

Diversity Statement

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Each of the following statements encapsulates one of my beliefs about diversity, equity, and inclusion followed by (1) an identification of a barrier to success for members of underrepresented groups, (2) strategies I have implemented to reduce these barriers, and (3) my related future plans.

1. Members of underrepresented groups should be proactively included in leadership positions.

In order for students to envision a future in which they can fully participate in the mathematics community, it is crucial that they can identify with mathematicians they see in positions of authority. For this reason, when ICERM, a mathematics institute, invited me to propose an REU and to suggest a co-organizer, I suggested Diana Davis. Foremost, Diana Davis has a wealth of experience in facilitating undergraduate research. But additionally, I wanted to ensure that, if our proposal was accepted (which ultimately it was), the participants would experience mathematics under the direction of a talented female mathematician. In this vein, when I volunteered to teach an undergraduate research course at the University of Michigan, which is typically taught by one instructor, I made the irregular request to co-teach with a female colleague. Similarly, when selecting TAs for Summer@ICERM, ensuring gender parity and representation of people of color was one of our main objectives. I am committed to continuing to find ways, even irregular ones, to include members of underrepresented groups in leadership positions.

2. We must proactively ensure equitable representation of all groups in the mathematical spaces we create.

When selecting applicants to participate in each of the four undergraduate research experiences that I have helped to run, it was important to me to select a roughly equal number of male and female participants. At Summer@ICERM, where I had the most control over the admissions process, it was also important to me to make first-round offers to people of color and first-generation college students. My co-organizer and I wrote to these individuals personally to encourage them to participate in the REU. Our proactive measures succeeded in producing a diverse cohort. I will continue to proactively work to ensure diversity in mathematical spaces that I help create.

3. Voices of underrepresented groups and younger members of the community should be amplified.

When I teach or run a research experience, I like to survey students roughly every other week to solicit suggestions for improvements. In situations in which I have worked with TAs, I have also had them participate in planning and organizational discussions. In fact, the idea to have talks on “impostor syndrome”, “strategies for finding mathematical support systems”, and “mathematical microaggressions” in our professional development seminar at the Summer@ICERM REU came from TAs! These optional talks were attended by all participants and helped to reinforce the belief that everyone can do math. It is often clearer to people with less power the ways in which the community can behave more responsibly and I will endeavor to amplify these voices.

4. The achievements of members of underrepresented groups should be broadcast widely.

In my field, two of the most consequential results were established by women - Marina Ratner and Maryam Mirzakhani. I have given lectures about their work to audiences of non-mathematicians at the Association of Women in Mathematics Symposium and at Math Circles, an interactive event designed to share the joys of mathematics with high school and middle school students. When I find myself with the opportunity to celebrate the success of members of underrepresented groups and to share my enthusiasm for mathematics with the general public, I will take it!

5. A greater effort should be made to include individuals with less strong mathematics backgrounds into our community.

One of the aspects that attracted me to LoG(M), the Laboratory of Geometry at the University of Michigan, is that it is a research experience designed for students with less background than traditional REU participants. One of the premises of the program is that by making research accessible through a focus on computation and experimentation, we can include individuals in the mathematics community who have less mathematics training. Since access to mathematics training is often a form of privilege, reducing the barriers to conducting research is a means to broaden the mathematics community to more underprivileged individuals. Indeed by the end of our LoG(M) program, our team of students, some of whom had not taken a mathematics course beyond linear algebra, implemented an algorithm for determining whether a square-tiled surface has a convex presentation that we were able to share with the broader community. I am committed to participating in such programs in the future.

6. Including underrepresented minorities in positions of power helps to support students. An illustration of this principle happened this past summer at an REU that I organized. One of the participants was a talented female student. Throughout the summer I communicated my excitement about her work. During the last week of the program, a female TA communicated to me that this student wanted to ask me for a recommendation, but feared that her work was uninteresting and that I only complimented it to be nice. I told the TA that the work was genuinely impressive and that I would be delighted to recommend this student. Ultimately, the three of us met and I agreed to recommend the student. My impression from the situation was that, had we not striven for gender parity in our TA hiring, my student may not have felt comfortable confiding her self-doubt in a mentor. I am committed to including members of underrepresented groups in the mathematical spaces that I have a role in creating.

7. Mathematicians should repudiate the fallacy that bias and microaggressions do not plague our “objective” field. The mathematician Francis Su defined “mathematical microaggressions” to include using phrases such as “trivially”, “obviously”, and “you either get it or you don’t” that often trigger feelings of self-doubt or inadequacy. These phrases can exacerbate the sense of not belonging that many members of underrepresented groups report feeling. Moreover, these phrases tacitly communicate a preference for students who have already mastered the material under discussion. A stronger educational background is unfortunately correlated with economic privilege and so this micro-violence disproportionately affects those from underprivileged backgrounds. One way that I try to improve the situation is by beginning my courses with a conversation about norms of mathematical communication, which include avoiding microaggressions. When someone lapses in class, I ask them to rephrase. I am committed to holding myself to a high standard with respect to the messages implicit in my speech and I will encourage those around me to do likewise.

8. We must be intentional about respecting others.

As an example, before the start of our program, several Summer@ICERM participants had identified themselves as non-binary. In order to ensure that these students would be comfortable, on the first in-person day of our REU, Diana Davis and I brought pronoun stickers and asked every student to affix the ones to their name tag that they would like others to use. Thoughtfully approaching our interactions with the community can help everyone feel supported and I commit to doing this in the future.

9. We must be candid with students about issues of inclusion.

During the 2020 Michigan REU, my fellow organizers and I decided to participate in Shutdown STEM. Instead of talking about mathematics on June 10, 2020 we had conversations about diversity, equity, and inclusion in mathematics and how we could build a more just and equitable mathematics community. At the Summer@ICERM REU, we designed a professional development seminar with the interactive lectures on ‘impostor syndrome’, “strategies for finding mathematical support systems”, and “mathematical microaggressions”. I am committed to using my future position, whatever it may be, to work for the creation of a more just and equitable mathematical community, especially by highlighting means for students to find support and community.

10. Raising awareness of support systems is vital.

Students often don’t avail themselves of support systems because they don’t know that they exist. As teachers, we are often our students’ primary source of information about these systems. For example, at the University of Michigan, the Women in Mathematics Society (WIMS) hosts a Bagel Sundays event for undergraduates to encourage them to start their math homework early. None of my students had heard of it until I mentioned it to them. To better support my students, I receive the “Math Missive”, a list of STEM events for undergraduates, from my department each week, which I cull and send to my students. Recently, I encouraged my class to join WIMS for a T-shirt tie-dyeing event. Raising students awareness of where to find support and community is one of our most essential tasks as educators. I am committed to continuing to do this in the future.

I look forward to participating in creating and inhabiting a healthy, diverse, and supportive mathematics community!