Personal Statement

Austen Miller

My love of learning has guided my life. I love science not as a special enterprise but as a natural outgrowth of my drive to explore and understand everything around me. Growing up wandering the mountains and deserts, I developed an appreciation for the wonders of nature and the incredible diversity of life. My university experiences later showed me that these things could be studied using computational tools.

Although I have spent much time pursuing other subjects largely informed by my Spanish family —such as history, literature, and language— it was this broad understanding provided the context I needed to realize the importance of life sciences to the world and to me personally. The world desperately needs scientists who can bridge national, cultural, and linguistic gaps. As a dual citizen of Spain and the United States, I believe I am uniquely positioned to navigate and contribute to scientific research across American, European, and Spanish-speaking cultural contexts.

In 2018, for personal and financial reasons, I left my university, Saint Louis University Madrid, and returned to the United States. Before eventually returning to higher education and finding my path in science, I spent a great deal of time feeling completely lost. I spent these years working, first at a debt collection agency, then night shifts as a psychiatric technician at the Utah State Mental Hospital during the COVID-19 pandemic. I supported my parents through their financial collapse and assisted my epileptic sister (who could not drive herself) through law school. There was no one else around who could do it. The occasionally dangerous environment of the hospital, and the restrictions of the pandemic, demanded quickly learning discipline and collaboration. Being on the night shift, I often had quiet moments when I could read. During a time when my life felt completely stagnant, it was a relief that I could at least continue to educate myself. I never truly appreciated education until I felt I had lost the chance to pursue it, except by my own initiative where I identified topics I was interested in and pursued them. Without realizing it, I was preparing myself for a research-oriented career.

It was at this time I decided I wanted to pursue a career in the life sciences. I wanted to do something that was interesting, could provide me financial security, and would help the situation of the world. I took inspiration from my love of nature and began reading books about biology and ecology. When my family’s finances stabilized, and I had saved enough to feel secure for a little while, I registered for Utah Valley University (UVU) in Spring 2022. I tried as hard as I could and surprised myself with better grades than I had ever received before. My newfound drive helped me to feel confident enough to embrace opportunities I never would have before. I applied to and was chosen for the UVU Honors Program, a science-oriented study abroad experience in Sicily, and most impactfully to me personally, a summer in 2022 working as the UVU Cultural Resources Intern at Capitol Reef National Park.

Capitol Reef utterly inspired me with its beauty, intricate ecosystems, and diversity of life. Working there allowed me to gain valuable field experience and collaborate within a team. I also occasionally had the opportunity to interpret the park's complex natural and cultural themes for visitors at the park's visitor center. These experiences underscored the importance of fieldwork and science communication in advancing scientific understanding. These experiences helped me feel confident on my path as a biologist.

Another role that gave me experience communicating complex scientific ideas to laypeople was when I worked as a research assistant for the UVU Roots of Knowledge, a massive stained-glass gallery that chronicles human intellectual and cultural history. What continually struck me about the gallery was its ability to use art, history, and science together to draw people in and educate them. I was responsible for fact-checking and editing the digital version of the gallery, which honed my research skills. I had always felt that my Spanish heritage and language skills were important, but it wasn’t until I started using Spanish language sources for research and assisted with tours for Spanish speakers that I understood this in concrete terms. The gallery made me see how seemingly unrelated fields and skills could connect and enhance each other.

In 2022, a pivotal moment happened when I was accepted as a National Science Foundation S-STEM fellow. My research mentor in the S-STEM program, Dr. Geoffrey Zahn, has been a huge influence. He is responsible for refining my general interest in biology and ecology into specific interests into topics like plant-fungal interactions and microbiomes, pushing me to use computational tools to explore these topics, and teaching me the process of science works. His example, and that of many other professors, helped me realize that my goals, which I had been treating as long-shots, are entirely possible and within reach.

This newfound confidence and understanding led me to my current research project: a spatial analysis of the foliar fungal communities of the Pando aspen clone, the world’s largest tree. This project has given me opportunities to collaborate with and lead other students. In the past, I would never have attempted such an ambitious project requiring learning so many new skills and permitting from the USFS. Now I am eager to become involved with research involving other unexamined areas and ecological impacts.

NSF programs have been instrumental in my career development. I cannot overstate how critical the NSF S-STEM program has been in funding my undergraduate education during financial hardships. It has helped me develop connections and find a sense of belonging in the academic sphere. I am particularly interested in the NSF GRFP because it aligns with my commitment to advancing scientific knowledge and fostering innovation. I know that having the opportunity to be part another NSF program will propel my career in ways I cannot even imagine yet.

My career interests are directly relevant to NSF criteria. I am interested in areas of research which are still largely unexplored, such as plant-fungal interactions and plant microbiomes. These areas of research are important for gaining a better understanding of unseen interactions between organisms which will help us better understand the environment.

One area of particular importance for me is the funding NSF GROW has for international research. Knowledge must be shared or be rendered sterile. When the world is involved in research, that research feels like it does not belong to any one country. Science explores nature, and nature does not perceive borders.

I am committed to make a career in science and research. I want to expand human knowledge, both for its own sake and to inform human actions. I also want to spread that knowledge so it can be used for global impact. The NSF is the ideal partner to help me achieving my aspirations.