

Much of my educational background has been shaped by privilege. I am a white woman who by virtue of the neighborhood I lived in had access to an excellent public school education. I am at least a third generation college student with a father who is a professor. It was expected that I would attend college, and through my family I had knowledge of not only how to apply and succeed at university, but I had the support and economic resources to continue my education beyond that. Although as a physics major in college I experienced gender discrimination, I largely took for granted the systematic advantages afforded to me by my racial privilege. However, this changed as a graduate student at UCLA: I realized that the students I taught were largely latino/a, but this diversity was not reflected in our department which had only one latino graduate student, and no latino/a postdocs or faculty. I began to educate myself on the barriers and institutional structure that have perpetuated this inequality. This disparity is not unique to any one school— in fact, Astronomy is one of the least diverse disciplines in academia, with a fraction of Black and Hispanic faculty that is just 3% (compared to 5% in Physics, 11% across all academic disciplines⁴). As a result, Astronomy is losing access to a larger and larger pool of talent necessary for the health and survival of our discipline.

Since that realization I have begun working on initiatives to combat the inequalities and attitudes in astronomy that have led to the systematic underrepresentation of minority groups. As much as anything I am motivated by solidarity— based on my own experiences as a woman in astronomy, I feel strongly that providing equal opportunities and outcomes for all underrepresented backgrounds of race, gender, disability and sexuality is a necessary prerequisite for excellence in education and research. As a graduate student, I taught two week-long astronomy courses as part of a programs to prepare native Hawaiian students for STEM careers on the island. I led outreach from our department to underserved communities, and I taught science for a year in a largely latino middle school. However, I still did not feel like I was making a systematic difference that would actually change the demographics of professional astronomers.

As a postdoctoral researcher, I have been inspired by the APS bridge programs, which target undergraduates in the transition between an undergraduate and graduate education. While the fraction of underrepresented students getting PhDs is significantly lower than those getting bachelors degrees, the difference in numbers (~ 30 each year) represents an attainable goal for change. For two years, I have run an astronomy summer research program for students from traditionally underserved populations ¹. My goal is to prepare students for graduate school by building lasting relationships between students, mentors and role models, providing students with targeted professional development, and creating a safe community for the discussion of challenges and roadblocks to equal representation. I address these goals by training local advisors in effective mentoring techniques, implementing a weekly summer seminar that complements students research experience, and having significant extracurricular interaction (dinners at my home, camping and rafting trips). Unique to this program,

⁴AIP Report on African Americans & Hispanics among Physics Astronomy Faculty

¹<http://www.aoc.nrao.edu/~bmills/index4.html>

formal mentoring does not end at the conclusion of a ten-week summer research experience, but continues year round via monthly Skype seminars. Recognizing that my own background and experiences as a white woman differ from those of my students in many ways, I have also arranged an on-site Diversity Speaker Series to connect students to colleagues who can serve as additional role models and sources of advice specific to the intersectional backgrounds of my students.

In my two years of running this program, four students (3 African American and 1 Latina) have been accepted into graduate astronomy programs. Two other students have gotten jobs working for NASA and Spitzer. The student feedback from this past summer² indicates that I am successfully meeting my goals of training and supporting students. As a future faculty member, I will continue to run similar programs that work to make the astronomy community fully representative of the community that houses and funds its endeavors.

²<http://www.aoc.nrao.edu/~bmills/index4.3.html>