HSC News

USC University of Southern California

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Norris Healthcare Center celebrates milestone with placement of final beam

By Douglas Morino

Construction continues to progress across the Health Sciences Campus, moving toward a goal that hospital officials say will transform the campus into an oasis of innovative research and exceptional health care.

"This work is being done to ensure Keck Medical Center of USC remains a leader of cutting-edge research and world-class health care for generations to come," said Tom Jackiewicz, senior vice president and CEO of Keck Medicine of USC. "It's an exciting and historic time to be at Keck Medicine."

As September ended, the last steel beam was placed atop the Norris Healthcare Center, which will stand near the corner of Alcazar and San Pablo streets. The new center will be dedicated to cancer treatment, with an ambulatory surgery center and a women's cancer program, and it will feature several new dining options. Construction is scheduled for completion in December 2016.

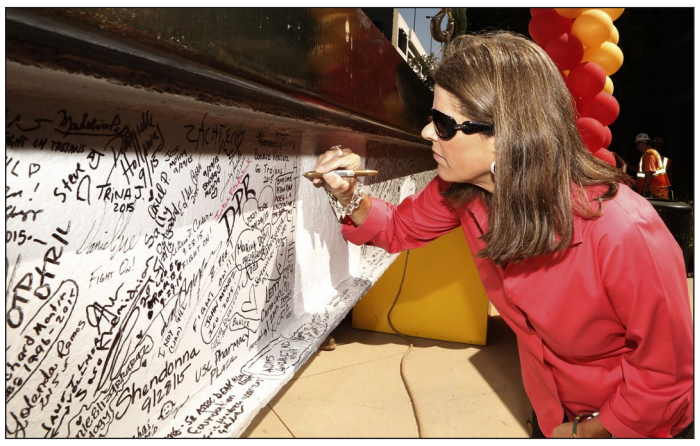
Work also continues on a new parking structure and improvements that will beautify the campus and improve traffic.

An extra entrance to Keck Medical Center of USC will soon be available, with Norfolk Street being extended to Soto Street. A new signalized intersection is expected to be in operation by the end of this month.

The site will include the first of several new gateways to welcome visitors to Keck Medical Center. It is expected to finished by the end of December. Secondary gateways at the intersections of Eastlake Avenue and Alcazar Street and Biggy Street and Zonal Avenue are scheduled for completion by

See **CONSTRUCTION**, page 3

Photos by Steve Cohn



Lisa Hansen, who chairs the Board of the Norris Foundation and is the daughter of long-standing supporter Harlyne Norris, was among those who signed their names and added messages to the last steel beam before it was hoisted into place. The signing event featured presentations by CEO Tom Jackiewicz, USC Norris Director Stephen B. Gruber and others, as well as an appearance by the Trojan Marching Band to help mark a milestone in ongoing construction at HSC.

Massry winners launched genetic revolution

By Hope Hamashige

The winners of this year's Meira and Shaul G. Massry Prize — Philippe Horvath, Jennifer Doudna and Emmanuelle Charpentier — come from different parts of the world and different backgrounds. What they have in common are significant contributions to biomedical science produced in an unexpected way: They study the immune system of bacteria.

Horvath, PhD, senior scientist at DuPont Nutrition and Health, previously worked for Danish food maker Danisco. He began researching bacteria in an effort to protect the integrity of the company's starter cultures, which are sold to companies that make cheese and ice cream.

Horvath

Doudna

Charpentier

These strains of bacteria jump-start the fermentation process in a number of foods, as long as they are active and healthy. But they are often subject to attack by viruses, called bacteriophages, a major source of product failure in the food industry.

He began researching sequences in the bacteria genome called clustered regularly interspaced short palindromic repeats, or CRISPR sequences. Between the sequences were pieces of DNA taken from viruses that had previously attacked the bacteria. If the same virus returned, those

See **MASSRY**, page 3

Vanessa Jackson

USC master's student Kaylha Munn interacts with a young patient while studying abroad with a group in Panama.

