

Chen named chair of Titus Family Department of Clinical Pharmacy

By Kukla Vera

USC School of Pharmacy Dean R. Pete Vanderveen, PhD, announced the appointment of Steven W. Chen, PharmD, as chair of the Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics & Policy effective June 1.

In his announcement, Vanderveen said, “Dr. Chen is a recognized national leader in designing and implementing innovative clinical pharmacy practice models, a two-time winner of the American Pharmacists Association highest honor (Pinnacle Award) and a truly superb clinician.”

Chen is a co-investigator on the largest grant ever received by the school, a \$12 million innovation grant from the Centers for Medicare and Medicaid Services.

This project, currently in its third year, aims to

improve medication use and safety, and access to primary care among underserved populations in Southern California.

A faculty member at the school since 1998, Chen holds the Hygeia Centennial Chair in Clinical Pharmacy. He has been among the faculty leaders in expanding the school’s footprint in safety-net clinics throughout Southern California, providing disease management and medication consultative services to vulnerable populations by teams of clinical pharmacists, residents and students. He currently oversees teams at over 20 clinics throughout Southern California.

His pioneering work in Los Angeles safety-net clinics has emerged as a national model that has been replicated at clinics across the country. Further, he has served as national co-chair



Phil Channing

Stephen Chen is a co-investigator on the largest grant ever received by the USC School of Pharmacy, a \$12 million innovation grant from the Centers for Medicare and Medicaid Services.

of the Health Services Research Agency’s Patient Safety and Clinical Pharmacy Services Collaborative which has exponentially expanded the footprint of clinical pharmacy services in clinics nationwide.

A 1989 graduate of the

school’s Doctor of Pharmacy program, Chen completed a residency in primary practice in 1990 at the Department of Veterans Affairs Outpatient Clinic in Los Angeles, formerly an affiliate of the USC School of Pharmacy.

At USC, Chen is a Distinguished Faculty Fellow of the Center for Excellence in Teaching and among the leaders of the Interprofessional Education Committee on the Health Sciences Campus, designed to promote collaboration in the training of the next generation of health professionals among USC health science schools.

In 2013, Chen was recognized as “Alumnus of the Year” by the School of Pharmacy Alumni Association.

He has also been recognized numerous times by students and residents as “Professor of the Year” and “Preceptor of the Year.”

‘Dr. Chen is a recognized national leader in designing and implementing innovative clinical pharmacy practice models.’

— R. Pete Vanderveen, dean of the USC School of Pharmacy

In wife’s memory, professor gives \$1 million to spur drug-delivery studies at Keck School

By Hope Hamashige

Marcel Nimni, PhD, professor of surgery, biochemistry and molecular biology at the Keck School of Medicine of USC, recently donated \$1 million to the Department of Surgery at the school to establish a laboratory to further research in tissue engineering and targeted drug delivery.

The gift honors the memory of his wife Fabiola Cordoba who died after a 6-year battle against pancreatic cancer, which included a therapy based on the approaches currently being expanded at USC. She was a pediatrician who worked in Nimni’s laboratory when he was director of surgical research at Childrens Hospital Los Angeles.

Nimni’s current research, prompted by Cordoba’s death, is aimed at specifically targeting cancer drugs to collagen capsules around pancreatic and other tumors to reduce systemic toxicity in patients. His generous gift will allow that research to continue at the Keck School.

“I became frustrated with the state of cancer research,” explained Nimni. “There’s only about a 2.5 percent survival rate difference between patients whose tumors are not resectable or metastatic and who either get or not get chemotherapy. This prompted me to try and change what is so often observed: Chemotherapy is killing the tumor cells but also killing the patient.”

Nimni has a long relationship with USC. He studied biochemistry at USC in the 1950s after



Photo/Courtesy of Marcel Nimni

Marcel Nimni (left) recently donated \$1 million to the Department of Surgery at the Keck School of Medicine in honor of the memory of his wife Fabiola Cordoba (right).

graduating from pharmacy school in Argentina. He returned to do postdoctoral work in 1960 and joined the faculty shortly thereafter, holding professorships in several departments: medicine, orthopedics and craniofacial biology. He has a long interest in the study of collagen and connective tissue changes in rheumatology, cardiovascular diseases and orthopedics. He established one of the first tissue engineering courses in the country at USC.

