

Keck Medical Center of USC holds steady in U.S. News rankings

By Alison Trinidad

For the seventh consecutive year, the hospitals of Keck Medicine of USC have been named among the best hospitals in the country for 2015-16 by *U.S. News & World Report*.

The magazine's annual "Best Hospitals" rankings recognize hospitals in the United States that do the best job treating the most challenging cases.

Keck Medical Center of USC, which consists of Keck Hospital of USC and USC Norris Cancer Hospital, maintained its Top 10 ranking on the list of Best Hospitals in metro Los Angeles (No. 3) and in California (No. 9). The USC Eye Institute again ranked among the Top 10 ophthalmology programs in the United States (No. 9). The magazine has ranked USC among the country's Top 10 ophthalmology programs for 21 years, while its hospitals have been included in the rankings since 2009, when the university purchased them.

"Keck Medicine of USC is proud to be included in *U.S. News & World Report's* rankings of the country's best hospitals and clinical programs for the seventh year in a row," said Tom Jackiewicz, senior vice president and CEO of Keck Medicine of USC.

"This honor is a true testament to the skill and compassion demonstrated by our faculty physicians, nurses and staff, and it's

See **RANKINGS**, page 5



Brian E. Henderson received USC's highest honor, the Presidential Medallion, in 1999.

HSC mourns Brian Henderson

Former dean of medical school also served as director of the Zilkha Neurogenetic Institute and USC Norris Cancer Center.

By Alicia Di Rado

Distinguished Professor Brian E. Henderson, MD, who led the Keck School of Medicine of USC as dean between 2004 and 2007 and steered some of the school's most prominent research centers, died recently at home in San Marino, Calif., at the age of 77 after a 13-month battle against lung cancer.

Henderson held the Kenneth T. Norris Jr. Chair in Cancer Prevention and was the founding chair of the school's nationally ranked Department of Preventive Medicine. He also served as the first director of the Zilkha Neurogenetic Institute and was director of the USC Norris Comprehensive

Cancer Center when the USC Norris Cancer Hospital opened in 1983.

USC in 1999 presented Henderson with the Presidential Medallion, the university's highest honor, for his pioneering research and service to the university.

"Brian Henderson was a beloved member of our Trojan Family for 45 years," said USC President C. L. Max Nikias, PhD. "His many contributions to medicine, research, and our community — notably during his tenure as dean of our Keck School of Medicine — were both far-reaching and extraordinary. He built an exceptional legacy at USC, and in the field of medicine."

See **HENDERSON**, page 5

Popoviches add to legacy with \$4 million gift for cancer research

By Lynn Lipinski

Continuing a family tradition that spans six decades, USC Trustee Jane Hoffman Popovich and her husband, J. Kristoffer Popovich, have pledged \$4 million to create the Jane and Kris Popovich Chair in Cancer Research at the USC Norris Comprehensive Cancer Center.

The couple's gift is a new chapter of generosity and support in the family's long history of giving to the university. Directed from the Hoffman Foundation, the gift will create an endowed faculty chair to advance cancer research on the center's greatest priorities in basic and translational research.

"After 60 years of research, we're still looking for cures to all cancers," Kris Popovich said. "We hope this gift will spur progress toward a much-needed breakthrough."

Jane Popovich's parents, H. Leslie and Elaine Stevely Hoffman, created the Hoffman Foundation in the 1950s, contributing millions of dollars to the campaign supporting USC's Master Plan, and more toward construction of the Elaine Stevely Hoffman Medical Research Center and the H. Leslie Hoffman Hall of Business Administration.

Following in her parents' footsteps, they continued the tradition through their lead gift of \$5 million to build Jane Hoffman Popovich and J. Kristoffer

See **GIFT**, page 3

\$20 million gift will support pre-leukemic disease research

By Lynn Lipinski

Entrepreneur and industrialist Norbert Gehr lost his battle with leukemia in February at age 74, but his family foundation's \$20 million gift to the Keck School of Medicine of USC for research may help others fight their own.

Gehr was the founder and CEO of The Gehr Group, a privately held, Los Angeles-based multinational organization with interests in international trade, real estate, manufacturing, wholesale and distribution.

Diagnosed with acute myeloid leukemia (AML) two years ago, Gehr had great respect for his Keck Medicine of USC doctors — internist David Goldstein, MD, and hematologist



Entrepreneur Norbert Gehr had received a diagnosis of myeloid leukemia in 2013.

Casey O'Connell, MD — and wanted to support their research as part of his legacy.

The gift will be split between the research efforts of O'Connell and Goldstein. O'Connell will use the gift for translational research into blood diseases such as myelodysplastic syndromes, which can lead to leukemia, and AML, the most common

adult acute leukemia.

Goldstein's research includes practical methods for improving delivery of health care through a team-based, coordinated approach. He is chief of the Division of Geriatric, Hospital, Palliative and General Internal Medicine and vice chair for clinical affairs for the Department of

See **GEHR**, page 2

Don't get lost in translation, advises speaker at Dean's Lecture

By Hope Hamashige

Translating scientific discovery to practical benefit is a difficult challenge, and Christopher Austin, MD, director of the National Center for Advancing Translational Sciences (NCATS), thinks sickle cell disease is a prime example.

Although the molecular and genetic defect that causes sickle cell disease was discovered in 1949, six decades have passed and yet no treatment for the disease exists. This gap between knowing what makes people sick and finding effective treatments was a primary focus of Austin's July 9 presentation in Aresty Auditorium as part of the Dean's Distinguished Lecturer Series.

"Translational science is poorly done," said Austin in describing how transla-



Christopher Austin of NCATS speaks about translational science on July 9.

tional science seeks to take research discoveries and develop and test them for clinical uses. "It is costly, time-consuming and inefficient."

The process of translational science faces hurdles at every stage, said Austin, which is why the National Institutes of Health established NCATS in 2002.