USC students gain firsthand experience in global medicine

By Les Dunseith

Back in March, about a dozen students enrolled in USC's Global Medicine program were gathering some typical spring break memories — drenching thunderstorms, rickety boats, flesh-biting flies, relentless mosquitos and long treks through knee-deep mud.

The USC students welcomed these challenges while furthering their educations in partnership with the Floating Doctors program, gaining firsthand clinical experiences in the rural northern islands of Panama.

Justin Finuliar, who is pursuing a master's degree in the Global Medicine program, was among that group, and he found the experience enlightening.

"It was an eye-opener to see in today's modern age, in such a picturesque landscape filled with such grateful people, the lack of resources available to them," Finuliar said. "The locals have to deal with these hardships every day. It was truly a humbling experience."

Finuliar and several classmates shared the insights they gained during immersive study programs in Panama, as well as in Denmark, Italy, Taiwan, Mongolia, India and Israel, with more than 150 other students, faculty and family members during a daylong Global Citizenship Roundtable held recently in Aresty Auditorium. Presentations highlighted the unique cultural, social and economic conditions in each country and the impact on the health of populations.

Participation in the roundtable is a requirement for Global Medicine

See **GLOBAL**, page 2

At Keck-Dornsife retreat, scientists share research

By Douglas Morino

Seeking to strengthen partnerships between two of USC's oldest schools, scientists from the Keck School of Medicine of USC and USC Dornsife College of Letters, Arts and Sciences recently gathered to discuss new research and areas for future collaboration.

The Keck-Dornsife Research Retreat was held Oct. 1-2 at Terranea Resort in Rancho Palos Verdes. The retreat featured about 54 scientists and faculty members

See **RETREAT**, page 3

Steve Cohn

RENAMING: USC President C. L. Max Nikias shares a laugh with Mary and Mark Stevens on Oct. 7 as confetti flutters down to celebrate the newly renamed USC Mark and Mary Stevens Neuroimaging and Informatics Institute. Seated nearby are institute leaders Arthur Toga and Paul Thompson, plus Keck School of Medicine Dean Carmen A. Puliafito. For more, go to hscnews.usc.

Justin Finuliar

Matthew Rafiei, Daniel Doo, Olivia McReynolds, Justin Finuliar, Melanie De Shadarevian, Kaylha Munn and Sarah Figueroa gather outside Bibi's restaurant in Panama.

GLOBAL: Students travel to learn

Continued from page 1

students who travel abroad as part of their studies, including recipients of funding assistance from the Dhablania and Kim Family Global Medicine Fellowship (DK).

Dilara Onur, who recently earned her master's degree in USC's Global Medicine program, traveled to both Taiwan and Panama as part of her USC academic program. She received a Dhablania and Kim Family Fellowship for her Panama trip thanks to a proposal to study the prevalence and cultural influences of iron deficiency anemia (through hemoglobin finger prick tests) in women and children of the indigenous communities in Bocas del Toro, Panama.

"Because there is very limited data in this region, my fellowship was to establish a baseline, if you will, so that Floating Doctors and future USC Global Medicine groups could continue the project," Onur said. "After I left, the hemoglobin levels were added to the patient charts to ensure that the test would be a standard part of patient intake."

Other DK fellows traveled to India, Israel and Mongolia.

For the first time, the Global Citizenship Roundtable included students visiting USC from another country, with 10 students from a Danish exchange course joining the roundtable.

"The Global Citizenship Roundtable is always even more meaningful and informative than we anticipate, more so this year with our guests from Denmark here to be a part of our dialogue," said Elahe Nezami, PhD, director of the Global Medicine program. "The students emphasize the importance of gaining firsthand experiences abroad with such enthusiasm that it is impossible not to see ourselves as part of a larger global citizenry."