Nimni added that he believes in giving back to the institution that gave him and his family so much over the years. “USC has been like my home. My kids went here, are both physicians, and I’m very grateful to USC,” he said. “I would like to encourage other faculty to give back for the training of those who will follow them and to extend their passion for research beyond retirement.”

Fasting triggers stem cell regeneration of damaged immune system

By Suzanne Wu

A new USC study showed that cycles of prolonged fasting not only protect against immune system damage — a major side effect of chemotherapy — but also induce immune system regeneration, shifting stem cells from a dormant state to a state of self-renewal.

Corresponding author Valter Longo, PhD, Edna M. Jones Professor of Gerontology and the Biological Sciences at the USC Davis School of Gerontology and director of the USC Longevity Institute, said the work provides the first evidence of a natural intervention triggering stem cell-based regeneration of an organ or system.

The study appeared in the June 5 issue of the *Cell Stem Cell*.

In both mice and a Phase 1 human clinical trial, long periods of lowered white blood cell counts. In mice, fasting cycles then flipped a regenerative switch, changing the

signaling pathways for hematopoietic stem cells, which are responsible for the generation of blood and immune systems, the research showed.

Longo, who has a joint appointment at the USC Dornsife College of Letters, Arts and Sciences, said the study has major implications for healthier aging, in which immune system decline contributes to increased susceptibility to disease as people age.

By outlining how prolonged fasting cycles — periods of no food for two to four days at a time over the course of six months — kill older and damaged immune cells and generate new ones, the research also has implications for chemotherapy tolerance and for those with a wide range of immune system deficiencies, including autoimmunity disorders.

Longo said, “We could not predict that prolonged fasting would have such a remarkable effect in promoting stem cell-based regeneration of the hematopoietic system.”

Radiological Society of North America honors four Keck School students

By Hope Hamashige

Four Keck Medical School of USC students have received grants from the Radiological Society of North America (RSNA). Samantha Delapena, Megha Nayyar, Chung Yao Yu and James Yoon were among the 25 medical students nationally to receive \$3,000 grants from the RSNA. Each student will also receive \$3,000 matching stipends from the Department of Radiology.

Delapena is conducting research on the use of contrast-enhanced ultrasound, as an alternative to three-phase contrast enhanced CT, to evaluate the treatment of hepatocellular carcinoma, the most common type of liver cancer.

Nayyar is conducting a review of the literature

on the surveillance of renal masses, focusing on the role of imaging in decision-making and ongoing surveillance of such masses in an effort to create cost-effective guidelines for surveillance of renal masses.

Yu's research focuses on the effectiveness of creating multiple three-dimensional images, using different types of tracers, in the detection of prostate cancer recurrence.

Yoon is studying the use of a type of bone scan to assess treatment response to bone metastases of prostate cancer.

The RSNA's Research and Education Foundation were established to address a lack of funding options for radiologic research. Since its inception in 1984, it has become the primary source of early career radiology research grant funding and



The RSNA recently awarded grants to Keck School of Medicine students Samantha Delapena, Megha Nayyar, Chung Yao Yu and James Yoon. From left are: Vinay Duddalwar, associate professor of clinical radiology; Delapena; Edward Grant, chair of the Department of Radiology; Nayyar; Hossein Jadvar, associate professor of radiology; Yu; Bhushan Desai, assistant professor of research; and Yoon.

has awarded over \$40 million in grants, many of which have led to NIH funding.

Bhushan Desai, MD, assistant professor of research in the Department of Radiology at the Keck School, noted that it is rare for one university to have four students receive RSNA

research grants in one year.

"This milestone is an excellent barometer of the increasing vibrancy of

our department's research portfolio," said Desai. "It is a tangible measure of our quality as an institution."

Enzyme used in antidepressants could aid prostate cancer treatment

By Kukla Vera

A new study co-led by researchers at the USC School of Pharmacy, among others, has found that suppressing the enzyme monoamine oxidase A (MAO-A) reduced or even eliminated prostate tumor growth and metastasis in mice.

The finding opens the door for physicians to possibly use the antidepressant drugs that had targeted MAO-A as a cancer-suppressant as well.

Jean C. Shih, PhD, University Professor at the USC School of Pharmacy, said, "This is the first paper showing that MAO-A plays an important role in prostate cancer progression and metastasis. MAO-A inhibitors may provide an unmet need in cancer treatment."

