

UCSF Tetrad: Statement of Purpose

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Please state your purpose in applying for graduate study in the Tetrad Program. Provide any personal or background information which may aid the selection committee in evaluating your suitability for graduate study at UCSF including any educational, cultural, economic, family or social experiences, challenges, or opportunities relevant to your academic journey.

At the beginning of my undergraduate career, I pondered how these accomplished professors decorated with PhDs, numerous publications, and countless years of research experience navigated the academic world from the point in time I write this now. With each passing year, I have explored not only my research interests in the fields of biochemistry and cell biology, but also the journey that led my research mentors to their current positions. Conversations with my mentors revealed that, despite my perception, they were not always the impressive figures they are today. Each of them had their own successes and failures that directed their careers, sometimes in directions unforeseen. I entered my undergraduate career with the notion that I'd work in the same lab for all four years. It was a disconcerting experience when I realized my junior year that I didn't want to continue working on behavioral neuroscience further, even though my fervor to study science remained. Accepting the uncertainty that lies in the future has provided me with the perspective necessary to grow from each of my undergraduate research experiences and find my own path. I found myself drawn to cell biology and biochemistry, fields I've explored through summer opportunities at the University of Michigan and UCSF. Working full-time in two different labs has shaped my development as a young scientist by introducing me to different lab techniques, teaching me how to formulate hypotheses as well as how to design experiments. The excitement I feel while exploring poorly understood biological problems in hopes of contributing to a growing body of knowledge compels me to pursue a PhD in Cell Biology through the Tetrad program at UCSF.

My decision to pursue a PhD has been partially influenced by the various research mentors I've worked with throughout my undergraduate career. At the University of Miami, Dr. Jennifer Britton was my first research mentor and the person who helped me start thinking about research problems critically. Over the course of two years, I learned how to identify the purpose of distinct components in our research studies, how different variables and factors were measured or controlled, and how to internalize knowledge from research articles in order to better understand research in our field. Dr. Britton also encouraged me to explore fields outside of behavioral neuroscience after I explained to her my growing interest in cellular biology. Her desire to train undergraduate students helped me develop key skills as a researcher, and her encouragement to explore other research interests allowed me to identify cell biology as my field of interest. My interactions with Dr. Robert Fuller at the University of Michigan inspired my curiosity about cellular biology. Over the course of ten weeks, I read several articles on the cellular mechanisms and biochemistry of vesicular trafficking in chorea acanthocytosis. During our weekly meeting, I'd explain my readings to Dr. Fuller and we'd apply concepts from the readings to my research project. These conversations would sometimes go on for hours as we bounced ideas off one another and traveled further down the rabbit hole of literature. Working with someone like Dr. Fuller showed me the importance of retaining a sense of curiosity and wonder in research. My most recent research experience with Dr. Peter Walter at UCSF taught me how to maintain a

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work-life balance, as well as how to incorporate creativity and art into science. Dr. Walter would often inquire about how things were going throughout my time in the lab. The first time I replied to this inquiry, I began to reply with a project update. He clarified that he wasn't inquiring about my lab work, but about my personal life. This interaction reminded me of the importance of balancing my time in the lab with time for myself. Throughout my time in the lab, I encountered various artistic representations of the science being done there, from mobiles of cellular organelles to hand drawn graphics of an experimental design. Working with Dr. Walter and others in the lab who embraced their creativity and incorporated it into their science reinforced the significance of balance. Being reminded to maintain and nurture aspects of my life outside of the lab was a comforting experience that will resonate with me during my graduate studies.

Throughout my undergraduate career, I have undertaken mentorship roles that have shaped my career path. For three years, I worked in the Undergraduate Academic Services for Psychology as a Peer Advising Liaison (PAL). Many of my tasks required me to provide academic and research guidance to students and help them shape their trajectories at the University of Miami. Serving as a teaching assistant in courses for first year neuroscience and psychology majors has been a fulfilling experience. I've seen how students have matured from first year students into sophomores and juniors with a variety of academic accomplishments and extracurricular involvement. In addition to being a PAL, I also worked in the first year residential colleges for two years as a First Year Fellow. Living with 80 residents for two semesters allowed me to develop a bond with most of them in a way that isn't always possible in an academic advising setting. This in-depth connection with my residents provided me with the opportunity to interact with students in distinct areas of study and provide them with academic and career resources necessary for them to fulfill their aspirations. These mentorship experiences have provided me with tools that I will utilize in my graduate studies and professional career.

I aim to work with underrepresented students to provide them with research opportunities and necessary resources to be successful in graduate school. I have participated in programs designed to promote diversity in the STEM workforce and I hope to contribute to the diversification of future generations of scientists. This diversity manifests itself in the form of intelligent and talented students who do not enter research, not because of a lack of desire, but a lack of support. Many students cannot afford the resources necessary to achieve their academic and professional aspirations. The inclusion of students that are disproportionately underrepresented in STEM fields is critical not only for expanding the research workforce but also for inspiring future generations. In 2010, only ~6.9% of PhDs identified as underrepresented minorities, but they composed 25% of the US population. Our scientific community needs to understand and reflect the group of people it's trying to help. As a Queer Latinx, seeing accomplishments by underrepresented people in science has inspired me to continue pursuing a career in research. Providing students with the opportunity to gain insight into research, learn invaluable lab skills, and work closely with faculty mentors is crucial to diversifying and, ultimately, revolutionizing ideologies within research.

By pursuing a PhD in the Tetrad program, I will be able to work with established researchers who are successful in their fields. I believe that any of the investigators I am interested in working with have mentorship qualities and research principles that have propelled them towards success. My training as a researcher, both at the University of Miami and at UCSF, will

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enable me to achieve my academic goals by providing me with mentorship from faculty, applied, in-depth knowledge of cell biology and biochemistry, and years of lab experience.