

# Teaching Philosophy

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“I’m not sayin’ I’m gonna change the world, but I guarantee that I will spark the brain that will change the world.”

-Tupac “2Pac” Shakur, Rapper/Actor

Traditionally teachers were thought of as the gatekeepers of knowledge. However, in the modern age of the internet, knowledge is widely available to those who seek it. I believe that a teacher’s role has transformed to sparking the curiosity to explore all that is available. As a teacher, my goal is not to “change the [whole] world;” rather, change the worlds of my students by engaging each of them to the best of my ability.

The ability to reach all students requires thought, preparation, and commitment. If I only consider a single type of learner when I prepare course material, I am potentially failing to “spark the brain that [could] change the world.” Firstly, courses will be prepared keeping the end-goal of course-specific student learning in mind. In addition to a traditional lecturing style wherein the students take notes for themselves, problems will be worked out in real-time during class by either myself or student volunteers. Another way to facilitate student learning includes using all available technology in the classroom. One example of a technology that could be useful in nearly any class setting involves creating visualizations for problems presented during class time with statistical software such as R.

Evaluation is important for testing the students knowledge and retention. If the students fail to learn, I fail at my goal to “spark the brain.” I will have quick 1-3 question quizzes during class time at least once per week. Some of these quizzes will incorporate questions similar to homework exercises while others will be directly from the current lecture topic. Through these weekly assessments, I will gain information about the students’ understanding of the subject and know which topics need more focus or which students need individual attention. Lastly, I aim to include a final project for my courses either as group work or an individual assignment. These projects could range anywhere from developing an RShiny application to performing a detailed statistical analysis with writeup. My recent summer student developed an RShiny application as his final task of the summer. This interactive tool allows other researchers using the same data to explore information about the spatial distribution of the study participants and links different spatial areas to census data.

A common criticism of the educational system involves the thought that knowledge gained in the classroom fails to be directly applicable when on the job. Thus, sparking the brain in the classroom might not lead to success in research with this disconnect. To remedy this, I aim to make homework exercises, in class examples, quiz and test questions, and the final project as close to real-life situations as possible. Recently, I taught a

lecture on the importance of understanding statistical significance to undergraduate basic scientists. A continuous, yet somewhat simplified, example in this lecture involved flawed research connecting the MMR vaccine and autism. This example motivated the students by demonstrating how a lack of understanding could have detrimental results as well as provided a real-life scenario that they could face in their own research.

Ultimately, my goal as a teacher is to furnish a model environment for generating the spark that could change the world, or at the very least, my students worlds. And, through the ideals outlined above, I believe that I can achieve that.