Shih, who is co-corresponding author of a paper on the research that was published on May 27 in the *Journal of Clinical Investigation*, has studied MAO-A for 30 years. She collaborated with fellow co-corresponding author Leland Chung, PhD, a prostate cancer expert from Cedars-Sinai Medical Center. Their team included researchers from the Keck School of Medicine of USC and the Fourth Military Medical University in China. The first author, Boyang Wu, PhD, was Shih's doctoral student at USC.

Chung, director of the Uro-Oncology

Research Program at the Cedars-Sinai Samuel Oschin Comprehensive Cancer Institute, said that when this enzyme is not suppressed, it produces a tumor-rich environment that fuels the growth and metastasis of prostate cancer cells.

"Suppressing this enzyme and combining it with current therapies may provide a better way to manage and cure men with metastatic prostate cancer," he said.

MAO-A regulates the amount of neurotransmitters in the central nervous system by deactivating some — breaking them down. Like all enzymes in the brain, MAO-A is needed in optimum quantities to keep a person healthy. Too much MAO-A has been linked with depression, while too little with autistic behaviors, aggression and anxiety.

Recently, scientists noticed that MAO-A levels were especially high in individuals suffering from prostate cancer, but were unable to determine why. Shih, Chung, and their team found that MAO-A produces an oxygen-rich, free-radical environment for cancer cells to thrive in — promoting stronger growth and invasiveness. They were able to control this effect in mice, strongly suggesting that the drugs already in existence to inhibit MAO-A for mental depression can do double-duty to suppress prostate cancer.

Keck Medical Center of USC nurses earn scholarships to further their education

By Hope Hamashige

Five nurses from Keck Medical Center of USC recently received scholarships from two organizations associated with USC to help them further their educations.

One of the organizations, Keck Hospital of USC Guild, gave \$5,000 each to Daniel Hudson, Jessica Thomas and Kimberly Sanchez. Hudson is pursuing a master's degree in nursing leadership, Thomas is completing a bachelor's degree in nursing and Sanchez is studying for a doctor of nursing practice degree.

Keck Hospital of USC Guild is a membership organization that supports the efforts of Keck Hospital of USC and Keck Medical School of USC. In addition to giving scholarships to nurses, the Guild also awards scholarships to medical students and helps raise money for equipment for Keck Hospital.

Town & Gown of USC gave \$2,500 scholarships to Rosalyn Phan and Sarah Giron. Town & Gown of USC is a philanthropic organization that gives more than \$1 million in scholarships to undergraduate and graduate students every year. Each year, the organization holds a benefit in honor of a well-known person. That person gets to decide how the scholarship money that was raised in their honor is spent. When Town & Gown decided to honor Nancy Reagan she chose a scholarship fund to help nurses.

Carol Mollett, past president of Town & Gown of USC, explained that the fund will help further the education of two or three nurses every year in perpetuity.

Soda may contain more fructose than labels say

Soda consumers may be getting a much higher dose of the harmful sugar fructose than they have been led to believe, according to a new study by the Childhood Obesity Research Center (CORC) at the Keck School of Medicine of USC.

In the study, published online June 3 in the journal *Nutrition*, Keck School researchers analyzed the chemical composition of 34 popular beverages, finding that beverages and juices made with high fructose corn syrup (HFCS), such as Coca-Cola, Pepsi, Dr Pepper, Mountain Dew and Sprite, all contain 50 percent more fructose than glucose, a blend that calls into question claims that sugar and HFCS are essentially the same.

"We found what ends up being consumed in these beverages is neither natural sugar nor HFCS, but instead a fructose-intense concoction that could increase one's risk for diabetes, cardiovascular disease and liver disease," said Michael Goran, PhD, director of the CORC and lead author of the study. "The human body isn't designed to process this form of sugar at such high levels. Unlike glucose, which serves as fuel for the body, fructose is processed almost entirely in the liver where it is converted to fat."

The Corn Refiners Association, a trade group representing HFCS producers, has long argued that HFCS is only negligibly different than natural sugar (sucrose), which is made up of equal parts of fructose and glucose. But Goran's analysis of beverages made with HFCS showed a fructose to glucose ratio of 60:40 — considerably higher than the equal proportions found in sucrose and challenging the industry's claim that "sugar is sugar."

HSC News

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Sports rivals find common ground in cancer research

By Hope Hamashige

Two research teams at the USC Norris Comprehensive Cancer Center recently received a significant funding boost from Rivals United for a Kure, a campaign of Kure It Cancer Research, Inc.

