

Mary Eileen Cain
Teaching Statement

When the brain or topics related to the brain are mentioned in the psychology classroom, students often want to head for the exits. They think that they cannot learn about the brain because they did poorly in high school biology or that the terminology is too difficult to master. One of the most rewarding experiences for me as a teacher has been having students turn to me and say things like “Wow, you made the brain understandable!”, “Hey, the brain is actually fun to learn about”, and perhaps the most satisfying is “ This brain stuff is really cool, how can I learn more?”. I have opened the door for students to begin to understand the complex role the brain plays in our cognition and behavior.

As a graduate student, I had the unique opportunity to teach several courses, as well as to serve as a teaching assistant for additional courses. As a teaching assistant, I gained teaching and organizational experience in large lecture courses including Introductory Psychology and Biopsychology. My teaching assistantship for General Psychology was a two year placement in which I supervised numerous undergraduate assistants, delivered lectures, coordinated participation in research studies, and trained new graduate teaching assistants. As a teaching assistant for Biopsychology, I developed a web page with course notes and resources for the students, and also delivered lectures and conducted study sessions. My additional experience as a teaching assistant has been as a laboratory instructor. I have taught laboratories in Research Methods and Statistics and in Physiological Psychology. As an instructor and a teaching assistant I have received exceptional evaluations from students, a sample of which are enclosed. In addition, I received the Graduate Teaching Fellow of the Year Award in the Department of Psychology for my work as a teaching assistant. During my post-doctoral training, I have gained additional experience teaching as an instructor for Brain and Behavior. My variety of responsibilities in the classroom and the laboratory have given me extensive experience in designing effective laboratories for undergraduates, course development, and lecture presentation.

In the classroom, I engage students by using classroom demonstrations to encourage critical thinking and discussion. I use a variety of examples, including video clips and computer animations, to make the information relevant and understandable to the students. I encourage students to ask questions in order to enable them to better understand the topic under discussion. In addition, I require students both in Introductory Psychology courses and in advanced seminars to read primary literature in psychology and neuroscience. I think the process of reading and understanding research articles is essential for an undergraduate education in psychology. I believe that teaching is a dynamic relationship in which both the student and instructor share information and perspectives. It is essential that the instructor respects each student's perspective and to have the student realize her or his contribution is an essential component of a successful course. I believe in stimulating students in class discussions

and in their assignments I give. I challenge the students to think and I encourage them to learn and apply concepts, and not just memorize material.

I believe laboratories greatly enhance the material students learn in the classroom. In the undergraduate Physiological Psychology laboratory, I supervised and developed a number of exciting and worthwhile laboratories for students. I have designed experiments using the Biopac computer system for the recording of electroencephalogram (EEG) and galvanic skin response (GSR) from students during different attentional and cognitive tasks. I have also used the Crawdad CD ROM lab manual to instruct students in single neuron recording techniques using the crayfish. This manual offers videos of the dissection procedures that can be played on a desktop computer while the students perform the dissections.

As a laboratory instructor for Research Methods and Statistics, I developed laboratories in which the students conducted several experiments and analyzed the results of their experiments using SPSS. These experiments compared the behavior of different strains of transgenic mice in social memory, startle, Morris water maze, and habituation experiments. The use of transgenic mice in these experiments provided interactive models from which students gained an understanding of the different methods available to study behavior and to begin to understand the complexity of cognitive processes.

In addition to my experience in the classroom, I have supervised numerous undergraduate students and graduate students in the laboratory. I look forward to working with students throughout my career. As an undergraduate I received an undergraduate research fellowship from the Howard Hughes Foundation, which allowed me to pursue an independent project in neuroscience. This experience enabled me to learn a variety of techniques, exposed me to laboratory research, and encouraged me to seek graduate education. The experience of working in a lab is essential for an undergraduate considering graduate school in behavioral neuroscience, and I look forward to providing this experience for undergraduates. I have had the opportunity to supervise numerous undergraduates in the laboratory, three of whom are now in neuroscience graduate programs. I have assisted two students in the preparation of summer research grants at the University of Kentucky. Both students received funding and presented their results at national conferences. I have also supervised an undergraduate honors thesis and assisted with the design of the study and the preparation of the thesis. These experiences have helped prepare me to advise graduate students. I plan to continue to encourage students to present their data at psychology and neuroscience meetings, apply for funding to support their projects, and to author manuscripts.