

The flashpoint of my scientific interest was sparked in the shadow of an astronomy dome in Peacham, Vermont. As my eyes adjusted to the velvety darkness of a February night, the sky began to reveal many of the scientific phenomena that refined my previously scattered work ethic towards studying the cosmos. Since that moment, I have relentlessly pursued knowledge of the mechanisms that govern unknown realms of the universe. With my fervor now uncovered, I not only follow my passion but strive to share it with different minds - starting with my family. My father is a high school educated immigrant in his late seventies who continues to work over forty hours a week at a blue-collar job, while my mother with advanced degrees set aside her career to raise my sister with autism.

My family and local community instilled the importance of developing a relationship with colleagues and the public. This relationship should be built without bias to economic class, gender, race, sexual orientation, cultural background, or intellectual facility. Despite being in a refugee resettlement city, Burlington (Vermont) High School lacked substantial support for English-language learners, as well as students with individual education plans (IEP). The abhorrent lack of assistance left many of these students unprepared for advanced and honors classes, resulting in Advanced Placement (AP) classes without a single IEP student and less than one percent of total AP enrollment learning English as a second language, despite living in the country for years. I will devote myself to a lifelong program creating educational content at all levels to best meet the learning patterns of different students. Beyond my graduate studies, I will continue to build a more open and welcoming scientific community by expanding this network to ensure that any student seeking advanced scientific study will have the opportunity to learn, regardless of their cultural, intellectual, or economic background.

A responsible scientific scholar carries an incontrovertible obligation to engage in research at the cutting edge and to communicate information to those eager to learn. Alongside my research engagements at Wheaton College, I worked with local families on Friday evenings to lead tours of the college observatory. The opportunity to demonstrate the details of telescopes to the local community solidified the importance of robust scientific discussion with wider society. I thrived when given the chance to narrow my engagement to introductory physics students as a tutor and teaching assistant. The teaching skills I practiced with my peers blended seamlessly with the lessons learned from my research when I began advising students in the physics department on a formal and informal basis. I met with my peers at Wheaton, gave guidance on finding experience outside of Wheaton College, and sat on career panels to share what I had learned in my research opportunities. Following a recent virtual visit to Wheaton to discuss the LLAMAS spectrograph with an astronomy class, I recognized the crucial importance of using my graduate research as a platform to continue engaging with individuals passionate about astronomy and physics, no matter their academic or social background. The amalgamation of these experiences solidified a desire to guide the scientists and leaders of the future, something I will continue in my graduate studies at Columbia.

At the Northeast Astronomy Forum 2018 in Suffern, New York I showcased a citizen science exoplanet observatory, Project PANOPTES, to a wide audience. I discussed the mission of

project PANOPTES with amateur and professional astronomers to expand the PANOPTES network. The opportunity to engage with both knowledgeable and general audiences strengthened the importance of healthy scientific communication and outreach, particularly in citizen-science projects. Presenting low-cost scientific platforms to the public encourages contributions from active scientists from all economic backgrounds, something I will emphasize throughout my graduate education and beyond when the opportunity arises.