

Keck Medicine



Keck
Medicine
of USC

A Momentous Leap Forward

*Historic \$150 million gift fuels
a revolution in medical science*

Keck School of
Medicine of USC

PAGE 13 Keck Medicine on the Westside
PAGE 16 A Bridge to Somewhere

PAGE 19 Advancing Intelligence
PAGE 22 Bone Cancer Treatment

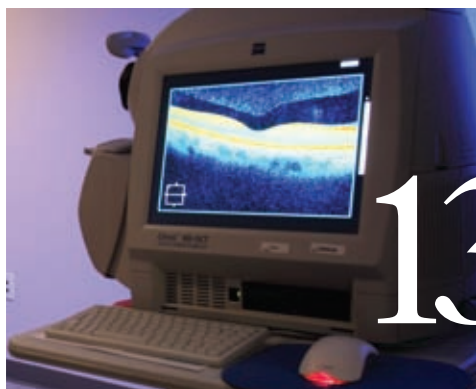
Keck Medical Center of USC

The new name in world-class medicine.

The University of Southern California's (USC) renowned doctors and nationally ranked hospitals have a new name: Keck Medical Center of USC. Our new name is a symbol of USC's commitment to change lives through the spark of scientific discovery and the healing power of compassion. This innovative team includes the newly renamed Keck Hospital of USC (formerly USC University Hospital), USC Norris Cancer Hospital, and 500 faculty physicians of the Keck School of Medicine of USC. The Keck Medical Center of USC brings hope back to health care, connecting patients with some of the brightest medical minds in the country.

Fight On.

Contents



ON THE COVER

8 A Momentous Leap Forward

An historic \$150 million gift from the W. M. Keck Foundation has the power to transform medical science at USC

Cover photograph: The new Keck Medicine of USC banner on campus celebrates a new era for the University's academic medical enterprise. Photo by Philip Channing

FEATURES

13 Keck Medicine on the Westside

The Doctors of USC Beverly Hills satellite brings cardinal and gold to a new ZIP code

16 A Bridge to Somewhere

The Keck School's new summer research program for minority students offers direction and guidance to tomorrow's medical heroes

19 Advancing Intelligence

Keck School researchers are discovering new fronts in the war on HIV and AIDS

PROFILES

22 Dr. Lawrence R. Menendez is at the cutting edge of recent advances in bone cancer treatment

23 Dr. David Berman, teaching at age 94, still wows Keck School students

24 Dr. Claudia Martinez's time in the Med-COR program inspired her dreams of becoming a doctor

DEPARTMENTS

3 Dean's Message

Boldness, creativity and vision at USC

4 In Brief

Campaign for USC; new fitness center; stem cell summit; radiation oncology chair; and more

25 Development News

Zilkha reaffirms commitment; first Watt Family Chair; nanotechnology; and more

29 Keck in the News

A sampling of news coverage of the Keck School of Medicine

30 There's a New Name in World-Class Medicine

Where can you find USC's medical experts?

32 Spotlight/Continuing Education



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CARMEN A. PULIAFITO, M.D., M.B.A.
Dean
Keck School of Medicine of USC

Boldness, creativity and vision. These traits epitomize the University of Southern California and its leadership in the journey to establish itself as a world-class university.

Nowhere are these traits more evident than in the launch of an ambitious \$6 billion fundraising campaign, announced by President C. L. Max Nikias in September 2011 and highlighted on the next page of this magazine. As you might expect, USC's academic medical enterprise will play a major role in the campaign. And it already has.

A gift of \$150 million from the W. M. Keck Foundation was announced in June 2011, during the preliminary "quiet" phase of the Campaign for USC. The gift represents the *boldness, creativity and vision* of William Myron Keck Sr. himself, founder of the Superior Oil Company and of the foundation that bears his name. Mr. Keck envisioned a philanthropic institution that would provide far-reaching benefits to humanity. Through a 1999 gift of \$110 million, which resulted in the naming of the Keck School of Medicine of USC, and through this most recent gift, the foundation is doing nothing less than fueling a revolution in medical science at USC. In recognition of the gift's impact, the Keck name has now been applied throughout the medical enterprise. Our cover story explains this "Momentous Leap Forward," and our spread on the Keck Medical Center of USC tells where you can make an appointment for care with our Keck School faculty physicians.

A gift of \$5 million from Board of Overseers member Selim Zilkha extends his previous *visionary* gift of \$20 million for the creation and support of the Zilkha Neurogenetic Institute. Mr. Zilkha's new gift will aid in recruiting *bold and creative* medical researchers who are seeking the origins of and cures for brain diseases that affect almost one in three families in the United States. You can read about this gift and others in our "Development News" section.

A *vision* of easy patient access to USC physicians fostered the opening during 2011 of our satellite medical specialty office in Beverly Hills. In a welcoming environment, patients find comprehensive diagnostic services, cutting-edge therapies and expertise in ophthalmology and prostate cancer. Take a peek at this new facility in "Keck Medicine on the Westside."

A *vision* of paving the way for minority students to become physicians underlies our new Bridging the Gap program, also described in this issue. The program in the summer of 2011 drew outstanding undergraduates from coast to coast to experience eight weeks of exposure to exceptional research and clinical programs at the Keck School of Medicine. One of the students spoke for others when he said, "This program exceeded all my expectations."

And a *vision* of conquering HIV and AIDS is explored in our feature on Keck School research in this important and complex arena.

As we move *boldly and creatively* toward our *vision* of being one of the world's best academic medical centers, we are grateful for your support.

Carmen A. Puliafito



In Brief

A Quick Look at news from the Keck School of Medicine and honors for faculty, students and alumni.

INVESTMENT IN PEOPLE

USC launches \$6 billion fundraising campaign

By Imelda Valenzuela

USC launched its unprecedented \$6 billion fundraising campaign amid a full house of enthusiastic supporters in Bovard Auditorium at the University Park Campus Sept. 16.

The Campaign for the University of Southern California is the biggest fundraising campaign to date in the history of American higher education.

“This campaign is ultimately an investment in people—faculty and students of unmatched ability and ambition,” said USC President C. L. Max Nikias, Ph.D. “This campaign will allow us to continue to bring the best people to this campus, so they can do their best work together here. USC has been on the move to an ultimate destination that is within reach: undisputed, academically world-class status.”

Mark S. Humayun, M.D., Ph.D., professor of biomedical engineering and cell and neurobiology at the Keck School of Medicine of USC and USC Viterbi School of Engineering and associate director of research at the Doheny Retina Institute of USC, was a featured speaker at the event.

He discussed a revolutionary artificial retina implant that is restoring partial vision to the blind, as well as technologies that foster new devices and therapies to aid people with other neurological impairments.

“This campaign can clearly accelerate what we can do at the intersection of engineering and medicine and transform human health,” said Humayun, who is also the Cornelius J. Pings Chair in Biomedical Sciences.

USC President C. L. Max Nikias and guests watch the fireworks at a gala event to kick off the University's \$6 billion fundraising campaign.





From left: Hospital President and CEO Richard D. Cordova; Los Angeles Mayor Antonio Villaraigosa; CHLA Board of Trustees Co-Chair Marion Anderson; Board of Trustees Member Mary Hart; program speaker Jennifer Page and her sons Max and Ellis; hospital Board Co-Chair Jack Pettker; and Robert Adler, M.D., M.S.Ed., Keck School professor of pediatrics and CHLA vice chair of the Department of Pediatrics and director of medical education.

CHLA dedicates 317-bed inpatient building By Sara Reeve

More than 200 community leaders and supporters celebrated the dedication of a new 317-bed, seven-story patient care building at Children's Hospital Los Angeles in June.

The \$636 million, 460,000-square-foot structure is designed as a family-centered care environment, with nearly all patient rooms being private. Children's Hospital has been affiliated with the Keck School of Medicine of USC since 1932.

"The strong academic focus of Children's Hospital Los Angeles makes it a perfect match for USC – this is indeed the third campus of our university," said Carmen A. Puliafito, M.D., M.B.A., dean of the Keck School of Medicine. "We have 300 full-time faculty members at Children's Hospital practicing, doing research and teaching. I am so thrilled that this outstanding type of medicine now has a facility to match its own excellence."

The new building was named the Marion and John E. Anderson Pavilion in honor of the philanthropists who provided a \$50 million gift to the project. Hospital staff members moved more than 200 inpatients into the new building in July.

Civic leaders and Children's Hospital administrators identified the need for the new building more than a decade ago. The new Anderson Pavilion allows for increased access, expanded patient care services and the ability to recruit new physicians in key specialties.

"[This new building] will make recruiting faculty easier, as a premier facility where they can deliver state-of-the-art care," said D. Brent Polk, M.D., chair of the Department of Pediatrics at the Keck School and vice president for academic affairs at Children's Hospital Los Angeles.

Architecture award honors Eli and Edythe Broad CIRM Center

The Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC received a 2011 American Architecture Award, which recognizes excellence in building design. The center was one of 45 recipients nationally, out of more than 1,000 entrants.

Organized annually by the Chicago Athenaeum: Museum of Architecture and Design and the European Centre for Architecture Art Design and Urban Studies, the American Architecture Awards are the highest and most esteemed recognition for the best new building design produced by leading architects, urban planners and landscape architects in the United States. Eli and Edythe Broad, the building's namesakes and primary donors, gave \$30 million toward the building's development, which stands as one of the largest gifts given to the Keck School of Medicine of USC in recent years.

TOP RANKINGS

USC hospitals among top national hospitals

By Sara Reeve

Keck Hospital of USC (formerly USC University Hospital) and USC Norris Cancer Hospital placed among the best hospitals in the nation in the 2011-12 *U.S. News & World Report* magazine's rankings of "America's Best Hospitals."

USC-affiliated Rancho Los Amigos National Rehabilitation Center also was ranked. Keck School of Medicine of USC-affiliated Children's Hospital Los Angeles, staffed exclusively by USC faculty physicians, is the only California hospital named earlier to the magazine's Best Children's Hospitals Honor Roll.

The latest rankings, annually published by *U.S. News* for the past 22 years, showcase 720 hospitals out of about 5,000 hospitals nationwide. Each is ranked among the country's top hospitals in at least one medical specialty and/or ranked among the best hospitals in its metro area. Keck Hospital of USC ranked in eight specialty areas, up two specialty areas from last year. The new specialty areas include:

- 30th in geriatrics
- 48th in gastroenterology

Other specialty areas include:

- Ninth in ophthalmology (USC Department of Ophthalmology at the Doheny Eye Institute)
- 18th in urology
- 24th in orthopedics
- 25th in neurology and neurosurgery
- 32nd in pulmonology
- 34th in gynecology

Bringing the total to 10 specialty areas, Keck Hospital of USC also was ranked as "high performing" in two specialty areas in the *U.S. News & World Report* metro area rankings for hospitals: ear, nose and throat, and nephrology.

USC Norris Cancer Hospital ranked 48th nationally among cancer hospitals and as "high performing" in nephrology in the rankings. Rancho Los Amigos ranked 18th in rehabilitation.

"We are proud to be included among the nation's top hospitals in this annual ranking," said Mitch Creem, M.H.A., hospitals CEO, Keck Medical Center of USC. "These rankings are a testament to the compassion, dedication and professionalism exhibited by our staff and faculty physicians every day."

This year, only 140 of the 4,825 hospitals that *U.S. News* evaluated performed well enough to rank in even one specialty.

"These rankings of our hospitals are a nod to the daily commitment to excellence by Keck School faculty physicians, nurses and hospital staff," said Keck School Dean Carmen A. Puliafito, M.D., M.B.A. "We're pleased for all of our faculty honored by these rankings."

RESEARCH WITHOUT BORDERS

Keck School co-organizes World Stem Cell Summit



Keck School of Medicine Dean Carmen A. Puliafito M.D., M.B.A., right, chats with diabetes session moderator Camillo Ricordi, M.D., of the Diabetes Research Institute at the University of Miami.

The Keck School of Medicine of USC was a co-organizer for the seventh annual World Stem Cell Summit, an international gathering of scientists, advocates, government representatives and other stakeholders involved with stem cell research.

More than 170 prominent scientists, business leaders, regulators, policymakers, advocates, economic development officers and experts in law and ethics discussed the latest scientific discoveries, business models, legal and regulatory solutions, and best practices. The event Oct. 3-5 at the Pasadena Convention Center attracted more than 2,000 attendees from 25 nations, 60 exhibitors and more than 150 endorsing organizations and media partners.

“We’re excited to be part of the World Stem Cell Summit’s first meeting in Southern California,” said Keck School Dean Carmen A. Puliafito, M.D., M.B.A., who is also a member of the California Institute of Regenerative Medicine’s (CIRM) governing board. “When we opened the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC in 2010, we envisioned being part of an ongoing dialogue on stem cell research that knows no borders. This was an important opportunity to be part of that conversation.”

Keck School co-chairs of the event were Elizabeth Fini, Ph.D., vice dean for research and professor of cell and neurobiology, and Mark Humayun, M.D., Ph.D., professor of ophthalmology, biomedical engineering, and cell and neurobiology, and associate director of

research at the Doheny Retina Institute at USC.

“This event brings us together with colleagues and with advocates and patients who are awaiting the results of our research,” said Fini. “We are beginning to see many positive outcomes from the research, and we hope this event will help keep the momentum going.”

