Fall SEF: Undergraduate Student Researcher

By Angelica Bautista

Beginning in early October I volunteered to help Ph.D. student Erin Rowland with fall small mammal trapping. I went out on two sessions to check traps and process any mice caught in the traps. On a third trip, I helped Erin clean traps and get them ready for storage as the trapping season was over and wouldn’t start again until the following spring. During the trapping session, we had 3-4 people, a scribe, Erin who would measure the mice, and someone to wear a vest with the microchips and hair samples. I had the opportunity to be scribe and assist in processing the captured mice by preparing the microchips and bags for hair samples. This being my fourth season volunteering with small mammal trapping sessions it has helped me hone my fieldwork skills. It takes a lot of dedication to work through long hours in the prairie under inclement weather, soaked from head to toe, and have 2-3 inches of water in your boots even on days it hadn’t rained. The fall season tends to be the coldest and small pieces of cotton are placed in the traps to keep the mice warm. If the mice are treated for too long they can have trouble keeping their body temperature up and can go into a torpid stage. A couple of times in the second session we had a mouse that was just starting to enter this stage. We had to make sure it was able to elevate its body temperature and regain strength before returning it to the area in which it was trapped. I was tasked with holding the mouse, helping it keep dry, and warm up in the sunlight. Working on this project exposed me to experimental design and techniques I can implement in my own research in tallgrass prairies like the use of live trapping to gather data on small mammal populations and how to set up grids and transects.
Each week I met with Dr. Peter Guiden, the postdoctoral fellow from the Jones Lab. He taught me how to write code using R programming. I was able to use what he taught me to analyze the data I collected over my summer research study. Through statistical models, I determined that bison had the most impact of the three variables I was testing. My meetings with Pete also furthered my interest in graduate school and we discussed graduate programs that
would be a good fit for me. Being able to discuss the process of applying to graduate school and what to expects from these various programs has helped me get a better idea as to where I want to set my goals for my academic future.

This semester I wrote a grant proposal for the National Science Foundation Graduate Research Fellowship Program (GRFP). I worked with Dr. Chaudhary from DePaul University to create a competitive proposal. Dr. Jones and Dr. Guiden gave me constant feedback and helped shape my personal statement. This was one of the most difficult experiences I have had as a student and a future scientist. I spent hours researching and designing an experiment that would be worthy of being part of the elite group of scientists who are awarded this fellowship. I went through at least a dozen edits on each document and even so I still feel I could have improved my writing. Obtaining this fellowship would be the golden ticket to graduate school.

I have been very fortunate to be part of an amazing group of people in the Jones Lab. Each member of the Jones Lab brings a unique experience to the lab. Every week we met for at least an hour to discuss seminal papers in ecology. A couple of weeks before the GRFP was due we had a peer review session and each applicant received feedback from at least 5 reviewers. The experience I’ve had being part of a lab will be helpful as I begin applying to graduate school programs and meet potential advisors. I have seen what a positive lab experience looks and feels like, I feel better equipped to ask about the day to day interactions and lab environment I should expect from potential graduate programs. I feel more confident in my understanding of what will be expected of me as a member of a graduate student lab and program. Over the course of the semester, our lab also met outside of campus at events and social gatherings. In October we
attended the Nachusa Science Symposium held in Dixon, IL. Next semester we are planning a field trip to Wisconsin to visit the sandhill crane sanctuary.

![Jones Lab members attending Nachusa Science Symposium](image)

My future career goal is to become a successful land manager and conservationist. I will need at the very least a master’s degree in order to be a competitive candidate in this field. Having fieldwork experience in various types of ecosystems and research areas has given me a head start toward becoming a desirable graduate school candidate. Grant writing experience has also shown me what I am capable of creating a unique experimental design and research. I am better equipped to start a graduate program having written a grant proposal and learned R programming in order to carry out my own research and be able to run analysis on my data. Working with a team of graduate students and meeting one-on-one with my advisor helped me get a feel for what a good graduate experience should look and feel like. I am confident going into other labs and asking about their program and group dynamics having had a very positive experience in the Jones Lab. My experience as an undergraduate student researcher will help me
choose the best graduate program to further my progress toward becoming a good conservationist. I will be able to continue improving on my grant writing skills and have this knowledge and experience as a reference.