

The current state of diversity in science does not reflect society as a whole. This ongoing inequality is morally intolerable as it limits access to underrepresented groups. Moreover, it poses an existential threat to science because it draws talented individuals to careers in other fields and reduces overall scientific literacy.

I believe the first step to promoting diversity is to become educated both about the problem of inequality and about our own biases. The psychologist Carl Jung once wrote, “Until you make the unconscious conscious, it will direct your life and you will call it fate.” Today, psychologists are uncovering the pervasive phenomenon of implicit bias, the unconscious associations our brains create between superficial qualities such as gender and personality qualities such as intelligence. These implicit biases can affect decision making about who to hire, promote, or collaborate with and are cited as a major cause and consequence of inequality in science. To break the vicious positive feedback cycle of implicit bias, the most important step is to become aware of its existence. As a graduate student I was awarded a Research Mentoring to Advance Inclusivity in STEM grant which provided training for myself and my mentee in cultivating effective mentorship. It also offered the opportunity for me and fellow graduate student Eliza Clark to teach fellow graduate student mentors and their mentees about implicit bias through a series of lectures and discussions. These experiences had a profound effect on my personal and professional growth and helped me to develop as a mentor and advocate of diversity. It also left me with a sense of the importance of becoming directly involved in efforts to overcome inequality in science.

I witnessed the impact of programs to promote diversity in science when volunteering as an EnvironMentor during graduate school. The mission of this program is to “mentor and motivate high school students underrepresented in the sciences as they conduct scientific research and acquire skills that will allow them to build careers and become active stewards of their communities and the environment.” It was as an EnvironMentor that I met Julio, a talented student at Poudre High School. I came to know Julio each week as we talked about his interests, life in high school, and what life in college would be like. Julio was interested in the environmental impacts of hydraulic fracturing, a method of extracting natural gas that is common in Northern Colorado. Therefore, we designed an experiment measuring the effect of simulated wastewater produced by hydraulic fracturing on a Colorado native plant, *Boechera stricta*. It was exciting for both of us to watch as his plants in our lab growth chamber began to show visible effects from some of the treatments. Soon his cousin Lilianna was interested to participate and began joining us weekly to contribute. When Julio presented his research in a poster with other high school students at Colorado State, I sat with his mother, who is from Chihuahua, Mexico, as we admired the intelligence and excitement in her son. Judges selected Julio as one of three students to present his research alongside top EnvironMentors students from around the country in Washington DC. There, Julio was chosen as one of the top ranking in the nation and he was awarded a significant college scholarship. Julio would go on to win another scholarship through the EnvironMentor program, be elected president of Poudre High School, and earn a prestigious Human Relations Award. I am proud to have played a small part in the development of this outstanding young scientist and I am looking forward to pursuing similar programs throughout my career in science.

I have also sought to contribute to programs promoting diversity in science at the undergraduate level. I helped to organize one such program developed by the McKay lab at Colorado State, the Biological Summer Research Experience (BSURE) program, whose mission is to increase students’ understanding of biology through research experience and

interactions with biologists across a wide range of career paths. During this program I organized student field trips, including a tour of the Cargill Specialty Seeds and Oil Innovation Center, and sat on panel discussions where undergraduate students could ask questions about how to apply to graduate school and life as a graduate student. From this program I was impressed by the tremendous potential of future scientists and will continue to promote access for talented individuals to pursue careers in research.