Fini is also director of the USC Institute for Genetic Medicine, where she oversees faculty, administration and programs, including stem cell research. Humayun is best known for his research on the Argus II retinal implant, which restores limited sight to patients affected by retinitis pigmentosa. Humayun is principal investigator on the California Project to Cure Blindness, a collaborative research project to develop a stem cell-based treatment for age-related macular degeneration. The project was funded in late 2010 with a \$16 million grant from CIRM.

Puliafito and Humayun were among several Keck School faculty members participating as speakers and moderators during the summit. Others were: Paula Cannon, Ph.D.; Roger DeFilippo, M.D.; Tracy Grikscheit, M.D.; Wange Lu, Ph.D.; Martin Pera, Ph.D.; Laura Perin, Ph.D.; Brent Polk, M.D.; Henry Sucov, Ph.D.; and David Warburton, D.Sc., M.D.

The summit was co-organized by the nonprofit Genetics Policy Institute, the Keck School, Children’s Hospital Los Angeles and several other California institutions including CIRM, City of Hope, Cedars Sinai Regenerative Medicine Institute and Caltech.



Ronald W. Chapman, M.D., M.P.H.

Keck alum named director of the California Department of Public Health

California Health and Human Services secretary Diana Dooley announced the appointment of Keck School of Medicine of USC alumnus Ronald W. Chapman, M.D., M.P.H., as the new director of the California Department of Public Health.

Chapman, who received his medical degree from the Keck School in 1989,

has served as the chief medical officer for Partnership HealthPlan California since 2010. Previously, he served as the health officer for Solano County Public Health and as the chief of the Medicine and Public Health Section for the California Department of Health Services.

Keck School grant funding increases

Despite a stiff competitive environment for external funding and a slow-to-recover national economy, the amount of Keck School of Medicine of USC research grant funding has greatly increased in recent years.

Most notably, during fiscal year (FY) 2011, the Keck School received \$248.3 million in grant awards – a 14 percent increase from FY 2010 and a 43 percent increase over four years ago (the largest four-year increase over the past 13 years). Other recent highlights include:

- Keck School plus its affiliates received \$312.2 million in grant awards during FY 2011, representing a 13 percent increase from FY 2010.
- Keck School affiliate Children’s Hospital Los Angeles received \$10 million more in grant awards in FY 2011 than in FY 2010.
- NIH awards comprised 73 percent of the total grants awarded in FY 2011, or \$169.1 million. This is the highest percentage of NIH versus total grants in the past seven years.

Eric L. Chang named chair of Department of Radiation Oncology

Eric L. Chang, M.D., has been appointed professor and chair of the Department of Radiation Oncology at the Keck School of Medicine of USC, Dean Carmen A. Puliafito, M.D., M.B.A., announced.

An internationally recognized authority in radiotherapeutic evaluation and the management of patients, Chang is also chief of radiation oncology at the USC Norris Cancer Hospital, Keck Hospital of USC and Los Angeles County+USC Medical Center. Chang arrived in September from the University of Texas MD Anderson Cancer Center, where he was professor of radiation oncology and director of the Central Nervous System Stereotactic Radiation Program.

"I am confident that Dr. Chang will lead our Department of Radiation Oncology into a new era of clinical excellence, as we significantly increase the size and scope of our cancer medicine activities at USC," Puliafito said.

Tumors of the central nervous system have been the focus of Chang's research. He established the Anderson Cancer Center's first Gamma Knife program

and first stereotactic spine radiosurgery program. Under his leadership, both programs have been internationally recognized for their clinical excellence. Both of these techniques use carefully targeted radiation to treat tumors in the brain and spine with minimal effect on surrounding healthy tissue.

"Building services for cancer patients is a key priority at USC's hospitals, and Dr. Chang will play an important role in expanding and strengthening our radiation oncology services and facilities," said Mitch Creem, M.H.A., hospitals CEO, Keck Medical Center of USC.

One of Chang's early goals is to recruit additional faculty who will allow the department to provide more comprehensive and specialized services to patients using some of the most advanced radiation therapy equipment. "There are significant opportunities to contribute toward improving how people face and respond to a diagnosis of cancer, through patient education, and helping patients to receive the best care possible using a personalized treatment

approach that will help maximize cancer control, while maintaining quality of life and minimizing symptoms related to cancer or its treatment," he said.

Serving as chair "allows me to take on the exciting challenge of setting a high standard for patient care, clinical and translational research, and the training and education of residents and medical students, that will directly benefit patients today, and ultimately patients who will be cared for in the future," Chang said.

A native of New York City, Chang received a bachelor's degree from the Massachusetts Institute of Technology. He graduated from Harvard Medical School and completed his residency at the Harvard Joint Center for Radiation Therapy and internship at the California Pacific Medical Center, San Francisco. He was a research fellow at Boston Children's Hospital and received postgraduate training in Gamma Knife utilization in Sweden and at the Cleveland Clinic.



Eric L. Chang, M.D.

New Soto Street Building houses fitness center and Keck School departments

By Amy E. Hamaker

A new Health Sciences Campus Fitness Center has opened, and divisions of the Keck School of Medicine of USC Department of Preventive Medicine have been united in the new 120,000-square-foot, three-story Soto Street Building, located at 2001 Soto Street (at the corner of Soto Street and Valley Boulevard).

Keck School of Medicine Dean Carmen A. Puliafito, M.D., M.B.A., said the development of the 10,000-square-foot fitness center, managed by USC Recreational Sports, was a high priority of his administration. "Through the help of many members of our USC community, this center has become a reality and will be a major enhancement to the student experience and quality of life on the Health Sciences Campus," he said.

Jonathan Samet, M.D., M.S., chair of the Department of Preventive Medicine, called his department's move to the Soto Street Building "momentous." "Most of the faculty, students and staff are finally in

one location and in a building that has been designed to match our needs."

The additional space in the Soto Street Building helps meet a growing need on campus. "Administrative units moving into the building will now have adequate space to provide services to the entire Health Sciences Campus," said Robert Cooper, Ed.D., vice provost for planning and budget.

The fitness center is open weekdays, 6 a.m. to 8 p.m., and features a host of amenities, including:

- More than 45 stations with a variety of cardiovascular and fitness equipment.
- Two group exercise rooms.
- Men's and women's locker rooms.
- A full-service café on the premises.
- A lighted outdoor basketball court and multipurpose area with amphitheater seating adjacent to the building.
- A pro shop on premises.



The new Soto Street Building opened in September, providing needed space for Keck School departments, as well as a 10,000-square-foot fitness center.

A Momentous Leap Forward

An historic \$150 million gift from the W. M. Keck Foundation has the power to transform medical science at USC – today and for generations to come



The latest gift from the W. M. Keck Foundation will help transform USC's medical enterprise into a single entity.

Few things have the power to fuel a revolution. The recent \$150 million naming gift from the W. M. Keck Foundation to USC to accelerate groundbreaking medical, clinical and translational research and education is definitely one of them.

“The \$150 million gift from the Keck Foundation will have a profound impact on our community and our world, today and for generations to come. It will be a catalyst for dramatic discoveries and developments in medical research, teaching and patient care,” USC President C. L. Max Nikias, Ph.D., said. “As we enter an era that demands nothing less than a global revolution in the medical sciences, the Keck Foundation has invested powerfully in such a revolution, helping USC’s academic medical center take a momentous leap forward in its efforts to improve and advance the human condition.”

In recognition of this transformative gift, USC’s academic medical enterprise has been named Keck Medicine of USC in perpetuity. It comprises:

- the Keck School of Medicine of USC, named in 1999, and
- the Keck Medical Center of USC. The Keck Medical Center includes Keck Hospital of USC (formerly USC University Hospital), USC Norris Cancer Hospital and USC’s faculty physician practice. USC Norris Cancer Hospital has not been renamed.

The Keck Foundation’s gift carries a unifying purpose. By designating the medical enterprise, the academic medical center and Keck Hospital of USC with the Keck name, along with the Keck School of Medicine of USC, the University brands its medical enterprise as a cohesive whole.

“We believe that this partnership with USC will fund outstanding research to expand the boundaries of medical knowledge and improve quality of life for vast numbers of people,” said Robert Day, chairman

and CEO of the W. M. Keck Foundation. “This gift reflects our commitment to bringing cutting-edge science, medicine and engineering together to find new and better ways forward.”

Nikias praised the Keck Foundation’s directors and officers for their “exceptional foresight and generosity in making such strategic gifts, adding to an already unsurpassed legacy of leadership in benefiting countless millions, here in Southern California and, indeed, around the nation and the world.”

This is the second transformative gift the Keck Foundation has made in recent years to USC’s medical enterprise, following its historic \$110 million gift in 1999 to the Keck School of Medicine of USC. With the new gift, the Keck Foundation and members of the extended Keck family have donated nearly \$300 million to USC, placing them among the most generous benefactors to the university.

“This is a marvelous day for the University of Southern California, the Keck School of Medicine and the entire USC academic medical enterprise,” said Carmen A. Puliafito, M.D., M.B.A., dean of the Keck School of Medicine and the May S. and John Hooval Dean’s Chair in Medicine, at the time of the gift announcement in June. “By extending its name to the entire USC academic medical enterprise, the W. M. Keck Foundation is accelerating the progress of our clinical and scientific faculty, our students and trainees, and our staff in all areas of our mission.”

Keck Medicine of USC will have significant impact on students, physicians, researchers, patients and the community at large for years to come.

USC President C. L. Max Nikias, Ph.D., and Keck Foundation President and Chair Robert Day sign the official gift documents in front of the model of the 1952 drilling barge of W. M. Keck Sr. Taking risks to invest in emerging technologies, Keck pioneered new exploration and drilling methods.

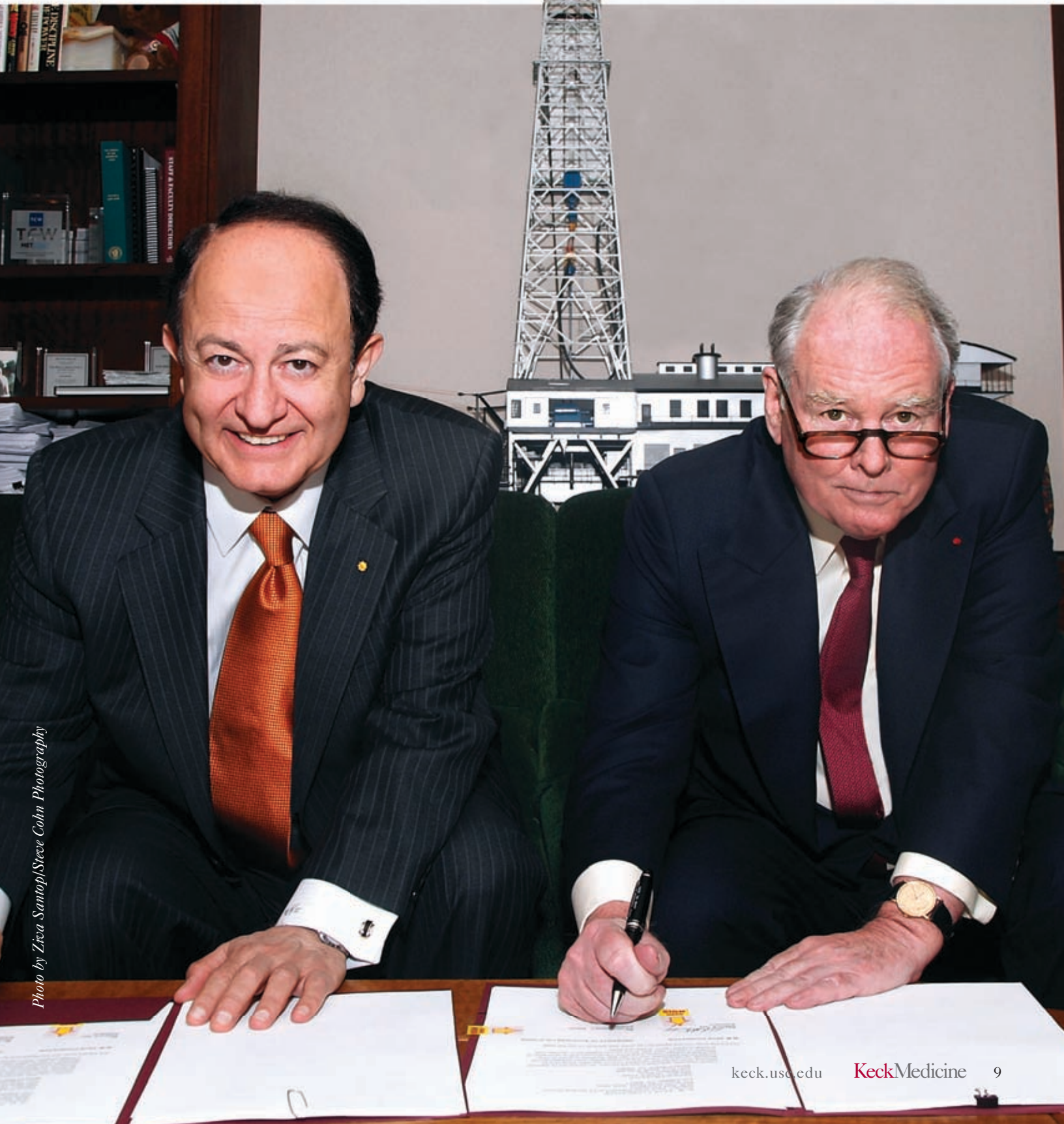


Photo by Ziva Santop/Steve Cohn Photography

Previous and current contributions from the W. M. Keck Foundation contribute to advances in pioneering research.



