

Teaching Statement

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My approach to teaching and mentoring is centered around the belief that students must be able to make mistakes in order to learn. Much of the craft of science is built around quantifying and describing sources of error. I believe that to learn the scientific method students must be encouraged to do more than simply learn facts by rote. By allowing students to experience and understand sources of error I aim to develop skills in problem solving and logic. These fundamental abilities are foundational to any career. Too often students are shown how a puzzle was solved without learning the skills required to solve problems for themselves. This is why I believe that scientific coursework needs to include both mathematical and laboratory components.

Students should expect that I will provide a safe environment for them to learn. I am particularly motivated to encourage students who face economic or social hardship to excel. It was quite difficult for me to balance graduate school with the needs of my family and children and I know the difficulties students face. As an example, one of my students last year stopped coming to a night lab I was leading for an introductory biology course. Over the course of several emails I learned that she was suffering panic attacks due to an assault the previous semester and was uncomfortable walking home alone at night. She was certain she would be unable to continue and questioned whether she would even be able to graduate. Working together we came to a solution and found her the resources on campus she needed to complete both the course and her degree. Without a sense of security learning becomes impossible. This is why the first priority of a teacher should be to provide a safe learning environment.

My second priority is to promote discussion. I believe learning is an active process. I encourage students to participate, contribute and to ask questions. Focusing on question driven teaching and science develops critical thinking in my students. The motto of the oldest scientific academy in the world, the Royal Society, can be translated as “accept no authority.” This means that everyone must be able to think critically for themselves about the world around them. This is a skill that will benefit every student regardless of future career path. While memorization is unavoidable, I am most excited about the process of discovery and actively work to frame lessons in this light. Students will leave my courses with increased ability to utilize the scientific method and to use question driven scientific thinking to better navigate the complex modern world.