Rivals United for a Kure awarded \$70,000 to Kevin McDonnell, MD, PhD, clinical instructor in the Department of Medicine at the Keck School of Medicine of USC, whose research focuses on identifying genomic mutations in adolescent and young adult cancer patients.

A second award of \$70,000 was given to Agnieszka Kobiela, PhD, assistant professor of otolaryngology at the Keck School, and to Uttam Sinha, MD, MS, associate professor of otolaryngology and Watt Family Chair in Head and Neck Cancer at the Keck School of Medicine of USC, who collaborate on research into biomarkers of invasion in head and neck squamous cell carcinoma.

Kure It is the brainchild of Barry Hoeven, a two-time graduate of USC ('72 BA, '73 MBA). Hoeven, having been diagnosed with kidney cancer in 1998, discovered the so-called orphan cancers that get little attention and little funding for research. Armed with this information, Hoeven was inspired to raise money for innovative cancer research. To that end, he established Kure It Cancer Research, which has awarded \$1.4 million in grants since 2007.

Rivals United for a Kure is an offshoot of that organization which plays up the historic UCLA/USC sports rivalry. The organization's November 2013 annual gala honored USC football coach John Robinson and UCLA's Terry Donahue in downtown L.A. Also participating were former USC football players Sam Cunningham, Anthony Munoz, Ronnie Lott, Curtis Conway and Paul McDonald. The money raised funds cancer research at USC Norris Comprehensive Cancer Center and UCLA's Jonsson Comprehensive Cancer Center.

For information or to contribute, visit www.rivalsunitedforakure.org.



From left are: Uttam K. Sinha, associate dean, surgical simulation; Agnieszka Kobiela, assistant professor of otolaryngology – head and neck surgery and biochemistry and molecular biology; Barry Hoeven, founder of Kure It Cancer Research; Stephen B. Gruber, director of the USC Norris Comprehensive Cancer Center; and Kevin McDonnell, clinical instructor at the Keck School of Medicine of USC.

Addressing inequities in care for Latino and African-American children with autism

By Paul Karon

To ensure that African-American and Latino children with autism spectrum disorders get the care they need, researchers at the Southern California Clinical and Translational Sciences Institute (SC CTSI) and Children's Hospital Los Angeles have proposed the creation of teams of specially trained community advisors to help families obtain proper screening and timely access to needed services.

Although studies show no difference in the rate of autism spectrum disorders according to ethnicity, African-American and Latino children are typically diagnosed six to eight months later than white children. These months can make a big difference, explained Michele Kipke, PhD, SC CTSI co-director and director of the community engagement program.

Children diagnosed before age 3, for example,

are eligible for certain publicly funded early intervention programs shown to provide children with autism increased opportunities and better outcomes. After age 3, those programs are not available.

Through focus group studies, researchers developed a clearer picture of the experience Latino and African American parents have when they asked doctors about children's unusual behavior or development.

Principal investigator

Katrina Kubicek, assistant director of the SC CTSI Community Engagement program, said, "More often than not, doctors told parents not to worry, that the child would be fine in a year or two, rather than referring the child to a developmental specialist for evaluation. That led to missed and delayed diagnoses for some families."

Investigators recommended the development of teams of community-based lay health-care

workers, called *promotoras*, who would help parents advocate for their children. The *promotora* model has already proved successful in Latino communities in California, where they have raised awareness about heart health and provided other assistance.

"Use of *promotoras* is one of the strategies we are exploring to help equip parents with information and tools they need to access services for their children," Kipke said.

USC researchers call on cellphones for behavior study of children

By Leslie Ridgeway

A Keck School of Medicine of USC research study using cell phones to survey youngsters about sedentary behavior has given scientists what they believe is a more accurate snapshot of real-time sedentary activity among children than an after-the-fact survey could accomplish.

Yue Liao, lead author and a doctoral student in the Department of Preventive Medicine and the Institute for Health Promotion and Disease Prevention Research at the Keck School, said, "Using this method, we could capture daily behavior and ask questions about who the kids were with."

The research was recently published online in the *Journal of Physical Activity & Health*. Genevieve Dunton, PhD, MPH, assistant professor of preventive medicine at the Institute for Health Promotion, was principal investigator.

The purpose of the research was to determine the most promising intervention targets for increasing physical activity among youngsters from the ages of 9 to 13. The goal was to learn where the children were, whom they were with and what they were doing when they weren't at school, thereby revealing sedentary behavior patterns.

