Two summer programs at the Keck School of Medicine of USC continue to foster diversity by creating opportunities for minority undergraduate students who are planning a career in medicine.

Bridging the Gaps (BTG) has given underrepresented students research and clinical experience since its inception in 2011. The eight-week program has hosted 104 students to date. The Keck School currently has BTG alumni in every class, and two past BTG students graduated with the class of 2018.

Diana Torres-Pinzon, now a third year student at the Keck School, recently reflected on how the program gave her the confidence she needed to excel. “The support from the Diversity Office and the connections I made that summer showed me that this was a place where I could get the support and guidance I would need in medical school.”

The Summer Program in Diabetes and Obesity Research (SPIDOR) concluded its inaugural 10-week session recently with eight underrepresented minority students, including two from USC. After a week of immersive study in diabetes and obesity, they then joined the BTG group for a curriculum in biological sciences, research activities and workshops about the practical aspects of attending medical school.

Katie Page, MD, associate professor of medicine, who has been with BTG since its inception, became a mentor for SPIDOR this year. “The program directors, Dr. Joyce Richey and Dr. Richard Watanabe, have done a remarkable job integrating coursework, workshops, and clinical and research experiences in diabetes-related fields.”

The programs also receive enthusiastic support from school leadership. “Dean Mosqueda has been very supportive of Bridging the Gaps,” Richey, PhD, associate professor of clinical physiology and neuroscience and associate dean for diversity and inclusion, said. “Bridging the Gaps is funded in part by the school, and that alone speaks to her support.”

SPIDOR is funded by the NIH/NIDDK. Both programs fund out-of-state students’ travel expenses, and students are housed at USC Village.
Laura Mosqueda, MD, dean, Charlotte Ginsburg, Allen Ginsburg, MD, Mark Humayun, MD, PhD, Wanda Austin, PhD, at the Ginsburg Naming Event celebration on August 14.

A $10 million gift from Allen and Charlotte Ginsburg will provide critical funding for innovative research at USC focusing on debilitating neurosensory diseases.

The donation will establish a research fund at the USC Institute for Biomedical Therapeutics. The institute brings together scientists, engineers, physicians and other faculty from across the university to develop new ways to diagnose and treat diseases that cause debilitating blindness, as well as other neurosensory disorders. In recognition of the donation, the institute will be named the USC Dr. Allen and Charlotte Ginsburg Institute for Biomedical Therapeutics. The gift will support research at the institute and a biennial scientific meeting of physicians and researchers to discuss new ideas and breakthroughs.

“We are very much inspired by this incredibly generous gift to develop revolutionary solutions for blindness through translating groundbreaking discoveries in the fields of biomedical engineering, stem cell biology, visual sciences and pharmacology,” said Mark Humayun, MD, PhD, inaugural director of the USC Ginsburg Institute and University Professor at USC.

Allen Ginsburg, a retired ophthalmologist, said the most devastating moments of his career came when he had to tell patients that they were losing their vision and would ultimately become blind.

“Now there is great hope with revolutionary breakthroughs made possible by Dr. Humayun and his colleagues,” he said. “It’s a distinct and sincere pleasure to be involved in this exciting research that holds promise to restore the precious gift of eyesight.”

New boot camp offered for incoming PIBBS students

The latest class of PhD students joining the interdisciplinary Programs in Biomedical and Biological Sciences (PIBBS) at the Keck School of Medicine is a group of 30 students from diverse backgrounds. Their undergraduate education took place at a variety of top universities across the globe, including University College and King’s College in London, University of Chicago, and University of California campuses across the state. Most of the students are US citizens, but the cohort also includes students from China, Korea, Pakistan and Poland. As befitting a university situated in Los Angeles, 20 percent of the students are Latino, and some of them are the first generation in their family to go to college.

For the first time, PIBBS students were welcomed with a preparatory boot camp, which gave students a running start. The boot camp included classes designed to hone students’ skills in critically reading scientific papers, developing “concept maps” to design experiments, keeping a lab notebook and practicing mindfulness. It featured team-building activities to foster a strong bond among the young aspiring scientists. PIBBS director and associate dean Ite Offringa, PhD, also hosted the students at her home for a welcome dinner.
Cancer is one of the leading causes of death worldwide, yet many racial and ethnic minorities are underrepresented in the fields of cancer-related research and patient care that affect their own families and communities of color.

