MD, MPH, interim dean of the Keck School of Medicine and director of the USC Gayle and Edward Roski Eye Institute, updated faculty and staff on past accomplishments and future plans for both the medical school and the clinical enterprise.

Varma detailed the school’s long-term vision to rise to No. 20 in rankings, explaining, “There’s a linear relationship between funding and rankings, which entails setting aggressive goals to recruit and retain NIH-funded principal investigators.”

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Commuter Alert

The intersection at Valley Boulevard and San Pablo Street will be closed to both vehicles and pedestrians for roadwork this summer.

Union Pacific Railroad has notified the university of an approved traffic control plan issued by the Los Angeles Department of Transportation (LADOT) for a full street closure, tentatively scheduled for the entire month of July. Citations will be issued to pedestrians and vehicles that try to cross the construction zone. Check hscnews.usc.edu for more information, including a map with detour routes.

Questions can be directed to Jason Tichota from Union Pacific Railroad at jmtichot@up.com.
By Cristy Lytal

U rbanite, transplant, bone marrow doesn’t come with a neatly printed label with dosage instructions. However, a new study published in Cell Reports provides clues about how the dose of transplanted bone marrow might affect patients undergoing this risky procedure, frequently used to treat cancer and blood diseases.

In the study, USC Stem Cell researcher Casey Brewer, PhD, and colleagues in the laboratory of Rong Lu, PhD, found that transplantation dose affects the behavior of blood-forming stem cells in bone marrow — called hematopoietic stem cells, or HSCs. “To track these cells’ behavior, the researchers ‘barcoded’ individual mouse HSCs with a genetic marker and observed their contributions to forming blood,” Brewer said.

Every HSC is capable of acting as a generalist, producing all of the specialized types of blood cells following bone marrow transplantation. However, the researchers observed that only 20 to 30 percent of HSCs took on this generalist role, contributing all of the most abundant types of white blood cells — called granulocytes, B cells and T cells. This relatively small group of generalist HSCs produced a disproportionately large amount of blood. The remaining 70 percent to 80 percent of HSCs were more strategic. When facing a scarcity of transplant donor bone marrow at the lowest dose, these HSCs prioritized T cell production. At higher transplantation doses, these HSCs opted to differentiate early, producing a balanced array of T cells and B cells.

“The dose of transplanted bone marrow has strong and lasting effects on how HSCs specialize and contribute their bone marrow,” said Lu, senior author and assistant professor of stem cell biology and regenerative medicine at the Keck School of Medicine of USC. “This suggests that altering transplantation dose could be a tool for improving outcomes for patients — promoting bone marrow engraftment, reducing the risk of infection and ultimately saving lives.”

Additional co-authors include Elizabeth Chu and Mike Chin, MB.

Liver transplant program marks 20 years

By Hope Hamashige

I n 1996, rather than taking long walks, watching her kids play sports, Beni Carrillo started spending much of her days sleeping. The exhaustion wasn’t a complete surprise because Carrillo had a liver disease, and her lack of energy was

One physician cautioned against having the procedure at Keck Medicine of USC because the program was small and she would be its first liver transplant patient. Preferring not to close any doors, she met Rick Selby, MD, professor of surgery and division chief of hepatobiliary, pancreas, and abdominal organ transplantation, anyway. Ultimately, Carrillo put her faith in USC’s liver program.

The USC liver transplant program is the only active living donor liver transplant program in Los Angeles County.

Two years later, both brothers are living full, healthy lives. “Organ transplantation is magical,” Selby said. “Those fortunate recipients realize an energetic state that they have not possessed in 20 years. Their recovery is a moving spectacle for all of us who participate in transplantation and further inspires us to expand transplant science and organ availability.”
By Mary Dacuma

Physicians and researchers from the USC Norris Comprehensive Cancer Center presented multiple abstracts at the 2016 American Society of Clinical Oncology (ASCO) Annual Meeting, held June 3-7 in Chicago.

USC Norris’ presence at the meeting included 22 poster sessions four poster discussion sessions, one oral presentation and an educational symposium. USC Norris also was involved in numerous other studies completed in collaboration with other institutions, including academic medical centers, pharmaceutical companies and private-sector research organizations.