Working with a team that develops mobile phone

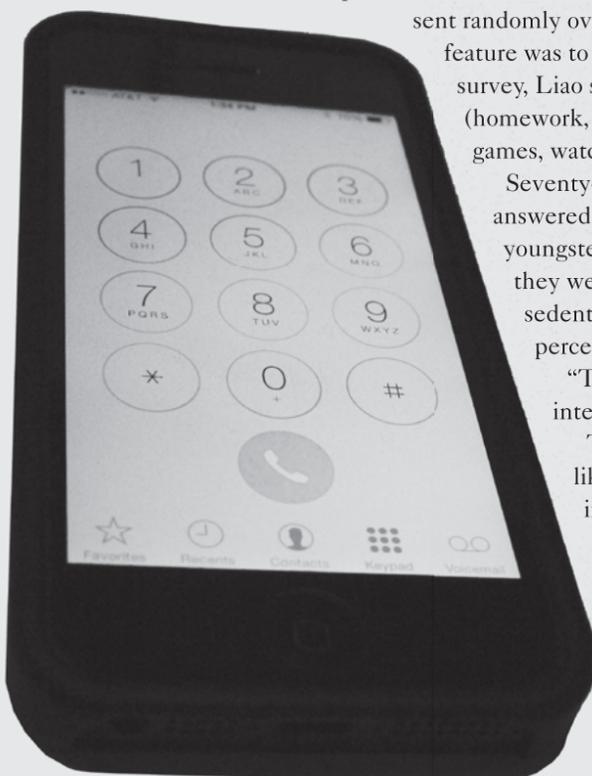
health technology led by Stephen Intille, PhD, from Northeastern University, the USC investigators sent 120 children 20 electronic surveys over a four-day period that included two weekdays and two weekend days. The surveys were sent randomly over phones supplied by the team; the phones' only feature was to prompt the youngsters and accept answers to the survey, Liao said. Sedentary behavior was divided into productive (homework, reading) or leisure-oriented activity (playing video games, watching TV).

Seventy-seven percent of all the prompted surveys were answered by the children. The surveys demonstrated that the youngsters were usually at home with family members when they were least active. Fifty-eight percent of the reported sedentary activities occurred with family members, while 26 percent occurred while the children were alone.

"This could indicate an opportunity for family intervention," Liao said.

The team also found that the children were six times as likely to engage in leisure-oriented sedentary behavior instead of productive sedentary behavior when with friends, and when alone, were equally likely to engage in leisure or productive sedentary behavior.

Boys participating in the survey were three times as likely to engage in leisure-oriented sedentary activities over productive sedentary activities when not at school, Liao said. Girls were equally likely to engage in leisure-oriented and productive sedentary activities.





Tom DeSanto

USC physician leads study to help children with liver disease

By Paul Karon

To compare outcomes of two common surgical procedures for children with liver complications due to Alagille syndrome, a USC researcher at Children's Hospital of Los Angeles is driving a collaboration with colleagues from 15 hospitals and research centers across the country.

Alagille syndrome is a congenital disorder that can interfere with development of the liver's bile ducts, preventing normal elimination of the important digestive fluid. A buildup of bile can damage the liver and cause other serious complications.

Fortunately, Alagille syndrome is uncommon, occurring once in approximately 70,000 to 100,000 births. But this rarity has also made the condition difficult to study, explained principal investigator Kasper Wang, MD, associate professor

of surgery at the Keck School of Medicine of USC and a pediatric surgeon at Children's Hospital of Los Angeles.

To prevent a buildup of bile in Alagille patients, surgeons typically employ one of two surgical approaches. In one, surgeons build a system to drain bile from the gall bladder out of the body into an external plastic pouch. For the other approach, surgeons connect the liver to the colon via the small intestine, so bile can be eliminated through normal excretion.

"Naturally, the internal bypass would seem preferable, but it's not clear that it works as well," Wang said. "The two have simply never been compared in a study."

To find enough patients to make a statistically significant comparison, Wang called on gastroenterologists and pediatric surgeons

across North America.

"Since the volume of cases is low, no single institution has sufficient experience to know which approach is preferable, or under what conditions one may be better than the other," Wang said. "A multi-center study is the only way we can gather enough data."