BETTER TRAINING FOR MEDICAL STUDENTS AND CARE FOR PATIENTS Founded in 1880, USC is one of the nation's most selective private research universities. It is a unique place of learning for medical students, and a place where patients will find the best care.



The new Keck Foundation gift will mean more opportunities for medical students and better overall care for patients.

As the new W. M. Keck Foundation gift helps expand USC's medical enterprise, both students and patients stand to benefit.

USC's academic medical enterprise comprises a medical school, many research centers and institutes, two university-owned hospitals with more than 400 private beds, renowned faculty physicians and clinical care satellites in the community. USC physicians serve over 1 million patients annually, and Keck Medicine's state-of-the-art facilities on USC's Health Sciences Campus attract patients from around the world.

Pediatric patients are seen by USC physicians at Children's Hospital Los Angeles, which has been affiliated with the Keck School of Medicine since

1932. In addition, USC physicians have provided services on a contract basis for patients at the public Los Angeles County+USC Medical Center for more than 100 years, building one of the largest academic training programs in the country.

The Keck School of Medicine, the oldest medical school in Southern California, enrolls 670 medical students, 292 Ph.D. students and 300 master's students in more than 25 research and clinical programs, and trains 900 medical residents in 52 specialty or subspecialty programs. The Keck School of Medicine receives more than \$275 million in annual sponsored program awards.

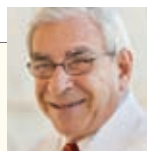
More than 500 Keck School of Medicine physicians are members of the private faculty clinical practice offering everything from complex therapies to primary care for the entire family. The physicians are internationally known for their expertise in clinical areas including: urology, neurology and neurosurgery, orthopedics, pulmonology, cardiology and cardiovascular surgery, transplant surgery, gynecology, ophthalmology, and oncology.

INCREASED NATIONAL RECOGNITION AND RESOURCES The recent Keck Foundation gift is expected to increase the stature of USC's medical and scientific enterprise.



"The continued support of the Keck Foundation will allow us to further invest in the recruitment of new physicians and also invest in our academic commitment to innovative research and teaching, advancing our mission and bolstering the reputation of our Keck School of Medicine and of the university as a whole."

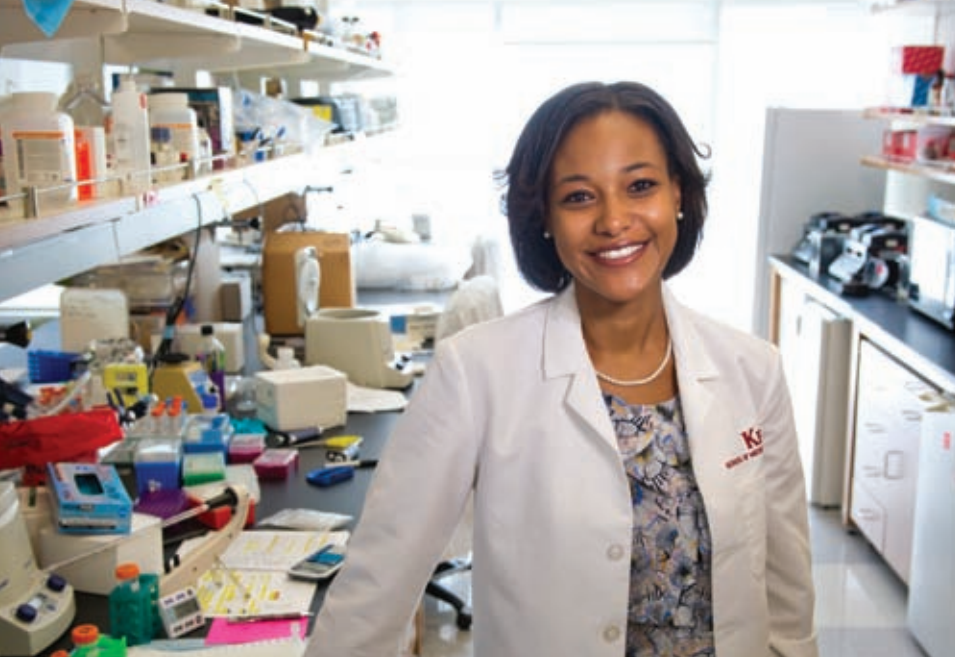
– Vaughn Starnes, M.D., chair of the Department of Surgery, surgeon-in-chief of the USC hospitals, and H. Russell Smith Foundation Chair for Cardiovascular Thoracic Research



"I am extremely optimistic that we will continue to grow as a leading academic medical center for patients seeking the best in medical care, clinicians seeking an environment of innovation and excellence, students seeking an outstanding education, and scientists seeking a fertile environment for their ideas."

– Edward Crandall, Ph.D., M.D., chair of the Department of Medicine, Kenneth T. Norris Chair in Medicine, Hastings Foundation Professor in Medicine, and president of the USC Care Medical Group Inc.

Photos by Chris Shinn (top left), Steve Cohn (top right), Bill Youngblood (left margin), Geoff Johnson/Malone & Company (bottom left), and Mark Berndt (bottom right).



This is not the first time the W. M. Keck Foundation and USC have worked together to foster collaboration among researchers. The foundation's previous transformative gift of \$110 million to the Keck School of Medicine of USC in 1999 not only made history, but also created growth both in medical and clinical research and in the community as well.

The Keck Foundation began a partnership with USC to strengthen and expand the scope of USC's medical education and research. At the time, the Keck Foundation gift was the largest ever made to a medical school. The gift also made USC the first university in history to secure three gifts of \$100 million or more.

In recognition of the Keck Foundation's generosity, USC's medical school was renamed the Keck School of Medicine of the University of Southern California. The renaming was accompanied by the creation of a Board of Overseers to advise the USC president and the Keck School dean on matters of policy and operation. The Board also took the lead in raising \$330 million in matching funds called for by the agreement.

Much of the first Keck Foundation gift was invested in neurogenetics, with a focus on the then-new Neurogenetic Institute at the Keck School of Medicine of USC. Thanks to that first gift, the focus on neurogenetics has expanded to include pioneering research centers at the Keck School of Medicine such as the Zilkha Neurogenetic Institute, the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC, and the Institute for Genetic Medicine.

MORE COLLABORATION, BOTH WITHIN THE MEDICAL ENTERPRISE AND BETWEEN USC SCHOOLS AND OTHER INSTITUTIONS In addition to those already mentioned, Keck Medicine of USC is home to a number of research centers, including the USC Norris Comprehensive Cancer Center, the National Science Foundation Engineering Research Center devoted to Biomimetic

Keck Medicine of USC by the Numbers

2 USC-owned private hospitals with over **400** beds: Keck Hospital of USC and USC Norris Cancer Hospital

More than **500** Keck School of Medicine of USC faculty physicians

Over **1,000,000** patient appointments annually

Over **7,000** patients in clinical research studies

1,300 faculty physicians and scientists

670 medical students
292 Ph.D. students
300 master's students

200 fellows and interns

\$300 million in research funding

900 medical residents – one of the largest residency programs in the U.S.



"The expansion of scientific research efforts with the first Keck Foundation gift will be greatly enhanced by this new gift, which will allow us to compete for those transformative scientists who are leaders in their respective fields of medical research, and who want to be at an innovation-driven medical center."

– Pat Levitt, Ph.D., director of the Zilkha Neurogenetic Institute, chair of the Department of Cell and Neurobiology, and Provost Professor of Neuroscience, Psychiatry and Pharmacy



"This is truly a momentous day for everyone touched by our academic medical center – our hospital and clinic staff, our physicians, the patients we serve and their families. This single act of enormous generosity will transform our clinical environment into a collaborative, innovative and pioneering medical enterprise."

– Mitch Creem, M.H.A., hospitals CEO, Keck Medical Center of USC

The Foundation Behind the Gift

The new gift to USC reflects the overarching mandate of the W. M. Keck Foundation to support pioneering discoveries in science, engineering and medical research. With assets of more than \$1.2 billion, the foundation is one of the nation's largest philanthropic organizations.

The W. M. Keck Foundation was established in 1954 in Los Angeles by William Myron Keck, founder of The Superior Oil Company, with the vision of providing far-reaching benefits to humanity through imaginative grants supporting scientific discoveries and new technologies. Taking risks to invest in emerging technologies, Keck enabled the oil company to become a global leader in the exploration and production of oil and gas.

The foundation supports outstanding science, engineering and medical research, and undergraduate education. In Southern California, the foundation takes special effort to promote arts, culture, education, health and community service projects that will have a significant impact in addressing complex issues and problems.

In addition to its substantial gifts to USC, the W. M. Keck Foundation supports several large-scale initiatives, particularly those known to benefit the advancement of knowledge and public interest. These include:

W. M. Keck Observatory – home of the world's largest optical telescope, located near the summit of Mauna Kea on the island of Hawaii.

Keck Graduate Institute of Applied Life Sciences – a graduate school in the Claremont College Consortium, offering integrated life science/engineering/business curriculums.

National Academies Keck Futures Initiative – a program of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine to stimulate interdisciplinary scientific and technological research.

Institute for Space Studies – an institute of the California Institute of Technology that combines the brainstorming of new ideas on space science and technology with follow-up research and development.

KCET – community television for Southern California.



First-year students recite the Hippocratic Oath at the close of the White Coat Ceremony.

Microelectronic Systems, the USC Institute for Health Promotion & Disease Prevention Research, and the USC Institute for Global Health.

The most recent gift from the W. M. Keck Foundation will promote further progress in medicine through more effective interplay between a rising private medical school and a top-flight private academic medical center, capitalizing on a research culture that encourages collaboration among medical faculty and their colleagues in engineering and the physical, life and social sciences. Researchers at the intersection of these disciplines foster innovation that spurs critical breakthroughs in medicine.

Such a culture was a major competitive reason behind the 2010 decision by the National Institutes of Health to award \$57 million to USC to fund the only Clinical and Translational Science Institute in Los Angeles. The Southern California CTSI addresses an array of health needs of the area's diverse population.

Other recent research grants include NIH awards of \$16 million for a physical science oncology center and \$9 million to create an atlas for genes. In addition, the California Institute for Regenerative Medicine awarded \$16 million to fund the development of a stem cell-based treatment for age-related macular degeneration. •

For information on making a donation to the Keck School of Medicine or the Keck Medical Center, see keck.usc.edu/SupportKeck or contact Bill Loadvine, wloadvin@usc.edu, 323-442-1192.



"I'm honored to be a nurse at USC. What we stand for and how we care for our patients ... how can it not be an honor to be part of something like that?"

– Veronica Acevedo, RN, coordinator for pain management and clinical educator, Keck Medical Center of USC



A small statue of Tommy Trojan joins receptionist Shelly Voss in welcoming patients to the USC Norris Westside Cancer Center.

Keck Medicine on the *Westside*

The Doctors of USC Beverly Hills satellite is bringing cardinal and gold to a whole new ZIP code By Imelda Valenzuela and Ina Fried

With her left eye, 21-year-old Elizabeth De Jong could not see the big “E” on the top line of the eye chart. Suffering from a congenital eye disorders, De Jong had lost the vision in her left eye over the previous few years due to cataracts and glaucoma. After a partial-thickness corneal transplant last summer, she is recovering her sight, and she expects contact lenses to finish the correction once her recovery stabilizes.

De Jong is one of the patients who make use of The Doctors of USC Beverly Hills office, which opened in 2011. “It’s a very nice location and a really nice office,” De Jong said. “It has a lot of very advanced technology.”

When De Jong – a senior majoring in accounting and Chinese at Calvin College, a small college in Michigan – is at home in Los Angeles, she is under the care of Neda Shamie, M.D. Shamie, a leader in corneal transplantation, is medical director of the USC Doheny Eye Center at the Beverly Hills office.

In addition to ophthalmology, the Beverly Hills satellite offers patients on the Westside convenient access to care for prostate cancer and urology through the USC Norris Westside Cancer Center and the USC Institute of Urology. The 14,000-square-foot office is located in suites 300 and 500 of the Archway Medical Plaza building at 9033 Wilshire Blvd., at Wetherly. The physicians practicing in the beautiful office space are among the more than 500 physicians who are faculty at the Keck School of Medicine of USC.

“It’s been a dream to come to the Westside for

To make an appointment with one of the physicians at The Doctors of USC Beverly Hills, please call the applicable number below.

USC Doheny
Eye Center:
310-601-3366

USC Norris Westside
Cancer Center:
310-272-7640

USC Institute
of Urology:
323-865-3700

Physicians at The Doctors of USC Beverly Hills

Ophthalmology

Neda Shamie, M.D., *associate professor of ophthalmology; medical director, USC Doheny Eye Center, Beverly Hills* Corneal transplantation, complex corneal and ocular surface disorders, and complex cataract surgeries.

