

# Samantha Sunnarborg

MSU Mankato Honors Student

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## Hello! Here's a bit about me...

Welcome to my portfolio! My name is Samantha Sunnarborg and I am a fourth year Honors student at Minnesota State University, Mankato. I am currently majoring in Physics and minoring in both Astronomy and Math. I am working towards becoming a professor at a large research university following both my passions for teaching and for learning. I will graduate from MSU in spring of 2023. I will attend Brown University beginning in the fall of 2023 to earn my PhD in Physics. Please take some time to learn about me and the Honors Program at MSU!

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## Leadership - Finding My Role

### My Undergraduate Leadership Journey

My experience on the [track and field team](#) was the beginning of seeing leadership roles play out in a realistic environment. By watching the successes and failures of the women in leadership roles on the team and the effects of these leaders on the overall environment, I identified which leadership skills were the most important to me: instilling confidence in individuals and their roles on the team and leading by example. I saw how vocal leaders could falter if their actions did not back up their words. I saw how even the biggest names on the team could lead from behind by instilling confidence in their peers and how that built our team from the ground up.

Taking the very beginning of my track career into the start of [MavPASS](#) was quite the leap for me. I had to take the observations I had created during the first 6 months of track and form them into a practical leadership style. For my first semester I was again able to follow the peer mentors in the program similar to how I followed the leaders on the track team. This however was only part of the job. The new experience for me was the leadership within my own sessions. The training and overall methodology of MavPASS strongly encouraged me to put into practice leading from behind and solidified this leadership style for me. I found my sessions to be most impactful for students when I had created a strong lesson that put everyone but myself in the spotlight. The confidence that grew within my students that first semester also grew my own confidence as a leader.

When I was then offered the peer mentor position within the MavPASS program I felt I knew how to lead a group of students, but I had not yet had practice with leading my peers. I found myself trying to lead with words for the first few weeks. I spoke at length about the things I had learned and how I expected my mentees to act. It wasn't until I started being the support for my mentees and not the teacher that I found our relationship and team strengthened. Since then, my goal in MavPASS has been to support and not lead as a way of bettering my fellow leaders, myself, and the program.

I found great success and development in my time at MavPASS and in track which prepared me well for my role as the [President of the Physics and Astronomy Club](#). I felt that my leadership philosophy was effective and well tested, and I was excited to have a role where I could act as an administrator as well. I quickly found that within these roles I often put too much of the burden on myself and if I faltered the group as a whole was hurt. I quickly learned to rely on my peers within the leadership of the club for support in the same way they relied on me and found a much stronger team because of this.

I quite enjoyed the varied responsibilities that came with my leadership roles in my time at MSU. These roles allowed me the chance to develop, implement, and fine tune my leadership style that I will carry into my future roles. I've found that leading from behind, creating roles based in the skills of myself and my teammates, and setting examples created a strong foundation for these different teams I was a part of. I hope that my future research teams and role as a professor will allow me to be a well-practiced leader thanks to these experiences I have had. I am excited to work to bring stability to any team I get the chance to be on and to better it and myself through these further leadership opportunities.



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## Research - Making My Mark

### My Undergraduate Research Journey

At the beginning of my time at MSU I knew that I wanted research to be the cornerstone of my education; I had the goal of going to graduate school and being a physics professor since I stepped foot on campus. After I finished my first semester I took a class called [Astronomy and the US Southwest](#) to expand on my interests in astronomy. The content of the class was reinforced by an end of the year mock research proposal, which was sent to a telescope to complete a research project of our choice. This class and project were a great introduction to research for me in my first year; I was able to get comfortable forming relationships with my professor which led to research opportunities down the line. It was also my first experience with an independent project focused on research. This project allowed me to dive into astronomy as a whole and see what subjects interested me the most, an experience that proved to be valuable to me so early in my research career. I also had to synthesize material from academic journals with my own knowledge to develop an effective research project idea. The proposal itself taught me to build my own basis of understanding, how to defend the need for my research in the field, and how to effectively communicate my work to others.

This course and my new relationship with the professor led into my first brief research experience. While that project was unfortunately short lived, it gave me the confidence and experience to pursue research more aligned with my interests. After this class I joined the [Applied Nuclear Science Lab](#) on campus and began my two-year research with that team. This lab taught me the true unpredictable nature of labs and research. This research project forced me to problem solve independently and collaboratively in a space where there weren't yet answers. This lab was also my first experience working on a research team. From this new environment I learned about leadership within a lab, as well as how to effectively support and be supported by my team.