The USC Master of Science in Global Medicine provides the strong medical science foundation needed to analyze, understand and solve worldwide health issues. The opportunity to study outside the United States is a key component.

The Dhablania and Kim Family Global Medicine Fellowship provides funding for research and study relating to global medical need. In 2015, the inaugural year of this award, $75,000 in total funding was made available, with individual awards of as much as $5,000.

"Receiving the DK Fellowship marks a huge milestone in my academic career," Onur said. "It was such an exponential learning experience, where I felt that I learned so much in such a short amount of time. I grew not only as an aspiring physician but also as a young adult seeking to make a positive impact on the local and global communities around me."

Andrew Florin

Dilara Onur measures the hemoglobin of a woman in Panama.

This type of personal growth is typical for student participants, Nezami noted. "This is one of the aims of our program, and we are so glad that the Keck School continues to embrace our place as a leader in global education."

The application process for the 2016 awards began Oct. 1. The fellowships are open to Keck School graduate, professional and medical students, as well as medical residents in the Keck School of Medicine. For more information, go to http://keckmed.usc.edu/msgm/Global-Medicine-Fellowship.html.

The USC medical students who participated in the recent roundtable expressed no regrets about devoting their supposed "break from the classroom" during the holidays, in the spring or during the summer to academic travel.

Onur's memories from her studies abroad involve making connections with community members in places she was visiting.

She comforted a young girl in a dentist's chair in Quebrada Sal, Panama.

She taught a member of a convalescent home in Bocas del Toro how to use her camera.

And she did her best to converse — while "failing miserably" — with an elderly woman on a bus in Taipei.

"These were all small but special moments in which I was able to make a true connection with whom I never would have had the opportunity to do so otherwise," Onur recalled. "Despite the language and other cultural barriers, one person can have a special connection with another. Those are the times that I will never forget."

Lenz is first recipient of endowed chair honoring J. Terrence Lanni

By Hope Hamashige

The ceremony installing the J. Terrence Lanni Chair in Cancer Research was one of heartfelt tributes for two men, a doctor and a patient, who formed a tight bond over the years they fought to save Terry Lanni's life.

Terry Lanni lost his battle against colon cancer in 2011 and his family decided to honor his memory by endowing a chair in his name at the USC Norris Comprehensive Cancer Center. They also wanted Terry Lanni's friend and physician, Heinz-Josef Lenz, MD, associate director for adult oncology and co-leader of the gastrointestinal cancers program at USC Norris, to be the first holder of that chair.

"Terry fought cancer with dignity and with a positive attitude," Debbie Lanni said of her husband. A member of the Board of Overseers at the Keck School of Medicine of USC, she added: "I attribute a lot of his strength to Dr. Lenz. They had a wonderful relationship."

USC Provost Michael Quick pointed out that sitting in an endowed chair is the highest honor for any professor because it allows them to take risks in their research. In this case, Lenz added that this chair holds a deeper meaning because it carries the name of a friend.

"Having his name on my business card is so meaningful," said Lenz, who noted that it will be a constant reminder of their commitment to making colon cancer a disease of the past. "I will never give up."

The gathering on a warm and windy afternoon in the gardens of USC Norris was attended by Quick, as well as James Ellis, dean of the USC Marshall School of Business, and Carmen A. Puliafito, MD, MBA, dean of the Keck School of Medicine of USC.

Heinz-Josef Lenz

Stephen B. Gruber, MD, PhD, MPH, director of USC Norris, said that Lenz was deserving of this honor because of his passion to help his patients, which is why he has excelled as both a physician and a researcher.

Lenz and his research team have made ground-breaking advances in colorectal cancer research and treatment. They have identified variations in genes that predict patients' response to chemotherapy, novel genes associated with DNA repair and novel mechanisms of drug action.

"Dr. Lenz is at the forefront of new therapies and for colon cancer," said Gruber, adding that Lenz is one of the first people he turns to for clinical advice.