As a result, the National Cancer Institute began requiring that funded cancer centers, such as the USC Norris Comprehensive Cancer Center, create programs designed to educate students in K-12 grades about what cancer is and how it affects health.

“To get them into these fields, you have to give them the spark very early on,” said Martin Kast, PhD, a leading researcher and educator and a professor in molecular microbiology and immunology and in obstetrics and gynecology at the Keck School of Medicine of USC. Teaching schoolchildren, Kast said, is an entirely different endeavor than educating graduate students and medical professionals.

“Still, I immediately said yes when asked to create such a K-12 program,” he added, “because I have connections to an educational STEM platform that reaches thousands of students and that is managed by my daughter, Dieuwertje Kast.” Dieuwertje “DJ” Kast is the STEM program manager for the Joint Educational Project (JEP) based at the USC Dornsife College of Letters, Arts and Sciences.

The younger Kast manages two STEM programs at JEP: the Young Scientists Program and the Wonderkids curriculum. The latter introduces first- through third-grade students in the after school program to careers in STEM.

The curriculum designed by DJ Kast and the cancer education team turns learning cancer basics into play, using props and child-friendly games.

The Wonderkids curriculum also benefits from having the world-renowned Martin Kast available to visit class and talk about the rewarding life of a career in cancer research and treatment. Despite his reputation as a lecturer who educates undergraduate, graduate and medical students, Kast said, “For the first time in many, many years, I was nervous to go into a class — a class of first- to third-graders. I thought, what the heck am I going to tell these kids? But the connection was almost instantaneous. These kids are very engaged. They really want to learn.”
The Keck School of Medicine of USC is leading a $26.5 million effort to conduct the first large-scale, multi-institutional study on African-American men with prostate cancer to better understand why they are at higher risk for developing more aggressive forms of the disease and why they are more likely to die from it. The RESPOND study, funded by grants from the National Cancer Institute, the National Institute on Minority Health and Health Disparities and the Prostate Cancer Foundation, will look at the role of social stressors and genetics in the development of prostate cancer in African-American men. Researchers hope to recruit 10,000 African-American men nationwide to participate in the study.

“Not only are African-American men more likely to develop prostate cancer, but they are twice as likely to have an aggressive, more lethal form of the disease, and we don’t know why,” said the project’s principal investigator Christopher Haiman, ScD, professor of preventive medicine and holder of the AFLAC Chair in Cancer Research at the Keck School.

The RESPOND study will focus on both biological and social factors that may influence the development of prostate cancer in this group. Social stressors such as discrimination, socioeconomic status, education, early life events and where the men live will be assessed via an online survey.

Men participating in the study will also be asked to provide a saliva sample and to grant permission for researchers to access their prostate cancer biopsy tissue. The samples will be used to identify genetic markers for prostate cancer and tumor characteristics, with a special emphasis on aggressive prostate cancer. All donated biological samples will be used solely for research purposes.

“We plan to look at variations in DNA that are associated with prostate cancer overall and, more importantly, for aggressive forms of prostate cancer that are lethal. These genetic markers will ultimately help us to identify men in future generations who are at high and low risk for prostate cancer,” Haiman said.

For more information about the study and how to participate, visit respondstudy.org.
The 186 first-year medical students from the Keck School of Medicine of USC’s Class of 2022 walked out into warm sunshine, ready to engage in a tradition that would signify the beginning of their lives as medical professionals. At a ceremony held on Aug. 10 on the Broad Lawn, these students received their white coats and some words of wisdom from faculty leaders.

In her first white coat ceremony as dean of the Keck School, Dean Laura Mosqueda, MD, reminded the students that their white coats hold meaning not only for patients, but for the students themselves.

“The white coat you receive today is a symbol of the oath you will take as a doctor — less than four years from now, I will remind you — and it represents an enormous privilege, as well as the solemn responsibility that comes along with the ability and the call to provide healing and comfort to our fellow man,” said Mosqueda, who also is professor of family medicine and geriatrics and May S. and John H. Hooval Dean’s Chair in Medicine.

Serving as the ceremony’s keynote speaker was Lawrence Opas, MD, associate dean for graduate medical education and professor of clinical pediatrics, who spoke about the profound importance of a “culture of trust” between doctors and patients. To end his talk, he distilled his advice for the future doctors into two sentences.

