On the first day of class, the students shuffle in with fear in their eyes; they have a preconceived notion of the class – difficult, stressful, and uninteresting. I believe this is because chemistry classes have a reputation of being taught in a dry, dull, and unapproachable way. I aim to provide a great learning experience for my students through several goals: creating a comfortable and engaging learning environment, implementing active learning and innovative strategies to enhance student learning, and developing a relevant and intellectually stimulating education. I have strived to obtain a wealth of teaching experience by serving as an assistant and tutor in my undergraduate education, a lecturer and teaching fellow in graduate school, and as a grader and guest lecturer in my postdoctoral career. To provide the best learning experience for my students, it is important that my instruction reflects the passion and enthusiasm I have for both teaching and chemistry. As not all of my students will continue studying chemistry, an overarching goal for my students is to develop critical thinking and problem-solving skills so they are better prepared for life experiences.

Many students enter the class thinking that this course will be extremely difficult, an attitude that often hinders their ability to learn. I believe that students learn best when they are in a non-stressful environment and feel that they can make mistakes without harsh consequences. It is important to set a positive tone in the classroom and listen to students when they have concerns. Providing a professional, inclusive atmosphere is key to student learning and by sharing my own learning experiences, I show students that mistakes are part of the learning process and should not be intimidating. This is particularly important for underrepresented groups including minority, female, first-generation and LGBTQIA+ students. I feel that one of my greatest strengths is my approachability, as students feel open to discussing and asking questions. By implementing a growth mindset approach, students become comfortable with new and different ways to assess learning without stressing over solving a problem incorrectly. It is important to be able to adapt to different students' needs and provide support to each student individually. For example, if a student is struggling with a concept, offering help and encouragement can be beneficial to their learning process. I will make myself available to students both individually and in office hours, as I believe mentoring students is one of the most rewarding aspects of teaching and I am dedicated to each student's success and future. In my work at Smith College, I have seen the benefits of implementing these strategies to learning goals.

Observing my faculty mentor, Professor John Snyder, has shown me that the focus of learning in the classroom should not be about memorization, but about understanding. Although his class is regarded as extremely challenging, he is able to engage students by showcasing research from peer reviewed articles and explaining how reactions learned in class relate to pharmaceutical development. Students who are engaged are more motivated and in turn learn better than those who are not. One of the comments I often hear is that chemistry is isolated and has no application in other disciplines, asking "when will I use this knowledge?" To address this misconception, I highlight the importance of learning problem-solving techniques and demonstrate how chemistry is related to everyday life, showing why it is interesting and fun. I want students to not only feel intellectually stimulated, but also that what they are learning is both relevant to their interests and that they are taking an active role in their education. My classes have generally been split up 50/50 between pre-medical and chemistry majors, so one way that I am able to provide relevancy is through proposing ways to synthesize or predict the stereochemistry of drugs, such as oxybutynin, a bladder relaxer, and chloramphenicol, an antibiotic. Inspired by my mentor, I developed problems based on literature and incorporated pharmaceutically relevant compounds in their course materials as a way to apply organic chemistry to both chemistry research and medicine.

In addition to learning about real-world applications, it is important for students to understand how the skills they learn relate to a career setting. To address this issue in organic chemistry, Professor John Snyder developed a course modeled after a drug discovery effort towards a therapeutic for Alzheimer's disease, which I helped work on in 2017. As they would in a research group, students met for weekly group meetings as a pre-laboratory lecture to discuss research questions, propose synthetic analogs, determine biological assays and discuss results. Students were first introduced to curcumin, our target molecule, and its potential therapeutic effects. Throughout the course, the students learned organic reactions and skills through the synthesis of analogs, while concurrently running biological experiments on these analogs in a neuroscience laboratory to explore biological activity. Additionally, I developed a laboratory experiment on the optimization of pyrroles using flow chemistry; based on surveys, students were most excited about tackling a problem as a research scientist would. I would like to use this approach when developing new materials for laboratory, demonstrations, and lecture to ensure students are able to see how chemists work in everyday life.

