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Undergraduate Library Research Award

Reflective Essay

When I first came to OSU, I knew that conducting undergraduate research would be a main priority throughout my academic career. However, I never imagined that participating in the Freshman Research Scholars program would bring me to where I am now as I proudly prepare my research for publication. While taking my Freshman Research Scholars Orientation course, I felt overwhelmed with all of the potential opportunities for research that lay before me. A wonderful librarian came into our class one day to explain how we could use various library resources to guide our research process. Before that point, I had always believed that research was all about running experiments in a lab setting. I was completely unaware of the sheer amount of reading and surveying literature that went into any research project. After the librarian demonstrated how to search for articles pertaining to our potential research topics, I began my preliminary searches using the BOSS search engine on the library website.

As a freshman, I knew that I wanted to eventually study the impacts of climate change on marine mammals or sharks. I realized that I would have to settle for a somewhat related study subject during my time performing research at OSU. I knew that the animals I was interested in were all carnivorous, so I began searching for labs at OSU conducting projects on carnivores. I was led to Dr. Shawn Wilder’s spider lab. I had always been tremendously afraid of spiders, but I thought it would be interesting to learn more about them and conquer my fears. I used the library search engines to browse Dr. Wilder’s previous publications to get a more in depth understanding of what kind of projects I would be able to participate in. When I met with Dr. Wilder to discuss possible research opportunities, he was immediately open to supporting an
independent research project that I could design. With this freedom and intention to study climate change stressors, we developed the idea to study how stress was involved with predator-prey interactions. Due to my fear of spiders, I wanted to minimize my direct interactions with them. I overcame this phobia driven obstacle by designing an experiment that would use crickets as my main study subject and observe how stress inducing by predatory spiders would influence their feeding habits. Dr. Wilder encouraged me to research the field of nutritional ecology to further refine my topic, as it presented a solid foundation for research development, while not repeating the work of previous research scholars.

I was then directed to the periodical section of the library. There, I was able to browse various publications regarding nutritional ecology research. I learned of the importance of self-regulation of nutrients in the diets of most animals. Enamored with the concept, I wanted to design my series of experiments around this concept. Unsure of how to begin, I consulted the Web of Science database via the library website.

Coincidentally, Dr. Wilder and I concluded that using spider webs would probably be an effective predator cue to stress out the crickets. We would then observe the proportions of macronutrients that they ate in response to the stress. My experiment was very successful and I was learning many things about the research process and throughout this experiment I had developed the ability to better utilize peer-reviewed literature as a resource. My constant perusal of the various peer-reviewed journals, as well as the multitude of other library resources that I had access to that pertaining to this subject had been pivotal in developing my skills as a researcher.

Throughout my sophomore and junior years here at OSU, I have been continuing on with this series of experiments regarding the consequences of stress for diet balancing by crickets.
After my initial experiment, I decided to proceed by performing a follow-up experiment using a different predator simulation. The spider silk ultimately proved to be relatively ineffective as a stressor, so I performed an advanced search using the BOSS search engine to identify studies that used other forms of predator simulation for crickets and achieved significant results. Thanks to the culmination of all my skills navigating the vast amount of relevant peer-reviewed literature, I was able to hone in on an article that used ZhuZhu pets as a mock predator to stress crickets. I mimicked this stress treatment in my own experiments and measured the resulting nutrient intake and metabolic rates of my crickets. This experiment was very successful and I saw results that conflicted with many of the previously published studies that were similar to mine. Dr. Wilder and I thought this was very interesting so we decided to continue by developing a manuscript to summarize my series of experiments.

It has been very satisfying to get the opportunity to combine countless hours of lab work and many nights in the library pouring over the literature into an all-encompassing manuscript. Although I did not start my university experience with much knowledge of the reality of the research process, I am honored to say that I have grown and developed immensely, not only as a researcher aided by the copious amount of assistance provided by the Edmon Low Library, but as a student with enhanced researching and information gathering skills. Although I may be competing with established academics hoping to publish their research, I am confident that I have developed the skills that will allow me to produce an equally impressive manuscript, one worthy of submission, and hopefully acceptance, to a journal.