The Applied Nuclear Science Lab also offered me another opportunity to write a research proposal in the form of a grant. This grant further strengthened the tools I had developed in my astronomy course in a real-life scenario. This proposal forced me to defend the need for my own research and how it fits into the work already done in the field. This lab also allowed me to collaborate with several faculty both within and outside of my department. At the end of the year we received the opportunity to present our lab's work to an audience via poster. The Undergraduate Research Symposium was my first experience presenting my own work to people of varying background and knowledge. Developing the ability to communicate my work to anyone tested my understanding of it, strengthened my experience in the lab, and bettered my skills as a researcher.

The culmination of my undergraduate research was my project at the [University of Rochester, NY](#) in the summer of 2022. This was an independent project that was a part of a national collaboration at Fermi Lab. This research was a completely different format from my past experience and pushed my skills in a new way. The actual execution of the project was completely determined by me and threw me into the development and execution of the full research process. The whole summer was trial and error. I scrapped several attempts and created more questions than I answered along the way. I learned very quickly that success is nonlinear. That the goals of research can change as the project progresses.

Despite the difficulties, I ended the summer with a completed project. This project was then given to the collaboration and is currently in use bettering the experiment as a whole. I had several opportunities during my time to present my work and findings to the collaboration and my peers at Rochester. This was the most exciting research experience I have had as the answers that I was presenting were new to science. These presentations were the culmination of all of the skills I had learned at MSU and were the projects I am most proud of. This work will translate well into the future research I hope to complete in graduate school. Knowing that research is messy but using the tools I have learned in the past three years will hopefully allow me to continue making contributions to science for my entire career.



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## Intercultural Engagement - Where Do I Fit In?

### My Intercultural Engagement Journey

One major upside of coming to a larger university is the interaction with the wide variety of people on campus. The diverse population of MSU has allowed for me to further understand my own identities and culture while learning about and interacting with people of cultures outside of my own. The importance of these interactions lies in becoming a more understanding, empathetic, and respectful person. As a person who hopes to stay in academia as a professor, I will serve as a leader and example in diverse populations like universities or international research collaborations. In order to set a good example, I value the experience of better understanding cultures and identities, my own included.

I was lucky enough to begin the path to understanding my own identities in my first semester when I took a class called [Sociology of Human Sexualities](#). This course focused on learning about identities related to gender and sexuality. This course helped me grow within myself as a queer woman who was still in the closet and had little experience being around other LGBTQ+ people. This course offered me three things: information on many different identities, a safe space to reflect on myself and my relationships, and a community.

From this course I grew in knowledge and confidence in myself and my identities. I developed an understanding of myself and how I fit into different spaces and communities. I addressed some uncomfortable facts about myself and the world around me that made me more cognizant of others and the world. I also developed relationships with people like me and those who are different. I was shown the value of having varying identities within a community and how getting to know others can widen my understanding of the community as a whole. I also better understand myself which helps me better interact and form relationships with both similar and different people.

I took this understanding of myself into my later years, especially when I took a class that I had wanted to take since high school: [American Sign Language](#). I wanted to take ASL because I was very interested in the language, but I soon realized that the best part of the class was learning about the deaf community. The three-class series allowed for me to develop my understanding and use of the language, but also my interaction with and understanding of the deaf community. This was my first formal class based around and taught by people of a different culture.

The most formative experience for me was having a deaf professor in the Advanced Sign Language course. She was such a funny, outgoing, caring human being and I could see how ASL was so integrated into her humor and personality. I had never met nor interacted closely with a deaf person before, but she quickly became one of my favorite professors. This class was so much fun, but also forced me to address several assumptions and biases I had. For example, I had always assumed that deaf people would choose to hear if they could. We had this discussion in class, and it really opened my eyes and changed my view of deafness. My professor and other deaf people identified strongly with their deafness: it was a connection to their community and to their language. I assumed that deafness was a disability, as much of the hearing world has labeled it, where it was truly just another identity. Just as I would never want to be anything but queer, most deaf people would not want to lose that part of their identity.

This assumption was based off my privilege in being a hearing person in a world that is catered towards hearing people. I have many other identities that fall along these same lines: being white, cisgendered, upper middle class, and a child of a two-parent household. All these identities are a part of who I am, but understanding how they change the way I traverse the world and how I make relationships makes me a more cognizant human being.

These classes offered me a space to learn about my culture and other cultures and become a person who understands themselves enough to have respect for all identities the way I hope mine would be respected. I hope to continue developing these skills while meeting all kinds of people in the future so I can be a respectful and understanding student, teacher, friend, and human.

