

Sparking the Flame for Careers in Scientific Research

The **UCLA Undergraduate Research Center (URC) for Sciences** serves students and faculty in all areas of life and physical sciences, engineering and mathematics. Our primary mission is to promote, develop and celebrate undergraduate student research with the overall goal of enhancing undergraduate education and preparing students for academic and research careers. The URC Sciences serves approximately 4000 students a year and houses 31 research programs which include CAMP and early pipeline programs dedicated to exposing students to careers in research.

One such program is the Program for Excellence in Education and Research in the Sciences (PEERS), an intensive program committed to promoting academic excellence and professional development for students dedicated to careers in the life or physical sciences or mathematics. PEERS is a two year program for incoming freshmen. Students receive personal academic advising, collaborative learning workshops for science/math classes, block enrollment in science classes, and other benefits. CAMP supports professional development and travel to conferences. Three PEERS/CAMP students are profiled.

Jennifer Pena, UCLA Class of 2014, Will Pursue Ph.D.

Jennifer Pena entered UCLA entirely unaware of the research opportunities available at a premier Research University. While fully aware of her passion for science, she knew little about science-related career options. As a freshman she entered PEERS. She recounts, “[PEERS] opened my eyes to a world of opportunities very early on in my undergraduate career by having students attend talks in a variety of fields and workshops on career options. This allowed me to discover my love for research.”

CAMP and PEERS proved a vital

and key stepping stone for Pena. The summer after her freshman year she participated in BISEP wherein she learned basic molecular biology techniques and attained a broad overview of many biological fields. PEERS and BISEP, Pena says, were integral to her success. She joined Dr. Elissa Hallem’s lab during winter quarter of her sophomore year and has researched the immune response of *Drosophila* to infection by entomopathogenic nematodes over the past two years. She attributes much of her success to Dr. Hallem’s mentorship and support.

Pena’s impressive academic record gained her admission to the University of California Leadership Excellence through Advanced Degrees (UC LEADS) program. Soon after, she was admitted to the prestigious Howard Hughes Undergraduate Research Program (HHURP).

“This program challenged me in a unique way,” Pena explains, “by requiring students to give a presentation on a journal article out of their field with faculty experts in the field present at the talk. This process ... helped prepare me for my future in research.”

The summer before her senior year, in what she considers the highlight of her undergraduate career, she worked in Dr. Stephen Harrison’s structural Biology lab at the Harvard Medical School in Boston, MA through the HHMI EXROP Program.

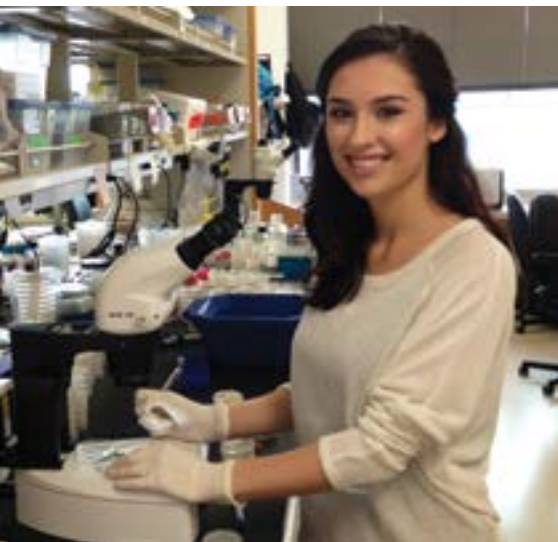
Jennifer’s is a premier example of UCLA’s Undergraduate Research Center-Sciences pipeline student. Having participated in research for just over two years, she is confident she wants to pursue a Ph.D. in the field of Immunology/microbiology. She will begin graduate school Fall 2014.

Navy Veteran Richard Flores Studies Circadian Rhythms

Richard Flores is not your traditional UCLA undergraduate. He served in the U.S. Navy for six years immediately following high school. As a Nuclear Reactor Operator & Electronics Technician, he served as an expert in reactor theory, operations, and safety. The Navy gave him the Engineer’s Most Knowledgeable Reactor Operator Award in 2008, so clearly Flores had a knack for science.

After leaving the military and being admitted into UCLA Fall 2010, Flores came to a revelation: he had the freedom to make his own choices.

“In the military, at all times, there is someone who knows where you are and where you’re supposed to be,” says Flores. Originally a blessing, the lack of constant surveillance and direction made him feel slightly abandoned as a freshman in college. He also felt somewhat unprepared for



Jennifer Pena



Richard Flores

the challenging academics at UCLA, as he had attended a high school that did not emphasize higher education.

His doubts waned after he participated in PEERS, where he attended each workshop and seminar, and interacted with the others in the

program. Over time, Flores found that he had built his own community; the people who initially seemed like strangers ended up becoming his best friends. The scientists invited to present their research awakened the scientist within him. Flores admits, "Finding out [...] I possessed the

power to become a scientist myself changed the path my life would take."