During his speech, Austin

See **LECTURE**, page 2

Stem Cell research produces genetic blueprint for cartilage

By Cristy Lytal

Cartilage does a lot more than determine the shapes of people's ears and noses. It also enables people to breathe and to form healthy bones. In a study published in *Cell Reports*, USC Stem Cell researcher Xinjun He, PhD, and University of Tokyo researcher Shinsuke Ohba explore how the protein Sox9 regulates the production of cartilage.

"Our paper is a blueprint of how the cartilage-producing cell, called a chondrocyte, is made and maintained by Sox9," said He, a postdoctoral research associate in the lab of Andy McMahon, PhD, director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC.

The researchers found that Sox9 can bind to the DNA of cells in different ways. In some cases, Sox9 proteins form pairs that bind directly to the DNA in the presence of molecular modifiers. When this type of Sox9 binding occurs at multiple sites along the DNA, genes that make the cells into chondrocytes are turned on.

In this type of binding, Sox9 and the DNA don't fit together perfectly. The researchers hypothesize that the sub-optimal fit could be a way of controlling the

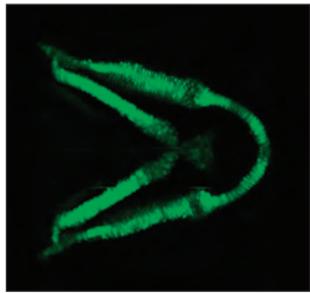


Image by Xinjun He

Developing zebrafish skeleton showing Sox9 activates a green fluorescent protein reporter in chondrocytes.

amount of proteins that genes make in chondrocytes, and therefore the amount of cartilage produced by the body. This Sox9 binding works similarly in cartilage of different origins — ranging from the nose to the ribs.

"Sox9 is essential to normal skeletal development throughout the body," said McMahon, one of the corresponding authors on the study. "When people have a Sox9 mutation, they can suffer from a devastating condition of bent bones and respiratory failure called campomelic dysplasia. Our study advances our knowledge of Sox9's role in causing this terrible disease — and brings us one step closer to understanding how to potentially treat it."

Hironori Hojo, PhD, a postdoctoral research associate in the McMahon lab, is also an author on the study.

GEHR: Gift to fund blood cancer research

Continued from page 1

Medicine at the Keck School of Medicine.

David Lifschitz, Gehr's longtime friend and current CEO of the Gehr Group, said that Gehr wanted to help other patients by finding a cure to blood cancers, even though he wouldn't live to see the benefit.

"Norbert didn't want any fanfare associated with his gift. What he wanted was to make a difference to other patients and he trusted these two doctors to use the funds for the greatest good," Lifschitz said. "That silent generosity characterized his life. He often helped employees and others through personal gifts, such as paying for funerals or unexpected medical expenses, without taking any credit."

Born in Brazil to a Jewish father who fled Germany in the 1930s, Gehr spoke in a video interview of his journey as a self-made man. He recalled quitting his job at age 25 and selling his prized Cadillac convertible to launch his first business — an industrial supply firm — in the San Fernando Valley.

He grew that business and ultimately built multiple successful companies under the Gehr Group umbrella with diverse interests such as New York hotel properties, electrical cables and defense intelligence

systems. He called himself a born optimist who loved the challenge of business and never shied from risks.

Among the hundreds of people he employed, many worked for him for 30 to 40 years. The Gehr Group is celebrating its 50th anniversary this year.

"Most people at Gehr worked with Norbert in the past and wanted to keep working for him. He was very loyal to his employees and like a father figure to some," said Mark Goldman, chief operating officer of the Gehr Group. "He was a person who dreamed about something, then made it happen."

Goldstein, Gehr's longtime physician, said the gift will create a new Center for Implementation Science at the Keck School of Medicine that will coordinate efforts across the entire university to improve patient care in a scientifically rigorous manner.

"It was a privilege to care for Norbert Gehr for some 30 years. Not only was he a corporate giant, he was a leader with great optimism and compassion. He demonstrated great loyalty to his colleagues and employees," Goldstein said. "Mr. Gehr was much more than a generous philanthropist; he shared his generosity of spirit to all who met him. The Gehr Foundation's gift

will provide an enduring impact on health care delivery in its support of innovative medical interventions."

O'Connell is grateful that Gehr and his family are supporting research at the USC Norris Comprehensive Cancer Center.

"Mr. Gehr was an inspiring man with incredible vision, an exemplary work ethic and a constant desire to push boundaries," O'Connell said. "I am so proud of his loyalty to our wonderful USC Norris family, especially our nursing staff, who cared for him with their unique blend of warmth and skill. This gift from the Gehr Family Foundation comes with an immense responsibility and through hard work, innovation and tenacity, I believe we can use it to make major breakthroughs toward curing AML."

Gehr is survived by his four children, Crystal, Max, Robert and Andrew, and two brothers, Richard and Leo.

This legacy supports the Keck Medicine Initiative, part of 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. Four years after its launch, the campaign has raised more than \$4.3 billion.

LECTURE: Transitioning discovery into treatment

Continued from page 1

shared some of the ways that NCATS attempts to make translational science quicker, more effective and less costly:

One initiative developed a network of more than 60 academic medical institutions that includes the Southern California Clinical and Translational Science Institute at USC. By pooling resources, so-called NCATS hubs can improve clinical trials by creating a patient recruitment database and centralizing the painstaking reviews and contract negotiations that can delay efforts for years.

NCATS pairs academic researchers with pharmaceutical companies to benefit both. NCATS helped London-based AstraZeneca find academic researchers in the United States when one of its cancer drugs wasn't testing well, for example. The drug

has since been resurrected as a possible treatment for Alzheimer's disease.

NCATS creates resources such as a chemistry genomics center to help scientists get past the barriers of developing assays and chemical library screening methods. It is also establishing new and novel ways to help scientists more quickly predict toxicity.

Austin reminded the audience of faculty and students from the Keck School of Medicine of USC why translational science is worth it despite the hurdles. Scientists have identified the molecular defects responsible for nearly 5,500 diseases, he noted, but an FDA-approved therapy exists for just 500 of them.

"This is an unbelievable time to be in translational science because you have a real opportunity to help people," Austin said.



