In the classroom, my students and I create a learning environment together based on their experiences and needs. I aim for each student to take with them knowledge they feel is interesting, meaningful, and hopefully useful.

> "Whoever teaches learns in the act of teaching, and whoever learns teaches in the act of learning."
> - Paulo Friere

I have taught and mentored students in many stages of the educational pipeline. At the undergraduate level, I have taught at a small private research institution and a large public engineering university. Additionally, I led supplemental instruction sessions for college algebra, graded for the math department, and tutored in the math lab while I was an undergraduate at a large, public commuter school and student taught pre-calculus at a Dallas county public high school. At the graduate level, I have mentored graduate students and been a teaching assistant for a class required for qualifying exams. This wide range of students and experiences inspires me to remain flexible and treat each class as a collaboration between individuals with unique perspectives.

Multiple ways of engaging with the course. Though not every student who enters my classroom will earn an A, I strive to make it easy for students to learn something and to show me what they have learned.

> "I learned more in this course than I have in any other class in my life...Though there was a higher standard of expectation compared to my other courses, the instructor also operated class at a much higher level as well. I feel like I took the gold standard for an undergraduate mathematics course."
> - A student in my Abstract Algebra I course.

Class participation is central to my courses. I aim to minimize the time I am speaking and provide opportunities for students to contribute in class throughout the lecture and synthesize the material themselves. In larger classes, such as a 120-person Integral Calculus course, I build **large scale group work** into each lecture using techniques like **polling** and **think-pair-share**. In smaller courses, like Abstract Algebra I and a four-person Linear Algebra course I taught one summer, **small group work** like finishing a proof together that I have started on the board is an important and regular activity in the course. In online classes, I took advantage of the chat feature and solicited questions and responses from students who would not have even necessarily spoken up in an in-person class.

Though I design my lectures to be participatory, I am aware of the systemic issues that contribute to which students feel comfortable jumping in to answer a question or spending time doing group work. With this in mind, I avoid calling on the same students and provide different types of opportunities to contribute to the class in public and private ways through class discussion of problems and anonymous surveys. There are also clearly defined **expectations for course conduct**, including against behavior that is discriminatory or harassing, and **in peer feedback activities I ensure all submissions are anonymous** to help avoid implicit bias among the student feedback based on knowledge of the submitters' various identities.

Since many students prefer to engage with course material more privately, I provide ways for students to solidify and demonstrate their understanding outside of class as well. My main tool is regular, low-stakes assessments. For example, in Abstract Algebra I the students must **answer weekly open-book "check-in" quizzes**. This gives them space to revisit the fundamentals of material we have covered recently in class and provides me different data about their learning than the proof-based homework assignments. Additionally, I assign three pass-fail **mastery quizzes**

throughout the semester on critical topics in the course. They have multiple attempts on each quiz over a month-long period, including an oral quiz option if they have exhausted their online tries.

In order to gain fluency with new math concepts, students must also develop their ability to critically evaluate logical arguments. In Abstract Algebra I, I give the students have three rounds of **homework revisions** involving a **peer feedback** stage (with anonymous submissions of homework typed in Latex to help avoid implicit bias in the feedback) and a **revise and resubmit stage**. In lower level courses such as Multivariable Calculus, I encourage students to give multiple solutions to the same problem and discuss what the benefits and downsides to each approach are. This further allows students to connect with material in the course in a different way than speaking in class or completing an assessment.

Scaffolding and encouraging student meta-cognition. Part of the joy in doing mathematics is the challenge of an interesting problem or concept; however, giving students a challenge they do not feel they have the necessary tools for is generally more demoralizing than inspiring. I aim to provide enough scaffolding so students feel secure attempting the things I am asking them to do.

> "Her greatest strength is she makes students feel confident in themselves"
> - A student in my Integral Calculus course.

I strive to provide enough structure for the task to feel doable and detect when to loosen the structure when the students have grown beyond it. In lower level classes, some of the support I provide can involve **modeling what I am asking them to do**. For example, in Integral Calculus I before each class I post fill-in-the-blank notes, and even in more advanced courses I give carefully written feedback forms to students during rounds of homework revisions to give guidance on what to look for in a well-written proof. Carefully providing support has been particularly necessary during the COVID-19 pandemic, when many students have had drastically different experiences due to health issues, lack of access to resources like a stable internet connection, and increased family responsibilities and stress. My response to these difficulties has been to be flexible with deadlines and attendance, to post notes and recordings after class, and to schedule short individual meeting slots with students after each exam.

> "She was extremely kind and understanding about how stressful college is, and she was very explicit about what to do in order to succeed in the course."
> -A different student in my Integral Calculus course.

Since my classes often involve more active learning than what students are used to, I begin the semester with peer-reviewed data on how students performance is usually higher with active learning despite students often feeling like they are struggling more. The first course of the semester is spent discussing the syllabus and having a conversation where I **encourage students to think critically about how they process, store, and synthesize information**. For example, many students have become used to attending class while also reading things on their phone, watching videos, or communicating with each other, and are often not aware of the data on how this affects their ability to retain and use what they are learning.

Meaningful and relevant course content. Throughout each course I give students opportunities to tell me their short term and long term goals through surveys and individual interaction. I then tailor course materials to support these goals through the examples I choose and opportunities I pass along, particularly during independent study courses I have advised. In one case, I knew a

student was nervous about their future in math research and so designed a semester of independent study on a book on combinatorial group theory with carefully chosen problems and readings to support the research they did with me the following semester.

> "Came into this class wondering if I had what it took to be a math major and left super excited about future courses. The class was hard, the homework long, but the professor was incredibly helpful, well-prepared, and just a genuinely great human being."
> -Another student in my Abstract Algebra I course.