“As one of the 69 National Cancer Institute-designated cancer centers, our research comprehensively touches every aspect of oncology,” said Stephen政法, PhD, director of USC Norris. “From epidemiology, prevention, targeted therapies and patient care, our faculty works tirelessly to better understand and treat this disease.”

Abstracts presented by USC Norris covered lung, gastrointestinal, prostate and breast cancer, tumor biology, genomics and genetic testing and symptoms.

Three researchers earned an ASCO MERIT award, which is given for high-quality, high-impact, strong scientific merit: Martin D. Berger, MD, postdoctoral scholar visiting fellow from Switzerland; Marta Schirripa, MD, postdoctoral scholar visiting fellow from Italy; and Mitsukuni Suenaga, MD, postdoctoral scholar visiting fellow from Japan.

As a testament to the quality of their research, all three MERIT one — have increased risk of brain and central nervous system abnormalities, according to a new study. A USC-led team of researchers examined how the immune systems of pregnant mice (roughly equiva lent to human mothers in their first trimester) reacted to a chemical that mimics a viral infection akin to the flu. Levels of tryptophan, an amino acid that activates the immune system, increased, causing the placenta to produce more serotonin, which led to higher concentrations of serotonin in the fetal brain.

Previous studies have linked viral-based inflammation during pregnancy and the risk for developmental disorders such as autism, cognitive delay and schizophrenia in offspring, according to the study.

“Serotonin is very important for fetal brain development and can modulate the way the fetal brain is wired,” said Alexander Kuo, MD, senior author and an assistant professor of cell and neurobiology at the Keck School of Medicine of USC. “In response to boosted serotonin levels coming from the placenta, the fetal brain stunted its own genesis of serotonin neurons, possibly because receptors sensed there was too much serotonin in there. That can be a problem, especially when it leads to the front of the brain being not developed as much as it should be.”

The study was published in the Journal of Neuroscience on June 1.

The study provides a new molecular pathway to understanding how prenatal insults could program a baby to eventually develop mental diseases.

Viral infections and inflammation during pregnancy do not guarantee central nervous system malfunc tions in children, Bonnin said.

Many times, the health of babies is not impacted. Bonnin referenced another study to explain.

“In the first trimester of preg nancy, if the mom gets an infection such as the flu, the risk of the baby developing schizophrenia 15 years later is increased by approximately threefold,” he said. “It doesn’t mean that if the mom has the flu, the kid will automatically have schizophrenia, but the risk is increased by threefold.”
By Cristy Lytal

Chi Family gift inspires stem cell scientists to ‘Return to the Beginning’

T he discovery of two genes—called Csa and Csb—in mice with Cockayne syndrome can kill cancer, but it can also kill the sensory cells of the inner ear—causing hearing loss. This hearing loss is likely to be more severe in individuals with Cockayne syndrome and therefore can be a consequence of both cancer treatment and aging. The Choi Family gift inspires stem cell scientists to ‘Return to the Beginning.’

This “how-to” manual for scientists who wish to pass along this beautiful art to future generations, as Yuyu Yang’s striking sculpture, which he titled ‘Write Your Name on the Stone of the Beginning,’ and how art can inspire scientific creativity.

Before unveiling the sculpture, Kin-Chung Choi described his motivation, ‘It’s very special that the Choi family would show their support in such a significant way. The Choi family is a great example of philanthropy and generosity.’

For all the Casey endeavors at USC.

In another study published in *The Journal of Neuroscience*, researchers established a new strain of mouse that models Cockayne syndrome, an equivalent of Cockayne syndrome.

The discovery of potential therapeutic strategies toward advancing interprofessional education, mission alignment, population health, knowledge sharing and impact on patients, students, faculty and alumni, seeking input from key stakeholders from throughout USCG in the process.

The order results from mutations in one of two genes—called Csa and Csb—in mice with Cockayne syndrome and therefore can be a consequence of both cancer treatment and aging. The Choi Family gift inspires stem cell scientists to ‘Return to the Beginning.’