Alex J. Bertliner

Dean Carmen A. Puliafito and Professor Thomas Buchanan hosted the presentation by Christopher Austin of NCATS, center, at the Keck School of Medicine of USC.

Calendar of Events

Thursday, July 23

Noon. Preventive Medicine and Tobacco Center of Regulatory Science for Vulnerable Populations Talk. "Research Needs and the Regulation of E-Cigarettes," Ian McLaughlin, USC. Soto Building, SSB 301. Info: Cristina Jehle, (323) 442-7222, jehle@usc.edu

Monday, July 27

8 a.m. Division of Rheumatology Lecture. "How to Induce Long-Term Remission of SLE by Resetting a Dysregulated Immune System," David A. Horwitz, MD, professor of medicine and molecular immunology, USC. LAC+USC, Old General Hospital Room 1729. Info: Francisco Quismorio Jr., quismori@usc.edu

11:30 a.m. Otolaryngology-Head & Neck Surgery Luncheon for World Head and Neck Cancer Day. Uttam Sinha, MD; Niels

Kokot, MD; Tamara Brown, MD; Norris Cancer Center LG 503/504. Info and RSVP: Jackie Jimenez, (323) 442-5579, jjimenez1@med.usc.edu

Tuesday, July 28

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

Thursday, July 30

5:30 p.m. USC Stem Cell. "HIV Matters," Paula Cannon of USC, David Hardy of Calimmune, John Zaia of City of Hope and Dale Ando of Sangamo Biosciences, Plummer Park, Fiesta Hall, 7377 Santa Monica Blvd., West Hollywood. Info: Cristy Lytal, (323) 442-2172, lytal@med.usc.edu, <http://stemcell.usc.edu>

Tuesday, Aug. 4

7:45 a.m. Comprehensive Stroke Clinic of USC and Department of Neurology Grand Rounds. "Roxanna Todd Hodges Lecture in Stroke Prevention and Education: Atrial Cardiopathy and Cryptogenic Stroke," Hooman Kamel, MD, Department of Neurology, Weill Cornell Medical College. Breakfast reception before lecture. Herklotz Seminar Room, ZNI 112. Info: Leslie Tarlow, (323) 442-7687, ltarlow@usc.edu

Saturday, Aug. 8

7:30 a.m. Department of Orthopaedic Surgery and USC Office of Continuing Medical Education. "USC Orthopaedic Surgery Football Injury Symposium," Aresty Auditorium. Info: Teresa Ball, (323) 442-2555, usceme@usc.edu

Thursday, Aug. 13

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

Support Group Meeting. "Survivor Stories." Keck Hospital, 3 North, Day Room (3261A). Parking validated and snacks provided. Info: Ozy Obiwuru, (323) 442-0049, obiwuru@med.usc.edu

Friday, Aug. 14

5 p.m. Educational Affairs White Coat Ceremony and Faculty Teaching Awards, Peter Crookes, MD, Department of Surgery. Harry and Celesta Pappas Quad. Info: Teresa Cook, (323) 442-2419, teresa.cook@usc.edu

Tuesday, Sept. 1

11 a.m. USC Stem Cell Seminar. Markus Grompe, Oregon Health and Science University. Eli and Edythe Broad CIRM Center Auditorium. Info: Cristy Lytal, (323) 442-2172, lytal@med.usc.edu, <http://stemcell.usc.edu>



The donation endows the Jane and Kris Popovich Chair in Cancer Research at the USC Norris Comprehensive Cancer Center.

GIFT: Funding for cancer research

Continued from page 1
Popovich Hall, home of USC Marshall's MBA programs, which opened in 1999. The couple later donated an additional \$5 million to establish the Popovich Family Scholarship Fund. Including this latest gift for cancer research, their lifetime giving to the university totals \$20 million.

"The Popoviches' latest gift to USC Norris demonstrates the breadth of their philanthropy, as well as their commitment to helping our university advance its mission to more effectively treat — and eventually eradicate — cancer," said USC President C. L. Max Nikias, PhD. "For six decades, Jane and Kris Popovich have been passionate supporters of their alma mater, and the USC Marshall School would not be the business education leader it is today without their exceptional generosity and guidance."

Natives of San Marino, the couple met in business school and married shortly after graduation. Today they are successful business owners and entrepreneurs.

The couple lends their time and resources to the university and its business school and students. Like her father before her, Jane Popovich serves on the USC Board of Trustees, a position she has held since 1983. She is the president of USC Associates Board of Directors, and serves with her husband on the USC Marshall Board of Leaders. Kris Popovich was instrumental in the formation of a board of directors for the USC Associates, and later served as the group's president.

Cancer research is a major focus of the Popoviches' charitable giving and involvement, and a 1995 gift from the Hoffman Foundation endowed the H. Leslie Hoffman and Elaine

S. Hoffman Chair in Cancer Research at the Keck School of Medicine of USC. In addition, Kris has served as a member of the board of councilors of the Keck School of Medicine and was also involved with the Norris Cancer Research Associates. They also are major supporters of Children's Hospital Los Angeles and other causes, along with their three daughters and sons-in-law, Kimberly and Robert Shepherd, Tricia and Michael Fink, and Jennifer and Christopher Allen.

Jane Popovich, who shares her parents' conviction that personal philanthropy is key to community growth, added, "I'm proud to follow in my parents' tradition of giving back to the USC community. I hope to preserve their memory and legacy through gifts such as this, as well as by staying involved."

Stephen Gruber, MD, PhD, MPH, director of USC Norris Comprehensive Cancer Center, praised the Popoviches' generosity.

"Jane and Kris Popovich understand the importance of investing in translational research, which is key to bringing the knowledge generated through basic science to the patient's bedside," said Gruber, who holds the Hoffman Chair in Cancer Research. "Thanks to their generosity, USC Norris can support outstanding faculty who will be able to develop innovative care that will benefit cancer patients. We are deeply honored and grateful for this gift."

The Popoviches' gift supports the Keck Medicine Initiative, part of 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 impact on the community and world.

USC Alzheimer's Therapeutic Research Institute established

By Alison Trinidad and Leslie Ridgeway

An institute focusing on the development of new, effective treatments for Alzheimer's Disease has been established by the Keck School of Medicine of USC.

