

Diversity, Equity, and Inclusion

I have focused my DEI efforts primarily in three areas: early-stage student mentorship and recruiting; hiring; and teaching. First, computer science is said to have a *pipeline* problem, in which advanced programs are less diverse than programs for earlier-stage students. To make progress toward addressing this problem, while I was a Ph.D. student, I worked with faculty members who organized a Research Experience for Undergraduates (REU) program to choose students to recommend to potential research supervisors from among the applicants. I also mentored eight students (four of whom were from underrepresented groups) through this program over five summers. Their work was published in several academic papers, and two of the students won second place in ACM SPLASH student research competitions. I also recently mentored four Maryland high school students who were interested in research. I have also mentored students through the ACM SIGPLAN Programming Languages Mentorship Workshop (PLMW) and the Technica hackathon, which focuses on underrepresented genders. By working with earlier-stage students, I have been able to recruit a gender-balanced and socioeconomically-diverse group of research assistants.

The gender imbalance is worse than it might appear if one were to compare to a 50/50 ratio: about 60% of US undergraduate students are women [NSCRC], but 21% of CS bachelor's degrees are awarded to women [Taulbee]. However, other kinds of diversity are important as well, and the lack of diversity in CS hampers innovation by excluding insights from those who might otherwise drive the field forward. At Apple, I saw the benefits of the diversity that we *did* have on the team. For example, I consulted with people who were from other parts of the world to understand how to make the software work for them. How do dates work in Japanese? How should tables, which in English documents have an origin at the top left, work in right-to-left languages?

Each context offers opportunities for DEI contributions. In serving on the CMU CS Department Faculty Search Committee and the CMU School of Computer Science Dean Search Advisory Committee, I worked to ensure that job applicants were interviewed by a diverse collection of interviewers, that interviewers selected questions wisely, and that all interviewers' perspectives were taken into account fairly in the discussion afterward. In the classroom, I am careful to choose examples and contexts that are inclusive and diverse. I choose application areas whose appeal does not depend on traditional stereotypes of what computer scientists like to build. I am particularly careful to ensure positive group dynamics for team class projects, intervening as needed so that all students establish inclusive, equitable work methods.

I look forward to continuing to promote diversity in the Ph.D. student pipeline by promoting diverse undergraduate involvement in research. I plan to create REU programs of my own as well as recruit local undergraduate students. By inviting students to join in research early rather than hoping that they will apply to graduate school, I will tap a more diverse population and enhance the diversity of the incoming Ph.D. student population. Finally, training is an important component of a diversity plan; I will seek and expect those whom I supervise to seek training as we learn more about how to make sure that the field of computing is open and welcoming to all.

In conclusion, diversity, equity, and inclusion are critical to the future of computer science. By recruiting through programs for earlier-stage students, such as REUs, I have made a significant impact on students who might not otherwise have had access to high-quality research programs. By actively addressing diversity-related problems in courses that require teamwork, I helped students have more positive experiences in class as well as build better teamwork skills. I will continue to work to promote diversity, equity, and inclusion and to directly support those who have not always assumed that they belonged.

References

[Taulbee] 2020 CRA Taulbee Survey. <https://cra.org/wp-content/uploads/2021/05/2020-CRA-Taulbee-Survey.pdf>

[NSCRC] https://nscresearchcenter.org/wp-content/uploads/CTEE_Report_Fall_2020.pdf