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UW Honors
Experiential Learning Final Reflection

When I told friends, family, and mentors that I'd be researching redox dynamics in Colorado's beaver-impacted floodplains this summer, I think everyone stopped listening at, "beaver." I received an influx of the best beaver books, movies, ongoing restoration projects and conflicts, and instagram reels of baby beavers stumbling on potential dam opportunities (by playing waterslide). But each of those features merely contextualized the actual questions we were hoping to investigate. This summer I was mentored by Sam Pierce, a first year PhD. student at the Stanford Doerr School of Sustainability. Our research hoped to further an understanding of biogeochemical cycles within beaver-impacted floodplains, to identify and quantify the relationship between soluble iron and dissolved oxygen not only across differing surface water sources, but across floodplain type (natural beaver dam, degraded, and beaver dam analogue floodplains), and to document the full 24-hr cycle of that relationship. We hoped to do all those things. And we made good headway, too, but the leading impetus of our work this summer was to build a data set.

One of the beautiful things about the Rocky Mountain Biological Laboratory (RMBL) is that they have projects with data records going back over 50 years. These long term data sets offer incoming undergraduates, graduate students, and PI's attested, unique records which are crucial in identifying long-term trends or patterns- especially in the wake of a changing climate. Studying redox dynamics around beavers at RMBL only began this year.

As such, this summer was a mission to form a baseline- to test methodologies and to frame our investigation. In just two months, we collected over 800 samples, some of which occurred around midnight and 5:00 am. None of this work would have been possible without a world of collaborators- be it through fellowships and grants (for both the project, myself, and my peers), friendships and volunteerism, or coordination and research management (special thanks to Jenny Reithel, RMBL Science Director). It was that type of expansive collaboration which enlightened me on the vocabulary, pathways, and spirit of reaching higher academia.

This past year, I began to consider school beyond undergrad for the first time in my, and my family's, life. My time in the Elk Mountains helped expose all of the language and rigors and opportunities of graduate programs that one would never have the chance to understand or encounter without a concentrated community of researchers in a multitude of stages in their higher education. Masters and PhD. students, post-docs, tenured professors, lab technicians, and anyone and everyone in between all under one 'ghost town' roof. The importance of this environment lies again in exposure, but also in possibility.

I never knew about the scope of environmental engineering going into college. All I knew was that I loved a challenge and fluid dynamics, but it wasn't until my second and third year that I truly discovered the possibilities of the major. In a favorite class this last year, we had over 10 lecturers who covered both a diverse breadth of current titles within the field, but also a diverse range throughout their professional careers (whether they had one change in positions, or many). Prior to that experience the majority of career words we heard were, "wastewater treatment." Of course, we know of more opportunities than that, and could think of numerous examples, yet when it came to resources and peers to understand how to actualize going about a differing career path, it felt like that was the first exposure.

I knew I wanted to pursue broader questions and to always be a lifelong learner, but actually taking steps towards graduate school or research positions can feel insulating. This is why RMBL and my work with Sam was key. It gave me time in the field, practicing our science and learning how research and biogeochemistry may fit into my future goals. But I was also examining how many different ways you could ask and study the same type of questions: which angles do you focus on? Is it something requiring a macro or micro view, or some combination? How broad can your question go? Who are potential collaborators? Questions like these become vital to being a contributing researcher, as it's not only what you research but how you research that marks your system understanding. And for me, that has always been the goal.

No one in my family or immediate community had the familiarity with grad school, and though cliché, that was a large contributor in making it feel like this was a journey I would have to "walk" alone. I no longer feel that way. This experience helped reshape *how* to approach those bigger goals, instead of *why* to approach them. I know why, and now, feel grateful to have been exposed to so many resources, peers, and a community that can "walk" with me on that journey.

In the end, my summer wasn't so much about beavers– though I did fall in love with their hydro, bio, and geochemical capabilities– but about possibility. And, in a way, confidence, too. I have never been the person to need someone to believe in me in order to find drive, but when a lifelong climate scientist and cricket legend tells you, "I hope you come back, I hope you continue with research," in an email titled "The End is Near," you take a moment to pause and think, maybe I am doing something right.