Key mutations worsen hearing loss from chemo drug

By Mary Ducuma

USCG was selected by the Association of Academic Health Centers International (AAHCI) to participate in the Aligned Institutional Mission (AIM) program. The multi-year program is designed to better align clinical care, education, and research at academic health centers with guidance and support from the AAHCI’s planning tools and peer consultants. In the fall, Keck Medicine will host a team of experts from academic centers like University of Pennsylvania and Washington University.

“We are looking forward to hosting these leaders and receiving their advice,” said Randolph Hall, PhD, vice president of research at the USC. “In preparation we are developing strategies toward advancing interprofessional education, mission alignment, population health, knowledge sharing and impact on patients, students, faculty and alumni, seeking input from key stakeholders from throughout USCG in the process.”

Professor leads push to craft stroke rehabilitation guidelines

By Breast Grady

E very year, approximately 800,000 Americans suffer a stroke, with more than 80 percent surviving and living for decades with some degree of disability. For the first time ever, the American Heart Association/American Stroke Association (AHA/ASA) has issued evidenced-based strategies to help improve outcomes for adult stroke survivors.

“The 2016 USG manual recommends a comprehen- sive post-acute care strategy for the prevention of disability. Previous guidelines have focused on the medicare involved in the initial management of stroke, but many people survive a stroke with some level of disability,” said Carolan Winnstein, PhD, professor at the USC Division of Biokinesiology and Physical Therapy and lead author of the guidelines. “There is increasing evidence that rehabilitation can have a big impact on the survivors’ quality of life, so the time is right to review the evidence in this complex field and highlight effective and important aspects of rehabilitation.”

Winston served as the chair of an expert writing team that put together these guidelines, which was published May 4 in the *Journal of Stroke*. The associations recom- mend that stroke patients seek treatment in an in-patient rehabilitation facility (IRF) as opposed to a skilled nursing facility, when possible.

“There is considerable evidence that patients benefit from an approach in a facility that understands the importance of rehabilitation during the early period after a stroke,” said Winston, who also holds a joint appoint- ment in the Department of Neurology, Keck School of Medicine of USC, and is the director of the Motor Behavior and Neurorehabilitation Lab.
‘Sunscreen’ gene may help protect against skin cancer

By Zen Vuong

A new USC-led study identified a “sunscreen” gene that may help stay off skin cell damage caused by ultraviolet radiation.

The researchers found that the “UV radiation Resistance Associated Gene” is a tumor suppressor for skin cancer, which is the most common form of cancer in the United States. Melanoma is the deadliest skin cancer. In fact, melanoma rates have doubled over the last three decades, according to the Centers for Disease Control and Prevention.

“If we understand how this UV-resistant gene regulates the processes by which cells repair themselves after ultraviolet damage, then we could find targets for drugs to revert a misguided mechanism back to normal conditions,” said Chengyu Liang, MD, PhD, the study’s senior author and an associate professor of molecular microbiology and immunology at the Keck School of Medicine of USC.

The study was published in Molecular Cell on May 19. More than 90 percent of melanoma skin cancers develop because of cell damage from exposure to UV radiation. Melanoma kills about 10,100 people annually, according to the American Cancer Society.

The researchers used data from 140 melanoma patients who participated in The Cancer Genome Atlas. The scientists gave a UV shot to cells carrying the normal UV-resistant gene and cells carrying defective copies of it. After 24 hours, cells carrying normal versions of the gene had repaired more than 50 percent of the UV-induced damage. In contrast, the defective copies repaired less than 20 percent of the damaged cells.

The researchers were able to show a correlation with increased cancer risk. Their study did not definitively show diminished levels or mutant copies of the UV-resistant gene were causes for skin cancer development.

Keck Medical Center to comply with End of Life Option Act

By Douglas Morino

Keck Medical Center of USC will comply with a new state law that permits terminally ill patients to request and administer medication to end their life.

“The End of Life Option Act allows physicians to prescribe the powerful medication under a set of strict guidelines that must be followed by health care professionals and the patient,” said Chengyu Liang, MD, PhD, professor of clinical medicine at the Keck School of Medicine of USC. “Our medical center seeks to respond to this issue in a compassionate way, not only for our patients and families, but for our colleagues and staff,” Liang said during a Town Hall on June 6 at Aresty Auditorium, where the End of Life Option Act was discussed with physicians. California’s End of Life Option Act took effect on June 9. California follows other states with so-called Death with Dignity laws, including Oregon, Washington and Vermont. Oregon in 1997 became the first state to enact a physician-assisted dying law. Since the law took effect, 1,545 patients have been prescribed the medication and 991 have died from ingesting the medications, according the data published in February by the Oregon Health Authority.

