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Diversity Statement

As computer science educators we have an obligation to create a space where everyone can feel supported and that they belong. I've been growing in my awareness that my actions as a member of the majority in computer science, even with good intentions, can make others feel that they don't belong. Because of this, I've strengthened my resolve to listen to others more carefully and try to understand where they are coming from. A few years ago while on a business trip abroad, my waiter handed me a spoon to eat my food with, while those native to the area ate with their hands, as was customary with the type of food being eaten. While the waiter had good intentions in giving me a spoon, his doing so highlighted the contrast between myself and the others who were there. While this experience being treated differently because of the color of my skin was harmless, I know this is much different than the experience that others have. Unfortunately, many have the experience of being overlooked for certain careers because of racial, gender, or other identity. While I will never fully understand these experiences, having come from a privileged background myself, I will do my best to listen and understand others, and to be an ally and help all students.

I have experience mentoring undergraduate students from variety of backgrounds to succeed on their research projects, and using teaching methods which help students feel included in class. I plan to continue these teaching and mentoring efforts and engage in research that will increase our understanding of how to help students of all background succeed in computer science courses.

Mentoring students with diverse backgrounds

As discussed in my other statements, as a graduate student I mentored four undergraduate and post-baccalaureate students of various backgrounds on research projects. With each student, I help them to use their unique strengths to contribute meaningfully to research. I keep a list of research projects that students I advise can take ownership of. Different projects on my list require different skills, ranging from educational data analysis, designing user interfaces for learning software, integrating software into existing learning systems, and reading and extracting information from education research papers. Thus, any student I mentor can both contribute in a meaningful way with their own unique skills and interests, as well as have the opportunity to learn new skills.

As an undergraduate student, I felt that I was busy, but between graduating from college and returning to graduate school, I started a family and my time is now far more constrained. I've been very grateful to my advisors who have been flexible with me in allowing me to complete my work in a way that supports my family situation. My advisors have been okay with meeting remotely when needed, scheduling meetings at times that work for me, and giving me feedback well in advance of deadlines so that I don't need to work outside of regular working hours.This experience has helped me to be more compassionate and understanding of the varied personal and family situations of my students, so that I can extend the same flexibility to them. As a research mentor, I've supported my students by helping them schedule research work around midterms and other commitments they have, and helping them obtain the information they need to succeed in all aspects of their career development, such as resolving visa issues.

Supporting Diversity with My Teaching

I care about every student that enters my classroom, and I truly want each of them to succeed. As such, I use teaching methods that help all students learn better, especially those from underrepresented groups. For example, I use active learning methods such as think-pair-share and having students work through problems as a group in class. I also work to make sure that students are placed into groups where their peers help them feel that their opinions and contributions are valued. I plan to implement course policies that avoid unnecessary burdens on students, such as allowing them to submit a few assignments late per semester without penalty, and making sure to let them access professional development opportunities they need. In my teaching statement I give further detail on how I support diverse students in my classrooms.

Supporting Diversity with My Research

Meta-analyses on CS1 Interventions for Broadening Participation in Computing Over the last few decades, various interventions have been tried for improving diversity, equity, and inclusion in CS1 courses, such as peer instruction and spatial ability trainings. A notable missing piece from the research literature is meta-analyses on these topics. Meta-analyses are an important part of education research to ensure replicability and generalizability of results, and to estimate their average effects over many studies. Over the next few years I will be performing meta-analysis of a few of these topics in order to better quantify their effects, helping inform better policy decisions for ensuring diversity, equity, and inclusion in computer science.

Accessible software for math education People with disabilities, including people who are blind or visually impaired, are underrepresented in computing. I am working on building accessibility features into Proof Blocks so that people who are blind or visually impaired can also enjoy the benefits of interactive tools for computing theory education. This work is informed by my prior work on accessibility features for mobile apps when I was a software developer at Amazon, where I worked with blind individuals to ensure that they were able to access and utilize all features of the app through screen reader controls. My background in accessible software will also help me to teach students to write inclusive and accessible software.

Women in (discrete) math Research has shown that women are less confident in their abilities in a calculus course than men, even when they are equally skilled. This lack of confidence in their abiliites, even when they have them, can harm their feeling of belonging in STEM majors. Does the same hold true for women in introductory discrete math courses in computer science departments? Along with my other discrete math-related education research, I hope to investigate the impact that the course content has on people from different demographic groups, and things that can be done to improve the situation.

Conclusion

I have been growing in my awareness of how I can make my classrooms more inclusive, and make computing education more equitable. I seek to continue to learn and improve. In my research, I contribute by giving individualized support to each research student, and by pursuing research, such as CS1 interventions, that will help with diversity, equity, and inclusion.