Ellis and Puliafito also spoke about Terry Lanni's long history of giving to his alma mater. Terry Lanni graduated from USC in 1965 and went on to have high profile business career as chairman and chief executive officer of MGM Mirage.

Puliafito added that Terry Lanni was also a great supporter of the Keck School, having served on its Board of Overseers.

"We are truly honored to have a chair in his name," Puliafito said.

Calendar of Events

Tuesday, Oct. 13

5:30 p.m. Ophthalmology Grand Rounds. Alexander Ljubimov, PhD, Cedars-Sinai Medical Center. HC4 Conference Room, 3rd Floor. Info: Tyaisha Christopher, (323) 409-5233, Tyaisha.Christopher@med.usc.edu, http://usceye.org

Wednesday, Oct. 14

Noon. Saban Research Institute Seminar. Samir S. Shah, MD, MSCE, University of Cincinnati College of Medicine. Auditorium, Saban Building, 4661 Sunset Blvd., Los Angeles. Parking available at the main hospital garage across the street from the Saban Building. Info: Ritu Gill, (323) 361-8715, tecpad@chla.usc.edu http://chla.org/tecpad

Thursday, Oct. 15

3:30 p.m. USC Women in Management Workshop. "Curating for Your Colleagues with WordPress," Ginger Mayerson, USC. CHP G23. RSVP and Info: Ginger Mayerson (323) 227-1092, mayerson@usc.edu, http://www.uscwim.org/calendar.asp

Friday, Oct. 16

9:30 a.m.-2:30 p.m. USC Pain Center, Quench the Fire and U.S. Pain Foundation Seminar. "2015 Take Control of Your Pain — Los Angeles," Steven Richeimer, USC Pain Center. Soto Building II, Rooms 2902 and 2904. Register online or at 9 a.m. on day of event. Lunch provided. Info: Lynne Popadak, (818) 288-0754, lynnepop@aol.com, www.QuenchTheFire.org RSVP: Nicole Hemmenway, (800) 910-2462, nicolehemmenway@nicolehemmenway.com

Noon. Molecular Imaging Center Seminar. "Current Topics in Radiopharmaceutical Regulatory Affairs," Phillip De Noble, PharmD, Memorial Sloan Kettering Cancer Center. Lunch provided. Harkness Auditorium. Info: Tautis Skorka, (323) 442-3858, skorka@usc.edu, http://mic.usc.edu

Tuesday, Oct. 20

11 a.m. USC Stem Cell Seminar. Arturo Alvarez-Buylla, UC San Francisco. Eli and Edythe Broad CIRM Center Auditorium. Info: Cristy Lytal (323) 442-2172, lytal@med.usc.edu, http://stemcell.usc.edu

Wednesday, Oct. 21

Noon. The Saban Research Institute Seminar. "Novel Virulence Mechanisms of Gram-Positive Pathogens," George Liu, MD, PhD, Cedars-Sinai Medical Center. Auditorium, Saban Building, 4661 Sunset Blvd. Los Angeles. Parking is available at the main hospital garage. Info: tecpad@chla.usc.edu, http://chla.org/tecpad.

Tuesday, Oct. 27

11 a.m. USC Stem Cell Seminar. Viviana Gradinaru, California Institute of Technology. Eli and Edythe Broad CIRM Center Auditorium. Info: Cristy Lytal, (323) 442-2172, lytal@med.usc.edu http://stemcell.usc.edu

Noon. USC Institute for Global Health, Globe Med at USC, Global Health and Human Rights program and Occidental College Seminar, "Sexuality, Health and Human Rights: Fulfilling the Promise of Health and Human Rights for All," Sofia Gruskin, JD, USC. Franklin Room, Suite TCC 350, Ronald Tutor Campus Center, University Park Campus. Info: Nivvy Hundal, (323) 865-0419, nhundal@usc.edu

Notice: Calendar items are due at least 10 days before publication date. Timely submission does not guarantee publication in print. See more calendar entries at *hscnews.usc.edu/calendar-of-events*. Submit items at *tinyurl.com/calendar-hsc*. Include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number/email address.

