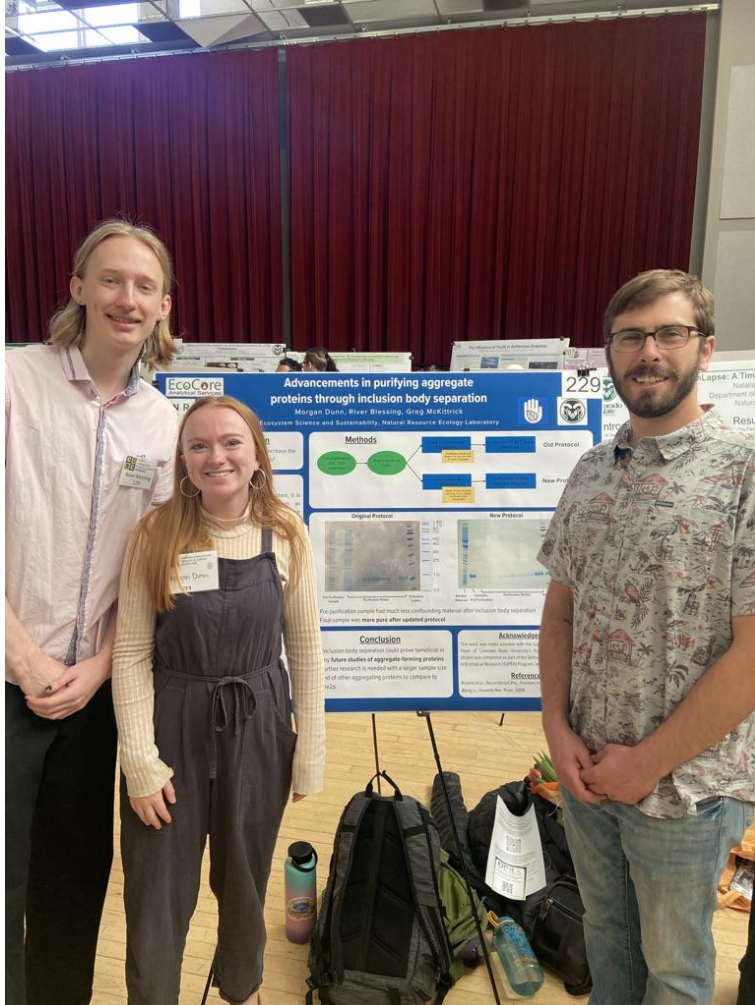


# My experience with support, growth, and undergraduate research.

I want to tell you a story about my first time being in a lab, conducting research, and how great it is to have helpful people as resources. It was through a program at Colorado State University called SUPER (Skills for Undergraduate Participation in Ecological Research). I was hesitant to join this program because I didn't know if I would like research and I thought about how miserable I would be if I didn't enjoy it but had to stick it out for an entire year, but wow was I wrong.

It was one of the most amazing experiences I have had in my life. I came into this program not having any real lab or research experience and I felt like I needed a lot of catching up to do. My mentor, Greg McKittrick, knew about my inexperience and still wanted me to join his research project. He was eager and ready to teach me what he knew about aggregating proteins and their resilience in soils (this is what his research is on), and doing research in general.



