Christine L. Faunce – Research Statement

I joined the Center for Applied Behavior Systems (CABS), run by Dr. E. Scott Geller, to gain insight on how the scientific process worked and to gain introductory experience in undergraduate research. I conducted humanistic behavior research on pedestrians and pedestrian safety. [redacted] At the time of the study, autonomous vehicles were largely underexplored for their implications in pedestrian and driver safety. Through video analysis using Hawkeye, I coded both driver and pedestrian behaviors to assess their interactions. Ultimately, we observed [redacted] which is noteworthy for autonomous vehicle developers. This work was presented at the Virginia Association for Behavioral Analysis Conference in 2018. Even though my research interests have changed, I would not give up the opportunities I had with CABS. At every CABS meeting, I felt empowered to contribute to the discussions on experimental designs [redacted] I attribute many aspects of the scientist I am becoming to the support and mentors I encountered in CABS. Ultimately, the death of [redacted] motivated me to study neurological disorders and how more effective therapeutics can be developed.

I joined The Buczynski Lab, which studies the neurobiology of addiction and drug target identification, in 2018 when it was still fairly new. Substance abuse is a pervasive, debilitating, and costly epidemic, and I was intrigued by Dr. Buczynski's behavioral and molecular approach to studying it. I did not realize it at the time but joining a small lab with no graduate students afforded me many unique opportunities to take on leadership roles and independent projects as an undergraduate student. I have led two projects during my three years in the lab, and I have trained and mentored five undergraduates throughout my time. When I first joined the lab, I focused on [redacted] Previous literature [redacted] My goal [redacted] I completely involved myself in this research, and I sought independent funding from the Virginia Tech Honors College so that I could stay with the Buczynski Lab and train on liquid-chromatography mass spectrometry as an analytical measure for quantifying [redacted] Additionally, I published a literature review as a compilation of my background research in the Journal of Neuroscience Methods in January of 2020.

This project has taught me more than just the technical aspects of research, but through it, I have realized the large amount of time and perseverance needed to succeed in research. For my first year in the Buczynski Lab, the experimental parameters were not working. [redacted]

[redacted] move towards publishing our findings from this work. This project has highlighted to me the importance of translational animal models to recapitulate human diseases and disorders.

As I yearned to apply my chemistry knowledge in the lab, I independently began a new project of characterizing [redacted] Previous data had linked [redacted] Through the funding support of the Clare Boothe Luce Foundation, I spent the summer of 2019 adapting my skills to molecular techniques [redacted] When I discovered this difference, I felt insurmountable pride in realizing that I had data to contribute to the scientific community. I am currently in the process of preparing a publication to [redacted] which I hope to submit by the end of the calendar year. [redacted]