Computing-related majors and careers have long-standing issues with diversity. It is essential to both understand problems of diverse populations and then act to eliminate barriers that keep them from having the same opportunities as their peers. Beyond recognizing diversity as a problem for computer science as a whole, it also deeply matters to me personally. Especially as I do not belong to a diversity group, I continually educate myself by reading books and blog articles on the subject and having frequent conversations with my underrepresented colleagues. Below are some of my experiences attempting to foster inclusivity.

**Recognizing Diversity in All Forms.** Diversity comes in many forms, and I have been careful to avoid assumptions about student identity based on minority status before more closely understanding their situation. Even students who are apparently in the majority may have issues such as learning disabilities that make them part of a diverse group. For example, at the beginning of my programming languages course, I reached out to all students to assess how their identity might affect the course for them, I provided the opportunity for anonymous feedback as well.

**Work to Promote Fairness and Inclusion in the Classroom.** Students may have different needs based on their backgrounds. For example, not every student will come from a background that supports their computing education before they enter university education. One way I have assussed this concern is to make classes self contained to the extent possible. For example, in giving explanations to students during class I have avoided drawing upon material—such as references to programming languages or frameworks—that has not been covered in prerequisite courses but which may be familiar to students privileged with a background in computing or who do it as a hobby. My colleagues and students have told me these references made them feel that they were implicitly behind other students. I emphasize that a background in computing is not necessary to be successful, and actively point out role models who lacked this background.

Encouraging inclusivity in classes requires an environment where students feel they will be heard. Rather than soliciting answers from any student in class—which literature shows discourages women and minority participation—I began to break students into groups to discuss questions and sample students to answer. When forming groups for projects or discussion, I assigned groups based on mutual project interest. This strategy worked well in classes: instead of only majority students (frequently men who sat in the front of class) answering questions, students who had been previously more reserved (frequently women and minorities) began to participate as well. I was also happy to see this led to diversity outside of the classroom (e.g., in forming study groups) as well.

I have actively worked with underrepresented students to ensure course logistics do not hinder their participation. For example, a student was falling behind with projects in my programming languages course and stopped showing up to class. I immediately talked to this student to push them to make a plan to get on track with course material. In this case, the student felt unsure of themselves because other students appeared to have much more experience than they did. We came to a fair compromise that allowed them to make up assignments for partial credit and they successfully passed the class with a much improved grade on the final exam.

I emphasize to students that I want to see them succeed, and am willing to work with them to make this happen. For example, in my programming languages course I had a student that I realized was supplementing their tuition with a job outside of class. At one point, this interfered with an exam date. I worked with the student to arrange to make up the test at a different time that accommodated their work schedule.

**Support Inclusion through Mentorship and REUs.** Along with changes to course structure and content, working directly with minority students increases their confidence and feeling of belonging in the field. I plan to reach out to talented students—working to include students in diverse groups—and mentor them either through research or serving as an informal advisor. This can be as simple as sending them notes of congratulations for good grades on assignments, but can also take the shape of formal mentorship in research.

I have mentored multiple students students as part of REU programs and summer research for high school students. These programs offered me a great opportunity to mentor students more closely than during the term. The students I worked with have said the experience has made them feel more confident in their abilities and more comfortable approaching faculty for help. One student even said the experience gave them the confidence to pursue a STEM major when they had previously been uncertain. This student successfully graduated and is now a successful software engineer.

Last, I realize that biases are often established long before students select university majors. I plan to engage in outreach to local high schools. I have worked with high school students in the past, and they have said their experiences deeply informed their decision to pursue computer science. I believe this experience helps advocate for underrepresented students to encourage their pursuit of computing, and allows them strong sources of references when they eventually apply to universities.

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**DIVERSITY STATEMENT**

Kristopher Micinski (micinski@cs.umd.edu)

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http://cs.umd.edu/~micinski/application