“Remember to wash your hands, introduce yourself, clean your coat, don’t be in a rush even if you are in a rush, sit down, be a good listener, understand the patient’s perspective, be truthful, embrace diversity, be intolerant of disparities, and always consider the safety of the patient,” he noted. “Bring honor to that awesome privilege and opportunity to take a [clinical] history, to perform a physical examination, to investigate disease, cure illness, maintain health and embrace that culture of trust.”

With nervous smiles and eager steps, the students were presented with their coats by Raquel Arias, MD, associate dean of admissions; Donna Elliott, MD, EdD, vice dean for medical education; and Karen Restifo, MD, JD, associate dean for student affairs. Cheering family and friends applauded and snapped photos as the students crossed the stage.

The ceremony concluded with the students rising to recite the Hippocratic Oath, promising to practice the art of medicine with honor and loyalty.

The Keck School ceremony was one of several white coat ceremonies that took place on the Health Sciences and University Park Campuses. White coat ceremonies were first established in 1993 to promote both professionalism and humanism in new medical students as they begin their education.
STUDENT PROFILES

LAWRENCE K. ROLLE
(MD Student, Class of 2020)

For Lawrence Rolle, being a student physician at the Keck School of Medicine is a dream come true. While his experience here at Keck has challenging at times, it has also been strengthening – further cementing his belief that iron sharpens iron. Lawrence truly feels this community is molding him into who he is destined to be.

Lawrence is a National Medical Fellowship Scholar, and is serving as co-president of ASSM (Associated Students of the School of Medicine) at the Keck School this year. The Keck School was Lawrence’s first interview, and he left really envisioning himself being here. Importantly, the school’s commitment to serving the vulnerable Los Angeles community, along with the inspiration oozing from his peers and faculty make it a place that is easy to love. Lawrence plans on creating a scholarship, but otherwise hope to further bring together the Keck community, emphasizing vulnerability. Ultimately, he aspires to open the doors of medical education — all the while inspiring others throughout the journey.

NASSIM LASHKARI
(MD Student, Class of 2020, USC School of Pharmacy, PharmD, MS Class of 2014)

Obtaining her PharmD and MS in Global Medicine from the USC School of Pharmacy, Nassim comes to the Keck School already a proud member of the Trojan Family. During her time as a pharmacy student she worked alongside physicians and students at Keck and she saw first-hand the importance Keck placed on preparing physicians to serve the multicultural community and peoples of different socioeconomic statuses in a culturally competent and compassionate manner. These values solidified her decision to remain at Keck for her medical education. As a student, Nassim was fortunate enough to pursue many of her interests, including serving on the national student committee for the Association of Women Surgeons, working as an academic tutor, and applying for and receiving the Dhablania and Kim Family Medicine Global Medicine Fellowship for a community-based research project in Bocas Del Toro, Panama.

Nassim feels incredibly fortunate to have lasting mentors at the Keck School who not only allowed her to pursue her dream of becoming a physician but have continually supported her throughout her medical education. As an aspiring trauma surgeon and academic leader, she hopes to one day serve in the same capacity as her mentors to a new generation of aspiring physicians.

BRANDON MCFARLIN
(PhD in Medical Biology, Year 2)

Brandon McFarlin was attracted to Keck by the opportunities USC and the Programs of Biomedical and Biological Sciences (PIBBS) offered. After 3 rotations, Brandon joined the lab of Alicia A. McDonough, PhD, which focuses on investigating molecular mechanisms governing sodium, potassium and blood pressure regulation and how these are impacted by diet, inflammation and chronic disease. Brandon joined a project addressing the sexual dimorphic differences in Na+ transporters in a mouse hypertensive model that lacked the cytokine IL-17A-. He submitted an abstract on his interesting findings and presented both a poster and a talk at Experimental Biology (EB 2018). He received a Meritorious Research Award and a Travel Award from the American Physiological Society Epithelial Transport Group.

This summer, Brandon will attend a kidney physiology and disease summer intensive at the University of Zurich, Switzerland, led by experts from US and Europe, whom he will work alongside as colleagues. Opportunities such as these illustrate those made available from the many outstanding leaders at USC, such as Alicia McDonough. Brandon finds himself in a perfect position to receive exceptional training and networking as he defines his specific PhD thesis topic in renal (patho) physiology.
Professor Sofia Gruskin saw an opportunity to do global health differently at USC. After 18 years with Harvard University, she launched the Program on Global Health & Human Rights at the Institute for Global Health in 2011 to forge new approaches to research and education in global health. Now, as the institute’s director, she is working to confront inequality and the many forms it takes around the world, and at home. Dr. Gruskin was drawn to USC’s engagement in multidisciplinary work with local and global reach. Her research focuses on understanding why health injustices occur and what can be done to address them.

