

Spring 2020 SEF Final Narrative

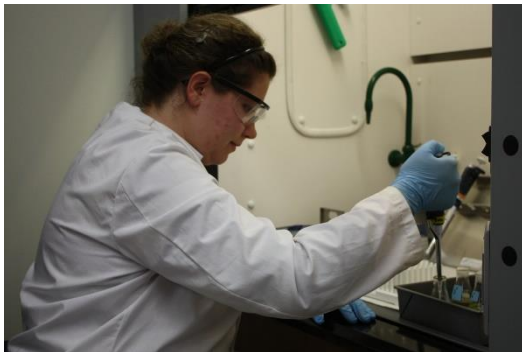
I joined Dr. Irwin in his lab after taking BIOS 341 (Primateology) with him in the fall 2019 semester. I greatly enjoyed that class and had already signed up for his primates and food class this spring when we met to discuss me possibly working with him this semester. I was very excited to have the opportunity to apply some of the material we would learn in class in a lab setting, which would allow me to have a greater understanding of the topic. I have always had an interest in studying animals as well as nutrition, so it was a great opportunity for me to be able to combine those two interests as well as my passion for conservation. During our first meeting Dr. Irwin explained the project more in depth and showed me his lab. I was very interested in learning more about the different nutrient compositions of the foods being eaten by bamboo lemurs in Madagascar. I have always enjoyed lab work but didn't have too much experience doing it, so I was also looking forward to learning more about that part of the project. I also saw this as a great opportunity to learn more about possible career paths or graduate schools pertaining to this area of research, which is something that I discussed with Dr. Irwin at our initial meeting.

While I took away a lot of valuable information and skills from our work together this semester, the lab skills were one of the most important things I learned this semester followed by learning the importance of doing thorough background information on the project. I greatly appreciated the opportunity to have guidance with learning new protocols and lab techniques. In biology and chemistry labs I had learned some of them, but often only through observation or having one turn to practice using lab equipment such as a pipet. To successfully complete some of the protocols used in the research done last semester I had to learn how to use a variety of different lab equipment well. The first part of the project focused on grinding up the food item

Sarah Naughton
Spring 2020

samples so they could be tested throughout the project. In order to grind the samples uniformly I had to use a Wiley mill which I had never seen before, so it was an entirely new experience for me. It was interesting to see how the different types of samples would grind differently and at different speeds, with the thicker, woodier plants. This work was somewhat tedious but was critical to proceeding with the rest of the tests which made it a good lesson in how tedious work is often highly valuable and should not be overlooked or done poorly.

The majority of the following protocols involved lab techniques that I had been exposed to before in lab classes but had limited experience doing myself. The technique that seemed the most prevalent, and was my biggest struggle, was pipetting and micropipetting. A lot of the protocols used for the nutritional analyses done on the food samples involved pipetting and micropipetting, which I was not good at initially. A few of the tests involved color change reactions, but the solutions would only change to the color if I had done the pipetting correctly.



There were a number of times, especially at the beginning, where I had not pipetted the reagents correctly into the test tubes, so the color change reactions were incorrect or did not occur, which made the results less accurate. This was not always

immediately apparent just by looking at the samples. We used a spectrophotometer to measure the colors more accurately and were able to detect more subtle differences that way to collect more accurate data. It was interesting to learn about the different types of micropipetting, including reverse pipetting. It was beneficial to learn reverse pipetting because it turned out that this technique was easier for me to use and helped with my accuracy. I am very grateful to Dr. Irwin and his post-doctoral fellow Tim for helping me improve my pipetting technique and other

Sarah Naughton
Spring 2020

lab skills and having patience while doing so. Their assistance was extremely beneficial, and I can take what they taught me to other labs and careers.

The other important lesson I learned this past semester is the necessity of doing background reading on a project. I found that by doing this reading it made the project more meaningful and allowed me to see the bigger picture behind each of the individual tests being run. It was also interesting to learn more about what other researchers had done in similar studies and how their findings could impact my study or future studies I might do. This summer I have been reading through some reference material Dr. Irwin suggested and we have been having phone calls to discuss the articles and so he can answer questions that I had while reading. While I am disappointed that I did not get to return to the lab this summer to work on my project, it is nice to stay involved this way and spend time learning more about areas relevant to the study.

While my Student Engagement Fund experience did not go as I had been hoping with the semester changing to online learning in March, I still feel that I got a lot out of the project and had a positive experience. One of my favorite parts of this project was how well it paired with an anthropology course, primates and food, that I had been taking with Dr. Irwin. I feel that taking that class and working in a primate nutrition lab at the same time allowed me to get the maximum benefits from both experiences. Being able to apply some classroom learning to an actual project helped take my interest in the lectures and focus it on practical applications of the material. Oftentimes classes are interesting and enjoyable, but it is hard to see what can be done with the subject after the class or degree is completed. This project was a natural extension of the class and allowed me to see what types of research project and careers are out there for someone with an interest in primate nutrition once my time at Northern Illinois University is done. It also opened my eyes to how a graduate degree could help me pursue a career in this field and what

Sarah Naughton
Spring 2020

graduate school projects might look like. Working with Dr. Irwin also allowed me to see how international field work can be done and then being able to use those samples in the lab somewhere else. I would greatly enjoy going to Madagascar myself one day to do field work and learn more about the lemurs and their food in their natural habitat. I am planning to continue working with Dr. Irwin on this project in the fall when undergraduates are allowed back in the labs on campus. I am looking forward to finishing the lab portion of the study and begin working on a poster to present my findings.