EDWARD JAY WANG | CONTRIBUTIONS TO DIVERSITY STATEMENT

Fostering a truly diverse learning and research environment is difficult and takes far more than just bringing people of diverse backgrounds into the room. Having been widely involved with a variety of outreach and mentorship efforts at the University of Washington, I have learned the limits of many of the efforts and have actively looked for new ways to improve what we are currently doing. My belief in creating long-lasting impact in increasing diversity is grounded in my own experience growing up as an immigrant, slowly shaped by years of mentorship by the people patient enough to pull me up and now as a mentor myself.

When I moved to America at the age of 10, my family moved into a majority middle-income Asian and Hispanic area in the center of LA suburbia. I knew about college and that I had to study hard to go there. I studied hard, learned English, and by high school, became one of the highest-scoring students in my class. I always heard our school district was the worst in the area, but I didn’t know what that meant, nor did I care since I thought “an A is an A, right”? When I was applying for college, I scrolled down the list of potential majors and really didn’t know what anything meant besides Biology, Chemistry, and Physics. I came across a peculiar word, “Engineering”. I looked it up on Wikipedia and thought “What an interesting concept, why hasn’t anyone told me about this?” I flipped through a book of top colleges my father had on the shelf and found some schools that had an Engineering program and ended up being admitted to Harvey Mudd College. On visit days, I was astounded by what the senior students were creating: ultralight honeycomb structures for aquatic use, new biomaterials, intelligent machinery, etc. It was inspiring and sparked my interest even more. The summer before going to college, I looked at my first quarter classes and saw, for the first time, the word “Programming”. So, I went to the library and picked up as many books on programming as I could and took notes about if statements, loops, and integers versus doubles.

Fast forward a few months and my new-found friends all found the courses to be quite hard but not insurmountable. Yet there I was, with absolutely no clue what the teacher was talking about in chaos theory. A few weeks later I failed my first math class. It was devastating. Looking back now, failing the class was almost inevitable. I simply did not have the preparation I needed to take on what was being thrown at me. Fortunately, Harvey Mudd College anticipated this and made the first semester all pass/fail and courses repeatable. I slogged through the first two years, attending every office hour possible and practically doing my homework in front of my professor’s offices. My professors helped me sift through what I didn’t know and explained the concepts that I was “supposed to know” before I came to college. One by one, we patched the lack of foundation. I ultimately made big strides of improvement and semester after semester my grades went up. My own experience in traversing higher education has shaped me in the way I think about efforts in increasing diversity. You CANNOT just take people from different backgrounds, put them in situations of opportunity, and assume they will thrive because of this new opportunity.

At the University of Washington, we have a wide variety of outreach programs from K-12 Engineering Discovery Days to summer long research internships for high school students. I have also given tours and demos to high school teachers from around the area to help motivate the value of engineering and computational thinking. However, after years of participating in these endeavors, I’ve noticed that many of these efforts are limited in its effectiveness in increasing diversity. Many of these programs are only conducted near highly-educated hubs such as university or technology companies. The under-represented communities with low access to these resources still either never hear about these classes or might not qualify because they don’t have enough background to join. Many of these programs have the potential to ultimately create a bigger divide in resources and ability between students of different socio-economic backgrounds. This rift cannot be patched effectively at the college or graduate level even if we strongly focus on encouraging under-represented students to apply and admit a more diverse student body. Although I personally was able to utilize the extra resources provided to me, many of my peers coming in with a similar background were unable to make up the gap. As such, although I believe we should continue with efforts like large demonstration type events and summer programs at universities, it is even more important to take on challenging outreach efforts that reach out geographically beyond the confines of highly educated hubs.

As a graduate student, I have started becoming more involved in broadening participation from these underrepresented groups by accepting students from high schools much further outside of Seattle to participate in our summer internship program (with financial support for transportation) and being a mentor at broadening participation workshops at international conferences. At the International Joint Conference on Pervasive and Ubiquitous Computing this year, I was one of the graduate student mentors for the Broadening Participation Workshop where I interacted with early career graduate students and prospective graduate students from traditionally underrepresented groups. One of the students I spent quite a bit of time mentoring is a student from Bangladesh who is interested in joining a PhD program in robotics. She asked me questions about the application process and for recommendations on potential faculty advisors. This workshop opened my eyes to the potential for having cross-cultural mentorship to help bridge the lack of resources through direct mentorship. As it is unclear to my professors what exactly I needed because they do not share the same background as I do, I also do not have a strong grasp of the educational background and resources my Bangladeshi mentee needs. However, through direct one on one mentorship, I am helping her navigate the rich resources that I have access to. This way, she will be able to provide students with more similar backgrounds even more effective mentorship and encouragement.
As a faculty member, I intend to contribute to diversity by focusing on outreach efforts that reduce regional, ethnic, and socio-economic disparity in academic exposure and access to resources. With international broadening participation programs, it would be possible to help students become connected with potential opportunities while identifying early on what resources they may need before they apply. Around the university, I want to help establish new or amplify existing efforts in outreach programs in underrepresented communities through increasing regional diversity. I am interested in engaging in efforts with K-12 schools about curriculum design/review and teacher training that can help provide more effective learning environments. I have also participated in discussions with policy makers and state representatives in Washington State to talk about the importance of STEM education at all academic levels. I believe that ultimately, for the efforts to have lasting impact, we must collaborate with regional governance. I am excited to continue to contribute to diversity through activism both at the ground level with one to one mentorship to broaden the diversity of the mentorship pool while improving the next generation of educational programs to provide diverse communities with the right preparation to take on challenges in STEM.