Mary Eileen Cain
Teaching Statement

When the brain, or topics related to the brain, is 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 student to begin to understand the complex role the brain plays in our cognition and behavior.

As a graduate student, I have had the unique opportunity to teach several courses, as well as to serve as a teaching assistant for additional courses. I have been an instructor for Introductory Psychology, both at the University of Vermont (UVM) and at a community college, and I have also been an instructor for an upper level psychology seminar course in Motivation at UVM. As an instructor, I was responsible for all aspects of these courses, including course and syllabus design, developing and presenting lectures, creating and grading exams, and developing and grading projects and papers. As a teaching assistant, I have 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. 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 in discussion by using classroom demonstrations to encourage critical thinking and discussion. I use a variety of examples 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 is 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.

In the undergraduate Physiological Psychology laboratory, in which I have been the laboratory instructor for the past two years, I have supervised and helped to develop a number of

exciting and worthwhile labs for students. I have helped to design and conduct 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. The Biopac digitizes analog physiological data that can then be analyzed using a desktop computer and the Biopac analysis software program. 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. In addition, I have contributed significantly to interfacing the analysis component of the Biopac software system with the acquisition of data from the crayfish experiments. This interface permits students to acquire data using the computer as an oscilloscope and to use the analysis functions of the Biopac system to store and analyze their data offline.

As a laboratory instructor for Research Methods and Statistics, I supervised and helped to design 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.

I am qualified to teach several courses, including: Introductory Psychology, Introduction to Biopsychology, Research Methods and Statistics, advanced Physiological Psychology, Motivation, and Cognitive Neuroscience. I would like to develop several advanced seminars courses on topics such as the neural substrates of learning and memory, neural substrates of emotion, Behavioral Neuroscience, Sensation and Perception, and Psychoneuroimmunology.

In addition to my experience in the classroom, I have supervised four undergraduate independent study students and numerous work-study students in the laboratory. I look forward to working with undergraduates throughout my career, since I thoroughly enjoyed this experience at UVM. 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 neuroscience, and I look forward to providing this experience for undergraduates. Not only will I provide undergraduates with techniques to use in the future, but I also will expose them to primary sources of relevant research in neuroscience and encourage them to design and critically evaluate their own research as well as the research of others. In addition, I will encourage students to present their data at psychology and neuroscience meetings.

In summary, I find teaching both rewarding and challenging. I would like to teach and establish a program of research at a small liberal arts college where teaching is a critical component of my responsibilities. I would like to continue the commitment to excellence in teaching I have learned during my graduate training at UVM.