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# Diversity, Equity, and Inclusion Statement

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**I believe diversity, equity, and inclusion (DEI) should be core values in academia.** Diversity has a variety of concrete benefits, like having a wide variety of perspectives and life experiences guide research directions. But, more importantly, I view increasing diversity as a matter of justice for historically marginalized groups. With that said, I think many DEI efforts improve the academic climate in ways that help everyone, not just underrepresented groups, a phenomenon Blackwell [1] calls the “curb-cut” effect.

While I have participated in outreach programs<sup>1</sup> and used inclusive teaching practices throughout my academic career, I only began treating DEI with the priority it deserves relatively recently (§1). Since doing so, I have been one of the main contributors to a major DEI initiative in my department, namely designing and teaching a course on DEI (§2). Through getting involved and my own study, I have learned a lot about DEI topics (§3). Together, these influence my future plans for advancing DEI (§4).

## 1 Getting Involved with DEI Efforts

I am starting this document with the story of how I got involved for two reasons. First, it clarifies the scope of my involvement in the main DEI initiative I have been a part of. Second, reflecting on the way I got involved has shaped my views on how to get others involved in the future.

**How I Got Involved** I serve on my department’s Doctoral Review Committee, which manages PhD program policies. In March 2021, CMU PhD student Bailey Flanigan gave a presentation to the committee describing a DEI initiative which was undertaken by herself and a team of PhD students she led. The initiative was a three-session pilot course on DEI topics, which all of the department’s first-year PhD students were required to take. Despite it being mandatory, student feedback on pilot was very positive. Flanigan and the team she led were planning to design a full version of the course for future years.

I had the following reactions to Flanigan’s presentation:

- “I wish I had taken this course. I could have learned a lot from it.” (It was only offered to first-years.)
- “I think any STEM department could benefit from everyone taking this course. When I become a faculty member, I should start a version of the course in my department.”

I concluded that joining the team behind the DEI course was the best way to increase my own knowledge, prepare to teach a version of the course in the future (§4), and have a positive impact in the meantime. I asked Flanigan how I could best help, pitching some specific ideas but being open to whatever would be most helpful. The result was that I joined the course development team and led the implementation of one of my ideas: running a pilot of the full course (§2). I also joined my department’s DEI committee (§3).

### Takeaways for Getting Others Involved

*Publicly Highlight DEI Efforts* Seeing Flanigan’s presentation prompted me to get involved, but I only saw the presentation because I was on a committee. More publicity could prompt others to join the effort.

*Welcoming Newcomers* The DEI course development team was welcoming to new contributors. There was a common understanding that everyone was at a different stage of learning and that not being an expert was okay. I think welcoming newcomers is important, because I experienced the following virtuous cycle: caring about DEI pushed me to get involved, and being involved made me care even more about DEI.

*Not Everyone Needs to Lead* When it comes to research, incentives in academia encourage everyone to become an intellectual leader in their own domain. But one does not need to be a leader or world expert to contribute to DEI efforts. There is value in showing up, actively listening and learning, and letting more

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<sup>1</sup>Specifically, as an undergraduate at MIT, I organized and taught in a number of middle- and high-school outreach programs through the MIT Educational Studies Program. One such program, Cascade, was for students in local underserved communities.

experienced contributors guide one's efforts in a direction that has positive impact. I think this mindset is especially important for those in privileged identity groups, such as myself, because one is unlikely to know what is best for an identity group one is not part of.

## 2 Designing and Teaching a DEI Course

I was the instructor for the inaugural run of CMU 15-920, a six-session course on DEI topics and their implications for computer science academia. I also served on a team of 14 PhD students that developed the course, making significant contributions to the course's detailed lesson plans and homework prompts. I first briefly describe the course and its content before highlighting the areas in which I contributed most.

**Course Goals, Content, and Format** The immediate aim of the course is to give its students a baseline understanding of DEI concepts, build their confidence having conversations about DEI, and understand their own roles in creating a more diverse, equitable, and inclusive academic climate. The eventual goal is to make the department's culture more inclusive over time as more and more students take the course. To this end, the department faculty recently voted to make the course required for first-year PhD students.

The course consists of six sessions, each of which has a focus topic: (1) introducing DEI, (2) systemic inequality, (3) stereotype threat, (4) microaggressions, (5) mental health and boundaries, and (6) allyship. After reading about the topic for homework, in class, students engage in group discussions, connecting the readings to their own lived experiences and everyday academic activities. For example, one in-class discussion prompts students to consider how stereotype threat might affect how students fare when a mentor "throws them in at the deep end" when starting a new research project. Each session after the first also has a guest lecture given by topic experts from the CMU community.

