My summer internship at Sewanee: The University of the South presented the opportunity to work in Dr. Jessica Siegel’s neuroscience laboratory and study the effects of nicotine and/or methamphetamine exposure on the developing adolescent brain in mice. The results of this research have implications in understanding the effects of co-administration of nicotine and methamphetamine during adolescence, an increasingly common phenomenon in adolescents today that was previously unanalyzed in a research setting. The research conducted during my summer internship yielded statistically significant results which will be submitted for publication, and the abstract written for the study was recently accepted for presentation at the 2014 Society for Neuroscience (SfN) conference. The experience, insight, and opportunities afforded by my summer internship are of integral importance as I progress to graduate school in pursuit of a doctorate in neuroscience and a career in research.

Before embarking on my summer neuroscience internship with Dr. Siegel, I found myself extremely uncertain of recent changes in my post-graduation plans. Therein, I arrived at Sewanee with the intention of matriculating to medical school and ultimately working as a diagnostician. However, my future plans underwent a paradigm shift in focus following my freshman year, when I realized my strong interest in the field of neuroscience. After a great deal of contemplation, I elected to begin taking the prerequisite classes necessary to enroll in Sewanee’s newly founded neuroscience minor. While taking Introduction to Behavioral Neuroscience in the fall of my junior year,
I felt for the first time that I had truly discovered my academic passion, and I subsequently became increasingly intrigued by the realm of neuroscience and its various sub-disciplines such as neuropharmacology. My growing interest in neuroscience culminated when I was selected to participate in Dr. Siegel's summer neuroscience research internship, and my experiences therein resolved all prior uncertainty regarding my shift in post-graduate plans from solely attending medical school to instead entering a neuroscience graduate program with the ultimate goal of conducting research in molecular neuroscience. In addition to reaffirming my change in career direction, my summer internship has afforded me several unique opportunities which will support and enable my future endeavors in neuroscience graduate school.

The knowledge and experience that I gained during my summer neuroscience internship included hands-on experience with numerous research techniques including experimental design, behavioral assessments, immunohistochemistry, intraperitoneal injections, handling and care of laboratory animals, and data analysis. Specifically, I learned to monitor and conduct experiments such as the Open Field test and the Morris Water Maze, slice brains for analytical staining, perform immunohistochemical stains for the dopamine transporter, and analyze resulting data to determine outcomes and assess hypotheses. These and other research techniques that I learned during my summer internship are highly pertinent to my future career and education. Such experience will greatly supplement my applications to various graduate programs.
and institutions and will undoubtedly be of further benefit as I continue striving towards achieving my goal of earning a doctorate in neuroscience and working as a neuropharmacological researcher.

In addition to the myriad laboratory experience afforded to me by my summer research internship, I have the opportunity to design and present a poster detailing the findings of the research and publish a manuscript in a scientific journal as a lead author. Accordingly, I was recently notified that the abstract for our study was accepted for presentation at the Society for Neuroscience (SfN) 2014 conference in Washington, D.C. this November. This remarkable opportunity involves presenting the aforementioned poster at a general session of the SfN conference as well as at the Faculty for Undergraduate Neuroscience (FUN) session. Moreover, I will be fortunate to attend the graduate school fair held during the SfN conference, which will provide exposure and information essential to determining the appropriate institution and graduate program to attend following graduation from Sewanee.

My summer internship at Sewanee was a monumental life experience, and the knowledge and reassurance that it provided have been and will be of the utmost importance as I move forward in my pursuit of a doctorate in neuroscience and a career in research. The techniques that I learned and the experience that I gained during my summer internship have opened the door to a new career path of which I was previously uncertain, and I intend to take full advantage of the resulting opportunities as I move
forward with my formal education. My summer research internship was made possible by contributions from the Fund for Innovative Teaching and Learning (FITL) and was conducted under the guidance and supervision of Dr. Jessica Siegel at Sewanee: The University of the South.