Carmen Puliafito, M.D., M.B.A., *dean, Keck School of Medicine; May S. and John Hooval Dean's Chair in Medicine; professor of ophthalmology and health management* Macular and retinal disorders. Co-inventor of optical coherence tomography, an important diagnostic tool.

John Irvine, M.D., *professor of clinical ophthalmology, A. Ray Irvine Chair in Clinical Ophthalmology* Surgical and medical therapies for corneal and lens problems.

Peter Quiros, M.D., *assistant professor of ophthalmology* Optic nerve disease, double vision, headache, eye pain, neurologic disorders associated with other diseases.

SriniVas Sadda, M.D., *associate professor of ophthalmology* Macular degeneration, diabetic retinopathy and other retinal and macular disorders.

Rohit Varma, M.D., M.P.H., *professor of ophthalmology and preventive medicine* Glaucoma and development of novel treatment devices.

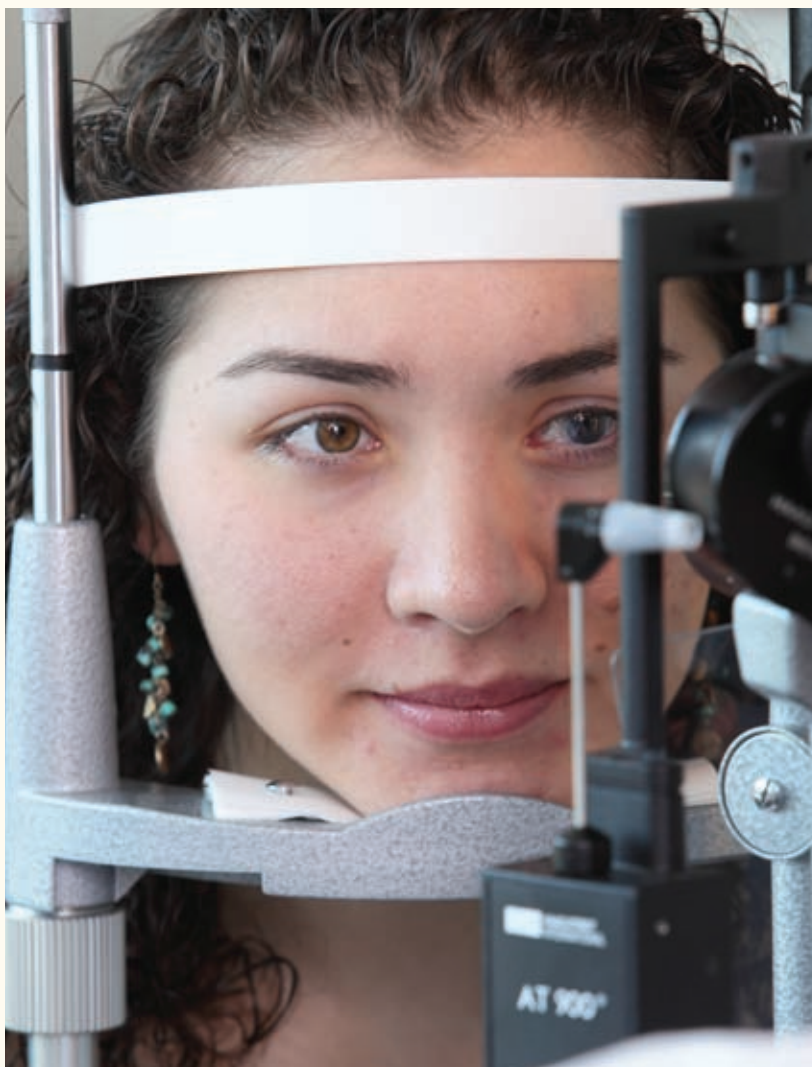
Lisa C. Olmos, M.D., M.B.A., *assistant professor of ophthalmology* Retinal diseases, ocular trauma, diabetic retinopathy, retinal detachment and macular degeneration.

Cancer Care and Urology

David Agus, M.D., *professor of medicine and engineering; director, USC Norris Westside Cancer Center and Center for Applied Molecular Medicine* Groundbreaking therapeutics and technologies to fight cancer.

Inderbir Gill, M.D., *chairman and professor, Catherine and Joseph Aresty Department of Urology; associate dean, clinical innovation; founding executive director, USC Institute of Urology* Robotic surgery and prostate cancer surgery that preserves quality of life and sexual function.

Mitchell Gross, M.D., Ph.D., *associate professor of medicine; research director, USC Norris Westside Cancer Center and Center for Applied Molecular Medicine* Applying modern techniques related to the study of genes and proteins in developing new therapies; improving clinical results for patients with cancer.



Patient Elizabeth De Jong is examined at the USC Doheny Eye Center at the Beverly Hills satellite.

USC,” said Keck School Dean Carmen A. Puliafito, M.D., M.B.A., at an opening reception. “This is the beginning of a new era in USC medicine. We’re here to inaugurate this new outpost of USC medicine on the Westside.” Puliafito, an expert in macular degeneration, is also seeing patients at the USC Doheny Eye Center, Beverly Hills, which is affiliated with USC’s nationally ranked Doheny Eye Institute. The macula, located near the center of the retina, is responsible for central, high-resolution vision.

Leading oncologists David Agus, M.D., and Mitchell Gross, M.D., see prostate cancer patients in the USC Norris Westside Cancer Center, affiliated with the USC Norris Comprehensive Cancer Center. Inderbir Gill, M.D., executive director of the USC Institute of Urology, sees patients there as well.

USC President C. L. Max Nikias, Ph.D., and his wife, Niki, were among more than 100 administrators, faculty physicians, board members and other friends of the Trojan Family in attendance at the opening reception.

“I am thrilled – it is wonderful to plant the cardinal and gold flag in Beverly Hills,” Nikias said. “Most of all it is deeply satisfying to be able to provide specialty care that is so vital and so very convenient to those who live and work on the Westside. While we aspire to expand USC’s global reach, we also aspire to build one of the very best academic medical centers right here in Los Angeles.”

Nikias acknowledged the physicians who practice at the new center, as well as the Keck School and its other doctors. “At this Beverly Hills location, the



(Top) At the opening reception for the new office are, from left, David Agus, M.D.; USC President C. L. Max Nikias, Ph.D.; Neda Shamie, M.D.; Keck School of Medicine Dean Carmen A. Puliafito, M.D., M.B.A.; and Mitchell Gross, M.D., Ph.D. (Bottom left) Optical Coherence Tomography and other advanced technologies are available for precise diagnosis of eye diseases at USC Doheny Eye Center Beverly Hills. (Bottom right) A big comfortable chair awaits the patient in a treatment room at the USC Norris Westside Cancer Center.



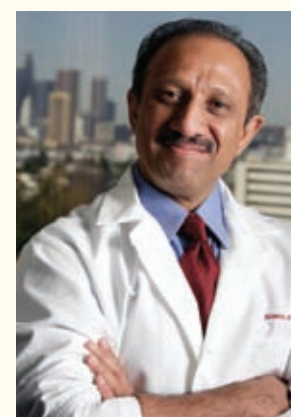
doctors practicing here, Dean Puliafito, Dr. Agus, Dr. Gill, Dr. Shamie and others, will help heal those suffering from devastating diseases such as cancer and blindness. They will give hope to patients and their families,” he said. “I’m very proud of USC’s doctors, our professors of the Keck School of Medicine. On the front lines of clinical care, they are healers. In the research labs, they are innovators and scholars. In their specialties, they are pioneers in developing new treatments and surgical techniques.”

The satellite was designed to enable physicians to deliver comprehensive diagnostic services, cutting-edge therapies and clinical trials. The new clinical center features well-appointed patient exam and treatment rooms, an on-site pharmacy, and valet parking. The convenient Westside Norris Laboratory is operated by USC Norris Cancer Hospital Laboratory and is part of the USC Clinical Laboratories system. Physicians can have results available to them electronically.

Referring to the satellite’s video conferencing center, Puliafito said, “This center on the fifth floor was designed to align the clinical with the academic teaching mission of USC. We anticipate that this will be a very important location for continuing medical education for physicians, for community outreach and for donor and alumni events for USC.”

Puliafito said that buying Keck Hospital of USC (formerly USC University Hospital) and USC Norris Cancer Hospital in 2009 “sent a signal that USC is on the move,” and that opening the Beverly Hills offices was the next step in USC’s plan for its academic medical center. •

For information on making a donation, contact Bill Loadvine, wloadvin@usc.edu, 343-442-1192.



Inderbir Gill, M.D., executive director of the USC Institute of Urology.



A Bridge to *Somewhere*

The Keck School's new summer research program for minority students offers direction and guidance to tomorrow's medical heroes By Linda Kossoff

(Above) Alicia McDonough, Ph.D., teaches a class to *Bridging the Gap* students, from left, Sean Mbachu, Kimberly Alzuphar, Eunice Martins and LaTasha Henderson.

Faculty leaders behind the 2011 launch of *Bridging the Gap: The Keck School of Medicine of USC's Bench to Bedside Summer Research Program* knew that their goal – to give outstanding minority students an opportunity to experience the school's exceptional research and clinical programs – was worthwhile. But would it be attainable?

The verdict: USC's first eight-week summer program was a bona fide success. All agreed – the Keck staff and faculty who lent their time and talents; program director Joyce M. Richey, Ph.D., assistant professor of physiology and biophysics and assistant dean, educational affairs; and, most importantly, the students who participated.

"This program exceeded all my expectations," says Adam Ross, a junior at the University of San Francisco. "When I arrived at the first social event and discovered that this was the first year of the program, I thought, 'Uh-oh – we're the guinea pigs!' But as my time at Keck continued, each event demonstrated a particular purpose to aid us in our preparation for medical school at USC."

BUILDING RELATIONSHIPS The initial student response following the program's announcement exceeded Richey's expectations. "We were hard-pressed to narrow down the selection to the maximum limit of 12," she says. "We were amazed at the number of applicants – close to 100 – and the caliber of students who applied."

To choose, program leaders looked at minority undergraduates from colleges from coast to coast. "We sought to develop relationships with certain colleges that have been considered historically black colleges and universities, such as Xavier in New Orleans and Morehouse in Atlanta, and we also had students from Ivy League schools such as Yale, Columbia and Cornell," says Richey.



(Left) Student Adam Ross, seated, works in the research lab of Robert Chow, M.D., Ph.D., associate professor of physiology and biophysics, and endocrinology. (Right) Student Kimberly Alzuphar, standing, watches and learns from her faculty mentor Penina Segall-Gutierrez, M.D., assistant professor of clinical obstetrics and gynecology.

The program aimed to lower underrepresentation of minorities in the medical sciences by exposing promising students to the professional paths available to them at the Keck School, including clinical applications and Ph.D. programs. This meant showing them firsthand the key activities and functions of physician scientists and basic medical scientists. Each student was assigned a faculty mentor who directed and guided his or her laboratory research.

Ite Laird-Offringa, Ph.D., director of Programs in Biomedical and Biological Sciences (PIBBS) and associate professor of surgery and of biochemistry and molecular biology at the Keck School, was paired with Yale University student Sunny Jones for research on immune responses in patients with small cell lung cancer. “The student-mentor pairing was more or less random, but I had indeed hoped to have a student from the East Coast so I could show the wonderful research we do here in California at USC,” she says. “Sunny was great – very smart, hardworking and positive.”

Program students were given the opportunity to work within one of eight disciplines:

- Metabolic diseases (diabetes and obesity)
- Oncology
- Cardiovascular
- Neuroscience
- Immunology
- Virology (AIDS)
- Hematology
- Stem cell research

Virtually all of these fields, notes Richey, showcase a health disparity for minorities in U.S. society. “The minority population is at a disadvantage for every chronic disease; several students were surprised by the marked disparity,” she says. “We provided instruction, seminars and then clinical (bedside) experience to really punctuate this point.”

As the weeks progressed, student enthusiasm would be tested by the rigorous demands of the program, which included a structured curriculum in physiology and biostatistics in addition to lab work. Research was conducted both in the laboratory and in the field.

The students rose to the challenge, a feat they

attribute largely to their support teams. “Not only were we given outstanding faculty to work with, but within the labs different graduate students took us under their wings,” says Eunice Martins, a junior at Rutgers, The State University of New Jersey. “Our faculty lecturers often gave us their contact information and invited us to shadow them as well.”

Kimberly Alzuphar, a senior at Columbia University, worked with Penina Segall-Gutierrez, M.D., assistant professor of clinical obstetrics and gynecology, on the use of highly effective contraception among Latina women with a recent history of gestational diabetes. “The most important thing I’ve learned this summer is that there is no specific doctor mold – not all doctors are the same,” she says. “It’s an interesting and exciting field.”

PERSONAL GROWTH The social aspect of the program proved invaluable to the future physicians and scientists. All 12 students resided on the University Park Campus, “so they could share what they were doing, compare notes and even become a bit competitive,” explains Richey.

With positive educational and social experiences came personal growth. Nan Sook Lee, Ph.D., a senior research associate at the laboratory of Robert Chow, M.D., Ph.D., associate professor of physiology and biophysics, and endocrinology, was Ross’ direct supervisor. “Over the eight weeks, his attitude became more like that of a scientist,” she says. “You want someone who can think, who can create, and who won’t become easily bored. He can apply principles rather than just memorizing them. That’s one of the things you need to become a good scientist.”