The USC Alzheimer's Therapeutic Research Institute (USC ATRI) in San Diego will be led by distinguished Alzheimer's disease scientist, Paul Aisen, MD.

Aisen is being proposed as professor of neurology at the Keck School of Medicine of USC and will lead the institute in pursuit of its mission to accelerate the development of effective treatments for Alzheimer's disease through innovative, collaborative, multicenter clinical trials.

"Dr. Aisen has been a leading figure in Alzheimer's disease research for more than two decades, having developed novel methodologies as well as designed and directed many large therapeutic trials," said Carmen A. Puliafito, MD, MBA, dean of the Keck School of Medicine of USC. "We are proud to have him join USC, where his expertise and leadership will help the Keck School and USC create a leading hub of basic, translational and clinical research in neuroscience and neurological diseases."

To accomplish this ambitious goal, USC is actively recruiting transformative faculty researchers to focus on the human brain and its role in numerous medical



Paul Aisen, MD

conditions including Alzheimer's disease and multiple sclerosis. These efforts align closely with President Obama's BRAIN Initiative, announced in April 2013.

The establishment of the USC ATRI with Aisen as director adds a strong clinical research program to complement USC's existing strengths in Alzheimer's disease research.

"Keck School of Medicine of USC provides an optimal environment for this research program," said Aisen. "Close collaboration with Keck investigators, including Drs. Arthur Toga and Paul Thompson at the USC Mark and Mary Stevens Neuroimaging and Informatics Institute, Dr. Helena Chui at the Alzheimer's Disease Research Center, and Dr. Berislav Zlokovic at the Zilkha Neurogenetic Institute, will facilitate rapid progress in data sharing and analytical methods central to the drug development process. USC ATRI will be the clinical outlet for testing of new treatments."

Aisen received his bachelor's in biochemistry and molecular biology from Harvard and his medical degree from Columbia. He completed his residency at Case Western Reserve University in Cleveland and Mount Sinai Medical Center in New York, and then fellowship training in rheumatology at New York University. After serving as chief medical resident at Mount Sinai, he began a solo practice in internal medicine and rheumatology in New York. Aisen joined the faculty of Mount Sinai in 1994 and was recruited to Georgetown University in 1999 as a professor of neurology and medicine. That year, he founded the Memory Disorders Program, a clinical and research program for Alzheimer's disease and related disorders. He continued basic research studies on therapeutic targets and biomarkers and designed and directed multicenter therapeutic trials. He became vice chair of the Department of Neurology at Georgetown in 2004. From 2007 through 2015, he was professor in the Department of Neurosciences at the University of California, San Diego and director of the Alzheimer's Disease Cooperative Study.

Alzheimer's disease is the sixth leading cause of death in the United States, and the only disease among the top 10 in America that cannot be prevented, cured, or slowed, according to the Alzheimer's Association.

Longtime leader is new interim dean of School of Pharmacy

By Kukla Vera

Glen Stimmel, PharmD, a national leader in clinical pharmacy practice and a USC faculty member since 1974, has been named interim dean of the USC School of Pharmacy, effective July 1.

"I'm looking forward to working with the excellent faculty, staff, students, alumni and supporters of our School of Pharmacy," Stimmel said. "Our school is on an amazing trajectory that promises to help innovate pharmacy practice, research and education. I'm honored to play a role in this important mission."

Stimmel is a professor of clinical pharmacy, psychiatry and the behavioral sciences in the School of Pharmacy and the Keck School of Medicine of USC. As interim dean, he will hold the John Stauffer Dean's Chair in Pharmaceutical Sciences.

Stimmel has long been a national voice in expanding the scope of practice for pharmacists, including advocacy for pharmacist prescriptive authority. He led a pivotal project in the 1970s to examine the safety and efficacy of pharmacists serving as prescribers. That study and others conducted at USC led to passage of legislation in California allowing pharmacists to initiate and modify drug treatment, order lab tests, perform physical assessments and administer drugs under physician authority. The law set the stage for further expansion of pharmacist



Glen Stimmel is a national leader in expanding the scope of practice for pharmacists.

authority in California and, ultimately, 2013's Senate Bill 493, which recognizes pharmacists as health care providers.

"Dr. Stimmel's work was foundational to today's efforts to continue to expand the role of the pharmacist on the health care team," said outgoing Dean R. Pete Vanderveen, PhD. "We are very fortunate to have a leader of Dr. Stimmel's reputation and caliber to lead our school at this auspicious time when we are building on the passage of Senate Bill 493."

Stimmel is a prolific scholar who has been a full professor since 1984. He has served in various administrative posts at the school, including as chair of its clinical department, the strategic planning and strategic implementation committees, and the curriculum committee.

Possible treatment found for a deadly lymphoma in HIV patients

By Les Dunseith

New research at Keck Medicine of USC has identified a potential treatment for a rare but previously incurable form of lymphoma that is observed primarily in patients with HIV/AIDS infection.

The study's lead author is Ramakrishnan "Ram" Gopalakrishnan, PhD, a research associate in the lab of Preet Chaudhary, chief of the Jane Anne Nohl Division of Hematology and Center for the Study of Blood Diseases at the Keck School of Medicine of USC. In Gopalakrishnan's laboratory tests involving animal models, he found that the disease known as primary effusion lymphoma (PEL) can be treated effectively by a class of drugs already approved by the FDA.

These immunomodulatory drugs, or IMiDs, were actually more effective on PEL than they have been on the cancer for which they were approved, multiple myeloma.

"That was the 'ah ha' moment," Chaudhary said recently about the research published June 29 in the peer-reviewed scientific journal *Oncogene* from the Nature Publishing Group. "We have this disease for which there is no cure available, and these cancer cells are being selectively killed by this drug. So then we decided to pursue it further."

The further study yielded an understanding of the mechanism-of-action by which the drugs work against PEL. And that knowledge led Gopalakrishnan and Chaudhary to discover that IMiDs display synergistic anti-PEL effects when combined

with another new class of drugs, called BRD4 inhibitors.

