

## Brandon Barker - Personal Statement

As a first generation college student who grew up in a rural community, raised by a single mother in a lower class household, each stage of life has produced new obstacles directly related to my background. Navigating and eventually learning to succeed in the university setting with my background has helped to curate my interests and fortified my desire to achieve a career in astrophysics. Alongside my career, I will continue my involvement in scientific outreach while advocating for educational equity and equal rights of marginalized groups within academia.

My involvement with organizations such as the Society of Physics Students (SPS), Women in Physics, and [Ask a Scientist](#) have given me an exceptional platform for science communication. In particular, I am interested in outreach focused around first generation students from rural communities, who are often overlooked despite the unique challenges that they face. In the U.S., 29.8% of adults over age 25 have a Bachelor's degree or higher; while in rural Appalachia, it is only 15.9%.<sup>1</sup> This trend is certainly not unique to Appalachia. Often, rural students do not see a college education as an attainable goal. Research has shown that as high as 1 in 5 low income high school graduates unenroll from college following graduation. Furthermore, those that *do* attend college have difficulties adjusting and are more likely to drop out in their first year than other students. For these reasons, I am committed to supporting first generation and low income students in their transition to academia.

During my first semester of college I began participating in [Saturday Science](#), a program jointly organized by our chapter of SPS. Here, volunteers from various fields and backgrounds go to Pond Gap Elementary, a local Title I community school, to conduct hands on science experiments and activities with the students. Most of the students participating in the program

---

<sup>1</sup> [https://www.arc.gov/assets/research\\_reports/DataOverviewfrom2011to2015ACS.pdf](https://www.arc.gov/assets/research_reports/DataOverviewfrom2011to2015ACS.pdf)

are from underrepresented groups including those from low socioeconomic backgrounds, students of color, and refugee families. Programs like this are absolutely critical to promoting science among marginalized groups to give them the resources that they deserve, and it was through this program that I found my passion for outreach.

This semester I have begun volunteering at Inskip Elementary, another local Title I community school, and Annoor Academy, a local Islamic elementary school. At Inskip I assist in leading a LEGO League robotics club. The students, ranging from second to fourth grade, are introduced to basic experimental design, testing, and programming. At Annoor Academy I develop lesson plans and lead activities for an after school science club. Both of these programs primarily reach students of color, many of which are from low income communities. Having been denied such opportunities as a child, I understand the importance of programs like these in early childhood education. My background as a first generation, low income student has given me unique insights into the diverse needs of these students.

I have worked as an astronomy TA and departmental tutor, and these experiences have given me the opportunity to speak to students from various backgrounds about their experiences. I have learned firsthand how there is no cut and paste solution for education.

A career in academia is about more than just doing and communicating research; as scientists we have a responsibility to nurture the next generation of students from all backgrounds. My unique background, continued efforts to engage the greater Knoxville community, and attempts to become a more effective educator will prove invaluable in reaching these goals.