NARROWING THE GAP For the foreseeable future, the Bridge program will continue to work toward the goal of establishing a greater minority presence in the medical field. The program’s leadership team is actively planning for summer 2012, and hopes to ultimately raise the participant count to 24.



Joyce M. Richey, Ph.D.

"We'd been trying to get a summer program together forever, but the resources were only made available [last year] through the help of [Keck School] Dean Carmen A. Puliafito, Dr. Henri Ford [vice dean of medical education for the Keck School], Dr. Joyce Richey and program coordinator Erin Yamauchi," says Laird-Offringa. "They put the whole program together."

"For the longest time, we really haven't been able to increase the number of African Americans inside the medical school," adds Ford. "We believe that by creating such a program, the very talented students from some of the best universities will really excel in it. Whether they want to do medicine or go into biomedical research, we have the nurturing environment that will allow them to excel and to thrive."

The students seem to agree. "My goal of earning my medical degree has been strengthened because of this program," says Cristian Carrillo, a junior at California State University, Monterey Bay, who

teamed with Lourdes Baezconde-Garbanati, Ph.D., associate professor of preventive medicine and sociology, for fieldwork with teaching minority youth leadership skills and healthy habits. "It has helped me see what life is like as a researcher striving to improve public health."

Ross echoes Carrillo's sentiment. "The program has definitely made me realize the multiple advantages and benefits the Keck School of Medicine provides in comparison with other top-ranked medical schools," he notes. "The only suggestion I would make for the program would be to include a Starbucks gift card to subsidize the amount of coffee we drink. Once you get started working in the lab, it's difficult to stop!" •

To donate in support of Bridging the Gap, see keck.usc.edu/ScholarshipGiving or contact Molly Gervais, mgervais@usc.edu, 323-442-1700.

Meet the Students

Below is a roster of the students who participated in the first Bridging the Gap program, the titles of the research they worked on and their faculty mentors.

Kimberly Alzuphar

(Columbia University)

"The effect of a Promotora-based intervention on uptake of highly effective contraception among Latina women with a recent history of gestational diabetes mellitus"

FACULTY MENTOR:

Penina Segall-Gutierrez, M.D.

Cristian Carrillo

(California State University, Monterey Bay)

"Minority youth leaders in action"

FACULTY MENTOR:

Lourdes Baezconde-Garbanati, Ph.D.

Geoffrey Casimir

(Rutgers, The State University of New Jersey)

"Effect of glucose and fructose ingestion on brain circuits involved in feeding behavior in young Hispanics"

FACULTY MENTOR:

Katie Page, M.D.

Matthew Cato

(Cornell University)

"Histone deubiquitinase and gene and protein expression in the intestinal tract"

FACULTY MENTOR:

Andre Ouellette, M.D.

Elise Digga

(Wellesley College)

"K13 knockdown in KSHV-infected primary effusion lymphoma cells blocks cellular proliferation"

FACULTY MENTOR:

Preet Chaudhary, M.D.

Ariel Hart

(Cornell University)

"Pubertal stress and inflammation in African American and Latina girls"

FACULTY MENTOR:

Donna Spruijt-Metz, Ph.D.

LaTasha Henderson

(Xavier University of Louisiana)

"Vascular endothelial growth factor promoter is transcriptionally regulated by TATA binding protein"

FACULTY MENTOR:

Debbie Johnson, Ph.D.

Sunny Jones

(Yale University)

"Elucidating the immune response in patients with small cell lung cancer"

FACULTY MENTOR:

Ite Laird-Offringa, Ph.D.

Eunice Martins

(Rutgers, The State University of New Jersey)

"Cell-cycle regulators p27 and cyclin D1 in Pten Null adult β -cell islets"

FACULTY MENTOR:

Bangyan Stiles, Ph.D.

Sean Mbachu

(University of Maryland, College Park)

"Interleukin-8 production in drug-sensitive and drug-resistant brain tumor cells"

FACULTY MENTOR:

Florence Hofman, Ph.D.

Adam Ross

(University of San Francisco)

"Generation of insulin-secreting glucose-responsive β -cells from human stem cells"

FACULTY MENTOR:

Robert Chow, M.D., Ph.D.

Jeroson Williams

(Morehouse College)

"Culturing human embryonic stem cells for hematopoietic stem cell differentiation"

FACULTY MENTOR:

Gregor Adams, Ph.D.

To view the research posters created by each student, visit keck.usc.edu/Keck_Medicine_Posters.



Jennifer Gomez, 10, and her mother, Jovita DeLeón, have benefitted from research and treatment by Keck School of Medicine faculty physician Andrea Kovacs, M.D., and a zero transmission rate of HIV from mother to child.

Advancing Intelligence

Keck School researchers are discovering new fronts in the war on HIV and AIDS

By Robin Heffler

Ten-year-old Jennifer Gomez seems like a typical, healthy fourth-grader. She likes arts and crafts and music, and she sometimes has difficulty focusing on her schoolwork.

What's different is that Jennifer's mother, Jovita DeLeón, was HIV-positive when Jennifer was born. DeLeón and Jennifer represent one of the important successes of research and treatment at the Maternal Child and Adolescent/Adult Center for Infectious Diseases and Virology at Los Angeles County+USC Medical Center. Among more than 500 babies born under the center's care since 1996, the transmission rate of HIV from mother to child has been zero.

The center is one of several units of the Keck School of Medicine of USC that are pursuing new HIV/AIDS prevention and treatment tools and raising hope for a cure.

Since AIDS was first described 30 years ago, Los Angeles has become a living laboratory for HIV/AIDS infection, with the second-highest number of infected patients in the United States after New York City. Re-

searchers have made huge strides, and HIV/AIDS is no longer the death sentence it once was. With advances in understanding and treating the disease, today many HIV/AIDS patients can lead normal lives.

WOMEN AND CHILDREN A professor of pediatrics and pathology at the Keck School and director of the Maternal Child and Adolescent/Adult Center, Andrea Kovacs, M.D., has been in the forefront of research and treatment of women and children with HIV/AIDS for more than 20 years, most of the disease's history.

"Dr. Kovacs is an excellent person, and I feel very comfortable talking with her about everything that I feel," says DeLeón, who was referred to the center in 1995 from another clinic, where HIV had been diagnosed. "Ever since I started going, I've had very good experiences."

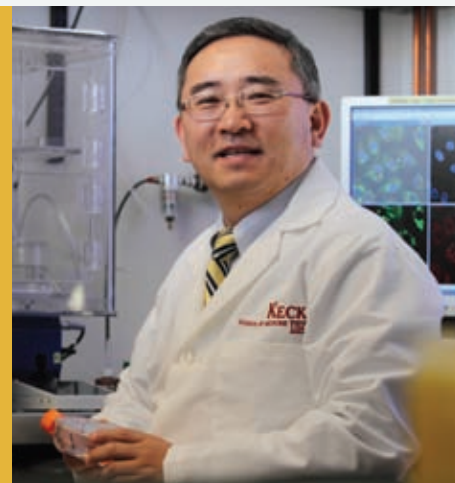
Jae Jung, Ph.D., directs the USC Institute for Emerging Pathogens and Immune Diseases.

Emerging Pathogens and Immune Diseases

The USC Institute for Emerging Pathogens and Immune Diseases is directed by Jae Jung, Ph.D., the Fletcher Jones Foundation Chair and chair of the Keck School of Medicine's Department of Molecular Microbiology and Immunology. Institute members include more than 25 faculty researchers in virology, immunology and microbiology.

The institute and department presented a one-day symposium on Oct. 10, 2011, to commemorate the 30th anniversary of the first description of the AIDS virus in Los Angeles. The event was organized by Paula Cannon, Ph.D., Keck School associate professor of molecular microbiology and immunology, pediatrics, and biochemistry and molecular biology, and Grace Aldrovandi, M.D., associate professor of pediatrics at the Keck School and Children's Hospital Los Angeles.

Sponsors were Dean Carmen A. Puliafito, M.D., M.B.A., Keck School of Medicine of USC; Office of the Provost, University of Southern California; and the Southern California Clinical and Translational Science Institute.



Under Kovacs' leadership, significant findings by center researchers include:

- Participation in the discovery that the antiretroviral drug AZT can prevent transmission of HIV from mother to child.
- The finding that elective C-sections can reduce the risk of HIV transmission to newborns.
- That the cytomegalovirus, a major co-infection of HIV, is associated with accelerated HIV disease and with the brain disease of encephalopathy in babies.

In a groundbreaking 1991 paper, Kovacs reported that the number of normal and abnormal infection-fighting T cells in children differ markedly from those of adults. Because T-cell counts are routinely used to determine the severity of and treatment for HIV, her research was used in developing guidelines for treatment of children with the virus and babies with a life-threatening form of pneumonia related to the virus.

Currently Maternal Child and Adolescent/Adult Center researchers are focused on the interaction of another virus with HIV: the hepatitis C virus. "We're looking at how the two viruses talk to one another in women who have both, making each condition worse," Kovacs says. "It appears that regulation of the immune system becomes more impaired when co-infected than when HIV is the only infection present."

Kovacs also notes that co-infected women are more likely to develop AIDS. "We think it's because particular T cells become hyperactivated and probably exhausted, and then are unable to fight the disease properly," she says.

USC researchers are examining why co-infection can result in a generalized immune-system activation and

acceleration of the liver disease associated with hepatitis C, as well as brain and cardiovascular diseases. Future studies will explore the potentially therapeutic abilities of cytokines – T-cell proteins that help to regulate the body's response to disease and infection – to treat HIV and hepatitis C co-infections.

In addition, Kovacs and her team think they may find answers to questions about co-infection by exploring the role of genetics in those who control HIV compared to those who progress more rapidly, such as "elite controllers" – people who have been HIV infected or co-infected for a long time but show no disease symptoms.

Another important area of inquiry is human leukocyte antigens (HLA), a group of genes involved in immune-system function. People with a certain type of HLA have more rapid progression of their HIV, or are more likely to get hepatitis C. "We're exploring how HLA type may impact immune activation and the body's ability to fight the viruses," Kovacs says.

For investigators like Kovacs, whose center provides care for more than 1,000 underserved HIV patients and their family members each year, patient behavior can pose both a research and a clinical challenge. "Adherence to medications is a huge problem in adolescents," she explains. That's why Keck School researchers are collaborating with colleagues in the USC Annenberg School for Communication and Journalism, assessing the potential use of cell phones to increase HIV prevention and treatment effectiveness in teen girls. They plan to expand the study to include teens in Washington, D.C., and two cities in South Africa.



Paula Cannon, Ph.D., is pursuing research on gene and stem cell therapy that holds promise for curing HIV.

COLLABORATION YIELDS RESULTS Collaboration with scientists and clinicians at City of Hope and a Northern California-based biotechnology company is integral to the work of Paula Cannon, Ph.D., Keck School associate professor of molecular microbiology and immunology, pediatrics, and biochemistry and molecular biology. Based on initial experiments in mice that have shown great promise, her research team is designing a human trial of a gene and stem cell therapy for HIV, expected to be ready within four years.

The research applies a pioneering technique called zinc-finger nuclease editing, which uses engineered proteins to bind to and cut the DNA of a targeted gene, thereby disabling it. In this case, blood-forming stem cells were treated with the proteins, disabling the CCR5 gene, which normally allows HIV to enter immune cells. The modified cells were then transplanted into specialized mice that can support human T cell development and HIV infection.

“Initially, the HIV was replicating at high levels, but after six weeks we started to see a change, and the infection started to lose steam,” Cannon says. “When we then looked at the human T cells, we saw an increased number that were CCR5 negative. After three months, 100 percent were negative, and the HIV couldn’t be sustained and disappeared.”

A less scientifically rigorous but emotionally compelling reason for excitement about these findings is that they come on the heels of a highly publicized case of a German patient who was effectively cured of his HIV; he had received a bone marrow transplant from an HIV-resistant donor, one of the rare individuals who naturally lack the CCR5 gene.

Cannon is also pursuing another potential route to stopping HIV, one seeking to circumvent HIV’s method of outwitting a defense mechanism that otherwise protects cells from viruses. The defense mechanism is a protein called tetherin, which HIV blocks with a protein called Vpu.

“It’s like a chess game,” Cannon says. “We hypothesize that blocking the action of anti-tetherin factors such as Vpu could represent a novel strategy to combat HIV replication by allowing the natural antiviral activity of tetherin to be reactivated. It may work better than other therapies because it’s using something that the body has evolved to do.” •

KECK SCHOOL-LED CLINICAL RESEARCH

Projects at the Rand Schrader Clinic and Children’s Hospital Los Angeles are among HIV/AIDS clinical research led by Keck School of Medicine faculty.

AIDS Clinical Trial Unit at LAC+USC Rand Schrader Clinic

Primary research areas are: metabolic syndrome, factors that accelerate the risk of heart attack and stroke in HIV patients; HIV-tuberculosis co-infection; and HIV-hepatitis C co-infection.

Achievements include:

- Design of studies that define treatment and prevention of opportunistic infections.
- Playing a pivotal role in the licensure of new drugs and setting of guidelines for HIV treatment.
- Pioneering the administration of antiretroviral drugs for co-infections (now a widely used protocol).
- Enrolling more patients in more studies than any other site participating in the AIDS Clinical Trials Group Network.