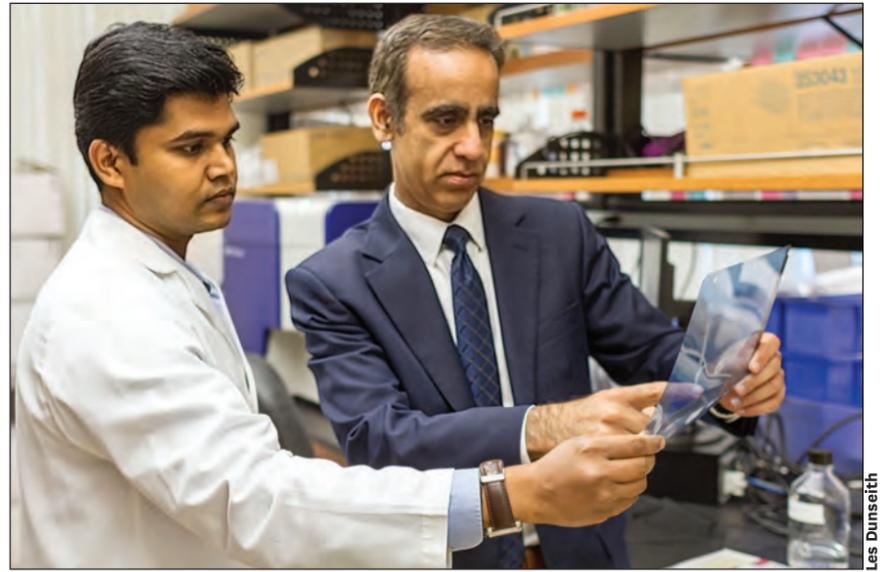
"There were already five clinical trials going on for BRD4 inhibitors related to other cancers," Gopalakrishnan said in explaining the decision process in the USC research. "So, when we combined the drugs, we knew how they could be toxic to this other situation with PEL."

"Not only have we figured out that the drug works," Chaudhary explained, "but Ram has also figured out what the underlying molecular mechanism is. And that has allowed us to combine this drug with other drugs in a more intelligent way."

Chaudhary, MD, PhD, the Bloom Family Chair in Lymphoma Research at the Keck School, is senior author of the study. His lab has done previous work on cancers that are found in patients with human immunodeficiency virus (HIV) infection, including cancers such as PEL that are caused by infection with Kaposi's sarcoma associated herpesvirus, also known as Human Herpesvirus-8.

"Primary effusion lymphoma is very aggressive. Median survival with current therapy is just three to six months," Chaudhary noted. "And the current treatment is also very toxic and requires medications that have other side effects, and that need to be given intravenously. This becomes an issue for countries with limited resources, for example in Africa where this disease is prevalent."

The study results are promising, but Chaudhary cautioned that the USC research is based on in vitro and



Ramakrishnan "Ram" Gopalakrishnan and Preet Chaudhary review images related to their study of primary effusion lymphoma (PEL).

animal model studies that involved putting human lymphoma cells into immunodeficient mice.

"We are not suggesting that the patients begin taking these drugs," Chaudhary said, "but the results do provide a very strong rationale for the clinical testing of these drugs."

Because the medicines are all FDA-approved, a clinical trial could occur quickly, the researchers believe.

"But it all depends on getting enough investigators excited about this," Chaudhary said. "The disease itself is not very common, so it's not feasible for a single center to conduct the clinical trial. You would have to work as a consortium."

Such a consortium already exists for physicians who have patients with both cancer and AIDS.

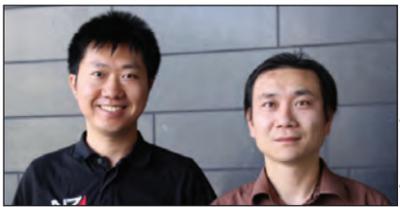
"So once they see our study, hopefully it will create enough excitement

and enough interest that they will say, 'Let's put this study through our consortium. Let's conduct a proper clinical trial,'" Chaudhary said.

Breakthroughs like this one related to less-prevalent diseases are now possible because of evolving attitudes in the medical research community.

"In the old days, we were mainly interested in drugs that effect millions or thousands of patients," Chaudhary noted. "The paradigm has changed at the NIH level and at the highest levels of medicine, and rare disease research has also become a priority now."

Other USC co-authors include Hittu Matta, Bhairavi Tolani and Tim Triche Jr. The study was supported by National Institute of Health grants, a Southern California Clinical and Translational Science Institute pilot grant and a grant from the Stop Cancer Foundation.



Ang Li and Yuwei Li



Lindsey Mork and Michaela Patterson

USC scholars win Doerr Challenge Grants

By Cristy Lytal

If two heads are better than one, then two labs are better as well. That concept underlies the new Doerr Stem Cell Challenge Grants in which teams of postdoctoral researchers from different USC labs receive up to \$10,000 in funding to pursue interdisciplinary one-year projects.

"The goal is to stimulate new interdisciplinary stem cell research projects initiated and proposed by students and postdocs," said Andy McMahon, PhD, chair of the executive committee of USC Stem Cell. "This will enhance their creativity and independence, as well as their ability to compete for future grants supported by agencies such as the NIH."

One team unites two postdoctoral scholars who work miles apart. Ang Li studies feather development in Cheng-Ming Chuong's lab on the Health Sciences Campus, and Yuwei Li researches imaging techniques in Scott E. Fraser's lab on the University Park Campus. They will study cell behavior during feather development, using imaging tools to monitor how cells move and organize in response to bioelectric cues, which are electric currents in living organisms.

"When stem cells form an organ, there are two major issues: to differentiate into the right cell types and to be organized spatially," said Chuong, PhD, professor of pathology and principal investigator with USC Stem Cell. "The issue of organization has not been studied as extensively

as differentiation. This work, when accomplished, will be a major paper."

The other award went to a team in the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research — Lindsey Mork from Gage Crump's lab and Michaela Patterson from Henry Sucov's lab. Together, they will use zebrafish to investigate the role of a gene, known as Tnni3k, in heart regeneration. When activated, this gene appears to lower the number of cells called mononuclear diploid cardiomyocytes that form new cardiac muscle after a heart attack or other injury.

