

Teaching Statement

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Great educators have passion and a deep desire to share the power and beauty of their discipline with students. I see my own discipline of mathematics as abundantly beautiful; however, the classes that I teach are diverse, and many of my students do not see mathematics in the same way I do. I view it as my duty as a mathematician and an educator to be inclusive of all students, to meet students where they are at in their mathematical journey, and to help students see the sheer aesthetic beauty and utility of mathematics. To do this, I let my passion for mathematics shine through whenever I get the opportunity. I provide students with equitable opportunities to seek a deep understanding of mathematical concepts rather than memorizing procedures, and I strive to make students feel both comfortable and valued.

I see my passion and enthusiasm for sharing the beauty of mathematics with others as my greatest strength as an instructor. In social situations I am fairly soft spoken, but when I get the opportunity to share my knowledge of mathematics with others, I am transformed into an excited, passionate individual. Over the years, I have been convinced that my passion in the classroom intrigues many students and motivates them to look for the ways that math can be awe inspiring and incredibly useful. I get no greater joy than hearing from a student that she became more interested in mathematics or fell in love with mathematics because of the role I played in her education. One of my former students told me that my lectures “are a pleasure to be at and constantly interesting.” Another remarked that I “re-piqued his interest in mathematics.”

Throughout my eleven year teaching career I have taught a wide variety of courses from developmental math to supervising research projects of doctoral students. I am comfortable teaching any math or statistics courses typically offered to undergraduates, and I am confident teaching graduate level courses in discrete mathematics. Regardless of the level I am teaching, I have high expectations for students. I emphasize that learning math is not a process of memorizing formulas, procedures, or even proof techniques. Successful mathematics students are those who focus on understanding why formulas, procedures, and proof techniques work. When students are focused on understanding the mathematical concepts rather than memorization, their problem solving, critical thinking, and communication skills improve immensely. Students will rely on these skills throughout their academic and professional careers, far beyond the mathematics classroom.

One course that I am particularly proud of both developing and teaching is an undergraduate research course called Special Topics in Mathematics (MTH 299). This is a course I teach at the College of Lake County (CLC) which is a two-year college in Illinois. When I started at CLC in 2011, I noticed that two-year college students are often not given the opportunity to pursue mathematical research until they transfer to a four-year school. So, with the goal of providing equitable mathematical research opportunities to two-year college students, I began developing MTH 299 in late 2017. During the 2019-2020 academic year, I received a sabbatical, and I was a Visiting Associate Professor at the Illinois Institute of Technology where I focused on improving my ability to supervise undergraduate research projects. I have taught MTH 299 every semester since the summer 2018 semester. As a result of MTH 299, CLC students have made numerous mathematical discoveries and have written 12 original papers that have been submitted for publication. Seven of these papers have already been accepted for publication in

peer-reviewed journals. Also, MTH 299 students have presented their research at four different research symposiums. I am overjoyed that MTH 299 students at CLC get to discover original and beautiful results for themselves.

While I think it is incredibly important for a math educator to be passionate about mathematics and teach mathematics in a way that emphasizes deep understanding, a math instructor must also endeavor to make each one of his students feel comfortable and valued in and out of the classroom. The old adage “people won’t care how much you know until they know how much you care” comes to mind. Helping students to feel comfortable and valued in the classroom means establishing an inclusive environment in which students can easily ask questions and propose ideas. I make it a point in my classroom to show gratitude to any student willing to make a conjecture or offer up a new idea. I also strive to learn about the goals and aspirations of my students by encouraging them to come to my office hours during the first week of classes just to introduce themselves. I make learning about the programs and degrees offered by my college a priority so that I can advise students when they have questions about their courses or degree program.

I strongly feel that math is not a spectator sport. I believe that the students who learn in the math classroom are the students who spend time conjecturing, discussing solution methods, and solving problems. Thus, I am always planning time in my lessons for group work, presentation of student solutions, and/or problem solving time. In freshman and sophomore level courses, one technique I have found to be particularly effective in accomplishing this is something I call *graded examples*. Graded examples are placed at various points in my lesson after I have taught an important concept. A graded example requires students to solve a problem on their own or in groups while utilizing what they were just taught. As students work on these graded examples, I walk around the room so that I can assess which parts of the lesson the students have understood and with which parts of the lesson students are still struggling. I then go over the graded example while putting special emphasis on areas where I saw several students struggling. All in all, these graded examples help me to identify where students are having difficulties so that I can modify my instruction to best cater to their needs.

Teaching mathematics is an important part of my life, and having the opportunity to teach math always excites me. Over the past eleven years, I feel blessed to have been given the opportunity to have a positive impact on the lives of students and share with them my knowledge of the discipline I fell in love with as a student. It is always my desire that my students have a great experience in my classes. I want them to come away with a deep knowledge of the emphasized topics and skills that they can use throughout their lives. I also sincerely hope that every one of my students sees mathematics for what it is: a beautiful, poetic, and incredibly useful art.