Cognitive Control Neurolab Frequently Asked Questions

Q: Are you accepting graduate students in the coming year?
A: Possibly. If you are interested in applying for graduate school at Michigan State University, please contact me, Dr. Susan Ravizza (ravizzas@msu.edu) to indicate your interest along with a copy of your CV.

Q: How will I know if I am a good match for your lab?
A: My lab will be a good match for you if you are interested in understanding memory and executive function from both a psychological and neuroscientific perspective. Successful students in my lab are highly self-motivated and enjoy the challenge of working independently to solve a problem, but also know when and how to seek help from others.

Q: What are you like as an advisor?
A: A cross between Dolores Umbridge and Severus Snape from Harry Potter. Just kidding! My goal as an advisor is to guide you along the trajectory of becoming an independent scholar and scientist. To this end, I establish expectations for independent discovery and learning in order to give you the skill set you will need as a full-fledged researcher. In the beginning, I like to provide graduate students with a relatively well-defined project that they can use for their first-year research requirements. After this, students will work with me to develop research projects based on their own interests. I provide the support and advice needed for students to tackle the challenges of being a scientist but, in the end, each student has the responsibility for his or her own professional development. By the time students reach their final years in my lab, I treat them as full collaborators and they strongly influence the direction of research in the lab.

Q: How did you become interested in cognitive neuroscience?
A: Before becoming interested in cognitive neuroscience, I was interested in how people think. During college, I worked in a library and tried to figure out what kinds of errors people made in shelving books. Did they confuse similar-looking letters? Did they remember them in the wrong sequence? A few years later, I became interested in associating how people think with brain function. This interest was prompted by a movie called Awakenings, a movie was based on a true story about a famous neurologist, Oliver Sacks. Dr. Sacks attempted to use drug called L-Dopa to "awaken" people with catatonia due to encephalitis lethargica. In particular, I remember that these catatonic patients could walk across a tile floor if the pattern was regular, but if there was a break in the pattern, then they stopped. I wondered why this would be and I decided to learn more about the neural basis of cognition and behavior.

Q: What was the academic/professional path you had to take to get here?
A: My route was very circuitous. My Bachelor's degree was in Communication studies and I went to graduate school in this area. After the 2nd year of graduate study, I realized

that I was much more interested in my Psychology classes than my Communication classes. During that time, I also saw the move Awakenings. I decided not to pursue a PhD in Communications and left with a Master's degree. For the next few years, I worked at a small record label while my husband got an MBA. I also studied like mad for the GRE test. I was very happy when I was accepted at UC Berkeley. It was my dream to study cognition in adults with brain injury. During my Ph.D. program I got to work with patients with a variety of disorders including damage to the cerebellum and those with Parkinson's disease. I found and still find working with patients very rewarding.
After graduate school, I decided to learn a new tool to uncover the link between cognition and the brain. I took a postdoctoral position at the University of Pittsburgh to learn functional magnetic resonance imaging (fMRI). By using patient research and fMRI, I found that I could present multiple forms of evidence for my research hypotheses. Each method has disadvantages but, combined, they are powerful way to answer research questions as the advantage of one method can overcome the disadvantage of another. After Pittsburgh, I became a Research Scientist at UC Davis and learned about clinical disorders such as schizophrenia and how problem with neural function may lead to cognitive difficulties. After a few years, I decided I was ready to have my own lab and research program. I applied for jobs and was happy when MSU offered me a position!

Q:What are your current research interests?
A: My research focuses on the cognitive processes that are necessary when automatic behaviors are not sufficient to accomplish goals. Humans have the ability to change their behavior when circumstances change. In other words, we can break out of "automatic pilot" mode. I study the control processes need to break out of automatic and routine behaviors. Understanding how we adapt, and the underlying neural mechanisms which allow us to do so, is the focus of our work. We combine methodologies such as fMRI, neuropsychological, and behavioral techniques in order to investigate these abilities in novel ways. Essentially, we emphasize both words in the term "cognitive neuroscience"; that is we attempt to generate and refine theories of cognitive control by understanding how the brain undertakes these functions. In the same way, we test predictions about the functions of neural regions based on theories provided by cognitive psychology. The combination of brain and behavioral data allows us to generate more comprehensive models of cognitive control.

Q: Do you recommend prospective students to apply for the psychology or neuroscience graduate programs?
A: I accept students from both psychology and neuroscience graduate programs. These programs have different requirements and, of course, grant PhDs in different, albeit, related fields. In psychology, students are directly admitted to work with a sponsor (e.g., Dr. Ravizza) and it is possible to be a teaching assistant. As a neuroscience student, you are admitted into the program and will rotate through 2-3 labs before selecting a home lab. Also, psychology training focuses more on statistics and cognitive psychology and neuroscience, whereas neuroscience requires students to gain proficiency in molecular and systems neuroscience as well as cognitive neuroscience. Students in my lab are expected to gain expertise in both neuroscience and psychology, so which program you choose should depend more on your interests and the direction that you see yourself heading after graduate school.

Q: Do I really want a PhD in psychology or neuroscience?
A: A PhD allows you a few career options, but it primarily leads you to a career in research. If doing research (as opposed to reading about research), makes you happy, then you should get a PhD so that you can do this as your career. Ask yourself if you want to go to graduate school simply because you are nervous about finding a job after your B.A. There are actually more PhDs produced than there are jobs for them, so finding a job actually becomes more competitive. As an undergraduate you probably got a lot of praise in your schoolwork. In graduate school and beyond, constructive criticism becomes much more common. To persevere, scientists need to find their work intrinsically motivating and pursue it because they find the research process rewarding. This takes a great deal of commitment, so think carefully about whether this is what you want.

Q: Do you have an opening for a post-doc ?
A: If you are interested in joining the lab as a post-doc, it may be possible if funding is available and the timing and fit are right. Also, it might be possible to pursue a joint post-doc with Dr. Ravizza and another mentor from the Cognition and Cognitive Neuroscience area. It would be helpful if you have sufficiently specific ideas to apply for external funding prior to starting a post-doc.

Q: How is your research funded?
A: My research is currently supported by a grant from the National Science Foundation.

Q: What do you teach?
A: I teach several classes at both the undergraduate and graduate level. I have taught Cognitive Psychology and Cognitive Neuroscience which are both lower-level undergraduate courses that focus on the mind or mind-brain relationship. I have also taught the Neurobiology of Learning and Memory which is a small course for Psychology majors in which we delve more deeply into how the brain is able to learn from experience. At the graduate level, I have taught a seminar in which we read empirical papers on several topics in cognitive neuroscience and go into the nitty-gritty of the methods in those papers.

Q: As an undergraduate, how do I get involved in research in your lab?
A: I typically recruit undergraduate researchers in April. I prefer that undergraduates volunteer for credit in a Psy 490/491 course for two semesters. When I start recruiting, I post an ad on the Psychology Department's website so you should look for that ad to appear in the Spring.