CONTRIBUTIONS TO DIVERSITY

Rachel J. Dutton

Given the University of California's commitment to educating a diverse population of students, my strong previous experience in mentorship and outreach demonstrate my commitment to this shared goal, and my planned activities will provide ample opportunities to help the university achieve this mission.

Past activities:

As a first-generation college student from a low-income background, I have experienced first-hand the challenges facing students from disadvantaged backgrounds. One of the key experiences during my undergraduate career was to have a positive mentor and role model in science. As an undergraduate at UCSD, working in Kit Pogliano's lab providing me with this opportunity. I was also a Ronald E. McNair scholar, which provided additional support in research and graduate school preparation specifically for students from underrepresented groups or disadvantaged backgrounds. These early opportunities were a crucial part of the early stages of my scientific career, and have greatly influenced my own priorities towards mentorship and inclusiveness in science.

I started running my own lab in 2010, and since then I have been a mentor for several undergraduate students from underrepresented backgrounds, especially through the summer internship in Systems Biology at Harvard. I have mentored seven students through this program from diverse backgrounds. Three of these students were from minority populations: [redacted] (African-American), [redacted] (Hispanic), and [redacted] (Hispanic). [redacted] was an incredibly motivated student, and she is now applying for graduate schools in biology. I am continuing to mentor her on graduate school application materials (her CV and personal statement), and will be writing her a letter of recommendation.

I am particularly aware of the challenges and barriers to the advancement of women in science. I have had the opportunity to mentor several other exceptional female undergraduates. [redacted] (intern, 2012) graduated in 2013 and is currently a Fulbright Scholar in Australia studying metagenomics. She is now applying for biology graduate programs and I will also be writing her a letter of recommendation. [redacted] (intern, 2013) recently started a graduate program in bioinformatics at the University of Pennsylvania. She worked on a computational project in my lab, and I also wrote her letter of recommendation for graduate school. [redacted] (intern, 2012) also went on to do a Fulbright Scholarship, and is now in the MD/PhD program at the University of Chicago. I am very proud of the positive role I have been able to play in these student's scientific careers. In addition to direct mentoring in my lab, I have also tried to be a positive role model for female undergraduates in science more broadly. I have spoken about my career path and research at the National Symposium for the Advancement of Women in STEM, and I gave the Joan Wood Memorial Lecture for Women in Science at the University of Indiana. These opportunities have allowed me to interact with and encourage many more women to pursue careers in science.

My work with food is broadly accessible to a general audience, and is therefore an excellent platform to engage and educate the public about science. My past experiences demonstrate my commitment to increasing the scientific literacy of the general public, of people of all ages and backgrounds. I have spoken about the science of food to large, international audiences (World Science Festival, NPR, PBS), and in my local community to people of all ages (Darwin Festival, Life Sciences Outreach Program for high school teachers, and the Children's School of Science in Wood's Hole).

I have received awards for teaching undergraduates and for my efforts in science communication. My skills in communicating complex topics to a diverse audience have, and will continue to be essential to engaging and educating students from a variety of backgrounds.

Planned activities:

As a faculty member, my lab will be a welcoming and supportive environment for training and mentoring students at all levels. To promote the participation of students from underrepresented backgrounds in science, I would like to be involved as a research mentor in the Ronald E. McNair Program and the UC LEADS Program. To promote the participation of women in science, I would also like to serve as an advisor for the Women in Science and Engineering program.

For a broader, and earlier, impact on student's appreciation of science, I would be particularly excited to help develop curriculum for the Elementary Institute of Science program for K-12 students. This would be an excellent opportunity to develop a workshop to teach children about science through food. One possible theme could be the "Science of Cheese." I envision hands-on exercises, such as making mozzarella, which can be used to teach about various aspects of microbiology in a fun atmosphere. I have taught such courses previously, with very positive responses from students.

I am an experienced and enthusiastic public speaker, and I would be very motivated to attend conferences such as the national conference for the Society for the Advancement of Hispanics/Chicanos and Native Americans in Science to perform outreach and recruitment of students to UCSD. I have significant personal understanding and appreciation of Hispanic culture based on my experiences studying abroad in Mexico (through the UC Education Abroad Program, at the National Autonomous University of Mexico (UNAM) in Taxco) and my childhood experiences growing up in an area of California with a large Hispanic population. I think these experiences would make it easier for me to relate to these students, and understand their needs.