



QuarkNet's cosmic ray detectors and masterclass activities are a primary reason that I am pursuing a physics degree in college and aspire to conduct research in astrophysics this upcoming summer and after graduation. QuarkNet's programs provided me with my first opportunity to conduct hands-on modern physics research. Using the cosmic ray detectors, I conducted two research projects for the high school and district-wide science fair in 2015 and 2016. I investigated correlations between weather patterns and muon flux; the following year, I constructed a cloud chamber and compared its findings with those from the scintillator panel system. Through assembling, calibrating, and collecting data with the CR detection system, I discovered a drive to independently explore physics concepts that otherwise wouldn't have ignited until much later in my life. Furthermore, the masterclasses provided me with unique opportunities share data globally, to hear about physics careers, and to connect with other high school students interested in physics. I was excited to learn physics beyond the high-school-classroom curriculum; it felt important and applicable.

Additionally, my interest in both astrophysics and particle physics piqued during my experiences with QuarkNet's programs. When learning about cosmic rays, I discovered an ongoing fascination with the vastness of the universe and how its pieces fit together and operate on a large scale. I entered college confident that I would study mechanical engineering, which I initially viewed as applied physics. However, I quickly realized that my true interests more closely align with the topics that I was introduced to through the cosmic ray detectors and masterclass activities than to product design. I have now added a physics major and astrophysics minor to my college education. Because I was exposed to particle physics in high school through QuarkNet, I was able to figure out that physics is my passion early-on in college. This has brought me confidence in my career path and will certainly prove an asset in research positions that I plan to hold in the future. Above all, QuarkNet's programs fueled my natural curiosity and drive to understand complicated ideas, which I believe to be my largest asset as a young physicist.

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