Diversity Statement

Diversity is a valuable and enriching part of the human experience, and that does not change in the math classroom; the varying backgrounds and interests of students mean that they can approach the same problem in different ways. A lot of group activities actively harness the diverse perspectives of students as a learning tool – during workshops, I have often seen students work together to create a solution that no one could have found alone. However, with these different perspectives come challenges to the instructor to accommodate for all of them. When I teach, I work to ensure that my classroom is welcoming and accommodating for all students.

While the root concepts and material theoretically operate independently of the human experience, students are ultimately people, and so the issues of students having different backgrounds are inescapable. To consider one example, many students work during the semester to support themselves and are handed a shift that overlaps with their recitation, or need to miss class to care for a child or other family member. With such students, I have arranged to meet with them individually, and discussed any material they were unable to be there for.

In particular, issues of personal identity can arise while teaching. A problem that is particularly prevalent in mathematics is that students of underrepresented demographics are left feeling out of place in the classroom; this can be amplified by the instructor emphasizing a normality that doesn't align with their specific experiences. As an instructor at Rutgers University, I have worked with students coming from a wide range of backgrounds – many of the students are members of minorities, international students, or come from a modest socioeconomic status, and I've grown comfortable working with students with a very different identity from my own. When I teach, I give every student some amount of individual focus, in order to combat the feeling students may have of being in a crowd of people very different from themselves. Examples of how I do this include having all students answer questions in class, and making a point to engage with workshop groups outside of just answering questions they call me over to ask.

Some diversity considerations impact the course experience directly - mathematics students come to the classroom with a broad range of both their familiarity with the background material and their reasons for taking the course. As an example of this, when I taught Graph Theory in the summer of 2017, some of my students were pure math majors and had experience with and interest in working with proofs, while others were interested in the course because of its

connection to computer science and had very little experience with working with rigorous proof techniques. I focused on presenting the proofs during lecture in an approachable way, emphasizing major concepts over rigor, in order to make sure the less proof-familiar students did not feel lost, while also giving the more experienced students something to think about.

Course-material related considerations also pertain to students preferring different ways of learning the material. While I believe that memorization alone is inadequate as a learning technique, the memorization of particular facts from class can serve as a landmark in the student's mental map of the course, anchoring their experiences. (A good example of this from the calculus sequence is the antiderivative of sec(x), which appears frequently in example problems and is cumbersome to reprove every time.) Some students like to have a lot of these waypoints and feel comfortable devoting a lot of the lecture to memory, whereas others prefer focusing on the core aspects and rederiving the other concepts from base principles. When I cover material, I try to bring students to the paradigm that allows them to recreate a lot of the material from a small list of memorized facts and principles, while also giving those who prefer to memorize more things a good idea of what facts are most useful memorized.