Empowerment and **community** are two important themes in my life. One of my goals in my classroom, especially for lower-level courses, is to empower students to succeed not just in math, but in college and in life, as well. Another goal of mine as a professor is to help create and sustain community: in my classroom, in our department, at our institution, and more broadly.

In my classroom: Students who are struggling often have a hard time pinpointing what they don't know. To aid these students in particular, I assign before each exam (and the final) a study guide that my students should build themselves: outlining definitions, vocabulary words, and good examples from each of the sections. Students tell me that this gives them confidence on topics they already understand well. I joke that if they like this study technique and use it for their other classes, they should owe me a commission on their grades; some students have informed me that this helped them outside of mathematics, as well.

Especially in my lower-level courses, I aim to use my classroom to teach not just mathematics but how to learn. I seek to reach not just for students who are struggling and need to improve their study habits but also for excellent students who have never had to spend time with the material before.

In class, I frequently push students to grasp a more geometric or visual interpretation of the formulas we are learning. This was especially true in Multivariable Calculus, when I even developed a project using Vassar's "augmented reality sandbox," which allows students to build their own landscapes and produces real-time topographic maps that are projected onto it. I then asked them to answer some related questions from the curriculum: http://faculty.vassar.edu/mcohen/sandbox.html.

On the first day of class, I stress how working together can make learning easier; I neglect to tell them how much it influences our classroom as a whole. When several students get together and struggle on the same problem, they are far more confident in bringing up that question in class. The more my students interact with each other, the better the atmosphere of the classroom becomes, and this encourages my quieter students to become more involved. In my office hours, I discuss the benefits of speaking mathematics aloud and listening to classmates solve problems aloud, as well.

Occasionally I set aside class time for more group work: sometimes just checking in with each other to see if they get the same answers when working problems individually; sometimes working on short problem sets together; and if the timing of the curriculum is right, developing in-class workshops to be done in groups.

For Linear Algebra, I produced a workshop around understanding matrices as linear transformations that resulted in many loud "Eureka!"-like outbursts. I produced workshops around some of the most popular topics in mathematics, including the Fibonacci spiral, Hilbert's hotel, and the Platonic solids for my Discrete Mathematics class and including the quaternions and conjugation in my Advanced Linear Algebra class. I rotate group members so that everyone can meet each other, and for the final project I assign group papers and presentations.

I've been taking steps to make my classroom more inclusive and welcoming for students from diverse backgrounds. In my syllabus under participation, I require my students to set up a "mini-conference" with me some time before the first exam, either during my office hours or while I am eating in the campus dining hall. As I said to an international student, one aim is to have students feel more comfortable if they need to see me for help later in the semester. Very quickly, this student warmed up and started engaging more in class. Many of my first year and sophomore students haven't declared majors formally, so this gives them the opportunity to discuss their ideas with me. Others tell me about athletics or other extra-curriculars.

Furthermore, I include in my syllabus sections on classroom norms and making mistakes, and I have my class take part in a social contract that making mistakes is acceptable in our classroom. I discuss how we can combat discrimination when we admit to and learn from our mistakes.

In our department: When I started at Vassar I created a Moodle for Math Majors but worked to especially include all the non-declared majors and minors, many of whom are in my classes. I use it to advertise research projects, upcoming courses, and weekly events. In my upper level classes, I give "Community" points for attending mathematics-related lectures and activities at the department or college level, and I assign half-page write-ups that ask students what they gain from the experiences.

In the Fall of 2016 I advertised a research project for students on line arrangements, and a junior joined me. He worked with me throughout the year and then over the summer as part of the Undergraduate Research Summer Institute (URSI), an in-house REU. I took him to several conferences to present a poster on our research. Then in Spring 2018 I worked on extending this project with a computer science student who ultimately spent this past summer creating a database for me. More formally over the summer, I worked with three more URSI students (rising seniors) as well as a Diving Into Research (DIR) incoming first year student. Additionally I organized regular activities for the eleven math summer research students in our department like talks and lunches.

In the Vassar community: I come from a background in programming, producing, and promoting events (especially via student groups on campus), and I have worked with Math Clubs. I've written two articles for the MAA's Math Horizons magazine for students on the subject of sustaining a vibrant Math Club.

I regularly mentor student leaders at various events and programs on campus, especially those connected with Jewish Life, the Office of Religious and Spiritual Life, and the Bicycle Repair Shop.

During 2016-7 I organized a committee with student leaders from the Women in STEM student organization and the head of the Women's Center to bring the movie **Hidden Figures** to campus for a week of five showings, during which we reached over 10% of the student body!

In the wider mathematics community: I co-created and maintain a Facebook group for our community called Not KNerds, where knot theorists share conference announcements, upcoming deadlines, job postings, mainstream news articles, and photos. Since 2016, I have used the group to share and distribute a schedule I compile of all related talks at the Joint Mathematics Meetings. One goal of this project is to help welcome younger researchers into the community by notifying them of talks they wouldn't have known to look for. I have also organized formal meetups during the conference.

I have experience in co-organizing several AMS special sessions as well as conferences. In January 2012 I co-organized the first ever *Baton Rouge Young Topologists Research Retreat* at LSU, where graduate students and other young mathematicians spent the bulk of a week in close quarters working on tractable research and writing mathematics together.

Interest in courses: At Vassar I've taught Calculus I, II, and III (Multivariable), Linear Algebra, Discrete Mathematics with an emphasis on proof-writing, and Advanced Linear Algebra (often a final course for minors). As a graduate student at LSU, I taught Calculus I and II and College Algebra, and I was a teaching assistant for Trig and Business Calc.

Along with these courses, I would be very excited to teach Knot Theory, a Combinatorial Introduction to Topology, Point-Set Topology, Matroid Theory, Graph Theory, Combinatorics, Proof-Writing, Geometry, Modern Algebra, Problem Solving for the Putnam Exam, Problem Solving for non-majors, and Discrete Mathematics for non-majors.

I am happy to teach younger students in the lower-level courses, as all majors have to start somewhere, and I'd like to get students involved in the departmental community as soon as possible.

I have experience training math majors concentrating in secondary education at LSU, and I've even gone into the classroom to teach fractals to first graders. Over the long term I'd like to develop more project-based investigations for integrated use within the K-12 curricula.