

Statement of Diversity. As PI of the UCI Water PIRE, I have leveraged our research program into a number of exciting educational activities intended to inspire young minds from all walks of life. For example, our team runs a 6-week fully paid summer field-based “boot camp” for undergraduates interested in pursuing a Ph.D. in urban water sustainability called the Undergraduate PIRE Program (UPP) Down Under. “UPP” (as we call it) is truly bi-national—students spend part of their time in Southern California (on the campus of UCI) and the rest of their time in Southeast Australia (on the campuses of Melbourne University and Monash University). Twelve students are selected from a competitive applicant pool (last year over 60 top engineering and social science students applied from UCI, UCLA, and UCSD). Starting in mid-June, the UPP students experience a combination of traditional classroom lectures, workshops, field trips, field sampling, laboratory testing, data synthesis and analysis, and scientific writing and conference presentations. Formal evaluation of the program documented statistically significant gains in all four areas of evaluation, including knowledge, education, partnerships, and institutional capacity. Students in the first UPP cohort have done extremely well one year after completing the program. Most are in graduate school, and several have received national prizes, including the prestigious NSF Graduate Research Fellowship. One of the 2014 UPP students (now a graduate student at Stanford University) summarized her experience as follows:

*“Since being exposed to urban water management from UPP PIRE, I’ve found it so fascinating and relevant that it’s continuing to be my focus while in grad school. One of my autumn classes, Coastal Contaminants, is taught by Professor Alexandria Boehm. As Ali is a previous PhD student of yours, Stan, other students and I get to read some of your articles for the class. **What I’ve learned from UPP PIRE this summer comes up over and over again in my classes and discussions.** Thank you again for giving me the opportunity to be part of such a significant and educational program. Not only was it a fun experience, but it was also eye opening in helping me determine my career interests.”*



The 2014 cohort of the Undergraduate PIRE Program (UPP) Down Under, catching air in Melbourne, AUS.

The UCI Water PIRE also targets K-12 students through the graduate student led “H2Outreach”, which organizes guest lectures on urban water sustainability at a number of local high schools (including several serving underrepresented populations) and runs an extremely successful partnership with the Orange County Children’s Water Festival. In a 2014 White House press release entitled, “Lifting America’s Game in Climate Education, Literacy, and Training”, our H2Outreach program was called out for developing a hands-on activity

in which over 1000 elementary school students built and tested their own mini-biofilters. Over 95% of teachers surveyed during the water festival rated it as “very good or excellent”, and one of the teachers noted that, “A group of UCI students had a biofilter activity where the children made water filters out of plastic water bottles, cotton, grass, bark, etc. The children loved it!”

Building on our outreach success, I recently submitted a proposal to NSF's highly competitive Research Experience for Teachers (RET) program with my colleagues at UCI. Several weeks ago we received word that our proposal was selected for funding, and thus community college teachers interested in the engineering, human health, and/or social science dimensions of urban water sustainability will be joining forces with the undergraduates in the UPP program. The overarching goal of the new NSF grant will be to "teach the teachers" at community colleges that serve students traditionally under-represented in STEM, and thereby leverage our PIRE sponsored research and education programs to influence hundreds of students at the critical (and potentially life changing) transition between high school and a four year college.