Hope Hamashige

WOUNDS OF WAR: Heather Goldenhersh, Brian F. O'Byrne and Bryan Doerries read from Sophocles' *Ajax* as part of a project dubbed Theater of War during a Sept. 24 presentation at HSC in the USC Visions and Voices series. They are members of Outside the Wire, a social impact company that uses theater to address public health and social issues like addition, political violence and psychological wounds related to combat. Theater of War presents readings of ancient Greek plays to service members, veterans, caregivers and families to help initiate conversations about the visible and invisible wounds of war.

CONSTRUCTION: Last beam placed atop site of new Norris facility

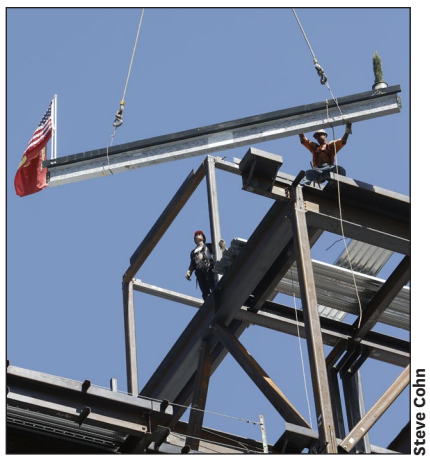
Continued from page 1

January 2016, with two larger welcoming gateways to be completed at Alcazar and Soto streets by March 2016.

Construction of the new six-level, 1,200-space parking structure on San Pablo Street, near Valley Boulevard, is on track for completion by the end of this year. Spots in the parking structure will be shared with a new extended-stay 200-room Hyatt House hotel on the northeast corner of the San Pablo and Alcazar intersection.

The hotel development will include 14,000 square feet of retail space, including a sit-down restaurant and 10,000 square feet of conference space. A 2017 opening is targeted.

A new student housing complex will stand south of the hotel. The complex will have 178 units with about 450 beds and is scheduled for occupancy in time for the fall 2016 semester. The ground floor will also include a new child care center for the campus, with capacity for 130 children.



Steve Cohn

After it was signed by Keck Medicine of USC patients and staff, the last steel beam was placed atop the building.

MASSRY: Researchers honored for their studies of bacteria

Continued from page 1

pieces of DNA would permit the bacteria to recognize and destroy it.

Horvath and colleagues later tested this by manipulating the DNA of a Streptococcus bacteria. By integrating sequences from the bacteriophage into the CRISPR sequences, they were able to create bacteria that were resistant.

In doing so, Horvath solved a long-standing problem for food companies. He also opened the door for scientists to build on his discovery and take it in a new direction.

Doudna, PhD, professor of chemistry and molecular and cell biology at UC Berkeley, and Charpentier, PhD, director of the Max Planck Institute for Infection Biology in Berlin, were also studying CRISPR sequences in bacteria. After meeting in 2011, they began working together to unravel the mechanism underlying this ability to guard against repeat attacks.

They figured out that two pieces of RNA join with protein made by the bacteria, called Cas9, to cut the DNA at a specific spot. They realized this system, which they called CRISPR-Cas9, could be used to edit genomes, not just kill viruses.

Their technique gave scientists a simple and powerful tool to add or remove genetic material at will. In laboratories, scientists have found potential therapeutic uses, including correcting sickle cell anemia and altering cancer cells to make them more amenable to chemotherapy. In theory, using CRISPR-Cas9, scientists could alter any human gene.

"And so a revolution began," said Shaul Massry, MD, professor emeritus of medicine at the Keck School of Medicine of USC. "What started as an obscure problem in commercial microbiology begat a revolution in the modification of animal genomes that will transform understanding of normal development and therapies for a wide range of diseases."

