Over the years, I have come to understand differences among individuals, and the value that these differences bring when we work together to create ideas and solve problems. At the same time, I realize that individuals encounter different opportunity gaps and barriers in their educational experience.

K-12 Outreach.   Growing up in India, I saw wide disparities in quality and access to education as a result of social and economic factors. Starting from my undergraduate years, I worked with several K-12 educational outreach programs, engaging in activities ranging from raising funds, teaching, assisting in labs, leading programs, creating instructor manuals, and volunteering. When I came to the United States, I continued working with outreach programs to introduce STEM fields such as robotics, maths, and science to elementary and middle school students, and to introduce electrical and computer engineering (ECE) to high school students through the ECE Outreach Spark Saturdays program. These varied roles taught me to adapt my approach to the needs of the educational environment, the backgrounds of students and the constraints of the available resources. I also learned that while on one hand occasional interventions can have a positive role in influencing students and exposing them to new possibilities, on the other hand we require a committed effort to sustain the impact of such outreach programs.

Women in STEM.   As a graduate student, I became increasingly aware of the barriers women face in STEM, starting from implicit biases, the effect of stereotypes on students' confidence, and the impact from the lack of role models. I saw firsthand how other factors such as culture and language could make it harder to navigate these barriers. At CMU, I have been active in outreach to increase the participation of women in STEM. Along with another PhD student, I extended the ECE Outreach program and started a new program called Mobile Labs to take the outreach program to school campuses. We piloted the program in Oakland Catholic Girls High School, and co-led it for two years. We actively sought out female undergraduate students to lead the labs, in topics ranging from programming to microcontrollers, energy harvesting, and audio processing. I felt it was important that students develop confidence with their first ECE experience. For this, we made sure the labs were designed such that students completed concrete tasks. We also added bonus assignments to challenge the students who wanted to explore further. The program created an increased awareness and interest in engineering among the female students. At least one of their students joined CMU ECE's summer program the next year. To introduce engineering to middle-school girls, I have assisted with the Society of Women Engineers (SWE) outreach program where we introduce middle school girls to various engineering disciplines at CMU.

In my experience, I found that participating in events such as Networking Networking Women (N2women) seminars, Graduate Women Gatherings at CMU, and the MIT EECS Rising Stars workshop was helpful as they gave me opportunities to interact with female students and faculty and listen to their perspectives. I organized one such event at the Cyber-Physical Systems week conference and created a forum for students and faculty to come together and have conversations. During my studies, I have taken the time to chat with and mentor several female students informally, about planning coursework, connecting them to research groups, and helping international students navigate the transition in culture. While mentoring students who are a minority in a group, I found that often they are more reluctant to express themselves confidently in these groups, and over time this can come in way of their growth. To help them overcome this barrier, one strategy I have tried is giving them feedback on their presentation. For instance, while working with one student who was not confident about sharing ideas through white-board discussions in a group, we got together and did a mock-up white-board presentation, recorded it on a camera, watched it and identified ways to improve, and iterated the process. Through this simple exercise, the student was able to direct their attention to putting in effort in to presenting more confidently. As a faculty, I would be committed to mentoring female and underrepresented minority students, beyond research and teaching, for their overall professional growth.

Research in Pedagogy.   As a Graduate Teaching Fellow at the Eberly Center, I had discussions about teaching strategies with my peers from diverse departments in CMU, and learned ways in which we can create inclusive classrooms. To understand this in more depth, my peers and I read research papers to understand how factors ranging from the tone in syllabus to the design of peer-based activities impact the classroom climate. Through this process, I learned about stereotype threats in classroom settings, where the existence of a negative stereotype associated with a group can deteriorate an individual's performance when they feel the risk of conforming to the stereotype. As a faculty, I would be mindful about creating explicitly inclusive teaching and research settings. I also educated myself on implicit biases, and took implicit association tests online. As a result, I have become more vigilant about my thoughts and actions, I take initiative towards debiasing my thought process by seeking out counter-examples, and I make an effort to reflect on why these implicit associations or stereotypes got built over time. As a faculty I would create structures in place to decouple biases from fair evaluation based on merit. I would continue to be educated by pedagogical research for creating inclusive environments in teaching and research settings.