Any Keck Medical Center physician who chooses to opt out of a patient’s request will be supported by their colleagues and hospital leadership, Liang said. “This act raised concerns among many people and that’s understandable,” Liang said. “Physicians need to be completely protected if they decide to opt out.”

The medication, secobarbital, can only be prescribed to patients under rules set by state law. In order to receive a prescription, patients must be older than 18 and diagnosed with an incurable and irreversible disease that is not treatable and will, within reasonable medical judgment, result in death within six months according to state law. The medication will only be available to established Keck Hospital and USC Norris patients per hospital policy. Patients must make two oral requests 15 days apart and a written request to the attending physician, by state law. The medication cannot be ingested by a patient on Keck Medical Center property, although the initial request can be made if the patient is hospitalized at Keck Medical Center, according to hospital policy.

The state law requires physicians, prior to prescribing the medication, to give advice to the patient on other end of life options and refer them to a consulting physician. The consulting physician must be independent from the attending physician and not be related to the patient. A referral to a mental health specialist must also be made, if necessary.

There will be mandatory trainings for physicians willing to serve as attending or consulting physicians.

FESTIVAL: Cancer survivors shared stories of diagnosis, finding right center for care

Continued from page 1

to find the best care for her husband. At the end of her speech, she introduced Gordon to enormous applause.

Stan Kieffer shared his inspirational story with the audience, starting from his insistence to a doctor that he was certain there was something wrong with him even when the doctor said he was fine, to the discovery that he had cancer. USC Norris. Kieffer emphasized that when facing a possible cancer diagnosis, people should be their own advocates. “You know your own body,” he said. “If you know something’s wrong with you, don’t be afraid to discover the truth because if you figure out what’s wrong with you, then you can do something about it.”

Mary Yamashita, MD, assistant professor of clinical radiology at the Keck School of Medicine of USC, also spoke about research and advances into better diagnosis of breast cancer, especially among women with dense breasts, a condition that doctors call obscured diagnosis through mammogram. She described a new technique that uses 3-D images to get better imaging of abnormalities that may not be detected in a mammogram.

While there were many first-time attendees at the event, there were many more who have been coming for many years. Survivor Rafael Martinez has been attending since he beat colon cancer 13 years ago. “I’ve been part of this for 13 years. It means the world to me,” he stated, the emotion clear in his voice. “I wouldn’t be here if I hadn’t had my surgery here.”

CONFERENCE: Event will benefit patients and stem cell researchers, Varma says

Continued from page 1

of Medicine of USC; and director of the USC Imperial Excellence Institute, underscored how the conference will benefit not only stem cell researchers, but also the patients they will ultimately serve.

“We are honored to welcome the international community of leading stem cell researchers to the 2019 ISSCR Conference in Los Angeles,” he said. “By bringing together these exceptional scientific minds, the conference will serve as an incubator for new ideas and research collaborations, which will eventually translate into better, more creative therapies for patients.”

Hong Kong-based businessman and philanthropist Kun-Chung Chai has been a strong supporter of USC Stem Cell, and he extended his “thanks to USC for giving me this rare opportunity to support stem cell researchers from all over the world.”

As chair of the executive committee of USC Stem Cell, Andy McMahon, PhD, expressed his thanks to those who helped bring the conference to Los Angeles. “I would like to acknowledge the key role of Mayor Eric Garcetti’s office and the Choi family in our successful bid to put L.A. on the major science meeting circuit,” he said. “We are delighted to extend our warmest welcome to the widest range of visionaries and leaders who will be attending this event, which will be a great opportunity to highlight research at USC and our sister institutions across the region.”

Elb Broid, who with his wife Edythe has funded three stem cell centers that bear their names at USG, UCLA and the University of California, San Francisco, added: “California has become the world leader in stem cell research, with some of the most promising research being conducted in Los Angeles. Edythe and I look forward to the increased knowledge and scientific collaborations that will come out of the 2019 International Society for Stem Cell Research.”

