

Research Statement

Throughout middle school and high school I was always amazed at how the human body worked in unison to perform simple tasks. If I were writing with a pencil in class, walking down the hall, eating lunch, or playing lacrosse, I would always find myself taking a moment to stop and think or observe how my body was making such motions and fine-tuned sensory inputs. How did my hand open and close when I told it to? How did my muscles work together to form words on a page? These questions were amazing to me and I wanted to learn the answers.

I knew that I wanted to be an engineer since I was a freshman in high school, so I pursued my passion. I excelled in the hardest courses offered, and was accepted a year early to a math and science focused school for my junior and senior year of high school. I acknowledged my acceptance and enrolled at the Massachusetts Academy of Math and Science. I took classes at the academy my junior year, and then took courses as a full-time college student at Worcester Polytechnic Institute (WPI) my senior year as a part of the curriculum. I was able to make the most out of this opportunity by studying multiple engineering courses and humanities subjects. After a full year of courses, I knew I wanted to be a Biomedical Engineer at WPI after taking a course in my final term entitled "Introduction to Biomedical Engineering" and focus in the biomechanics and the nervous system after taking "Human Anatomy and Physiology, and Neurobiology" later in my college career.

That fall I enrolled and continued my undergraduate career at WPI declared as a Biomedical Engineering major. From my introductory course I learned there were many different focuses and careers within the discipline and that it was important to choose a concentration of study. In addition to WPI's challenging courses, schedules, and group projects, I worked with graduate and predoctoral students in a Regenerative Medicine lab at WPI's state-of-the-art bioengineering facility. The next year, my current year, I have continued research in another field of bioengineering at the Bioengineering Institute of Neuroprosthetics (BEI) at WPI. I have been working closely with graduate and predoctoral students in examining the electrophysiology of neurons, and performing experiments to develop an action potential through formulating special photoreceptive surfaces. The leading professor of my current lab has been impressed with my work and requested that I stay to continue doing paid research in his lab for the remainder of the year.

I have plans of doing research to obtain my master's in science after I graduate. After I fulfill my master's degree requirements, I have plans to continue my research in an effort to earn my PhD in Biomedical Engineering, focusing on neuroprosthetics. I would then like to work in my area of research at a private institution and to also teach classes and lecture at institutions across the nation, much like I was exposed to by my introductory Biomedical Engineering course at WPI.