

## Sewanee Research with Dr. Brandy Tiernan

Throughout the summer of 2016, I interned under neuroscientist Dr. Brandy Tiernan. This internship was on the campus at The University of the South, and was the first summer position ever available for students in the neuroscience department. This internship helped build my research abilities while also making it possible for me to better understand and appreciate neuroscience in a way I never understood before.

Before accepting this internship, I volunteered in the Emotion and Cognitive Control Lab (ECCL) on campus, which is facilitated by Dr. Tiernan. This made it possible for me to stay there over the summer and study while preparing the lab for data collection during the Fall 2016 semester on campus. I was completely new to all the equipment used in this lab; I had no idea how to place an electrode cap on someone, how to clean the equipment or even what it is used for. Working in the ECCL during the semester introduced me to all of these things. Not only did I learn what these things are used for, but I also learned how to use them and why they are important in data collection of experiments.

With the internship offered to me through working in this lab, I was also asked what experiment I would like to manage and conduct. This is something I never thought possible. Dr. Tiernan worked diligently with me to write a proposal, begin research on my own experiment and to code it into software that was beyond my understanding. Before the summer began, I researched multitudes of areas before deciding what I wanted to experiment on. This was

presented at Scholarship Sewanee before my internship ever begun. The opportunities that I got just from volunteering in the research lab are unbelievable.

Walking into this internship, I had no idea what to expect. I had never done an internship before or had much research experience. The amount of help I got from Dr. Tiernan eased a lot of anxiety. She understood that everything was new to me and took that into consideration whenever giving me tasks to accomplish. Also, during the summer, the Bridge Program was started. This is where high school students from around the nation come to learn about different sciences. Throughout her time working with them, she gave me specific details for what I was intended to do, that way I knew what to expect before they arrived. This gave me leadership experience as well as an opportunity to teach the things I have learned while working under Dr. Tiernan. The amount of care she showed me throughout the entirety of the internship made this summer fun and exciting while also learning countless tools for future courses and internships outside of campus.

Throughout this experience, there were a handful of different things that I was tasked with, including working on soon-to-be published research papers, to dissecting brains, to learning how to code my own experiment. During my time preparing for the high school students, I was able to visualize parts of the brain by actually dissecting one and searching for the different areas (i.e. hippocampus, corpus callosum, etc.) myself. This had to be one of my most memorable tasks in this internship. I have always enjoyed learning by doing things hands-on. This gave me the ability to learn what each area of the brain is used for while seeing where those tasks take place. I learned the reasoning on why each brain is different between species and am

now confident in explaining to others why that is so. Throughout researching for my own experiment, I learned specifics in experiments (i.e., what is needed for proposals and what information is needed from other, already performed, experiments in order to conduct an experiment that follows the already found data in similar areas). Doing this made me able to ask questions in the perspective of a reader instead of just an experimenter. This makes me able to get data that supports my hypothesis while also searching for answers to those questions throughout the experiment itself.

This internship introduced me to many areas of neuroscience that I had not seen before. A lot of those came from working on Dr. Tiernan's papers about aging and emotion regulation, to which my name will now be included when published. This opportunity alone is mind-boggling; having the opportunity to be on a published paper as an undergraduate is an honor, to say the least. Working to understand her findings and reasons behind experimentation has only increased my interest in neuroscience. Not only that, but it furthered my capabilities of researching and writing research papers in general. This internship has filled me with the utmost confidence that I can conduct research in a manner that is satisfactory to professors and any outside sources that require sufficient research. Having an internship under a neuroscientist will further my abilities to get accepted into a neurosurgery internship that I will hopefully be a part of next summer.

This summer was full of activities that I would not have found elsewhere. Living so close to Sewanee, having my first internship here made it possible for me to ease into the rest of my life. This summer was filled with so much fun during my internship and outside of it. On top of having an internship in an area that interests me, I was able to experience Sewanee during the

summer and also direct a musical in my home town. Meeting new people and enjoying the sun on the mountain was a great experience. Interning on campus was definitely a fantastic decision for my first internship and I hope to broaden my experiences elsewhere while using the tools gained from what I learned at The University of the South this summer.