Saban Research Institute of Children’s Hospital Los Angeles

Primary research areas include:

- Multiple-site studies on HIV prevention and evaluations of medication adherence in youth through the International Maternal, Pediatric, Adolescent AIDS Clinical Trials Group and the Adolescent Trial Network.
- Progress of children in the Pediatric AIDS Center and in one of the largest adolescent HIV clinics.
- Effects of HIV and antiretroviral drugs on the cardiovascular systems and bones of children.
- In Africa, factors preventing mother-to-child HIV transmission through breast milk and development of an HIV vaccine.

Improving Bone Cancer Treatment

By Martin Booe

IN THE NOT SO DISTANT PAST, amputation was not merely the last resort for most bone tumors; it was the only resort. Recent advances in treatment, however, have produced a much brighter prognosis for sufferers. At the cutting edge of these developments is Lawrence R. Menendez, M.D., director of the USC Center for Orthopaedic Oncology at the Keck Medical Center of USC and a professor of clinical orthopaedic surgery at the Keck School of Medicine of USC.

“The good news is that we’re making great strides forward by using multiple modalities,” says Menendez, who has made USC his home since 1985. “Amputation used to be the gold standard, and while it’s not completely a thing of the past, it has become a rare occurrence.”

Musculoskeletal tumor removal lagged behind other areas, in large part because there are relatively few cases, he says. Only an estimated 4,500 bone tumor cases a year occur in the United States. Treatment is difficult, because the tumors frequently are hard to access, and once removed they pose the challenge of making up for the bone mass lost to the tumor’s removal.

Now surgeons are moving from merely saving limbs to minimizing damage and maximizing post-surgical functionality. One way is by reducing invasiveness. “Across the board, surgery has become progressively less invasive through the use of robotics, laparoscopies and other techniques,” Menendez says.

To that end, USC has been ahead of the curve for some time as the only facility in Los Angeles with a CyberKnife, a device that treats tumors noninvasively anywhere in the body by targeting high doses of radiation to cancer cells, without the toxicity that radiation treatment usually involves. In addition, the center has been at the forefront of employing 3-D computer imaging (surgical navigation), cryoablation (killing cancer cells by freezing tissue) and its opposite, radiofrequency ablation (killing cancer cells with heat).

Menendez himself is a pioneer in the field of implants. He invented one that replaces the hip socket after pelvic resection. Dissatisfied with the results of bone cement and finding most implants imperfect, Menendez is currently developing implants that allow for superior bone ingrowth and fixation.



Patient Paul Flaten has a post-surgery checkup with Lawrence R. Menendez, M.D.

USC’s latest contribution is a new program dedicated to metastatic bone cancer, the most prevalent form of malignant bone tumor, which occurs when cancer has spread to the bone from other organs. Founded in July 2011, the Metastatic Bone Tumor Program brings together bone cancer surgeons, diagnostic radiologists, physical therapists and plastic surgeons to foster collaboration.

“It’s difficult for general orthopedists or surgeons to maintain an expertise in bone tumors because they’re so rare – that’s why the sarcoma centers are so important,” Menendez says. “The treatment requires multiple modalities; it’s really not good for the patient if the physician only sees one or two cases a year. I think that’s one of the strengths of having a big sarcoma service at USC. Our volume is high, so our team is aware of all the different strategies.”

The son of public school teachers, Menendez earned his medical degree from New York University Medical School. He completed a general surgery internship at Columbia Presbyterian Medical Center and returned to New York University for his orthopaedic surgery residency. He also took an oncology fellowship at the University of Florida.

An avid surfer, he spends his scant free time catching waves and studying foreign languages, including Spanish, French, Portuguese and Mandarin. •

For more information, see keckmedicalcenterofusc.org/orthoncology. To make an appointment, call 323-442-5830.

“The good news is that we’re making great strides forward by using multiple modalities.”

Six Decades of Dedication

By Carrie St. Michel

"I LOVE THIS GUY. HE'S SO DAMN OLD, BUT SO DAMN GOOD."

When David Berman, Ph.D., distinguished emeritus professor, Cell and Neurobiology, at the Keck School of Medicine of USC, recently read this student evaluation comment, he was not remotely offended. While the student's summation wasn't the epitome of eloquence, it was, in a word, accurate.

For starters, there is no denying the rarefied air enveloping Berman's age – 94 – a longevity that he attributes to being "genetically lucky," noting that his father lived to 100. There's similarly no denying how good he is at teaching, as evidenced by the more than 45 teaching awards he has received since joining USC's faculty in 1952.

Berman's Trojan roots run deep. He earned his bachelor's degree in pharmacy at USC, as well as his master's in pharmacy, and Ph.D. in pharmacology. While Berman has always wanted to teach, his focus on pharmacology was fueled by longtime USC pharmacology professor and department chair, the late John Webb, Ph.D., whom Berman describes as "the most fabulous, brilliant teacher."

Berman's passion for pharmacology has propelled him to remain at the lectern long after his contemporaries have called it quits. His desire to continue teaching has even resulted in an annual event of sorts. Back in the late 1980s when Berman turned 70, faculty members were required to retire; ever since, he has been rehired annually, thus the "emeritus" designation – despite the fact that he still teaches pharmacology courses to first- and second-year students.

It is because of these students that Berman has been a six-decade fixture on the Keck School campus. As he puts it, "Being with students keeps you young – you pick up on their energy and excitement." You also pick up on their characteristics, which, according to Berman, have remained relatively consistent over the years. "The students have always been really bright, dedicated and hardworking."

Differences today, he says, are more of the demographic and technologic variety. "In 1952, the classes were predominantly male. Today, more than half of our students are women." Berman points to another difference: the use of technology. "It used to be com-

mon for students to visit my office with questions," he recalls. "Now, they're more likely to email."

Over the past 60 years Berman has shown unwavering dedication to teaching. While others his age are enjoying their carefree golden years, Berman still seeks to up his game. "Even now, I think about how I can improve my teaching." This continual quest has resulted in numerous curriculum innovations, including "Medicine in History, Literature and Art," a favorite course among students. In recognition of Berman's commitment to excellence, the David A. Berman Pharmacology Achievement Award was established in 1997 and is presented annually to an outstanding pharmacology student.

David Berman, Ph.D., continues to win teaching awards long after his contemporaries have retired.



In June 2012, Berman will, finally, retire for good. He looks forward to taking in art exhibits with his wife of 65 years, Miriam, and spending quality time with their two daughters and three grandchildren.

Looking back over his achievement-filled career, Berman has but one regret: that he will not have taught "long enough to meet a third-generation student. It has always been a special moment when a student would come to me, introduce him or herself and say, 'My mom or dad was in your class.'" •

To donate to the David A. Berman Pharmacology Achievement Award, see keck.usc.edu/BermanAward or contact Molly Gervais, mgervais@usc.edu, 323-442-1700.

Making the Most of Med-COR

By Mary Ellen Zenka

GROWING UP IN THE LOS ANGELES neighborhood of Boyle Heights, Keck School of Medicine graduate Claudia Martinez, M.D., didn't have dreams of becoming a doctor. In fact, her dreams didn't even include college, as none of her relatives had ever attended one. Her family struggled financially – her father was disabled and her mother earned modest wages as a seamstress. All six family members squeezed into a one-bedroom apartment and tried to make ends meet from day to day.

Then Martinez heard a presentation about the USC Med-COR Program during a seventh grade science class. She didn't fully realize it then, but it was a life-changing event for her.

Founded in 1970, the USC Med-COR Program provides structured academic enrichment to help disadvantaged students and students of color in the Los Angeles Unified School District better compete in mathematics, science and English, with the goal of admission to medical schools. Med-COR also provides SAT preparation, a career day, a California College Tour, a summer hospital jobs program and more.

After that first presentation, Martinez actively embraced the Med-COR program during her years at Francisco Bravo Medical Magnet High School in east Los Angeles. She spent her weekends at USC's University Park Campus. "Doctors and other professionals from various medical specialties lectured each Saturday," she explains. "Then we all received tutoring support to ensure that we kept our grades as high as possible. I was exposed to fields I never knew existed. As a young Latina, I didn't know any of this was within my reach."

During her free time, Martinez volunteered at Los Angeles County+USC Medical Center, logging in more than 1,000 hours doing a variety of jobs. She had grown up near the center and was impressed that so many people cared for those in need.

Thanks to her start in the Med-COR program, Martinez graduated from California State University, Northridge, with a bachelor's degree in biology, then from the Keck School in May 2011. She is currently in her first year of residency at the SUNY Downstate

Medical Center, Department of Emergency Medicine in Brooklyn, N.Y. "I love the pace of the ER, and that everyone is different with a wide range of medical issues for me to handle. It's never dull, and every day I continue to learn," she says.

After her residency, Martinez hopes to return to her community for her medical practice. Her goal is to help heal and educate people – many of whom don't have insurance and use hospital emergency services for their primary care.

Without the Med-COR program Martinez knows she would have traveled a different path. "I am so amazed that I'm a physician," she adds. "It's an honor to have people trust me and put their health in my hands." •

Med-COR brought the dream and the means of becoming a physician to Claudia Martinez, M.D.



Photo courtesy of SUNY Downstate Medical Center

Development News

RECRUITING ESTEEMED INVESTIGATORS

\$5 million Zilkha gift to aid namesake institute's recruitment

By Imelda Valenzuela

Los Angeles businessman and Keck School of Medicine of USC Board of Overseers Member Selim Zilkha recently reaffirmed his commitment to the Keck School center that bears his name with a \$5 million gift. The donation will support the Zilkha Neurogenetic Institute (ZNI) and will be used for recruitment of senior scientists and investigators to the institute.

Zilkha's interest in neurogenetic diseases is a personal one: His mother and eldest brother suffered from Alzheimer's disease for years.

The Zilkha Neurogenetic Institute was established in 2003 with a \$20 million gift from Zilkha. The institute is located in a six-story, 125,000-square-foot building on the USC Health Sciences Campus, housing 20 researchers who develop therapeutic strategies to attack a multitude of debilitating neurological and psychiatric disorders faced by millions worldwide.

"The research that we're doing at the Zilkha Neurogenetic Institute is research on brain diseases that are not rare – Alzheimer's disease, schizophrenia, bipolar disorder, autism, depression, anxiety disorder. These are disorders that are affecting almost one in three families in the United States," said Pat Levitt, Ph.D., director of the Zilkha Neurogenetic Institute; provost professor of neuroscience, psychiatry, psychology and pharmacy; and chair of the Department of Cell and Neurobiology.

Zilkha's new gift establishes the Zilkha Senior Scholar Award, which will provide funding to offset the cost of recruiting esteemed investigators. Such investigators will have dynamic, grant-funded research programs that focus on specific brain diseases, including Alzheimer's disease, brain cancer, and neurodegenerative and psychiatric disorders.

The scholar award will be leveraged with university commitments to bring the scholars to the ZNI. The funds provided through the award will support costs for equipment, research staff and trainees, and the like, which are needed to attract the best and brightest minds in the field of translational neuroscience, according to Levitt.

"We will be able to use those dollars to leverage with university funds and other philanthropic funds to be able to recruit senior scientists who already have research programs in Alzheimer's disease, schizophrenia and autism up and running at other institutions," he said. "We want to bring them to the Keck School of Medicine of USC to be able to multiply the efforts that we already have ongoing."

Zilkha intends for his gifts to be an example so that others will support research at ZNI. "Selim told me something that I thought was very, very important," Levitt said. "He views his initial commitment and this new commitment as just the beginning of an effort that we all need to make to have an impact now on families and those who are affected."



USC President C. L. Max Nikias, Ph.D., left, and members of the Keck School of Medicine Board of Overseers Selim Zilkha, center, and Robert Day meet to announce Zilkha's new \$5 million gift to fund the recruitment of senior scientists to the Zilkha Neurogenetic Institute.

Whittier Foundation grants \$3 million for nanotechnology research

By Pauline Vu

The L.K. Whittier Foundation has awarded another \$3 million to the nanobiotechnology initiative it established five years ago at the Keck School of Medicine of USC.

The grant funds the L.K. Whittier Foundation Nanobiotechnology Initiative, which is researching new ways to use nanotechnology to fight diseases such as cancer, diabetes and cardiovascular disease. Nanotechnology, or science and engineering at the nanometer level, has huge potential to transform the biomedical world. One nanometer is about as long as a human fingernail grows in one second.

"We are extremely grateful to [trustee] Laura Lee Whittier Woods and the Whittier Foundation for their generosity and foresight in continuing to fund nanobiotechnology at USC," said Edward Crandall, Ph.D., M.D., the project's lead investigator and chair of the Department of Medicine.

"This grant will enable us to work from bench to bedside in multidisciplinary projects," added Crandall, who is also the Kenneth T. Norris Chair in Medicine and the Hastings Foundation Professor in Medicine.

The Los Angeles-based L.K. Whittier Foundation first established the Keck School's biomedical nanotechnology program in 2007 with a \$2.7 million grant.