Flores currently works in Dr. Christopher Colwell's lab within the Department of Psychiatry and Behavioral Sciences where his project focuses on circadian rhythms in a mouse model of Huntington's

disease. Flores presented this work at the CAMP Statewide Symposium and SACNAS National Conference in 2013. He also had his research supported through CARE Fellows, CARE Scholars and most recently as a scholar in the NIH-funded Minority Access to Research Careers.

Thanks to his successes and support from several programs, including CAMP, Flores strives to promote science among undergraduate minorities. He understands the importance of reaching out to the community and understands how "a conversation with a brilliant scientist [...] can change your life and illuminate unexplored paths you may have never considered."

Flores plans to apply for Ph.D. programs in Neuroscience for Fall 2015.

UCLA Class of 2014, Brandon Matthews Wins CAMP Statewide Research Award

As a freshman **Brandon Matthews** would never have pictured himself immersed in research, but the UCLA PEERS program impacted his career goals early in his undergraduate career and exposed him to the myriad opportunities available through research.

Matthews currently works in the physical chemistry laboratory of Dr. Paul Weiss. As a researcher he was part of the CARE program and its summer counterpart, CARE SEM SPUR. This pair of programs trained him to communicate his research orally and in writing, skills that enabled him to become more comfortable with himself as he developed as a scientific researcher.

Advice Matthews would offer to students just starting research is to "not pigeonhole yourself into one thing." He says, "There is literally so much out there you don't know about and if you were to focus only on what you know and like, you'd miss opportunities to find out what you love and where your true passion lies."



Brandon Matthews

With funding from CAMP, Matthews presented at several national conferences. In fall 2013 he was chosen by the Assistant Provost of Undergraduate Research and URC-Sciences Director Dr. Tama Hasson to represent CAMP systemwide at the Louis Stokes Midwest Center for Excellence inaugural meeting. (Please refer to article on the next page.)

He also represented UCLA at the 2014 CAMP Statewide symposium where he received a Special Merit in Research award in the Physical Sciences category. Another major highlight was his trip to the Annual

Biomedical Research Conference for Minority Students (ABRCMS), stating, "It was an amazing experience seeing all the undergraduates, and particularly Black undergraduates, come together in celebration of research and success."

Matthews is grateful for the opportunities afforded him, but above all, he attributes much of his success to his mother who has been a constant mainstay and source of encouragement.

He plans to pursue a Ph.D. in Chemistry and will begin graduate school Fall 2014.

National Conferences Lead To Distinction

UC-LSAMP Presents at Louis Stokes Midwest Center of Excellence Conference

Our UC Alliance for Minority Participation—CAMP-NSF—took pride in having two presentations at the October 2013 Conference sponsored by the Louis Stokes Midwest Center of Excellence, the first center of its kind funded by NSF.

Dr. Tama Hasson, UCLA CAMP Faculty Director, presented on the PEERS Program: A Successful retention program for URM science students. PEERS is a two-year freshman/sophomore program for STEM majors who have had more than typical life challenge hurdles to overcome to reach UCLA. The program's goal is to bring these students into the scientific community by helping them to maintain a science major and encouraging undergraduate research. Participants take "Pathways to Science" seminars, collaborative learning workshops, research seminars by UCLA professors, and

the opportunity to be exposed to and involved in research.

PEERS Scholar **Brandon Matthews** – also a CAMP student – presented his research at the California NanoSystems Institute,



“Visualizing Assembly of Differently Oriented Dipole Moments within Carboanethiols on Metal Substrates.” Matthews worked with John C. Thomas, Logan Stewart and Paul S. Weiss, Director of CNSI, Distinguished Professor of Chemistry & Biochemistry & Materials Science and Engineering. Matthews also presented this project at the AAAS

annual conference held in Chicago, February 2014, and won Special Merit in Research at the 2014 CAMP Statewide Symposium (see page 12).

Diana Lizarraga, Director of Berkeley CalNERDS, presented: Innovative Retention Methods for “Technologically Amplified” Scholars. She shared experiences with today's undergraduates, hyper-connected college students – the “Millennials.” These students have capitalized on “micro-learning moments” via the various online search engines. Lizarraga's talk engaged faculty and program managers in a discussion on innovative technology-based models of retention. She introduced some novel and cost-effective ways to connect with students outside of the 8-5 routine, and provided packets that illustrated some of the retention techniques utilized at Berkeley.

Also attending were Maria Franco-Aguilar, UC Riverside CAMP Coordinator and Director, Academic Preparation and Outreach, Graduate Division, and Marjorie DeMartino, CAMP Statewide, UC Irvine.



UC Santa Cruz students, led by Malika Bell and Yuliana Ortega, enjoyed the excitement of ABRCMS, Annual Biomedical Research Conference for Minority Students, in Nashville, November 2014. Many students received travel awards. The conference features hundreds of undergraduate posters and keen competition for recognition. It is sponsored by NIH.



2014 STATEWIDE UNDERGRADUATE SYMPOSIUM