The Meira and Shaul G. Massry Foundation established the international Massry Prize in 1996 to recognize contributions to the biomedical sciences and the advancement of health. Founded by Shaul Massry, the nonprofit foundation promotes education and research in nephrology, physiology and related fields. The winners will deliver lectures at 1:30 p.m. Oct. 29 in Mayer Auditorium.

RETREAT: Keck-Dornsife event brings scientists together to share

Continued from page 1

from the two schools.

"This is great science," said Thomas Buchanan, MD, vice dean for research at the Keck School of Medicine, at the opening of the two-day event. "The fundamental idea of this retreat is to build basic scientific collaboration between the two schools. We don't want to leave here without concrete plans for the future."

The opening day of the retreat featured a "lighting round" — scientists detailing their research in short, dynamic presentations. The second day featured sessions on research collaborations between the two schools, partnerships with industry, core resources and joint training opportunities.

The retreat was hosted by Carmen A. Puliafito, MD, MBA, dean of the Keck School of Medicine and Randolph Hall, PhD, vice president of research at USC.

Paul Aisen, MD, director of the Alzheimer's Therapeutic Research Institute, was the retreat's keynote speaker.

Departments and institutes represented included the USC Institute for Neuroimaging and Informatics, biological sciences, cell and neurobiology, chemistry, molecular biology and immunology, oncology and stem cell biology and regenerative medicine.

Among the researchers presenting their work was Janos Peti-Peterdi, a professor in the Department of Physiology and Biophysics at the Zilkha Neurogenetic Institute within the Keck School of Medicine of USC. Peti-Peterdi's research focuses on renal pathophysiology.

Steve Cohn

Arthur Toga of the USC Stevens Institute for Neuroimaging and Informatics and USC Stem Cell's Andrew McMahon check an agenda with Raymond Stevens of the Bridge Institute at USC Dornsife.

"Kidney disease is a major health problem and kidney research is a top priority for USC," Peti-Peterdi said. "As our kidney team becomes larger, we seek opportunities to collaborate and interact with researchers across the university with the goal of finding a cure for chronic kidney disease."

NIH grant to fund prostate cancer imaging research

By Douglas Morino

A Keck Medicine of USC researcher has been awarded grant funding to further his research into the detection and treatment of prostate cancer, which is among the most common types of cancer and the second leading cause of cancer death among U.S. men.

Hossein Jadvar, MD, PhD, MPH, MBA, associate professor of radiology and biomedical engineering, will receive an exploratory and developmental research grant with just under $450,000 in funding over a two-year period from the National Institutes of Health for his project, "Pilot Human Studies of FMAU PET in Prostate Cancer." The proposal received a top score from the NIH review panel, which attests to its significance and the anticipated impact.

The prestigious grant funds new studies that break ground or extend previous discoveries in new directions and "high risk, high reward" studies that may lead to a breakthrough in a particular area, or result in novel techniques, methodologies, models or applications that will impact biomedical, behavioral or clinical research, according to the NIH.

Hossein Jadvar

The study will investigate the use of image-targeted biopsies through the implementation of position emission tomography radiotracers that monitor cellular proliferation to see if cancer can be found in the prostate gland even if past biopsies did not detect any cancer. A PET scan imaging test uses low-levels of radioactive material called radiotracer administered through an IV to scan organs and look for diseases.

"For patients who have had biopsies of the prostate gland and the urologist didn't find anything, but their blood PSA level is elevated, the question becomes 'What do you do next?'" Jadvar said. "I've found that in a patient that previously had a negative biopsy, this tracer might be able to find cancer."

The study could lead to earlier detection of prostate cancer and more targeted, less-invasive treatment.

"Image-targeted biopsies are much better than what we do today and provide a way for more effective, image-targeted treatment," Jadvar said. "This may allow the cancer to be treated without taking the entire gland out."

The study is expected to begin by the end of the year and enroll about 40 patients.