Institutions contributing data include Texas Children's Hospital - Baylor College of Medicine; Lurie Children's Hospital; University of California, San Francisco Medical Center; Washington University of St. Louis; Riley Children's Hospital; Children's Hospital of Pittsburgh; Mount Sinai Hospital; Cincinnati Children's Hospital Medical Center; Children's Hospital of Philadelphia; Children's Hospital Colorado; The Hospital for Sick Children, in Toronto, Canada; Johns Hopkins University; and Emory University.

CHECKERBOARD CHALLENGE — Taking time to relax, Jennifer Kirk, RN, (left) plays checkers with James McDermott outside Keck Medical Center. A long-time patient on 4 South, McDermott is awaiting a heart transplant.

Calendar of Events

Tuesday, July 1

2 p.m. Institute for Neuroimaging and Informatics Talk. "Advances in Imaging Neurodegenerative Disease Using SWI," E. Mark Haacke, Wayne State University. Herklotz Seminar Room, ZNI 112. Info: Grace Liang-Franco, (323) 442-7246, grace@ini.usc.edu, www.loni.usc.edu

Wednesday, July 9

7:30 a.m. USC Institute for Integrative Health Seminar. "Update on Soy, Green Tea and Breast Cancer," Anna Wu, USC. NTT 7409. Info and RSVP: Quintilia Avila, (323) 442-2638, qavila@usc.edu, integrativehealth.usc.edu

Friday, July 11

Noon. Tobacco Center of Regulatory Science for Vulnerable Populations Seminar. "50th Anniversary Surgeon General's Report on Smoking and Health," Jonathan Samet, USC. Soto Street Building Room 115 & 116. Info: Hasmik Gasparyan, (323) 442-7222, hasmikga@med.usc.edu

Monday, August 4

8 a.m. Noon. Education, Career Development, and Ethics Program of Southern California Clinical and Translational Science Institute Seminar. "Short Course: Research in Diverse Urban Populations," Jon Samet, Lourdes Baezconde-Garbanti, Katrina Kubicek, Jennifer Unger, and William Vega, USC. Aresty LG 503-4. Info: Ray De Mesa, (323) 442-8281, ray.demesa@med.usc.edu. RSVP: ow.ly/xxDSy

Thursdays, August 7 - September 25

9 a.m. - Noon. Southern California Clinical and Translational Science Institute Course. "Introduction to Clinical and Translational Research Study Design." Aresty LG503-4. Info and RSVP: (323) 442-8281, ecde@sc-ctsi.org, <http://j.mp/1dVmmg5>. This is an eight-week course. \$200.

Notice: Calendar submissions must be received at least 10 days before an issue's publication date to be considered. Please note that timely submission does not guarantee an item will be printed. Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number or email address for information.

Submit calendar items at tinyurl.com/calendar-hsc.

Donations buy germ-killing robot to keep CF patients safe

By Hope Hamashige

When it comes to managing cystic fibrosis (CF), Greg Storm, a lifelong CF patient, knows that exercise can be the most important step. Regular exercise helps CF patients reduce the rate of lung function loss and helps improve healing from lung infections.

While Keck Medical Center of USC has a gym where hospitalized CF patients can work out, some were afraid to use it because of the risk of being exposed to germs.

Storm, a member of the CF patient advisory committee at Keck Hospital of USC, said the patients let it be known how much they would benefit from the purchase of a state of the art disinfection system to use in the medical center's Cystic Fibrosis Gym.

Patients recently got their wish when two organizations, The Webb Foundation and The Bob and Margrit Gold Trust, together purchased a germ-killing robot to clean the gym's equipment. The Webb Foundation donated \$50,000 and The Bob and Margrit Gold Trust gave \$40,000 to buy the robot, which uses ultraviolet light to kill bacteria, viruses and spores without contact or chemicals.

"Knowing that the gym is safe from infection is a huge thing for us," said Storm.

The Webb Foundation and The Bob and Margrit Gold Trust have teamed up before to help Keck Medicine's CF patients. They combined last year to build the gym for CF patients at Keck Medical Center.

Both organizations have an interest in helping people with CF. The founders of the Webb Foundation, Lew and Dorothy Webb, have a grand-

daughter, Nikki Adams, who has been a CF patient at Keck Medicine. The founders of The Bob and Margrit Gold Trust had two sons who died of CF in the 1960s.

Steven Tyre, CPA, trustee of the Bob and Margrit Gold Trust, said helping people with CF is an honor. "There's not a braver, tougher bunch of human beings around," said Tyre. "If I can help a man like Greg Storm enjoy a longer, healthier life, what more could I ask for."

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