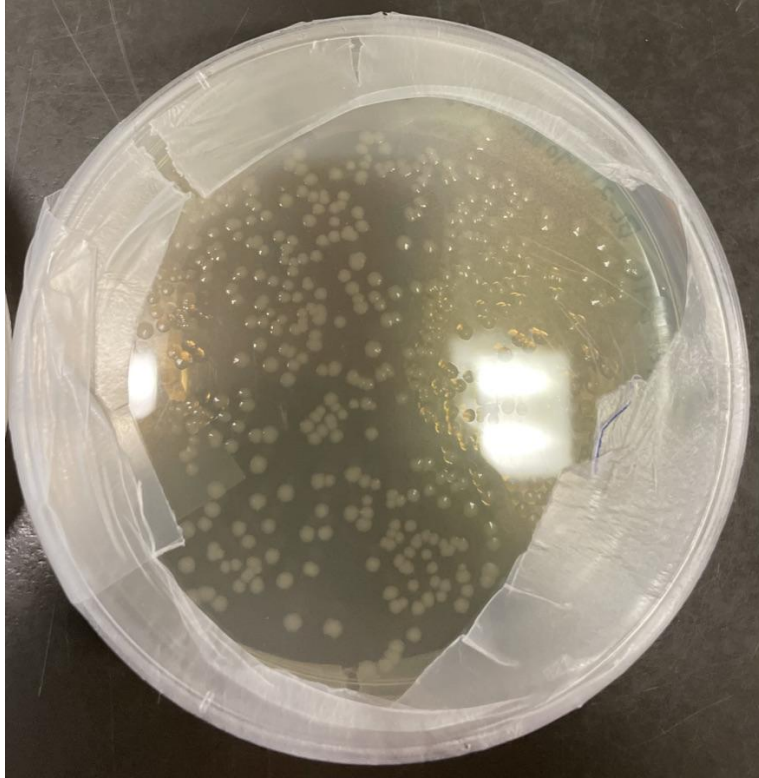
Picture 1. Me (right), my labmate Morgan (center), and my mentor Greg (right) presenting our research on a poster at a symposium for undergraduate research. (Credit Morgan Dunn)

It was very challenging, especially at first, because I had to read literature to get up to speed on topics such as aggregating proteins, carbon sequestration technology, and soil microbial communities. These long and complex research papers about Beta sheets, prion genetics, and the incorporation of labeled carbon into samples went soaring over my head. I had never heard of these foreign concepts but Greg sat me down and talked

through each paper he suggested I read. This helped endlessly with my understanding and retaining of that information.

I went from only knowing basic chemistry and biology concepts to understanding niche concepts such as infectious intracellular aggregated forms of proteins and the role that carbon and nitrogen storage play in climate change on a deeper level. Greg's willingness to help me through any challenge I faced allowed me to have the great experience that I did.

After I had worked very hard to understand the foundational concepts of his research project, it was time to start in the lab. Again, I had never done work in a real lab and my only experience was some half-assed biology and chemistry labs that were handicapped by the pandemic. So, learning proper aseptic technique, pipetting, agar plate pouring, and measuring optical density of samples had a steep learning curve for me. But right there with me the whole way, again, was my mentor. He demonstrated the proper way to do things before allowing me to royally screw up on my way to learning how to finally do it correctly. He allowed me the room to fail in order to grow and was supportive at every turn. I was never scared of being in the lab, of failing or "ruining" the research because he always said science is a continuous loop of troubleshooting. One of those factors in need of troubleshooting sometimes is the researcher themselves. I continually learned how to do tasks better and more effectively even when I was already doing them "correctly".



Picture 2. A colony of E.coli that I grew on an agar plate. (Credit River Blessing)

Greg's philosophy in the lab prioritized growth, which allowed for better research from both he and I. His continuous support allowed me to not just learn how to do lab work and understand complex scientific concepts. It allowed me to change how I see science as a whole. Being part of a research team that was on the forefront of carbon capture technology and climate change mitigation gave me a sense of new purpose. Having a phenomenal mentor who took me in as a lowly undergraduate student and helped transform me into an emerging researcher was more than I could've ever asked for.

This experience changed my life. It put me on a different path. One where I felt that I could make a difference in this world. It is all thanks to being supported through this

SUPER program. I have heard of many other stories of people in the scientific community being everything but supportive of newcomers. I believe this mindset hinders science as a whole because of how many barriers there are. Not having someone to weather the storm with you, to stand up for you, and fight with you, makes it a lot harder to succeed. I now recognize how lucky I am to have found myself in such a supportive atmosphere and I want to advocate for others to be a part of that. I hope that sharing my experience may influence others to see how positive this type of atmosphere is and that they will want to help create more spaces just like it.