



*Post-doctoral researcher Dr. Brandon Winfrey (UCLA) trains undergraduate and graduate students to conduct biofiltration experiments at the Monash Biofilter Facility in Melbourne.*

*Teaching Statement.* My teaching philosophy is premised on the idea that the best teaching is informed by the latest research. By bringing research into the classroom everyone benefits: students are better able to grasp the immediacy and relevance of what they are learning, and my own research is informed by the student's reactions and questions. An example of the latter is a Critical Review my colleagues and I just published in the journal *Environmental Science and Technology* entitled "From raintanks to catchments: use of low-impact development to address hydrologic symptoms of the urban stream syndrome" (doi:10.1021/acs.est.5b01635). The paper's genesis was student frustration over the lack of a one-stop quantitative and comprehensive review of how low impact development technologies improve stream health and mitigate the urban stream syndrome (while there are several reviews along these lines, they are tailored for ecological audiences).

Through the NSF PIRE program and the upcoming NSF RET program my colleagues and I are taking these ideas to the next level, by embedding the teaching experience within the research experience (during this year's UPP—an undergraduate focused activity described further in my Diversity statement—we had students collect biophysical data at a biofilter test facility at Monash University in Melbourne), and by emphasizing both the engineering and social challenges associated with urban water sustainability (the UPP students also participated in social science surveys, gauging how Melbourne residents and visitors perceive green spaces). In summary, I believe the formula for teaching success involves three elements: (1) bringing students into the research enterprise; (2) giving them hands-on field experience; and (3) breaking down disciplinary boundaries.

I have been called upon to teach a wide array of courses in both of my departmental affiliations—Civil and Environmental Engineering and Chemical Engineering and Materials Science. I am equally at home teaching survey classes (Intro to Environmental Engineering, Intro to Sustainable Urban Water Systems), traditional undergraduate engineering classes (Intro to Fluid Mechanics, Chemical Engineering Thermodynamics, Open Channel Flow), and specialized graduate courses (Environmental Transport Phenomena, Physicochemical Hydrodynamics). I have also taught abroad at the University of Melbourne, where I held two six-month appointments as Chair of Hydrology and Water Resources in the Department of Infrastructure Engineering. At UoM I taught Introduction to Fluid Mechanics for Civil Engineers, Chemical Engineers, and Environmental Engineers—a class of between 200 and 300 students. I have won a number of awards for my teaching, including the top teaching prize awarded to Assistant Professors across all departments and schools at UCI (UCI Academic Senate's Distinguished Assistant Professor Award for Teaching) and several international lectureships (Chancellor's International Lecture at the University of Melbourne, Croucher Lecture at the University of Hong Kong).