

Christine L. Faunce – Personal Statement

Finding my sense of purpose was something I grappled with during my first year at Virginia Tech. Undergraduate research changed my experience, but more than anything, meeting my first research mentor, [REDACTED] made my Virginia Tech experience what it is today. In CABS, I learned how to apply the scientific method and contributed to projects focused on pedestrian behavior and safety. However, a pivotal moment for me was losing [REDACTED]. As I was trying to ascertain how losing my mentor could have been prevented, I was also enrolled in organic chemistry, a class not required for my major at the time, but one that piqued my interest. I was immediately captivated by the ways which chemistry could be used to study and treat diseases. The passing of my mentor and this newfound curiosity spurred my motivation to find a research opportunity that could intersect my interests in chemistry and neuroscience. After nearly five years of undergraduate research experiences, I am passionate about utilizing chemical biology to uncover novel, more effective therapeutic targets, and I believe that pursuing a doctoral degree through the [REDACTED] will provide me with the best foundation to continue a career in this research.

My new passion led me to pursue a research experience in the Buczynski Lab in 2018 to study neurobiology and drug target identification. 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 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 on [REDACTED]

[REDACTED] My goal was [REDACTED]

[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 [REDACTED] through the summer.

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] This project has highlighted to me the importance of translational animal models to recapitulate human diseases and disorders.

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As I yearned to apply my chemistry knowledge in the lab, I independently began a new project of characterizing the underlying mechanisms of a specific genetic mutation [REDACTED] [REDACTED] Previous data had linked a [REDACTED] [REDACTED] so I investigated the potential molecular underpinnings of this mechanism [REDACTED] [REDACTED]

[REDACTED] Through the funding support of the Clare Boothe Luce Foundation, I spent the summer of 2019 adapting my skills to [REDACTED] [REDACTED]

[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 [REDACTED] which I hope to submit by the end of the calendar year. I believe that this work can inform researchers of [REDACTED] [REDACTED]

Before COVID became so widespread throughout the United States, I had accepted a position to work in the lab [REDACTED] to expand my research experience in chemical probe development. Despite not being able to work in [REDACTED] person, [REDACTED] I stayed an active member of the Buczynski Lab during this time [REDACTED] [REDACTED]

As a dual degree seeking student at Virginia Tech, I have benefited from an interdisciplinary curriculum which is why [REDACTED] access to multi-disciplinary research centers and collaborative environment excite me. I have used my interdisciplinary background to lead an [REDACTED] at Virginia Tech and to be an effective teaching assistant [REDACTED] I hope to contribute to the [REDACTED] community in similar ways in which I have impacted the Virginia Tech community. I am thrilled by the prospect of pursuing a doctoral degree in [REDACTED] where the scientific community is extremely abundant and diverse. I believe that the environment at not only [REDACTED] but [REDACTED] at large, will help me to decide whether I will pursue a career in research through academia or industry.

The work by [REDACTED] have inspired me as I continue to study the fields of chemical biology and disease mechanistic research. The chance to be mentored by any of these ground-breaking leaders in science would be unparalleled and is why I am eagerly applying to [REDACTED] to pursue my doctoral studies. I intend to bring the same determination and commitment to research that I have exemplified throughout my undergraduate research career to my doctoral studies to begin addressing my own questions in CNS disease pathology.