

This summer I had an internship with Professor Zigler at The University of the South in Sewanee, Tennessee. My internship was based out of the University. I lived on campus and utilized the biology lab and vehicle to travel to caving sites. This internship's goal was to provide more information into the biodiversity of the invertebrates that inhabit caves in Georgia, Alabama, and Tennessee. We accomplished our goal by collecting samples of the invertebrates that inhabit the caves in these states and then identified them under microscopes down to their family and genus. After seven weeks of collecting samples and identifying, we compiled our new data and past data of these caves' biodiversity to produce a work that summarized and provided more information into which invertebrates are located in the caves of Georgia, Alabama, and Tennessee. My responsibilities began with looking up caves that were located in our desired location to see if the caves met the project's criteria. If the cave was under 250 feet long, needed a boat or other gear we did not own, or had too low of a ceiling, we did not include it in our list. After establishing which caves met the criteria, I printed out maps which outlined the shape of the cave and gave its ceiling height. Next, I utilized the latitude and longitude coordinates to locate the cave's location. I then researched who owned the property in which the cave was located. If the cave was on private property, we would drive to the address found using the cave's coordinates to ask for permission before entering the cave. If the cave was on public property and access was allowed, no further steps were needed to explore it. Some owners turned us away, others were not home, and some were closed off by the Department of Natural Resources (DNR), but we usually were able to explore two to three caves on a

designated caving day. In the caves, it was my responsibility to collect samples of cave obligate invertebrates and also take note of any cave vertebrates I came across. After exploring a cave, I would make sure to place paper into our sampling tubes identifying the cave and the date it was explored. Once back at Sewanee I would unload the collected samples from each cave and separate them by species. I would also print out labels to place into the organized tubes displaying the sample tube's sequence number, the cave's name and ID number in which the sample was found, the date of the exploration, and the individuals present. On non-caving days, with the help of Professor Zigler, we conducted research to narrow down the invertebrates family down to its specific species. If we had collected an invertebrate in which we were unable to positively identify its species, we sent the sample to professionals that studied that species. Then I combined the information we gathered with published data from the same area from 2002 to create a new source of information into the biodiversity of cave obligate invertebrates found in Tennessee, Georgia, and Alabama.

With this internship I developed the following skills: how to create a research question, how to plan an organized method to collect data, and how to efficiently use the information I found. Specifically, by creating a database of all caves in the three states, applying selection criteria and researching location and ownership, I was able to create a workable data set for this summer's project. What at first appeared to be an overwhelming task became quite manageable. Also, having to be persistent in what we collected and recording our samples to ensure the information on which species were found in which

cave was correct, caused me to realize the importance of planning and keeping organized when collecting data.

I believe this internship is going to make difference because it will provide other biologists and even curious cavers of Tennessee, Alabama, and Georgia with more information regarding the biodiversity of cave obligate invertebrates. This information could lead to understanding if any of these invertebrates are threatened or endangered and could aid in protecting these animals.

My internship provided me with an experience in which I learned many valuable skills. The greatest lesson I learned from this internship, and one which I will take back to Sewanee with me this fall, is that if you want something to happen for you, don't wait for the opportunity to show up but instead make it happen for yourself. Events that led to this lesson started when I realized I wanted an internship in the biology department to gain field research knowledge since little insight on the subjects was available. Thankfully, Professor Zigler's internship could not have been more perfect fit for me. Professor was helpful, patient, welcoming, and seemed to have a vested interest in my advancement.

Once locating the internship opportunity, the next step was to find funding as I needed income during the summer term if I wanted to partake in this internship. By applying and being granted funding through Sewanee, I was able to accomplish my summer goals of expanding my knowledge base, build my work experience, cover my expenses for the summer and bank funds for my upcoming study abroad. Once the internship began, this lesson was greater enforced because I saw that gaining access to our desired caves was not just going to happen. We had to be persistent in emailing and going from house to house

knocking on strangers' doors to get what we wanted. This great lesson of working with persistence to gain what I want will help me in future jobs and opportunities.

This internship helped shed light on what a job working with small invertebrates would entail and how it would compare to working with larger animals. It also affected my career goals by reinforcing my desire to have a job in which I work in the field performing research. I am so thankful for being able to have this internship because it has opened my eyes to all the different and fascinating types of research for an individual with my course of study. Thank you for giving me this wonderful opportunity. I look forward to applying to additional programs next summer.

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