STATE

Continued from page 1

Jackiewicz emphasized Keck’s position of being the preferred provider of complex care and its strategy of building networks through affiliation, partnership and acquisition.

“We are developing our network of networks,” Jackiewicz said. “Affiliations with PIH Health and Hoag coupled with expansion into outlying markets of Bakersfield, Lancaster and Las Vegas will help ensure growth and sustainability of our health system.”

Attendees engaged in a question-and-answer session following the presentations, with reactions ranging from appreciation for the depth of information shared to questions about school funding, recruitment and clinical growth.

In addition to full capacity at Aresty, hundreds of employees viewed live stream of the address online.
Physicians, staff sign new Keck Commitment pledge

By Douglas Morino

Physicians, staff and nurses from across Keck Medicine of USC paused recently to sign and adopt the Keck Commitment, a set of standards that will guide professional behavior across the academic medical enterprise.

The Keck Commitment is based on three pillars: excellence, judgment and respect. Respect is the cornerstone of the commitment and guides the pursuit of excellence in the workplace. These pillars will define the workplace culture of Keck Medicine for years to come.

“The Keck Commitment is an unswerving belief in the collective empowerment that comes when civility is fostered across our health care organization,” said Tom Jackiewicz, MPH, senior vice president and chief executive officer, Keck Medicine.

“The Keck Commitment is an institutional promise to promote professionalism in the workplace, regardless of what challenges come our way,” Jackiewicz said. “This is a commitment to ourselves, each other and our patients.”

The Keck Commitment was developed collaboratively by the Committee of Champions — a multidisciplinary group of professionals across Keck Medicine — and based on ideas shared by staff on the Art Wall during Professionalism Week in October.

The project to create a set of professional standards grew out of discussions among Keck Medicine physicians and administrators regarding the benefits of strengthening a professional culture across the organization.

During signing events held at Keck Hospital of USC, USC Norris Cancer Center and USC Verdugo Hills Hospital in June, staff signed their names under the commitment, pledging to uphold the professional standards of Keck Medicine of USC.

Meet the Faculty: Joseph T. Rodgers, PhD, stem cell scientist and amateur acrobat

Inside the laboratory, Joseph T. Rodgers, PhD, assistant professor of stem cell biology and regenerative medicine, uncovers the signals that instruct stem cells to build and repair tissue.

Outside the laboratory, he builds his own muscle tissue through aerial and acroyoga.

“I’m also known for doing handstands and other minor acrobatic feats,” he said. “I have many, many photos of me doing handstands in front of landmarks.”

The Hollywood sign, Yosemite’s Half Dome, Mount Rushmore and the Golden Gate Bridge have all inspired such inversions.

Joseph Rodgers performs a handstand on the beach.

Study reveals high-calorie cravings after birth control regimen

Can birth control give you the munchies? USC researchers conducted the first neuroimaging study to evaluate the effect of hormonal birth control on food motivation.

Participants had two brain imaging sessions — one prior to receiving Depo-Provera and one eight weeks later. At each session, they were shown random images from three categories: non-edible objects, healthy foods and high-calorie foods. “The images showed increased activity in the areas of the brain that motivate you to eat,” said Katie Page, MD, chair of Maternal-Child Health, USC Diabetes and Obesity Research Institute.

“Treatment with Depo-Provera for eight weeks was associated with greater activation in brain areas involved in reward processing when participants were viewing pictures of high-calorie comfort foods.” These findings can help clinicians better counsel women using Depo-Provera to prevent both unwanted weight gain and unintended pregnancies. — Mary Dacuma

HSC News

Physicians, staff sign new Keck Commitment pledge

Get to know the faculty members on the Health Sciences Campus and beyond! Do you have a special skill or interest that nobody expects? Is there a professor whose hidden talent should be celebrated? Let us know by emailing hscnews@usc.edu with your nominations for our new Meet the Faculty feature! You might see them in a future HSC News issue.

Meet the Faculty: Joseph T. Rodgers, PhD, stem cell scientist and amateur acrobat

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