The initiative involves investigators at both the University Park Campus and Children's Hospital Los Angeles, as well as the Health Sciences Campus, including:

- Crandall, who is also professor of chemical engineering;
- Thomas Chen, M.D., Ph.D., neurosurgery;
- Amir Goldkorn, M.D., medicine;
- Mark Humayun, M.D., Ph.D., ophthalmology, biomedical engineering, and cell and neurobiology;
- Richard Roberts, Ph.D., chemistry and chemical engineering;
- Uttam Sinha, M.D., otolaryngology;
- Mark Thompson, Ph.D., chemistry; and,
- Timothy Triche, M.D., Ph.D., pathology, cancer biology and pediatrics.

The Whittier Foundation has a history of generously funding medical research at USC. In 2002, the foundation donated \$5.2 million to establish the L.K. Whittier Foundation Innovative Tailored Therapies Initiative at USC Norris Comprehensive Cancer Center and the Keck School, with the goal of helping scientists develop new approaches to treatment of cancer patients. In 2008, the foundation awarded an additional \$5 million to extend that initiative for five years.

ENDOWMENT

Helping students find – and fund – their way

By Pauline Vu

As the Keck School of Medicine's associate dean of educational affairs, Raquel Arias, M.D., is extraordinarily dedicated to her students. So dedicated, in fact, that she is making a bequest that will eventually establish a Keck School scholarship endowment, which she estimates will be approximately \$3 million.

"I consider all of the medical students that I've trained to be part of my extended family," said Arias, a 1982 graduate of the school.

Over the course of a 30-year career, Arias estimates she has delivered about 3,000 babies. Now her current aim is to shepherd that many Keck School doctors into the world. She figures she's more than halfway there.

"Being a doctor is a tremendous honor, and the opportunity to nurture people who've made that choice is one of the most enjoyable, enriching and fulfilling things a person can do," she said.

Arias chose to attend USC for two reasons: to work at Los Angeles County+USC Medical Center, which she calls "a monument to care for those who need it the most," and because her mentor, who she said was one of the few Mexican-American doctors practicing in the country during the late 1960s, also attended USC.

After Arias graduated and completed her internship and residency at LAC+USC, she spent three years at a clinic in Merced, Calif., to fulfill her National Health Service obligation. Then she joined the USC medical school's faculty in the Department of Obstetrics and Gynecology.

In 2000, Arias became associate dean of educational affairs, giving her the opportunity to help guide students into choosing a specialty that enhances their talents and to impress upon them the importance of service.

Arias' scholarship priorities will be to help students who are pioneers for their family or their culture in attending medical school, or who offer the profession special qualities, but whose financial needs may make them reluctant to go to school, she said.

She recalled that when she went to medical school, one year's tuition cost more than what her whole family earned in a year. "That much money is hard to fathom, and I'm pretty sure there are still people in that situation right now," Arias said.

To donate to medical scholarships, visit keck.usc.edu/ScholarshipGiving or contact Molly Gervais, mgervais@usc.edu, 323-442-1700. For more information on making a bequest, contact Clara Driscoll, clara.driscoll@usc.edu, 323-442-1346.



Keck School alumna, benefactor and associate dean of educational affairs Raquel Arias, M.D., helps students choose a specialty that matches their talents.



Keck School of Medicine Dean Carmen A. Puliafito, M.D., M.B.A., right, presents an award to Jeffrey Ross Gunter, M.D., chair of the advisory board for the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC.

Keck School touts stem cell research at Beverly Hills event

By Imelda Valenzuela

Forty people attended a reception honoring Keck School of Medicine of USC Dean Carmen A. Puliafito, M.D., M.B.A., for his reappointment to the California Institute for Regenerative Medicine (CIRM) board. Puliafito has served on the Independent Citizens Oversight Committee, the CIRM governing board, since 2008.

The event, "Transforming Medicine with Stem Cell Research," was hosted at the Peninsula Beverly Hills Hotel by Keck School alumnus Jeffrey Ross Gunter, M.D., a dermatologist and chair of the advisory board for the Eli and Edythe Broad

Center for Regenerative Medicine and Stem Cell Research at USC.

"I truly believe that stem cell research will be one of the most influential modalities of treatment in the next 50 years of medicine," said Gunter. "Many causes are attractive because you can see immediate results. I'm more concerned about generations to come, and I believe that stem cells will play a huge role in health care."

Puliafito, a practicing ophthalmologist, said, "I came to USC four years ago, and one of the reasons I came was that California is the stem cell capital of the world. I am aware of the tremendous challenges that patients face every day. As a physician, there is nothing more compelling than dealing with the patient and the patient

asking, 'What can you do to solve my problem?'"

USC is one of a few institutions in the world that have been funded by CIRM to develop a stem cell cure for macular degeneration, according to Puliafito, who explained that clinical trials would be under way soon. He also emphasized that implications from the studies would impact other health issues including heart disease, Parkinson's disease, Alzheimer's disease, diabetes and spinal cord injuries – categories in which he said "there is tremendous hope" with regard to stem cell research.

To donate to stem cell research, visit stemcell.usc.edu/Giving or contact Ted Wynn, twynn@usc.edu, 323-442-3056.

IN MEMORIAM

J. Terrence Lanni, longtime Keck School of Medicine supporter, 68

By Pauline Vu

J. Terrence Lanni, 68, a USC alumnus and member of the Keck School of Medicine's Board of Overseers, passed away on July 14 after a two-year battle with cancer.

Lanni was one of the world's most respected hotel executives. During his 13-year tenure as chairman and CEO of the company that began as MGM Grand, he took a one-casino company and turned it into one of the largest casino operators in the world. The company was later renamed MGM Mirage and now is known as MGM Resorts International.

He had been a member of the Board of Overseers since its inception in 1999. Lanni was also a generous philanthropic supporter of the Keck School, Dean Carmen A. Puliafito, M.D., M.B.A., said in a letter to the board. "We watched him battle cancer with great courage over the past two years. He was a good friend who will be sorely missed," Puliafito said.

A native of Los Angeles, Lanni graduated from USC with a bachelor's degree in business in 1965. He served on the USC Marshall School of Business' Board of Leaders and was named the school's Alumnus of the Year in 1992.

After his graduation, Lanni served as treasurer for Republic Corp. for 10 years. In 1977, he entered the gaming industry, joining Caesars World as treasurer and chief financial officer. He eventually became the compa-

ny's president and chief operating officer, before leaving in 1995 to head MGM Grand. He retired in 2008.

Lanni was known for his integrity and for establishing the first formal diversity and inclusion program in the gaming industry. He garnered numerous accolades throughout his career.

In a statement, Lanni's family said his death was peaceful. "So many have shared with us stories of the ways in which Terry touched their lives," the statement said. "We are all proud of the positive impact he had on so many people's lives and will forever seek ways in which to honor his memory."

He is survived by his wife, Debbie, and sons, Sean and Patrick. The family has requested that donations be made to the Lanni Family Cancer Research Fund, which will benefit the translational research of Heinz-Josef Lenz, M.D., professor of medicine and preventive medicine at the Keck School and the USC Norris Comprehensive Cancer Center.

Memorial contributions may be made online at keck.usc.edu/TerrenceLanni or sent to the USC Norris Comprehensive Cancer Center Development Office, Attn: Carmy Peters, 1441 Eastlake Ave., NOR 8302, Los Angeles, CA 90033.



J. Terrence Lanni

"We are all proud of the positive impact he had on so many people's lives and will forever seek ways in which to honor his memory."



During a reception in Santa Barbara, Keck School of Medicine student Monika Foster, left, talks about why she chose to attend the Keck School. Student Roshel Graham spoke about the rotation she completed at Santa Barbara Cottage Hospital.

Keck School of Medicine and Cottage Hospital celebrate partnership

By Imelda Valenzuela

The Keck School of Medicine of USC and Santa Barbara Cottage Hospital celebrated their 32-year-old partnership with a reception hosted by Keck School Dean Carmen A. Puliafito, M.D., M.B.A., at the Four Seasons Resort The Biltmore Santa Barbara.

Since 1979, Cottage Hospital has served as a pediatrics, psychiatry, obstetrics and gynecology, and internal medicine rotation site for the Keck School of Medicine. Over 65 guests attended the reception including administrators and faculty from the Keck School and Cottage Health Systems, friends and alumni of USC, and Santa Barbara community members.

"Santa Barbara is a key part of our plan for medical education at USC," said Puliafito. "We think that this community and the commitment of the Cottage Health System to medical education and the environment it provides to promote learning is wonderful for our medical students and for the community at large."

Andrew Gersoff, M.D., program director for the internal medicine residency program at Cottage Hospital, commented, "The trust that you've shown us to have your students come here is the best honor you could give to all of us."

Gersoff talked about the expansion of the program, which will soon allow medical students to do surgery and radiology rotations in addition to the existing rotations.



At a reception honoring Uttam Sinha, M.D., are, from left, Andrew Jameson, Nadine Watt, Scott Watt, Obaida Watt, Sinha, Sally Watt Oxley and Howard Oxley.

ACADEMIC HONOR

Sinha named to first Watt Family Chair

By Imelda Valenzuela

Stirring speeches and personal accounts were shared at a reception honoring Uttam Sinha, M.D., associate professor and vice chair of otolaryngology-head and neck surgery at the Keck School of Medicine of USC, as he was installed as the first Watt Family Chair in Head and Neck Cancer.

"This chair is one of a handful of chairs for head and neck cancer in the country," said Keck School Dean Carmen A. Puliafito, M.D., M.B.A., addressing 120 guests gathered at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC. A chair signifies the academic achievement, the clinical expertise and institutional commitment that we expect from our finest faculty members."

Sinha, born and raised in India, was a medical resident from Calcutta University, when he arrived at USC 26 years ago. He saw then the "limitless potential in the breadth of research that was possible," he said. "The experience created in me my profound commitment to USC, the place I have stayed all these years, and the only academic medical center home I have ever known. Three decades later, my drive and inspiration are even stronger."

The matriarch of the Watt family, Nadine, who experienced a large tumor in her mouth, was a patient of Sinha's. She passed away from unrelated causes in 2009. Her daughter, Sally Watt Oxley, spoke on the family's behalf and described her mother's care at the hands of Sinha.

"He performed the surgery to perfection and made mother look as beautiful as she was before," Watt said. "He not only cared for her physical illness, but also her emotional well-being. And because of his talents, he vastly improved the quality of her life."

With many ties to USC, the Watt family has donated nearly \$17 million to the university. Watt Way, a major street on the University Park Campus, is named after Nadine's husband, Ray, a former USC trustee who was instrumental in USC's preparations for the 1984 Olympics. The gift to support the Department of Otolaryngology-Head and Neck Surgery initially came from Nadine Watt's estate. The family then decided to double the amount to establish the chair.

One of Sinha's protégés, Grace Peng, M.D., who graduated from the Keck School and is now a resident in otolaryngology, said of Sinha, "I've seen his lab expand, his projects multiply, his head and neck institute become a reality and his accolades stack up. His surgical skill and his mind for translational research aren't his only strengths. He has taught me the value of humility, the importance of passion and the excitement of pursuing lofty goals."

Dale H. Rice, M.D., chair of the Department of Otolaryngology-Head and Neck Surgery at the Keck School, has worked with Sinha for 26 years. "He has developed into one of the world's foremost experts in head and neck surgery," said Rice. "With his breadth of experience and his expression of concern and care for his patients, there is no one more deserving of the Watt Chair."

Keck in the News

Every week the news media cover stories from the Keck School of Medicine of USC. Here is a sampling of coverage. For complete listings see www.usc.edu/uscnews/usc_in_the_news/.



Levitt

The *New York Times* and NPR highlighted a study by **Pat Levitt** and colleagues, finding that the placenta plays an important role in fetal brain development during the early stages of pregnancy. The study was covered in India and by Asian News International. The Huffington Post highlighted Levitt's research showing that when gastrointestinal disorders of autistic children have been resolved, the children exhibit fewer disabling autistic behaviors.

Reuters Health featured research by **Howard Hodis** that found soy supplements may not prevent artery hardening among postmenopausal women. The story was carried by EMax Health and BioScholar. Australian newspapers highlighted research by Hodis on the use of specific estrogen to improve vascular health in women who are near menopause.

ABC, CBS, AP, Fox News and *L.A. Times* featured surgeries by **Michael Bowdish** to implant a total artificial heart or a ventricular assist device in patients with heart failure. The procedures can help patients survive until they receive a donor organ, or simply improve their quality of life.

Associated Press (AP) interviewed **Michael Goran** about the health impact of consuming high-fructose corn syrup. AOL News, NR and The Huffington Post quoted Goran about

a study on children's weight and access to junk food. *Los Angeles (L.A.) Times* cited an op-ed by Goran and **Emily Ventura** about high sugar content in L.A. Unified School District school lunches. AP quoted Ventura about the school district's decision to remove flavored milk from school lunches.

The *New York Times* noted that diabetic IndyCar driver Charlie Kimball assembled a health care team from the USC Westside Center for Diabetes to help manage his condition, specifically mentioning diabetologist **Anne Peters**, nurse practitioner **Donna Miller** and dietician **Meg Moreta**. Also covering the story were Medscape News, The Post Game, Racing West and several area newspapers.