The project combines the Sucov lab's expertise in heart generation with the Crump lab's knowledge of zebrafish, which can heal from severe cardiac injuries.

"In this project, Lindsey and Michaela directly address a fundamental question in regenerative biology: namely, the cellular basis for the profound differences in regenerative capacity between mammals and non-mammalian vertebrates such as the zebrafish," said Crump, PhD, associate professor of stem cell biology and regenerative medicine.

Sucov, PhD, a professor of stem cell biology and regenerative medicine, cell and neurobiology, and biochemistry and molecular biology, added: "I have no doubts that they will uncover important new mechanisms fundamental to heart regeneration, and their success could lead to a long-standing collaboration."



Daniel Oh, MD, speaks to the crowd as he and colleagues from Keck Medicine of USC accept their award from the American Lung Association in Los Angeles.

USC Norris team receives Impact Award at American Lung Association Gala

Daniel S. Oh, MD, and the entire Multidisciplinary Lung Cancer team at USC's Keck School of Medicine recently received the Impact Award during the 2015 LUNG FORCE Gala.

The award recognizes a public health professional whose career and work have made major and lasting contributions to the world of lung health. It was presented June 20 during an event hosted by actor and comedian Kim Coles at the Skirball Cultural Center.

The gala is part of an effort by the American Lung Association in California to increase awareness of lung cancer and make lung cancer in women a public health priority. The event also featured a silent auction and raised funds to support lung cancer research.

The Lung Cancer Program at USC Norris Comprehensive Cancer Center is one of the few programs in the country in which patients with lung cancer can be evaluated simultaneously in one visit by physicians of different specialties, such as thoracic surgery, pulmonary medicine, medical oncology and radiation oncology. This team approach allows patients to benefit from real time multidisciplinary discussion of their care to provide advanced personalized care in a streamlined setting.

Joining Oh at the gala to receive the award were physicians Chris Lee of radiology, Ching-Fei Chang and Alex Balekian of pulmonology, and Barbara J. Gitlitz and Jorge Nieva of medical oncology, plus researcher Ite Laird-Offringa, PhD, and nurse navigator Nancy Berman, RN, OCN. Other recipients are Jeff Hagen, MD, and Mike McFadden, MD, of thoracic surgery, and Eugene Chung, MD, PhD, JD, of radiation oncology.

Oh, an assistant professor of surgery and an integral part of the multidisciplinary team, specializes in general thoracic surgery. He has an interest in applying and expanding the role of minimally invasive and robotic technology in the diagnosis and treatment of the conditions afflicting his patients.



USC Eye Institute Director Rohit Varma

Improved vision found with non-surgical treatment in USC Eye Institute-led studies

By Alison Trinidad

In ancillary studies of two multi-center international clinical trials led by the USC Eye Institute, the injectable drug ocriplasmin appears to improve vision among patients suffering from symptomatic vitreomacular adhesion (VMA), a condition related to the aging eye that could cause permanent vision loss if left untreated.

"These are the first large studies that document patient-reported visual improvement after injection of ocriplasmin for symptomatic VMA," said Rohit Varma, MD, MPH, director of the USC Eye Institute and lead author of the study. "These improvements were achieved without surgery, consequently avoiding the risks, recovery time, possible complications and costs associated with surgery. This is an important finding in our search for safer and more effective treatments to prevent blindness."

As the eye ages, it is normal for the vitreous — the thick clear gel that fills the center of the eye — to liquefy and separate from the back of the eye, called the retina. In some cases, parts of the vitreous remain attached to and may pull on the retina, causing vision distortion, vision loss and even blindness. An estimated 1.5 percent of the population suffers from eye diseases associated with VMA. The standard of care for VMA patients at high risk for vision loss is surgical removal of the vitreous.

In the two randomized and masked Phase 3 clinical trials, researchers at the USC Eye Institute, Wills Eye Hospital in Philadelphia and Cole Eye Institute in Cleveland studied patients with symptomatic VMA who opted for treatment with ocriplasmin at clinic-based centers in the U.S. and Europe. The study investigators performed complete eye examinations at regular intervals before and up to six months after injection, with the option to recommend and perform surgery if vision deteriorated.

As described in the June 11 issue of *JAMA Ophthalmology*, the patients treated with the ocriplasmin injection reported greater improvements in vision-related activities and visual function and were less likely to have experienced worse vision at six months when compared to patients who received a placebo.

GUEST OF HONOR

In other USC Eye Institute news, Varma was the guest of honor and featured speaker in June at the Pacific Coast Oto-Ophthalmological Society Meeting in Hawaii. The conference draws top U.S. otolaryngology and ophthalmology physicians and scientists. In all, a dozen faculty from the Keck School of Medicine of USC attended the conference, held on the island of Hawaii. Among them were the society's otolaryngology president, Dennis Maceri, MD, associate professor of clinical otolaryngology and neurosurgery.

HENDERSON: Former dean remembered

Continued from page 1

Henderson began his career in medicine as a researcher in virology. As a young scientist, he ventured to Africa with the Centers for Disease Control and Prevention and spent 3 1/2 years studying yellow fever. He was also a member of the U.S. Delegation on Hemorrhagic Fevers to the Soviet Union in 1969 and went on to travel extensively in Asia, where he was part of the first official U.S. scientific delegation to the People's Republic of China. But with the dawn of the 1970s, researchers turned their attention to the great challenge of cancer — culminating with the U.S. declaring a "War on Cancer" under the Nixon Administration. Henderson changed his research focus and helped lead the charge.

"At that time we knew virtually nothing about the causes of cancer," Henderson said in a 1999 interview.

That battle against the disease brought him to the Keck School in 1970 as an associate professor of pathology. He ultimately became one of the world's preeminent authorities in cancer epidemiology — investigating rates and patterns of cancer incidence to seek factors that might raise or lower risk for the disease. He studied the interplay between environmental and genetic contributors to the disease. Among his most cited works were studies on the importance of reproductive hormones to diseases such as breast cancer, as well as the role of diet in reducing cancer risk.

