# Diversity Statement

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While several STEM disciplines reflect the diversity of society as whole, computing fields have tended to exhibit significant to severe underrepresentation of women and many minorities. As an academic in a computing implementation field, I see this imbalance reflected most clearly and acutely in the population around me at academic conferences, on faculty rolls, and in graduate programs: the 2017 Taulbee Survey[1] shows that only 18% of CS PhDs go to women. In-depth data released with the 2015 CRA Taulbee Survey[2] showed that women accounted for 19.7% of all computer science PhDs from 2008 to 2013, and only 14.2% of PhDs in Programming Languages and Compilers, and 14.4-17.2% of PhDs in the related systems fields of Operating Systems, Information Assurance/Security, Networks, and Hardware/Architecture. Computing communities often have members of URMs at even lower rates than women. This imbalance tends to be further reinforced at each subsequent stage of education and career pipelines.

Efforts to broaden participation in computing require not only building interest, recruiting, or mentoring among underrepresented populations starting early in the educational pipeline and continuing into career development, but also effecting change to computing communities to make recruits from all backgrounds feel valued, respected, and supported. As I mentor, train, and develop future researchers and leaders in computing locally in the near term, a long-term goal is to give my mentees the space, skills, and support to grow, achieve success, and find value in computing careers where they will serve as role models and community builders, in turn achieving larger impact on participation and inclusivity than my short-term efforts.

## Institutional Resources

The University of Pennsylvania (Penn) is an R1 institution and a Pacesetter for the National Center for Women in Information Technology (NCWIT), serving graduate and undergraduate students in a prime location to reach a diverse population of local high school students in Philadelphia. I have built on these resources to, for example, volunteer at local high schools' Career Days to discuss computer science careers, teach a mini-lesson at Penn's annual Women in Computer Science High School Day for Girls (discussed in my Teaching Statement), and to help recruit and retain women within the department.

At Penn, the CIS department hosts Tuesday night "study halls" for URM students where they can bond over their academic work and have access to tutors from the same community. Approximately 24 computer science and computer engineering majors participate in study hall each week, and it has served as a recruiting platform for TAs and peer leaders in many capacities. The study hall focuses on 1st and 2nd-year courses, and

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[1] S. Zweben and B. Bizot. *2017 CRA Taulbee Survey*. CRA Computing Research News, vol. 30, no. 5. https://cra.org/wp-content/uploads/2018/05/2017-Taulbee-Survey-Report.pdf

[2] S. Zweben and B. Bizot. *An In-Depth Examination of Data and Trends Regarding Women in Computing*. 1 September 2015. https://cra.org/wp-content/uploads/2015/01/Data-Trends-Women-in-Computing-Sloan.pdf

the 2nd-year computer organization course in particular is a good segue into the systems-focused projects in my group.

I plan to extend the study hall "pipeline" and recruit underrepresented students to join my research group, with the help of Dr. Rita Powell, the CIS Department's Director of Diversity and Belonging. These undergraduates will be part of my department's existing undergraduate research community, which features monthly research and graduate school presentations, an annual poster session, and help with securing conference funding.

This year my department is applying for an extension of a previously-awarded Google exploreCSR (Computer Science Research) grant to spur women's participation in undergraduate research. I am planning to join the Penn contingent along with faculty from Bryn Mawr College and Swarthmore College. The project will focus on matching students with faculty research projects and providing them with workshops on attending graduate school and the skills they will need to be successful in a computer science research career.

## Student and Post-doc Mentoring

I have served as a mentor for many of my undergraduate, Master's, PhD and postdoc collaborators. At Penn, I have worked hard to build a diverse research group, with one woman and one member of an underrepresented minority at present. Two additional women joining in Fall 2019 which will actually bring my group to half women this fall. Percentages belie small absolute numbers, however, and I am eager to continue our community's work to improve diversity and inclusion.

To assist with student retention and mentoring, I regularly encourage and fund students to participate in relevant PhD student mentoring workshops. I have recently sent students to the 2018 CRA-W Graduate Cohort, the Verification Mentoring Workshop at CAV 2017, and the Programming Languages Mentoring Workshop (PLMW) at PLDI 2018, and will send a student to the upcoming 2019 ACM Richard Tapia Celebration of Diversity in Computing.

I am especially proud of the achievements that my mentees have gone on to achieve. Three master's students that I introduced to research are now pursuing their PhDs in computer science at the University of Michigan, the University of Washington and New York University, respectively. Nicole Limtiaco, a talented junior undergraduate in my group, went on to win my department's Wolf-Hallac Award for her academic achievements. Brooke Fugate, a former PhD student, won a 2014 Microsoft Graduate Women's Scholarship. Omar Navarro Leija, a current PhD student, is an NSF Graduate Research Fellowship winner. William Mansky, a former postdoc collaborator, is now an assistant professor at the University of Illinois at Chicago. Christian DeLozier, a former PhD student, is now an assistant professor at the US Naval Academy.