

## Diversity Statement

Chelsea Clifford

June 2023

If the field of environmental science was truly diverse and equitable, the environmental scientist community would comprise a representative swath of humanity, across all axes of variation that we manifest, all equally empowered to express their findings and views and to contribute to change. Regrettably, however, one can observe almost any environmental school, department, conference, board, panel, list of fellows, etc., and plainly detect, no statistics necessary, that we have not reached that point.

When I volunteer to engage young children in environmental or science education, I generally find that almost all of them manifest enthusiasm for at least some part of it. Of course, I have worked with kids who squeal when the bugs or the snakes first come out, but within a few minutes most will reach out or lean over the microscope with everyone else. I have worked with children who have never been in the woods or off a trail before. Some were the same children who showed up without lunches, late, because their mother or aunt had just gotten off her shift. Their joy at experiencing a little nature, then understanding some of how it works, and becoming more comfortable in it, felt especially rewarding. I have watched excitement and appreciation in mentally disabled children emerging down into a wetland, and carried water samples up to a boardwalk for a wheelchair-bound child who then did the same chemical tests as everyone else. I firmly believe that all humans are born with the raw materials necessary to contribute to environmental science, and I know from my own experiences as a researcher that we need the collaboration of all different kinds of people, from cattle ranchers, to indigenous elders, to poor Black communities coping with woefully insufficient infrastructure, to understand and ultimately conserve our environment.

However, through my own development as an environmental scientist, and as I continue to observe contemporary education and science, I witness the departure from the field of most people who deviate from the mean, median, and modal demographic of the environmental scientist. Even I, a white, cis-gendered, apparently able-bodied person, close to that standard, sometimes feel that who I am is fundamentally not reconcilable with the type of person senior people in my field want working here. I unquestioningly learned to veil parts of myself, especially around more senior scientists: my physical and mental health struggles resulting in part to abuses, trauma, and accidents in my past, what remains of my rural US Southern culture and the ways that the academic one still feels a little foreign, executive functioning difficulties eventually diagnosed as autism, that I even think scientists' humanity is part of science, and so on. In recent years, I have been making a conscious effort to "out" myself more. I think our collective practice within academia of not often frankly and publicly discussing such personal experiences is hurting all of us already here, and making our community appear even more forbidding from the outside. What is lost to environmental science and me because of my narrow self-portrayal is relatively slight compared to the parts of self I hear people farther from the norm find themselves compelled to sever, crush, hide, or separate to gain acceptance, or even survive. We must lose so much more in all the people who drop out of the field altogether because of unnecessary standards. Worse, many of these people leave freshly burdened with trauma. This "leaky pipeline" or "hostile obstacle course" is a huge injustice and waste. It is as much an urgent infrastructure problem for our field as literally leaky water main and sewer pipelines in many aging cities. We need to make structural and institutional level changes, not just in recruitment, but in retention, through practices of inclusion and equity, through willingness to deeply change, and through real prioritization of thought, time, effort, and resources.

What really brought teaching issues around diversity flaming to the forefront of my mind was working as a teaching assistant for a course in urban restoration ecology that was part of an experimental partnered program between Duke University and historically Black Paul Quinn

College. It started in class with what were, in hindsight, somewhat predictable and avoidable issues. For example, my course within the program was designated to fulfill a writing requirement. The program schedule crammed the course into three weeks, the first of which revealed students' vastly differing writing skillsets. So, the professor and I had to quickly adjust her plans, in order to educate and assess everyone fairly. It got worse. Towards the end of the program, tensions blew wide open, largely in front of the students, through accusations among leadership of sexism, racism, and worse. Ultimately I flew to Dallas, as the only member of the original teaching team remaining and available. I did my best to bring my students back to working together and feeling optimistic about all their final community projects. I had only worked on the one for my class up to that point, but the students deserved to take pride in them all. In the one task I had expected to guide students to lead, we had a great creek cleanup and barbecue on campus with other Paul Quinn students and community members. The same student who had struggled most with the writing requirement shined best in leadership and organization that day. Meanwhile, local community activists really helped me understand watershed issues common in poor communities, as we pulled trash out of the bushes and creek bank together. I learned more than I helped or taught. My whole experience of that program, bumping against and contorting through difficulties ranging from the institutional to the interpersonal, heightened my personal urgency improve at resolving issues around diversity, inclusion, equity, and justice.

I had already been making some effort as Social Media Editor for Duke Women in Science in Engineering; I kept the followers of our [Facebook page](#) and then new [Twitter feed](#) regularly updated with relevant scientific and popular articles that gravitated towards the intersectional. After my experience with the Paul Quinn students, though, when elected to represent my department for the PhD student council of my environmental school, I raised diversity and inclusion as issues we should re-focus upon, and established ties between that council and the master's student organization for diversity and inclusion. We agreed to a joint resolution, with other signatories, that a proven record in increasing and retaining diversity should be a criterion in the search for the school's new dean, which went into effect in her hiring. I had previously written [a blog post](#) for the school about my own implicit bias and pointing out that our racial diversity had little improved since previous diversity accounting and resolutions years ago, and later [one](#) on the benefits of mental heterogeneity in a population of researchers. So, at around the same time as my student government activities, these posts got me invited to a couple diversity workshops with the school's acting dean and other administrators. I encouraged them to consider less visible forms of diversity, and to look beyond recruitment to preparedness to help diverse people thrive, with necessary resource investment. As a graduate student, I marched a student in crisis from her home to mental health treatment, argued with a superior about what I saw as exploitation of relative privilege in labor practices, and otherwise pushed the boundaries of appropriate behavior in trying to promote inclusion and equity. As a post-doctoral researcher at Iowa State University, I brought diversity-related work to the journal club I started, which prompted lab members to talk more openly about related issues. I became the person our students felt comfortable to approach about biased and exclusionary behavior encountered within and even beyond our lab. In addition to resolutions of specific problems, I helped my advisor develop a lab code of conduct and field safety manual designed to make us a more inclusive environment overall. My commitment to facilitating the success of all types of people in environmental science and beyond is firm, personal, and sometimes a bit disorderly if need be.

Beyond my workplace behavioral nudges, I continue to do science outreach with a variety of people both in person and online, and I remain committed to including usually ignored socio-ecosystems and non-scientist collaborators in my research. So, while I still make plenty of mistakes, and always could do more to help than I do, I have been trying to shape my little neighborhood of environmental science to function more like the diversity-friendly place it needs to be. It will remain important to me that my employer supports my desire to further such work.