Kaela S. Singleton
Seed Research statement

Introduction: I always think of this as a quick synopsis of who you are/what you want out of graduate school, and how you are qualified/your goals.

My interests revolve around understanding the molecular and neurological mechanisms responsible for altering physiological behaviors and noting their impact on cognition. I have had numerous research experiences through the NIH funded BP-ENDURE program working in neurophysiology and cell biology at Georgia State, Emory, and Vanderbilt University. These experiences have introduced me to key techniques including perfusions, animal care, cell culture, immunoblotting and immunohistochemistry as well as exposure to key scientists in the field of neuroscience and molecular biology. My studies in Classical History and Culture have driven me not only to inquire about the molecular components that define behavior in lab, but also to research the applications of medicine and science from fourth century Greece to now. **My goal as a graduate school applicant** is to develop the techniques I have already accumulated and apply them to the exceptional research program at **[program]**, and further develop both my technical and intellectual skill set in order to continue to advance as scientist with the field of neuroscience. I feel that with my previous experiences I will be able to grow immensely as a researcher and contribute to the overall mission of this program.

Comment [KS1]: Be sure to talk about your overall goal. It doesn't have to be like get a post doc and become a professor – just what you want from this experience and how this program fits that need!

Body: I approached this as a statement of purpose - how I got to where I currently am, discussing how my interest in neuroscience peaked plus the experiences I've always had.

The onset of my interest in neuroscience began at a young age in the seventh grade, when we had the opportunity to dissect a sheep brain, leading me to become fascinated with the human mind. In my senior year of high school, I sought after the opportunity to pursue a career in science by participating in Agnes Scott College's Generating Excellence in Math and Science Program where they challenge women to collaborate and act as mentors to one another. From this group of women I learned the importance of peer-driven achievement and internal motivation to succeed. Combined, these two incidents provided me with the confidence needed to begin exploring my interests in neuroscience.

Comment [KS2]: In every paragraph or mention of something – say what that experience taught you and be sure you conveyed that within the statement! Have a person outside of science read your draft and they can help with this!

When discussing research experience do it in a formulaic way: I worked with Dr. X at institution Y. My project focused on X. The project entailed (techniques). I learned from this x,y,z. This impacted me in X kind of way. It's colored coded :)

Following the beginning of my sophomore year, I sought to engage myself, not just in acquiring knowledge but the application of my newfound knowledge through research. In my sophomore year, I became a part of the competitive Neuroscience Education and Training program (NET/work). This program exposed me to my first research experience, working at the Center for Brain and Behavioral Institute at Georgia State University with Dr. Michael Black as a fellow within the Behavioral Research in Neuroscience program (BRAIN). In working with Dr. Black, we were given the opportunity to propose and conduct our own research experiment. The project developed by my lab mates and I was to establish the molecular effects of repeated and acute cocaine injections on *procambarus clarkii*. This project entailed careful handling and injections of invertebrates as well as sacrificing and dissecting nerve chord for

reverse transcriptase PCR and immunoblotting. In addition to this, I was also given the chance to present this study at the BRAIN Research Symposium and the 2012 Society for Neuroscience conference. This experience allowed me to familiarize myself with scientific language, the ability to present in front of large crowds, as well as networking with other scientists. Most importantly this opportunity allowed me to realize the magnitude of neuroscience research and gave me the determination I needed to become a skilled, competitive, and exceptional candidate for pursuing a career in neuroscience.

Comment [KS3]: Add your achievements in wherever possible!

In addition to professional development workshops and exposure to new techniques, the NET/work program also allowed me to begin a research assistantship with Dr. Gretchen Neigh at Emory University. I quickly found my place in Dr. Neigh's lab and began assisting on studying the neurobiological and behavioral mechanism of HIV in female adolescence transgenic rat model. This work entailed stress behaviors and handling in rats, as well as tissue slicing and immunohistochemistry. The research I have conducted in the Neigh lab has continuously challenged me to work harder through collaboration with other scientist and graduate students, strive for excellence by peer driven competition and seek out opportunities to further enhance my skill set. In the spring of my junior year, I worked with the NET/Work program in applying for summer research assistantships in order to gain exposure to new methodologies. Fortunately, I received an offer to be a research assistant at Vanderbilt University in their Summer Science Academy program. I began working with Dr. Kate Ellacott in the Molecular Physiology department focusing on insulin resistance in primary rat astrocytes. The project entailed astrocyte cultivation, immunoblotting for phospho-AKT, and immunohistochemistry. In addition to data collection, Dr. Ellacott also asked that I actively participate in weekly lab meetings giving my own progress reports and presentations. This open communication with researchers in the scientific field furthered my experience in presenting to large crowds but also introduced me to the different perspectives on scientific inquiry.

Conclusion: This paragraph changed for each school I applied to - basically, summarizing how I thought I fit into a specific program. It also often included specific researchers I wanted to work with if I had the space.

Considering the novel discoveries at **Blank University** I am confident that the sum of my experiences will be a valued addition to your program and that the continued investment of my education and development as a scientist will ultimately contribute to the growing knowledge of neurophysiological research both at **program name** and in the field of neuroscience. My ultimate goal in pursuing a position in the **Graduate Program** is to find an institution that fully embodies all the characteristics of excellent science, and contributes to it my determination, technical skill set, and passion for neuroscience. I have found that within this program, and I hope to be able to actively engage in the challenges proposed by a generation of physiological and cognitive disorders with fellow researchers at **program name**. I would greatly appreciate the opportunity to learn and grow as a researcher from the faculty at **University**, and I thank you for your time and consideration in reviewing my application.