### My Contributions

*Teaching the Course in Fall 2021* First and foremost, I took on the responsibility of teaching the first run of the full six-session course in Fall 2021. As the instructor of the course, I gave the introductory lecture, recruited guest lecturers from the CMU community, handled course administration, moderated in-class discussions, graded homework, and conducted post-course interviews with students. Our enrollment ended up being small, with just five students after drop date. But running the course resulted in a lot of helpful feedback that will improve the course. Our feedback so far suggests that the course does a good job getting students to think critically about DEI and consider how they might improve their academic climate, though there are of course plenty of improvements planned for next time. The course is now required of first-year PhD students, so these improvements will directly impact 20–30 students per year.

I contributed 95% of the effort of running the course and managing logistics. But I should emphasize that teaching the course was possible in the first place only because the course development team had collaborated to create a thoroughly detailed course curriculum.

*Curriculum Design* Different people on the team took ownership over different parts of the curriculum. I mainly worked on the in-class lesson plans for lessons on systemic inequality (my contribution: 50%) and stereotype threat (my contribution: 30%). For instance, I conceived of and co-wrote the aforementioned prompt on "deep end" mentoring. I also created the course's introductory lecture, which motivated the course with data on representation disparities and introduced key definitions (my contribution: 100%).

## 3 Other DEI Activities

**National Academies Summit on DEI and Anti-Racism** In June 2021, I attended a virtual summit on DEI and Anti-Racism in STEMM run by the National Academies of Sciences, Engineering, and Medicine [9]. This was my first exposure to cutting edge research on the DEI topics, and I watched and took notes on many great talks. I noticed that several interventions that improved the representation or achievement of those in marginalized groups *formalized a process that would otherwise be informal*. Two speakers who

highlighted variations on this theme were Frank Dobbin, who discussed formal mentorship and referral programs, and Claude Steele, who discussed a formal PhD orientation program in UC Berkeley's chemistry department. It makes sense to me that informal systems can leave more room for bias, e.g. "old boys' clubs" cementing existing inequality in referrals.

**Serving on the DEI Committee** I served in my department's DEI subcommittee, and more specifically on the four-person subcommittee on faculty hiring. Motivated by research showing that using rubrics with specific evaluation criteria can reduce bias [10], the subcommittee designed a rubric that will be used to evaluate faculty applications. This is another instance of formalizing a process to combat bias.

## 4 How I Will Prioritize DEI Going Forward

**Establishing a DEI Course** One of my specific motivations for getting involved in designing and teaching the DEI course (§2) was to build the expertise I need to recreate it as a faculty member. I fully intend to do so. I expect to teach the course myself at least initially, aided as before by guest lecturers from the community. But I hope that it will eventually become an established part of the department, and perhaps even a first-year student requirement.

**Fostering Psychological Safety and Social Belonging** Research from academia [3] and industry [11] suggests that psychological safety is a dominant factor in determining performance of teams, in some cases more so than the exact skill sets of the team members [6]. In the interest of helping all of my group members, and particularly in the interest of combating stereotype threat, I aim to create a research group where everyone feels supported. One pillar of this will be fostering social belonging, which has been shown to help mitigate stereotype threat [8].

Here are some specific strategies I plan to use to create a supportive environment:

- I will *emphasize to my group that I value DEI*. My door will always be open to discuss obstacles to inclusion with my group, even if those obstacles are related to my own implicit biases.
- I will *value a wide spectrum of traits and research skills*. These include work ethic, clear communication, and being a team player. I will not treat technical background as the sole indicator of research potential.
- I will *create structures for group members to support other*. These might include having a weekly group lunch, maintaining a wiki or similar knowledge base, and scheduling formal practice talks that the whole group typically attends. While these support structures would be to everyone's benefit, I see them as another instance of the theme of formalizing systems to reduce bias and increase equity (§3).
- I will *make ample time to meet regularly with my group members*. Research can be a struggle for everyone, and regular meetings reduce the amount of this struggle that must be borne alone.

I am also eager to try some of the "lab counterculture" strategies outlined by Hammer et al. [5].

**Creating Undergraduate Research Opportunities** Doing research as an undergraduate is virtually required to pursue an academic career. I aim to create opportunities for undergraduate students from all backgrounds to try their hand at research in my group. I anticipate applying for additional funding through programs like NSF REU and NSF CISE BPC to support this.

**Fully Committing to Service, Especially in DEI** Recent studies show that in STEM academia, service burdens fall disproportionately on those from underrepresented groups [4, 7]. I believe service, and in particular DEI-related service, should be everyone's responsibility. I will continue my service in DEI. This may entail joining DEI committees at the department or school level; participating in mentorship programs in my field, e.g. through ACM SIGMETRICS; and bringing DEI considerations into my service on other committees, e.g. student admissions or faculty hiring. In addition, I plan to actively encourage those in my research group to devote time and energy to DEI-related service.

**Staying Informed** I will remain informed about latest efforts to create more inclusive academic STEM environments [2, 5, 12]. I hope to replicate strategies that succeed in other research groups and departments.

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