

In retrospect, I feel lucky that I have made my way to become a female researcher in engineering, because that has been my dream ever since I was a child—a dream that might have seemed unrealistic to a girl in an underdeveloped area of China. Since my childhood, people kept telling me that women cannot have a bright future in science and engineering. I also saw fewer and fewer female colleagues as I advanced, since numerous girls who were very talented in math, physics, or chemistry gave up on pursuing STEM majors because of that traditional stereotyping of women.

I realized how a stereotype can affect people's careers when I studied in the Department of Automation at Tsinghua University, where the male students always outnumbered the female students by ten to one. Since then, I have also realized that these unfair stereotypes actually come from the lack of diversity in STEM communities. The fewer females in STEM, the more people believe that females are not good at STEM, so fewer females want to stay in STEM, which forms a vicious cycle.

The gender stereotype is only one of the many biases we are facing nowadays, and **therefore, I am firmly committed to promoting diversity in STEM.** First, a diversified community will break the vicious cycle and eventually eliminate the stereotypes that have been deeply rooted for so long. Second, in a diverse community, one is able to make contributions according to one's abilities, instead of being limited by unfair judgments based on one's gender, race, religion, or social class. Third, as pointed out by many people, a diverse group is often "the source of innovative ideas and creative accomplishments."¹ Given these advantages, I believe that a diverse community is more resilient in the long term, and we should advocate diversity as a crucial goal, especially as educators.

Challenges: We are a long way from achieving acceptable representations in STEM. Although women represent 47% of the workforce, only 12% of engineers are female.² African-American and Latino workers represent 29% of the workforce, but only 12% of the engineering workforce, according to the 2015 U.S. News/Raytheon STEM Index.³ I think there are two main challenges on our way to achieving diversity in STEM.

1. **Diversity awareness.** The first challenge we face nowadays is that many people are still unaware of the diversity issues in our community. When I was a senior undergrad, my favorite professor rejected several female students' requests (including mine) to join his research group, without even interviewing us, because he believed that "girls hardly have a deep understanding in math." This was not an unusual situation but I believe that many people are still not aware of the diversity issues, let alone working to solve them. Therefore, the first challenge we are facing is the low awareness of diversity problems.
2. **From awareness to policies.** Diversity is easier said than done. With continuous effort, more and more people have begun to think about and discuss this problem, but we need to go beyond that: it is important to implement effective policies to address it. Recently, I attended a conference at which I was not able to get a nursing room, even though I requested it multiple times; ironically, the conference had a series of workshops on how to promote diversity in our community. These workshops, of course, discussed important problems and useful approaches in diversity. However, we need more comprehensive policies to show that diversity is not just a slogan, but a commitment that we should make.

Plan: My experience has made me realize the importance of advocating diversity in STEM. Therefore, I have been very enthusiastic in joining others to promote diversity in our community.

1. **Increasing public awareness of diversity.** Since my first year in college, I have volunteered in social activities that aimed at promoting diversity. For example, during my summer vacation in 2010, I volunteered in an

¹University of California Diversity Statement: <https://regents.universityofcalifornia.edu/governance/policies/4400.html>

²"Solving the Equation: The Variables for Women's Success in Engineering and Computing," American Association of University Women (AAUW), <https://www.aauw.org/research/solving-the-equation/>

³"To attract more blacks and Hispanics to STEM, universities must address racial issues on campus," The Hechinger Report, <https://hechingerreport.org/attract-blacks-hispanics-stem-universities-must-address-racial-issues-campus/>

elementary school in one of the poorest minority communities in Yunnan Province, China. Most kids there, especially girls, would drop out after middle school and start to work because that is what their parents expect them to do. Having grown up in a poor area of China, I fully understand how precious the opportunities are for kids there to get more exposure to modern science and technologies, and, more importantly, to realize that the stereotypes they hear about are not necessarily correct. I plan to continue my volunteer activities to increase people's awareness of diversity and break the stereotypes people set for underrepresented groups.

2. **Organizing career-building programs for underrepresented groups.** As a graduate student, I have had the honor of being selected in several academic career-building programs for women and underrepresented minorities, such as the Rising Star in the Fields of EECS program and the CRA Women Grad Cohort. I got a lot of guidance on academic job searching, and I also learned from several senior female professors through their own stories on how to become a successful female professor. This later motivated me to serve as a consultant for the Women in Engineering group at UIUC, because I think it is important to help the younger generations build successful careers in STEM. I will continue my journey and will be actively involved in organizing career-building programs for improving diversity in STEM.
3. **Building people's confidence in learning STEM.** Over several volunteer experiences in both China and the U.S., I have observed that a major obstacle to diversity in STEM is the inequality of access to educational resources and the resulting lack of confidence in choosing a STEM field as one's major. Schools in developed areas always understand the importance of early exposure to STEM and know how to teach it well. However, lots of other schools may not have access to the same resources and students from those areas, as a result, tend to form a stereotype that STEM is intimidating and that studying STEM is not worthwhile. I think that it is critical to help young students clearly understand what STEM is and be aware of the potential career paths ahead of them if they have strong STEM skills. I plan to work with the Education Department in my university to build programs to integrate more STEM into the K-12 curricula and to train professional teachers who can help inspire the next generation to be STEM-competent and STEM-confident.

To pursue my interest in STEM, regardless of the stereotype people set up for women, was an important decision in my life, thanks to the support I received from my parents. Now, as a female researcher in STEM, I feel obliged to make our community more diverse and more friendly to women and other underrepresented groups that are still suffering from the biased stereotypes imposed on them. Even with the increasing public awareness of the diversity issue, the problem is still challenging, and I hope that with our continuous effort, we can build a better STEM community.