Today, she is working to join interdisciplinary global health efforts across USC’s campuses, and bring her colleagues and students into work around the globe. She aims to contribute to the Keck School’s reputation as a world-class medical school by training the next generation of leaders to bridge the local and the global in addressing the intersections around health and wellness.

Dr. Joseph Hacia has been on the Keck School’s faculty since November 2000, after completing his post-doctoral training in genetics in the laboratory of Dr. Francis S. Collins (Director, National Institutes of Health). The school has provided a wonderfully supportive atmosphere for his research program that focuses on gene and drug therapy development for peroxisome biogenesis disorders that lead to vision and hearing loss, neurodegeneration, and shortened lifespans in children.

Dr. Hacia works closely with many family-run non-profit organizations and physician-scientists across the world. His personal interactions with affected families fuel his passion for research and medical education.

He hopes to highlight the Keck School’s dedication to people who are often ignored by society and to educating the next generation of physicians and researchers who will proudly carry the torch and continue this noble mission.

Dr. David Peng came to the Keck School from the Stanford University School of Medicine. He joined the Keck School’s faculty in 2004 and became the chair of the Department of Dermatology in April of 2013.

Keck Medicine of USC formed the Virtual Care Committee – of which Dr. Peng is a member – this year to create a forum where faculty and patient care providers can imagine innovative ways to deploy digital health strategies. The committee’s goal is to expand access to Keck doctors and enhance the patients’ experience of health care. Telemedicine and digital health can strengthen the connection between doctors and patients and transform patient care by breaking down time and distance barriers. Doctors in distant communities can now also communicate by telemedicine with clinical leaders at USC, expanding our geographic reach. Digital patient monitoring permits physicians to remotely manage many complex diseases while patients remain in the comfort of their homes. In 2018, the vision became reality when the USC TeleCARE platform went live. Dr. Peng believes that harnessing the creative energy at Keck Medicine will position USC as an innovation leader in this newly emerging field of care delivery.
The Department of Preventive Medicine at the Keck School of Medicine of USC seeks to understand, and improve the lives of individuals and communities. For more than 40 years, its faculty have developed research and educational programs that address the complex public health needs in local, national and international settings.

With a focus on the causes and consequences of various diseases, environments, policies and behaviors, the department’s researchers are developing “state-of-the-science” methods to improve diagnostic, treatment and prevention strategies. Six collaborative divisions guide the work of more than 100 faculty and train approximately 1,000 students in areas of bioinformatics, biostatistics, disease prevention, environmental health, epidemiology, global health, health behavior and health promotion.

The department ranks second, nationally, in funding from the U.S. National Institutes of Public Health, according to the Blue Ridge Institute for Medical Research. Major research initiatives support work in clinical and translational science, multi-ethnic cancer studies, cancer surveillance and epidemiology, statistical methods for integrative genomics in cancer, addiction research, environmental health impacts, gene ontology, maternal and developmental risks, nutrition and obesity, environmental exposure and disease, and tobacco regulatory science — among others.

Faculty members collaborate widely across the Keck School and the university, playing key roles in a number of school- and university-wide initiatives, including ones with the USC Norris Comprehensive Cancer Center, the Clinical and Translational Science Institute, the Institute for Prevention Research, and the Institute for Global Health. Through these institutes, labs and centers, researchers and students work on issues of health equity, human rights and policy to develop and test effective community-based programs to promote the public health of the diverse populations in California and across the Pacific Rim.

The department’s nine undergraduate, master’s and doctoral degrees span the public health sciences, offering educational initiatives in research, advocacy, program implementation, and program management. Known for small classes, one-on-one mentoring and numerous interdisciplinary research opportunities offered by internationally recognized faculty, the educational programs of the Department of Preventive Medicine ensure a robust pipeline of driven new leaders to the public health arena.

**Department of Preventive Medicine by the numbers**

- **6 DIVISIONS**
- **MORE THAN 100 FACULTY**
- **APPROXIMATELY 1,000 STUDENTS**