Problem solving is the core of every chemistry course and teaching students how to approach problems is a technique that can be applied to many fields. My emphasis when teaching is for students to gain understanding, as opposed to memorizing. Students learn in different ways and it is important to implement a variety of explanation techniques, especially for abstract concepts. For example, when discussing S_N2 reactions, I draw the reaction on the board, have 3-D models, and act out the reaction as a demonstration. By providing different methods of instruction, students can see how the reaction works as well as its effects on stereochemistry. I believe it is beneficial to expose students to various assessment techniques addressing different levels of Bloom's taxonomy. I provide study guides containing assorted types of problems: defining terms, describing reactivity, predicting products, comparing conditions, and designing syntheses. I distribute these guides and utilize the think-pair-share technique for selected problems. If I notice that students are struggling, I go to the board and, together, we discuss what strategies and knowledge are helpful for solving the problem. It is also important for students to engage in cooperative learning. I have utilized iPads to aid peer instruction by providing a new platform for the exchange of questions and answers between students. Using Flick-to-Share in the ChemDraw App, I send groups a complex mechanism, synthesis, or predict the product question that would be challenging to answer individually. Students work together, submit, and come up to the board to explain the strategies they used to solve the problem. If students approached the problem incorrectly, I help lead the class to the solution through open discussion. At Smith College, I have also observed this type of group work run successfully in large lectures (100+ students) by Professor Kevin Shea. He has developed a highly successful method of combining both lecture and in-class problem solving to help student learning. In the future, I would like to similarly incorporate a balance of problem work and lecture to ensure that students can apply what they have learned. These techniques allow me to interact with students and quickly determine what assessments or concepts are more challenging. By providing low-stakes formative feedback, it helps students to identify their strengths and weaknesses and also allows for assessment of teaching effectiveness so adjustments can be made if needed.

During the 2017-18 academic year, I took part in the Scholarship of Teaching and Learning Program (SoTL) where we discussed teaching as research and focused on ideas that we could implement and assess in our courses. The discussion was centered around *How Learning Works*, bridging ideas of technical research with applications of classroom-based strategies to enhance student learning. This experience inspired me to constantly research and develop ways that I can improve and innovate my teaching to provide the best learning experience for my students. Additionally, I have learned new techniques and methods of teaching through attending Teaching Arts and New Faculty Workshops at Smith College. Hearing how other faculty have utilized new strategies, including their success and failures, has aided my ability to think of approaches to implementing active learning techniques. One example that I related to was the finding that many students struggle with drawing connections between different types of reactions or concepts, often because they are not able to organize the knowledge that they have gained. One way to encourage this type of learning is to use concept maps to draw relationships between ideas. For example, in organic chemistry a concept map can be used to describe chemical relationships between functional groups and reagents. Showing students how similar (or different) topics are to each other can be beneficial to their learning process and helps them draw connections to prior knowledge, new material, and course content.

Overall, I aim to focus my teaching on a growth mindset approach so that students feel comfortable making mistakes and learning from them. I hope to provide a positive environment and be an approachable, encouraging and enthusiastic instructor that inspires students to learn. I aspire to increase student engagement by utilizing biological and real-world examples, drawing connections between chemistry, their day-to-day experiences, and future careers. I want my teaching to expresses both my passion for teaching and learning and the enthusiasm I have for chemistry. By emphasizing understanding concepts over memorization, students will establish critical thinking skills which can be used throughout their lives. My goal is to increase student learning through active learning techniques, formative feedback, and diverse methods of concept explanation. Most importantly, I believe that the ability to influence young minds and shape the next generation is not only rewarding but requires dedication, adaptation, and innovation. As an evolving profession, it is imperative that educators are constantly learning from students, literature, and peers, allowing for growth and improvement.