Co-investigators include Osamu Ukimura, MD, PhD, Susan Groshen, PhD, Kai Chen, PhD, and Peter Conti, MD, PhD.

A native of Tehran, Iran, Jadvar has been active in contributing to the nuclear medicine and molecular imaging field throughout his career. He holds nine patents and serves on multiple NIH review panels.

Widely considered a leader in the field of nuclear medicine, Jadvar has been an attending physician at Keck Medical Center of USC and a member of the USC Norris Comprehensive Cancer Center since 1999.

Douglas Morino

HEART WALK: Keck Medicine of USC staff, family and friends gathered at the Rose Bowl in Pasadena on Sept. 26 for the 2015 Los Angeles Heart Walk. The annual 5K walk celebrates those who have made lifestyle changes and encourages others to live healthy lifestyles while raising money needed to fund heart disease research and community initiatives. More than $1.3 million has been raised this year.

2015 Good Neighbors Campaign launches

The university's Good Neighbors Campaign, USC's annual employee-giving initiative organized by Civic Engagement, began Oct. 1 with a $1.6 million fundraising goal to support key university-community partnership programs.

The campaign promotes better health and educational opportunities in the areas surrounding the Health Sciences and University Park campuses. Begun in 1994, the USC Good Neighbors Campaign encourages USC faculty and staff to contribute a portion of their paychecks to support programs that help strengthen local communities through USC Neighborhood Outreach and United Way. Students, alumni and friends can also participate.

To date, the campaign has raised more than $17.7 million to support more than 600 community partnership programs. The 2015 campaign runs through the end of this month.

For more information or to give online, visit goodneighbors.usc.edu.

County to honor USC Correctional Health

By Douglas Morino

A collaborative program between the Los Angeles County Department of Health Services, L.A. County Sheriff's Department and the Keck School of Medicine of USC aimed at providing quality medical care to jail inmates while cutting taxpayer costs will be honored by Los Angeles County officials.

The Inmate Care Services Program will be given a Top 10 Award on Oct. 21 by the County of Los Angeles Quality and Productivity Commission.

The award is given each year to a county department or agency that show sustained success through innovation, cost avoidance, revenue savings and public service enhancement. The Inmate Services Program was selected from 37 competing entries.

Launched in 2013, the program is led by Erick Eiting, MD, medical director of inmate health services at LAC + USC Medical Center and USC Correctional Health. It is designed to provide treatment of inmates inside county jail facilities, including Men's Central Jail and the Twin Towers Correctional Facility.

"Our concept is to take as much of the care as possible out of the hospital setting and bring it into the jail setting," Eiting said. "We want to minimize potential community safety issues involved with taking patients out of jail."

Under the program, an urgent care center staffed by a rotating team of 30 physicians has been established inside Twin Towers Correctional Facility. Additionally, a comprehensive women's health program and clinic has been set up at Century Regional Detention Facility in Lynwood and four subspecialty clinics were opened at Twin Towers Correctional Facility, along with a new electronic referral system for coordinating and tracking patient care.

The program was launched after medical center officials noticed an increase in inmate patient admissions after the passage in 2011 of AB 109, a state law mandating that low-level, nonviolent offenders serve their sentences in county jails rather than in state prisons.

The county's jail system, the largest in the United States, includes five facilities with a combined population that can top 18,000 inmates on any given day.

LAC + USC Medical Center's jail ward has 16 emergency room beds and 24 inpatient beds and is routinely filling to capacity.

There have been 20,752 inmate patient visits in the medical center's urgent care clinic inside Twin Towers since it opened in July 2013. The USC Correctional Health Department shares a close relationship with the Sheriff's Department and its Medical Services Bureau. Physicians from the Medical Services Bureau provide general care to inmates, while USC Correctional Health physicians from LAC + USC Medical Center provide specialty and acute care services.