In 1972, Henderson set up the Los Angeles Cancer Surveillance Program — the county's cancer registry — at USC, where it remains today as a resource to researchers nationwide. The registry has shed light on countless medical issues, such as the link between combination hormone replacement therapy and increased breast cancer risk in postmenopausal women and how intense smokers are more likely to develop aggressive, deadly bladder cancers.

In explaining the value of the registry at its 25th anniversary, Henderson put it simply: "First you find out who gets the disease within a certain population. When you identify a pattern of who gets it, then you have a clue about why people are getting it."

Two decades later, he established the Hawaii-Los Angeles Multiethnic Cohort, an influential study following 215,000 people that has led to influential findings on cancer risk factors. Its work continues, with dozens of papers published from the study each year.

Stephen Gruber, MD, PhD, MPH, director of the USC Norris Comprehensive Cancer Center, called Henderson a "towering figure in American medicine."

"Dr. Henderson's contributions as a physician, scholar and leader transformed our understanding of the hormonal basis of many human cancers, and led the way to effective medicines to prevent and treat cancer," Gruber said. "He saved countless lives."

Henderson led the USC Norris Comprehensive Cancer Center at a



September 2004: Brian Henderson meets with noted Russian pediatrician Leonid Roshal, second from left, during a visit to the Health Sciences Campus. Also pictured are faculty physicians Stephen Giannotta and Vladimir Zelman.



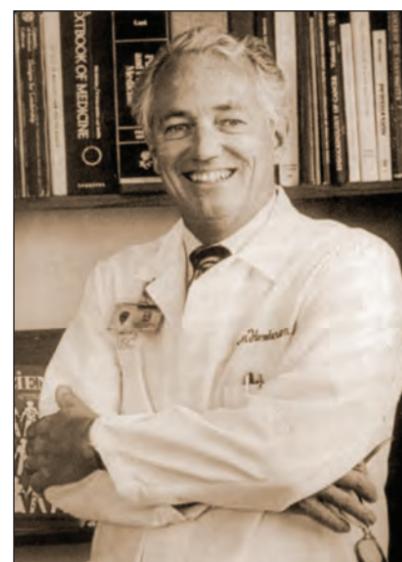
August 2005: As medical school dean, Henderson presided over several white coat ceremonies.

time of tremendous growth between 1983 and 1994. He also led the Salk Institute for Biological Studies in San Diego as its president from 1993 to 1995, returning to USC in 1996.

"During his decades of service to USC, Dr. Henderson brought significant prestige, as well as national and international recognition, to USC, the Keck School of Medicine and the USC Norris Comprehensive Cancer Center, because of the outstanding education and research programs he established and promoted," said Keck School of Medicine Dean Carmen Puliafito, MD, MBA. "Dr. Henderson was a warm and caring individual, a passionate scientist, a man of great integrity, and an excellent role model for young researchers and students."

While Henderson was widely recognized for his contributions to cancer research, he pointed to the Keck School of Medicine's education of future scientific minds as his greatest accomplishment.

"Looking back, I'm really proud to have helped build the scientific base of the medical school," he said. "Mentoring students is something I just love."



December 1992: As director, Henderson was featured on the cover of USC Norris' Cancer Center Report.

Henderson was inducted into the Institute of Medicine of the National Academy of Sciences in 1992 and served as the president of the Society for Epidemiologic Research in the late 1990s. In 2004, he was one of the first scientific experts selected to the oversight committee for the state's stem cell research entity. He also served on the board of trustees for Children's Hospital Los Angeles.

Of his career and work, Henderson said: "In the course of my travels, I feel fortunate to have been taught and to have received more than I could possibly have given."

A graduate of the University of California, Berkeley, he received his medical degree from the University of Chicago Medical School. He completed his internship and residency at Massachusetts General Hospital.

He is survived by his wife, Judith; his children, Sean O'Brien Henderson, Maire Henderson Mullaly, Sarah Cathleen Henderson, Brian John Henderson and Michael Clement Henderson; and 11 grandchildren. Donations may be made to a fellowship fund at USC Norris Comprehensive Cancer Center at <http://www.uscnorris.com/support/brianhenderson.html>

RANKINGS: Hospital programs do well again in U.S. News report

Continued from page 1

gratifying to see their work recognized," he added.

Keck Medical Center of USC also maintained its Top 50 specialty ranking for cancer care (No. 26), urology (No. 31) and geriatrics (No. 38) and was ranked "high performing" in nephrology and orthopedics.

For 2015-16, *U.S. News* evaluated

hospitals in 16 adult specialties and ranked the Top 50 in most of the specialties. Less than 3 percent of the almost 5,000 hospitals analyzed for Best Hospitals 2015-16 were nationally ranked in even one specialty.

Objective measures such as patient survival and safety data, adequacy of nurse staffing and other data largely determined the rankings in most spe-

cialties. The specialty rankings and data were produced for *U.S. News* by RTI International based in Research Triangle Park, N.C. *U.S. News* used the same data to produce the state and metro rankings.

The rankings are available at health.usnews.com/best-hospitals and will appear in the *U.S. News Best Hospitals 2016* guidebook in August.

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:

Desai is 'rising star' in health care

AMAR A. DESAI, MD, MPH, of Keck Medicine of USC has been selected for the 2015 edition of *Rising Stars: 25 Healthcare Leaders Under 40*. The honorees on this year's list have achieved great professional heights in the health care industry at a young age, and these "rising stars" are poised for continued growth throughout the rest of their careers, according to a news release from *Becker's Hospital Review*. *Becker's* selected leaders through an editorial review process that included peer nominations. All leaders were under 40 at the time of their nomination. This list has appeared annually since 2012. Desai, who is one of four recipients from California, joined Keck Medicine of USC on Aug. 1, 2014, as chief executive officer of USC Care and Ambulatory Care Services. Previously, he had worked at DaVita Healthcare Partners Inc., as well as McKinsey & Company. Desai is board certified in internal medicine and nephrology, and he is broadly published in health services and outcomes research.

