An effective mathematics lecture includes the mathematical results and emphasizes the processes by which we obtain them. Accordingly, I provide my students with the necessary knowledge and, more importantly, the ability to understand how we obtained those results from multiple perspectives. To accomplish this, I draw parallels with previously obtained knowledge when presenting new information and explicitly verbalize my thought process when solving problems. In general, I approach teaching as a conversation during which the students and I actively engage with the thought processes leading to mathematical results. This interactive approach exemplifies the reality that mathematics is an active process and offers guided practice in this skill. By treating mathematics as an activity that we practice together, my students take ownership of the material, and learn the problem solving skills necessary of mathematicians at work.

Perhaps the most obvious example of my approach was during my experience as a teaching assistant for integral calculus at McGill University. I was responsible for 2 tutorials and 3 office hours per week. I began each tutorial with a brief review of the material to be covered, and divided the exercises for each topic into three sections. For the first, I detailed a complete solution while explicitly describing my thought processes emphasizing how and why I was applying each concept. Next, by asking for input from students, we completed a second problem on the board. I found that students were encouraged to make suggestions during this second example after I explicitly verbalised my thoughts during the first problem. Finally, I allowed students time to work through a new problem while I circulated through the class and offered hints and suggestions. By scaffolding each topic in this way, students first observed the explicit steps leading to a complete solution, then contributed to the development of a solution, and finally independently solved problems with my individually tailored guidance. Students appreciated this course design and made explicit mention of it in my teaching evaluations.

Integral calculus is required for most McGill science degrees and the audience is quite diverse. Thus, it was critical to use a range of teaching approaches, and to individually connect with each student. My ability to do so was recognized with the teaching assistant award in 2017 and 2018 while my calculus students gave me an average rating of 4.89/5 for "Overall, the performance of this TA was excellent" with no ratings lower than 4/5. I have also lectured portions of third-year honours ordinary differential equations and honours introduction to dynamical systems courses at McGill. While these courses required more direct lecturing than a tutorial, I explicitly structured each class to emphasize student interaction and participation; the students quickly learned that I am willing to wait for them to answer my questions.

My postdoctoral experience has focused on research and has taken place at a national laboratory without students or classes. However, I believe that teaching is an integral part of being a mathematician, and I therefore organized a day-long workshop as part of the CRM-CAMBAM Mini-workshop series in Mathematical Biology. This workshop offered a graduate-level introduction to the use of structured equations in mathematical biology and was attended by approximately 60 individuals. This online workshop illustrated the difficulty in eliciting student participation and the importance of adaptability during remote learning. As a result, I envision moving away from the synchronous lecture format for remote learning, and instead pre-recording lectures and scheduling small virtual meetings to allow for personalized feedback.

Mathematical teaching also includes student mentorship and I have thus far mentored three undergraduate researchers. In an interdisciplinary field such as mathematical biology, fostering an interactive and collaborative atmosphere through frequent (at least weekly) meetings is critical. During these meetings, I emphasize the collaborative nature of mentorship, with students learning to pose research questions and take initiative in their work. As a mentor and scientist, I am deeply committed to issues of diversity, equity, and inclusion. I am committed to the recruitment of undergraduate researchers from under-represented groups, such as women or people of colour; to the creation of an inclusive, supportive and respectful group atmosphere; and to explicitly seeking opportunities to listen and learn about issues of diversity, equity, and inclusion. I am dedicated to taking concrete action to ensure that all students view mathematics as a place they are welcome, where they belong, and where they are important contributors.