The *New York Times* featured a profile on **Jonathan Samet**, who led the World Health Organization panel that released a decision classifying cell phones as possibly carcinogenic. The story received wide coverage: *Time*, *The Wall Street Journal*, *USA Today*, *Nature*, *Science*, *New Scientist*, *Consumer Reports*, CNN, NPR, Voice of America, Lifescript, Medscape, International Business Times, technology and health media, and newspapers in Canada, Germany, India, Ireland, Malta, New Zealand, the Philippines, Russia, Spain and the United Kingdom. *U.S. News & World Report* quoted Samet about a study that suggests that children of mothers exposed to high levels of magnetic fields are at an increased risk of developing asthma.

The *New York Times* highlighted work by cardiologist **Leslie Saxon** in a story about wireless medical monitoring devices that are untethering patients and allowing research in areas where it was not previously possible. MobiHealthNews quoted Saxon multiple times.

ABC News featured a study by **Myles Cockburn** and colleagues, who found an increased prevalence of prostate

cancer among older men exposed to certain pesticides in the Central Valley. The research also was featured by ThirdAge.com, *L.A. Times*, McClatchy Newspapers and *Tehran Times* (Iran).

Reuters and Medscape reported on a study by **Brian Francis** and colleagues that found more than half of people getting a certain type of glaucoma surgery may suffer vision problems afterwards.



Patel

AOL News reported on research by **Pragna Patel**, who helped discover a gene mutation that causes a rare condition in which people grow excess hair all over their bodies. The discovery may hold promise for treating baldness or hirsutism in the future. The story was covered by Truth in Aging, eScience News, Live Science, TruthDive, Yahoo!7 News (Australia) and news media in China, India, Indonesia, Pakistan, Taiwan, the United Kingdom and Vietnam.

The *Wall Street Journal* and The Atlantic featured a study by **Ya-Wen Janice Hsu** and **Donna Spruijt-Metz**, who found that teen boys from well-off Chinese families who report being physically active and eating plenty of vegetables are more likely to be overweight. The results run counter to trends in the U.S. and Europe, where children and adults have waistline sizes that correlate to the degree of their poverty. The research was covered by Fast Company, International Business Times, Asian News International, and news services in China and India.



Bowdish

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Keck Hospital of USC is a private, 411-bed referral, teaching and research hospital staffed by faculty physicians of the Keck School of Medicine of USC. Combining sophisticated technology with genuine concern for you and your family, the hospital offers advanced medicine and compassionate care. Among the hospital's advanced services are neurointerventional radiology, minimally invasive cardiothoracic surgery, robotic surgery and interventional cardiology. Surgical specialties include organ transplantation and neurosurgery, as well as cardiothoracic, bariatric, esophageal, orthopaedic, and plastic and reconstructive surgeries.

USC Norris Cancer Hospital

1441 Eastlake Avenue
Los Angeles, CA 90033
1-800-700-3956

USC Norris Cancer Hospital is affiliated with USC Norris Comprehensive Cancer Center, one of only 40 centers in the United States designated as "comprehensive" by the National Cancer Institute. Clinical researchers are leaders in the development of novel therapies for the disease. USC Norris Cancer Hospital offers advanced treatments in an intimate setting. Specially trained staff strive to meet the unique needs of cancer patients and their loved ones.

Healthcare Consultation Centers I & II

1510 San Pablo Street (HCC I) &
1520 San Pablo Street (HCC II)
Los Angeles, CA 90033
1-800-USC-CARE

Private practice offices for many USC faculty physicians are located at Healthcare Consultation Centers (HCC) I & II adjacent to Keck Hospital of USC. These facilities give patients easy access to family medicine, gynecology, urology, orthopaedics, psychiatry, cardiothoracic surgery, head and neck surgery, otolaryngology, and neurology and neurosurgery. HCC I features an outpatient pharmacy. HCC II features the CardioVascular Thoracic Institute and diagnostic imaging, including MRI, PET and CT.

Doheny Eye Institute

1450 San Pablo Street
Los Angeles, CA 90033
323-442-6335

The Doheny Eye Institute is recognized as a world leader in basic and clinical vision research and advanced patient care. Faculty physicians from the Keck School of Medicine of USC provide outpatient services for a variety of vision-related conditions. Additional locations include:

Arcadia

626-446-2122

Beverly Hills

310-601-3366

Fountain Valley

714-628-2966

Pasadena

626-395-0778

Rancho Mirage

760-325-2069

Riverside

951-788-1231

We also have several
satellite locations.

Beverly Hills

9033 Wilshire Boulevard
Beverly Hills, CA 90211

USC Doheny Eye Center

310-601-3366

USC Norris Westside Cancer Center

310-272-7640

USC Institute of Urology

323-865-3700

Downtown

333 South Hope Street, Suite C-145
Los Angeles, CA 90071
213-437-1000

La Cañada

1751 Foothill Boulevard, Suite 3
La Cañada, CA 91011
323-442-9700

Pasadena

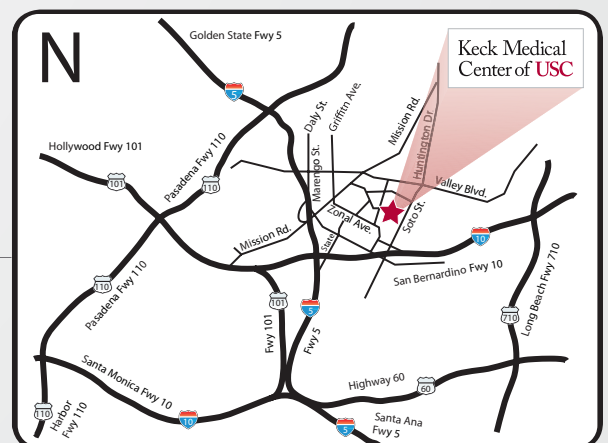
Surgical Specialties

626-683-9000

Oncology

626-568-1622

We're located near
the intersection of
major freeways.



Patient Juan Vivanco with Jeffrey A. Hagen, M.D., associate professor of surgery and chief, division of thoracic/foregut surgery

Spotlight

Joyous events enrich the life of the Keck School of Medicine of USC and the Keck Medical Center of USC.

1. Keck School of Medicine student Vanessa Kreger accepts her white coat from Henri Ford, M.D., vice dean for medical education, at the White Coat Ceremony for the Class of 2015. **2.** Cardinal-and-gold USC banners decorate light poles surrounding the Health Sciences Campus as part of USC President C. L. Max Nikias' beautification initiative. **3.** Patients of the Keck Hospital of USC Adult Congenital Heart Disease Care Center celebrate on the field of Dodger Stadium as part of USC Night. **4.** Members of the Keck School's 1961 alumni were hailed as new fellows during the annual 50-Year Fellows Luncheon. **5.** Keck School grads Devon Isaacson, left, and Kim Ruby flash a victory sign minutes before receiving their degrees. **6.** USC celebrates the kick-off of breast cancer awareness month at the USC Trojan football game Oct. 1 with an awareness booth and a special halftime appearance of USC breast cancer physicians, patients and survivors. **7.** Shalena Burnett, left, and Sona Doshi jump for joy after winning the beanbag toss at the Keck School reception for returning medical students.



Continuing Medical Education

Innovations in Medical Education

DATES: February 25-26, 2012

LOCATION: Hilton Pasadena Hotel, Pasadena, CA

FEES: \$275

CREDITS: 13 Category 1 AMA PRA Credits™

Perinatal Medicine, Obstetrics

DATES: February 27-March 1, 2012

LOCATION: Hyatt Regency Maui, Kaanapali Beach, Maui, HI

FEES: \$745 – M.D., D.O., Pharm.D.; \$645 – Nurses, Midwives, Allied Health

CREDITS: 20 Category 1 AMA PRA Credits™

INFORMATION: www.perinatalhawaii.com

22nd Annual National Interdisciplinary Breast Center Conference

DATES: March 10-14, 2012

LOCATION: Planet Hollywood, Las Vegas, NV

FEES: See www.breastcare.org

CREDITS: 26.75 Category 1 AMA PRA Credits™

40th Annual Diagnostic and Therapeutic Skills in Internal Medicine

DATES: March 12-16, 2012

LOCATION: Grand Wailea Resort, Wailea, Maui, HI

FEES: Varied

CREDITS: 28 Category 1 AMA PRA Credits™

INFORMATION: www.uscdiagnostic.com

Contact the USC Continuing Medical Education Office at:

TELEPHONE: 323-442-2555 or 800-USC-1119

EMAIL: uscme@usc.edu



UNIVERSITY OF SOUTHERN CALIFORNIA LEGACY CIRCLE

My legacy is ending cancer

Arlene Ray is a survivor. Decades after overcoming a struggle with breast cancer, she faced a diagnosis of lymphoma and turned to the experts at USC Norris. They helped her beat back the disease—and they inspired her with their innovative research and unparalleled clinical care. Today, she has dedicated her philanthropy to helping USC Norris researchers pioneer new frontiers of discovery to end cancer once and for all.

To learn more about charitable gift planning to benefit the USC Norris Comprehensive Cancer Center, please contact John Baker at 323.865.0725 or by email at john.baker@usc.edu.

What will your legacy be?

USC Norris
Comprehensive
Cancer Center

Part of the Keck School of Medicine of USC



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At the Keck School of Medicine we train exceptional students to become the future leaders of medicine.

A gift to support scholarships at the Keck School of Medicine is a sound philanthropic investment. It will yield dividends today and for decades to come.

To learn more about establishing a named scholarship at the Keck School of Medicine of USC please contact Sandi Campione at 626.457.4219 or campione@usc.edu

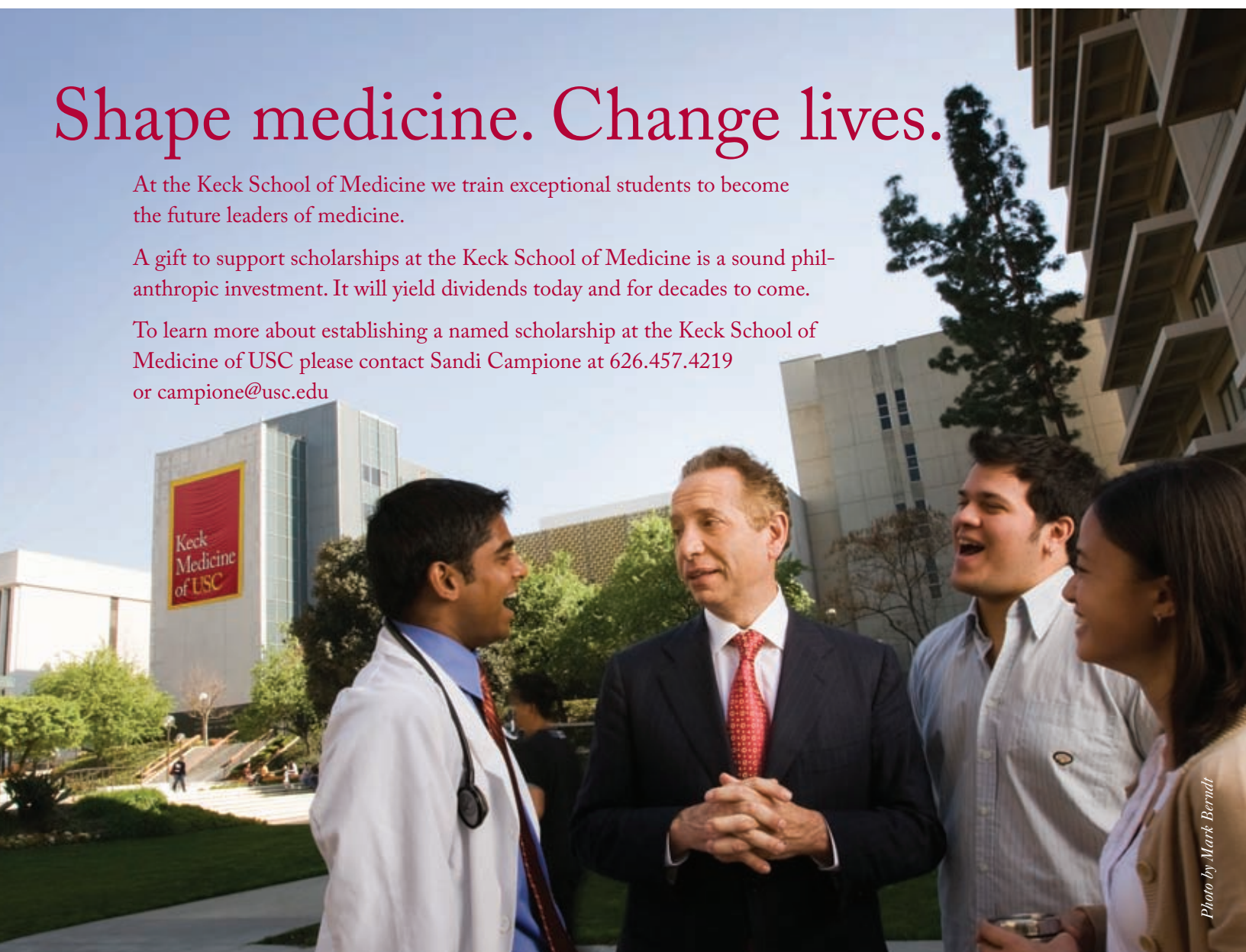


Photo by Mark Berndt

Keck School of Medicine of **USC**