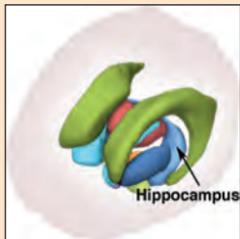


Men's health marathon ends at Keck Hospital of USC

TWO FLORIDA urologists have completed a marathon drive from Florida to California in a Tesla to raise awareness about men's health, arriving at Keck Medical Center of USC in the early afternoon on June 20. As the USC Trojan Marching Band led the way, drivers Jamin Brahmhatt, MD, and Sijo Parekattil, MD, made their way up the driveway that leads to the front of Keck Hospital of USC. The two men are co-directors of the Personalized Urology and Robotics Clinic at South Lake Hospital in Clermont, FL. Also on hand to witness the journey's end were Keck Medicine medical staff, including Gerhard Fuchs, MD, FACS; Leo Doumanian, MD; Mary Samplaski, MD; and Gregory Taylor, MD.

Brain study shows that depression reduces size of hippocampus

CHRONIC DEPRESSION IS associated with shrinkage in the hippocampus, a part of the brain related to learning and memory, according to new research led by a team from the Keck School of Medicine of USC. "Depressed people consistently had less brain tissue in the brain's memory centers," said Paul Thompson, PhD, professor at the Keck School of Medicine of USC and co-founder of the ENIGMA consortium, a global group of scientists working to uncover factors that help or harm the brain. The ENIGMA team at USC worked with researchers from the VU University Medical Center Amsterdam on this study. The research, which was published in the July 2 issue of *Molecular Psychiatry*, also revealed that the differences in the brain become more severe the longer an individual suffers from depression, as well as in people who receive a diagnosis of depression at an early age. The difference in the size of the hippocampus is not detectable when such a diagnosis is first made. "We found that depression has a unique signature in the brain, which is not apparent at illness onset. We found greater brain abnormalities the longer people have been ill," said Derrek Hibar, PhD, an assistant professor at the Keck School and senior author of the study.



Liver transplant program lauded

THE SCIENTIFIC REGISTRY OF TRANSPLANT Recipients (SRTR) recently released data indicating that the Keck Medicine of USC liver transplant program is one of four programs in the U.S. (and the only one in Southern California) with overall statistically higher than expected 1-year patient and graft survival rate.

Campaign urges screening for cervical cancer

By Hope Hamashige

"It's important. It's easy. It's time." That message in English and Spanish adorns bus benches, billboards and lampposts around the Health Sciences Campus as part of a cervical cancer prevention campaign dubbed *Es Tiempo*.

The message, which also features an image of a jacaranda tree, was spearheaded by Lourdes Baezconde-Garbanati, PhD, MPH, associate professor of preventive medicine at the Keck School of Medicine of USC, to increase awareness among Hispanic women about the importance of cervical cancer screenings.

Baezconde-Garbanati said the project was initiated after Laila Muderspach, MD, chair of the Department of Obstetrics and Gynecology at the Keck School, noticed high rates of Hispanic women coming in with advanced cervical cancer, suggesting that many were not getting regular screenings. Cervical cancer remains a leading cause of cancer morbidity and mortality among Hispanic women even though it is largely preventable through screenings and vaccination against human papillomavirus (HPV).



Messages in Spanish and English urge cervical cancer screening on billboards and other sites near the Health Sciences Campus.

Baezconde-Garbanati took on the campaign as an effort to change those rates, at least in the immediate vicinity of the Health Sciences Campus. The campaign was designed to remind women of the importance of cervical cancer screening and getting their children vaccinated against the human papillomavirus. It's easy to do and can save lives if done in time.

In addition to the banners and signs, reminders to schedule an appointment are being mailed to women who have not had a pap test in three years by workers at Clinicas Monseñor Oscar Romero in Boyle Heights and Pico Union.

Jazmin Gutierrez, a patient at Clinicas Monseñor Oscar Romero, said the cam-

paigned opened her eyes about the danger of not getting screened for cervical cancer. She made an appointment herself and plans to promote cervical cancer screening and HPV vaccination among friends and family members.

Baezconde-Garbanati is heartened that women have responded to the campaign.

"I believe that people are craving information and we are beginning to see people respond," she said. "With this campaign, I feel like we are going to make a difference and save lives."

The Norris Whittier Foundation, California Community Foundation and the USC Center for Health Equity in the Americas provided funding for the *Es Tiempo* campaign.

Puliafito honored for contributions to physician training

By Douglas Morino

Keck School of Medicine of USC Dean Carmen A. Puliafito, MD, MBA, has received an award honoring his contributions to medicine from National Medical Fellowships (NMF), an organization founded in 1946 that provides scholarships to underrepresented minority students in medicine and the health professions.

Puliafito was given



Carmen A. Puliafito speaks at Champions of Health event.

the NMF Excellence in Academic Medicine Award at the annual Los Angeles

Champions of Health Awards ceremony, which was held in June at the Molina Healthcare Event Center in Long Beach.

NMF President and CEO Esther Dyer applauded Puliafito for his leadership in the field of ophthalmology and technical innovations, and his efforts to increase the minority student population in the sciences as dean of the Keck School.

Online searches persist for flavored cigarettes

By Leslie Ridgeway

A study by Keck School of Medicine of USC found that despite a U.S. Food and Drug Administration ban in 2009, flavored cigarettes are still available for purchase via the Internet and are popular search targets.

Heightened online interest in flavored cigarettes was identified through a case study of Djarum, a manufacturer of flavored cigarettes and cigars, the latter of which are legal. By monitoring the search terms "Djarum cigarettes" and "Djarum cigars" in Google, the scientists discovered that 72 percent of websites in the top 50 of search results promoted and 34 sold flavored cigarettes.

"We weren't surprised that the web is being used to circumvent tobacco regulations," said Jon-Patrick Allem, PhD, a postdoctoral fellow with the USC Tobacco Center of Regulatory Science (TCORS) and corresponding author on the study. The paper was published June 17 in the journal *Tobacco Control*.

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