Eiting seeks to provide incarcerated patients with the best quality care possible, regardless of their past.

"You have to look past what these patients may have done and remind yourself that they deserve the same treatment as anyone else," Eiting said. "I went to medical school and became of physician to treat all human beings, regardless of their background or back story."

Q&A: Malnutrition and Keck Medicine of USC

In recognition of Malnutrition Awareness Week (Sept. 28-Oct. 2), Stephanie Sanders, RD, an outpatient dietitian for Keck Medical Center of USC, offered these observations:

Q. What is malnutrition?

Sanders: Malnutrition is simply defined as any condition in which our bodies do not receive enough nutrients for proper function.

Q. How serious is malnutrition among patients?

Sanders: One-in-three patients are malnourished. Patients diagnosed with malnutrition have triple the length of stay in a hospital setting. In general, malnourished patients experience higher risk of infection, more hospital readmissions, greater health care costs and decreased wound healing. If malnutrition is untreated or undiagnosed, two-thirds of hospitalized patients experience further decline.

Q. What are some warning signs and impacts?

Sanders: Parameters of particular significance for patients include inability to eat, repeated or extended cessation of feeding, frequent interruptions in enteral or parenteral nutrition therapies and unintended weight changes. Without frequent monitoring, non-severe malnutrition could progress to a severe malnourished state, leading to increased risk of mortality and morbidity, decreased function and quality of life, as well as higher costs.

Q. What is the role of nutrition experts?

Sanders: The nutrition experts at Keck Medical Center seek to prevent, recognize and treat malnutrition among our hospitalized patients.

Q. What happens when malnutrition is found?

Sanders: Collaborating with a multidisciplinary team is a crucial piece to the puzzle for malnutrition awareness. The dietitians will alert team members of their findings and make recommendations for interventions, diagnosis and documentation.

Promising study focuses on treatment for dry eyes

By Meg Aldrich

New research by the Fini Lab at Keck Medicine of USC demonstrates for the first time that a natural protein in tears may be key to treating dry eye syndrome, a common affliction of the eye that affects millions of people.

Published in *PLOS ONE*, the study suggests a new approach to treating dry eye. Using an experimental mouse model, the researchers found that the natural tear protein known as clusterin seals the ocular surface barrier, while also protecting against further damage.

"It is well known that clusterin protects cells and proteins," said Shinwu Jeong, PhD, assistant professor of research ophthalmology in the Institute for Genetic Medicine at the Keck School of Medicine of USC and the senior author of the study. "A problem in dry eye appears to be that natural clusterin is depleted. We predicted that adding it back would be beneficial, however, the novel mechanism of sealing was unexpected."

Dry eye symptoms include pain, burning, itching, redness, sensitivity to light and other discomfort. If left untreated, severe cases may result in vision loss.

"We are the first to report functions for this protein in dry eye and shed some light on its potential use for ophthalmology treatments," said Aditi Bauskar, a PhD student in USC's medical biology program and lead author of the study.

The researchers studied the ocular surface barrier rather than upstream effects of tear production, chemistry and inflammation that contribute to dry eye conditions.

Courtesy of Fini Lab

Lead author of the study Aditi Bauskar, a PhD student in USC's medical biology program.

"Our pre-clinical results are very promising and make a strong case to use clusterin as a biological drug to prevent or treat not only dry eye but also other corneal disorders involving damage to the ocular surface barrier," Bauskar noted.

No drugs are currently on the market to address ocular surface barrier disruption.

The research is the basis of several patent applications with the USC Stevens Center for Innovation, one of which has been issued. It was conducted in the lab of M. Elizabeth Fini, PhD, director of the USC Institute for Genetic Medicine and professor of cell and neurobiology and ophthalmology at the Keck School.

Other USC co-authors include faculty members Wendy J. Mack of preventive medicine and SC-CTSI, Martin Heur of ophthalmology and Janet Moradian-Oldak of the Ostrow School of Dentistry.

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