I began my college career as a finance major with the goal of becoming a financial advisor. However, during my freshman year at OSU, I became intrigued with a nutrition principles course. I changed my path and decided to pursue a degree in nutritional sciences. One of the first courses I took in my new major was Introductory Biology, I quickly became fascinated by the experiments we conducted in the laboratory practicum. I wanted to know more about the research being done at OSU and I asked the lab instructor about his particular area of research. My lab instructor told me he was currently researching nutrient distribution in relationship with predators. After discussing his research study’s relevance to human nutrition which had become my passion, he invited me to meet the principal investigator, Dr. Shawn Wilder, and visit his laboratory. I gladly accepted his offer. I wanted to be prepared for my meeting with Dr. Wilder so I immediately began combing through the databases available on the Oklahoma State University library website. I used the BOSS search engine to identify some of Dr. Wilder’s previous research, and I used the time parameter to find his most recent research materials. I spent several days reviewing the available literature, and I brought some of the articles that I found most interesting to our meeting. My appetite for research had become insatiable and made up my mind that I would do anything to gain research experience. I asked Dr. Wilder at our first meeting if there was anything I could do as an undergraduate to participate in his research and he allowed me to assist on some of the ongoing projects. Several weeks into the semester, I he offered me the opportunity to design and initiate my own project related to diet composition and its affect on diet regulation in predators and I quickly accepted.
Together Dr. Wilder and I designed a project that used wolf spiders as the ecologically relevant predator. By feeding spiders different macronutrient ratios, we were able to measure metabolic outcomes of spiders that were fed different diets. After conducting a large portion of the research project, many of the outcomes were significantly different than we anticipated. There were not very many differences in the metabolic outcomes when predators consumed different diets, but the spiders had significantly different body composition. This suggested that energy regulation might be altered by other adaptations. Based on earlier research on related organisms, together with the background knowledge of my advisors, the decision was made to investigate the role of behavior in energy regulation. Previous research had partitioned information into physiological or behavioral categories, potentially limiting the scope of interplay between these two components. We decided this would provide a novel experiment cohesively integrating both aspects into understanding energetics in this particular predator.

This was a daunting task because behavior is often a subjective item to articulate. Using previous behavior designs in the methods section of the literature, we were able to design the behavior experiment. After designing this additional project component, I decided to write a research grant proposal as a part of the Wentz research program. Through this process, I gained many things. I acquired experience in writing proposals. I was able to provide funding for my research design. I learned a great deal about research methods, design, and implementation. I learned how to collect data, and to analyze it using behavioral analysis software (EthoVision version XT 10). The research project I worked on with Dr. Wilder and my involvement in the Wentz research program led to my decision to pursue a PhD in Nutritional Sciences at Oklahoma State University. Even though I will not graduate with my undergraduate degree until May of this year, I have already begun collaboration with Dr. Sam Emerson in OSU’s Department of
Nutritional Sciences. I am currently designing my graduate project with Dr. Emerson to better understand the role that nutrition plays in vascular function of aging populations.

The development of my project with Dr. Wilder was highly dependent on my ability to understand the research that is available at present. Not all sources report the most validated information, so the sources I chose were critical. I used many of the library’s search engines because of the very specific scope of my project. Evaluating information sources is especially important in the realm of science. Consequently, I chose to use peer-reviewed articles from well-known science journals.

My project called for many creative uses of literature review. Even though the scope of my experiment was very specific, the topic of nutrition and energy regulation applies to all organisms. I used PubMed for many of the broad questions related to nutrient effects, and experimental implication in human subjects. For the general sciences questions, I focused on the Science Direct search engine. The close relationship between ecology and nutrition led me to research nutrient distribution, so I expanded some of my searches to agricultural databases such as AGRICOLA. This shaped my research in a very unique way. By using such a diverse group of research databases, I was able to make application of my research to areas I might not have considered.

Early in the research process, I realized that specificity was critical in the search for relevant articles. After conducting the physiological aspect of my project, we begin looking at articles in animal behavior and ecological journals for alternative explanations for energy regulation. Over the course of the project, I learned that there is a multitude of different resources available. The standard web resources provided limited access to research literature. Conversely,
OSU library services provide full access to numerous independent reliable online journals. In addition to having online search engine access to these databases, students can also request copies of journal articles from the library that might not be available online. The library also has research tools available for citation management such as Zotero or Endnote. These programs were instrumental in ensuring that the references I used were cited correctly. I was able to access all of these resources on my personal computer through my OSU account. This easy access made it possible for me to research literature and record citations without having to be physically present at the library.

Evaluation of information was one of the areas in which my research skill most improved. After completion of my Wentz research data, I strived to do more with what I had found. My results suggested that there were connections between energy regulation and behavior in this specific predator species. However, this is information could be misleading if not properly evaluated. I learned that it can be easy to interpret information incorrectly if the context in which the experiment took place is not given careful consideration. This led me to begin writing a manuscript with my findings on so that I could share the information I found with other scientists in the field of nutrition. The two components of my experiment (i.e., metabolism/behavior), were conducted over the course of two years, and the current manuscript represents the background, methods, findings, and interpretation of my project. All of my work in research was made possible because I accessed the resources provided by the library. I am excited to continue to use my newly acquired skills and resources made available to me through the library while I continue my education and mentor new students at this university.