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Ms. Penney

Independent Study and Mentorship I

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### Topic Proposal

My topic of study this year is neuroscience. Specifically, I am looking to focus on developmental and cognitive neuroscience to better understand the functions, changes, and conditions of the brain under general neurological disorders. I aim to learn more about clinical research in neurology and professional skills in this branch of neuroscience. I hope to utilize the knowledge I gain this year to produce an impactful final product that will contribute to society.

My interest in neuroscience stems from a young age. This field allows me to integrate my love for the biological sciences and desire to participate in groundbreaking research with my passion for helping people. Neuroscience is an advancing field with the potential to further our understanding of the human body as a whole. The fact that our brains are the control center of our whole body truly amazes me. I have been able to immerse myself in this field during my time at Medical City McKinney as a junior volunteer. I was able to shadow a neurologist and understand what a typical schedule in that profession looks like. I saw how the neurologist works alongside other healthcare professionals to attend to patients and effectively address their medical needs. In addition to this, I was able to explore other units in the hospital including the emergency room, laboratory, radiology department, intensive care unit, and medical surgery. Through these rotations, I familiarized myself with a common healthcare setting and connected with many patients. Additionally, last year through the Health Science II Program in Frisco ISD, I had the opportunity to expand upon my clinical experience as a certified nursing assistant. As a licensed professional, I was able to work in a variety of settings in Baylor Scott & White, Medical City Frisco, Centennial Pediatrics, and a number of rehabilitation centers. During my time at these locations, I not only had the chance to build upon my patient care

skills, but also experience surgeries. A few of the surgeries I had the privilege of observing were an endarterectomy, percutaneous nephrolithotomy, and a neuroendoscopy. All of these experiences led me to solidify my interests in medicine and further peaked my interest in neurology. The hands-on exposure to a variety of departments allowed me to narrow down my focus to the area of neuroscience and was invaluable to the practical skills I obtained.

With my experiences as a volunteer and healthcare worker, I am familiar with the professional environment of healthcare settings. I have learned how to serve patients and empathize with them while also being alert and quick to take action under a code blue or a flashing call light. Although I will be pursuing the research aspects of neurology (neuroscience) in a laboratory setting, the knowledge I have gained will still be applicable because it is important to know how the research will directly impact patients. It is crucial to be persistent, diligent, curious, and open to learning new things to be a successful professional in the field of neuroscience. As an individual who possesses these traits and has prior knowledge of the medical field, neuroscience is a perfect fit for me. To prepare for my intended area of study, I am expanding my knowledge on common neurological disorders and exploring the biological processes that cause those conditions. The technical knowledge combined with an ample skill set will prove to be beneficial in preparing me for the field of neuroscience.