Diversity and Inclusivity in Academia

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My first introduction to the challenge and benefits of diversity was growing up in an interfaith household. My family decided to enjoy both sets of traditions, but I also experienced the frustration of not quite feeling like I belong and being 'othered' by more traditional family members. Now, as a leader in my community, I strive to bring diverse groups of people together and make everyone feel equally welcome and valuable.

Gender and Psychology in the (Scientific) Workplace

Growing up, I was very lucky to have unfettered access to a computer at home and a father whose idea of father-daughter bonding was learning about how radios work, composing algorithms, and writing programs. I was proud of my programming skills, and became well known in my middle and high school communities for my technological projects. After my science fair project won an international award, a research scientist in the Princeton University EEG Lab invited me to do additional research on my project in his lab and write my work up for publication. His postdoc helped me polish and submit what became my first publication, a single-author journal article on application-specific wavelet-like filters in the *IEEE Transactions on Biomedical Engineering*.[1]

[1] E. L. Glassman. A wavelet-like filter based on neuron action potentials for analysis of human scalp electroencephalographs. *IEEE Transactions on Biomedical Engineering*, 52(11):1851–1862, 2005

It was not until graduate school that my gender started to catch up with me. I stretched myself into new, unfamiliar research areas and then I started receiving comments from colleagues that attributed my graduate research fellowships (both of them) and my future faculty job prospects entirely to my gender, not my intellect. I became afraid during technical conversations that I was confirming in their minds that I was mentally inferior and only there, working with them, because of my gender. I became withdrawn, and my work suffered.

My early graduate career was saved by the bookstore. Or, more accurately, the wealth of books that summarized the latest academic research from psychology and the learning sciences on optimism, growth mindsets and resilience, as well as bias, imposter syndrome, microaggressions, and stereotype threat. Some books, like *Unlocking the Clubhouse*,[2] specifically addressed the challenges of being a woman in modern computer science programs. These books threw me a life preserver and lifted me out of the specifics of my situation so I could make the necessary changes internally and externally to flourish. *I began incorporating some of these insights into my teaching practices so my students could benefit as well.*

[2] J. Margolis and A. Fisher. *Unlocking the clubhouse: Women in computing*. MIT press, 2003

While we as a society are becoming increasingly familiar with terms like 'imposter syndrome' and how it can trip up otherwise talented and well-prepared people, it is not enough to have a speaker come in once a year to give a talk on the subject to a women's group on campus. I would like to follow the example of Professor Haoqi Zhang at Northwestern, who is incorporating psychological research about mindset and emotional regulation into the curriculum of his classes and the design of his research group mentoring processes. I would like to expand on his efforts and team up with the scientists who are actually doing this research, i.e., professors of psychology and the learning sciences, to create a scientifically valid curriculum for students and best practices for professors, so that the suite of relevant results from psychology inform the

way we, as scientists, support each other and ourselves.

Graduate school is difficult, no matter what one's identity or background. Knowing the psychological traps and supportive strategies is, I believe, the first step to helping students, especially women and visible minorities, recognize and effectively handle challenges when they might otherwise be at risk for dropping out of science and technology altogether.

Creating and Leading Diverse Communities

During the Summer of 2013, I was one of a small group of instructors who, after being selected and trained, went to Jerusalem to teach programming to gifted high school students who were *50% Jewish Israeli, 50% Christian and Muslim Palestinians, 50% women, 50% men, and from both sides of the Green Line.* Each cohort of high school students spends three years learning together, and, each summer, instructors like me teach computer science and entrepreneurship all day for several intensive weeks.

Founded in 2004 by MIT alums, the Middle Eastern Education through Technology (MEET)[3] program is intended to replicate the project-based bonding process that forged strong friendships between MIT students across traditionally difficult political and cultural boundaries. The hope is that students will graduate and become the next leaders of their communities, armed with strong technical and entrepreneurial skills and the ability to work in teams toward a shared goal with people who did not necessarily share their religion, their native language, or their interpretation of history.

[3] The program has since been renamed "Middle East Entrepreneurs of Tomorrow." http://meet.mit.edu/

The program resonated with me because when I arrived at MIT as a freshman, I was immediately accepted into a research group that was evenly split between Muslim researchers from Pakistan and Egypt and Jewish researchers from America like myself. One of the close working relationships I enjoyed in that research group grew into an enduring cross-cultural friendship. I also joined an interfaith dialogue program at MIT, to have even more kind and curious conversations about the intertwined nature of culture and religion. My understanding of the world has changed in a deep way as a result of those relationships. I am gratified to know that, as an immediate result of participating in MEET, similar bonds are forged between gifted high school students who, because of the social and political realities of the region, might otherwise never meet.

MEET taught me that teaching a diverse classroom well can come down to the subtle details. For example, while all of MEET's students are gifted and capable of learning the material, they do not all arrive with the same level of academic preparation. There can be differences in students' confidence and inclination to raise their hands that are correlated with both gender and national identity. As a teacher, I consciously called on a balance of girls and boys, Palestinians and Israelis, so no one would come away with the impression that their teacher was biased against them.

When teaching at a university, I use the same care. Our society continues to struggle with the ramifications of historic oppression and ongoing inequality. I believe that the MEET model is applicable: it can bring students from diverse socio-economic levels and racial categories to solve difficult problems together, building technical skills and empathy at the same time. I would like to explore the creation of such a program within the community surrounding UC Berkeley. In summary, within and beyond the university campus, I will actively construct supportive environments where diverse sets of people work together on challenging problems.