

## **Teaching Philosophy – Lauren L. Williamson**

I love to teach. I've been teaching others since I was young, asked by teachers to guide other students through tasks and projects during class time. Into college, I became the active figure in study sessions: planning them, drawing diagrams, and explaining difficult concepts to other students. There is something to be said for the joy of watching a peer or student have an epiphany, consolidating a concept and finally understanding something that was previously difficult to comprehend. Nevertheless, an inherent joy in teaching must be honed and formalized, using what we know about how students learn and how learners can be successful.

My graduate program emphasized the role of teaching in graduate education and I have had the role of teaching assistant for 3 classes. These three classes have been distinct in size, scope and learning objectives. In their distinctiveness, I have seen the opportunities and challenges that each different class provides. Earning a Certificate in College Teaching through a program offered by the Duke Graduate School has also allowed me to reframe my focus as an educator. While obtaining this certificate, I learned about the importance of students at the center of the classroom. With the students in mind, I molded my teaching style and goals. Now I am armed with an arsenal of techniques that engage students and achieve learning objectives, and I am prepared to be student-focused in the classroom.

Introducing undergraduates to the academic world of science and rigorous hypothesis testing is one of the joys and challenges of teaching neuroscience. As a teaching assistant for Fundamentals of Neuroscience, I led my own discussion sections in which I chose the readings and guided class discussion each week. Beyond the initial comprehension of the readings and the empirical data, the students were encouraged to think critically about the methodology of the science and the possibilities for future experiments (see "In-Class Questions" and example test questions). The 25 students per discussion answered a set of questions individually when they arrived, and most students were able to answer the questions easily if they had prepared for class. We then discussed the readings as a group, a task made all the easier by their preparation for in-class questions. All 50 of my students engaged with the material over the course of the semester in a format that made it easy for them to do so.

Large lecture classes can be obstacles for student participation. Gauging student comprehension of new material can be difficult, but new technology offers solutions. As a teaching assistant in Introductory Psychology, I saw the professor use group survey technology, such as PollEverywhere, throughout lectures. Using text messages or their laptops, students were able to answer multiple-choice questions about lecture material and see their comprehension level in real time. This simple technology also allowed students to be anonymous, relieving potential anxiety for being incorrect. I would like to use simple technology to offer interactive participation opportunities to students in large classes.

The organization of a class with clear objectives and goals for the students is paramount to their success. As a teaching assistant for a large lecture with many discussion sections in Biological Bases of Behavior, I have seen the logistics required to formalize and to maintain learning objectives over many class sessions and

several other teaching assistants. Cooperation as a team and confident oversight by the professor allowed us to provide the students with similar experiences and chances to achieve success. Well-organized lecture sessions and team-based learning approaches in discussion gave the students the content and the tools to acquaint themselves with neuroscience for the first time.

Students achieve learning objectives when they are given the chance to actively participate in their own education. My graduate advisor taught a small seminar class organized by team-based learning objectives (see attached proposed syllabus). I taught two class sessions during the semester and saw the positive effects of team-based learning. Students participated more in class discussion and all were prepared to answer questions individually and in groups. When students worked together and relied on each other, they prepared more for class and were more willing to ask questions. In my own small classes, I would like to establish a team-based learning system that encourages active participation and preparedness by the students.

Mentoring is also an important aspect of education, and I have had the chance to mentor several students in my graduate laboratory. It has been valuable to see the benefits of working side-by-side with an undergraduate and teach by example. When undergraduates first experience bench work in the laboratory, there is a sudden realization about the nature of "doing science." Demonstrating that day-to-day efforts are just as important as the final findings is an exciting chance to encourage a new generation of academics. As upperclassmen at Duke University, undergraduates can work on a thesis project on which they are the main engineers of their own experiments. I have learned much about the role of a mentor as I provided these students with guidance and also allowed them extensive latitude. Each student is different; however, they offer clues about their independence and their personal challenges as they work. I have learned a lot about interpreting their behavior when they are still not confident or experienced enough to speak for themselves. It has been rewarding to witness their transformation into thoughtful scientists by the time they write their final thesis paper. In addition to their accomplishments within the university, we have finished work from their projects for publications on which they are authors (see CV).

Education and mentoring are critical aspects of participating in academic life. Through my experiences in graduate school, both within the classroom and without, I have seen the benefit of student-focused and learner-guided techniques and I plan to use these tools to my advantage as a teacher. The work of engaging with "learners" as an educator is never finished. I hope to continue my training as a teacher to provide the best learning opportunities for future students.