Combined Diversity and Inclusive Excellence Activities Statement   **Madeline Endres**

Starting as a cello major, I took my first computing course on a whim—I liked the creative aspects, but I was pretty sure computing wasn't for me. However, a strong mentor looked past my background, encouraging me to become her teaching assistant and continue in the field. This contributes to my belief that innovation in computing is strengthened by including those with less-represented backgrounds or pursuing non-traditional paths. At Michigan's Department of Computer Science and Engineering (CSE), I furthered departmental initiatives including co-organizing a diversity-focused speaker series and co-designing inclusivity training for student instructors. I also support diverse groups in my research, including by identifying gender bias in student-teacher evaluations and increasing student involvement in open-source software for social good.

Organizing and Hosting a Diversity-Focused Speaker Series: I am one of two co-organizers for CSE's Faculty Allies Speaker Series. Started in 2018 and funded by both the department and graduate college, this series supports the many CSE students interested in less-discussed computing careers (such as an interdisciplinary start up, teaching-focused academia, or government labs) not always prioritized by standard advising. Since starting in late 2022, I have successfully revived the series after a COVID-19 pause, hosting one speaker in Spring 2023 with a second scheduled for early 2024. Successfully running such an initiative requires deliberate speaker selection, strategic event publicizing, and collaborative logistical planning.

When vetting and inviting speakers, I prioritized candidates with non-linear careers who straddle the academic/industrial boundary, encouraging speakers to spend a third of their talk on career-related questions. This focus was reflected positively in attendee feedback, as career advice was the most commonly-appreciated aspect of the event. One student attendee elaborated, reporting that they "liked that the speaker drew on her own experiences and that the trajectory of her career, like her shift from crypto in academia to the real world stock market, wasn't always clear or direct because it made me feel a lot better about exploring new career paths". To publicize the event to students who could benefit from additional career-related support, I reached out to computing faculty who teach courses with an interdisciplinary emphasis. I also organized small group meetings with the speaker for students who either had a similar research focus or were members of diversity-focused student organizations. This targeted approach was a success: I filled all small group meeting slots, and the talk itself was attended by over 70 people, with in-person attendees filling the largest appropriate room in the building. All 33 respondents to the feedback survey I designed and distributed were either somewhat (12%) or extremely (88%) satisfied with the event.

My experience has taught me that a focus on logistics is necessary for successfully hosting an external speaker, especially when coordinating with student attendees who may think visiting speakers are not for them. As co-organizer, I worked closely with full time staff and faculty to ensure the event ran smoothly at all levels, from travel logistics to communicating with attendees. This careful planning, combined with routine feedback collection, helped ensure the series' sustainability as a valuable, ongoing resource for inspiring and guiding diverse computing careers.

Sustainable Inclusive Teaching Training for Student Instructors: I have also helped provide Inclusive Teaching Training for CSE's student instructors. Michigan has a large undergraduate computing program (over 1,500 students matriculate each cycle). Discussion sections are often run by students, many of whom are first time teachers with limited university-provided training. Departmental climate surveys and faculty reports have identified this training as insufficient for fostering an inclusive learning environment. In 2019, CSE received support from the provost's

office to provide supplemental computing-specific training. Due to my extensive experience as a student instructor and my knowledge of best practices from serving as an engineering teaching consultant, I was a natural fit. I co-designed the initial curriculum and facilitated training sessions.

When designing the initial curriculum, I adapted research-backed practices I'd seen at workshops hosted by Michigan's Center on Research for Learning and Teaching to a computing context using both recommendations from the research literature and my own teaching experience. Initial topics included mitigating imposter syndrome, combating stereotype threat, and fostering a growth mindset. I made sure to provide citations underscoring the importance of inclusivity to attendees. Even so, discussions around diversity can be challenging. I have found that sensitivity via both up-front acknowledgment of this challenge, along with empathetic moderation, helps me effectively facilitate confidential conversations on nuanced topics. My facilitation style fosters an open and productive environment where attendees express vulnerability, recount their own negative experiences, or even share situations that they believe they could have handled better. This focus on diplomacy was also relevant at the organizational level where it helped me navigate meetings balancing the diverse perspectives of the provost's office, departmental faculty, and fellow students.

Inclusive Teaching Training is now offered every semester, including past the end of my involvement in 2023, and has served almost 800 students. Through my experience, I have found that integrating scholarship-supported best-practices, focusing on sensitivity, and diligently adjusting to feedback all help build a sustainable and impactful initiative. I have also learned that no diversity intervention is perfect in its initial offering (in fact, the perfect often does not even exist due to limited resources). However, I firmly believe in not letting the perfect be the enemy of the good: To improve the quality of our curriculum and foster the initiative's sustainability, we collected significant feedback at each training session. Attendees with more teaching experience wanted a forum to discuss specific issues they had encountered. We thus added a second discussion-focused workshop for those who had already taken the initial training. This advanced course was well received, with an average rating of 4.52/5 from attendees who found it "helpful to learn about other people's experiences and methods of solving problems they've encountered." The department included the training expansion in its publicly-available annual climate report.

Diversity-Focused Research: I also strive to improve the climate in computing more generally through my research. I deliberately pick topics that have the potential for direct broader impact. For example, in coordination with CSE's Diversity Committee, I analyzed student-teacher evaluations across the College of Engineering to investigate gender bias. While we did not find any evidence of bias for engineering professors overall, we did observe significant differences for several departments, including computing: Women professors consistently received 7% worse numerical teaching evaluation scores than did men. Beyond publicly publishing our findings [17], on a more personal note, I have had multiple women professors or graduate students reach out to me about using the results to contextualize their own evaluation scores when applying for faculty jobs or promotions. My results have also been used on other internal committees in this context.

I use my research to not only identify barriers faced by traditionally-underrepresented groups, but also support the development of computing projects that directly benefit society. For example, I researched a intervention in a software engineering course that encouraged student contributions to open-source projects for social good [11]. This initiative succeeded, directly leading to dozens of accepted contributions to social good projects and receiving a distinguished paper award at FSE.

In my PhD, I worked to support those with non-traditional computing paths. I have led sustainable student-, teacher-, and faculty-facing initiatives, and I hope to use the skills that I gained to continue to support diverse computing groups and non-traditional computing paths as a Professor.