

Personal Essay: Library Research Award

My primary research method was Pubmed search. My instructor brought my attention to a database titled "Web of Science," available through the research portal on library's main website. Web of Science was able to find a few articles that were not on Pubmed but the vast majority of the articles were exactly the same with a given search query. Due to my familiarity and experience with Pubmed, I chose to use this database for the bulk of my research. Since much of this research was performed at home, I was unable to access the full text articles. Therefore, I used the library's website again to search for Pubmed through the research portal. After logging in with my UID, I was able to access the full-text articles at home away from the campus Wi-fi system. In order to decide upon a topic, I simply delved into the literature. I knew that spending hours reading various topics would allow my brain to connect different papers and come up with an idea.

My ideas initially had nothing to do with hibernation or resveratrol however. I wanted to study evolutionary nutrition in animals when I began preparing for the assignment (about one month before the due date), but the research in archaeology and anthropology was intimidating. I would have had to understand the various dating methods used to analyze fossils and I felt uncomfortable with this. I came up with my idea two nights before the due date after a small epiphany.

I was reading papers on hibernation, and came across several researchers who pharmacologically manipulated the hibernation process to study metabolism and satiety. Hibernating mammals such as squirrels and marmots predictably fatten in the spring, then stop feeding in the winter. This fattening is akin to human obesity, where poor glucose control, insulin resistance, very high leptin levels, and excess triglyceride storage are commonplace.

In marmots these insulin and leptin alternations occur seasonally and predictably. Resveratrol has been touted for its potential role in treating diabetes type II, and reversing obesity through weight loss, and reducing insulin resistance in animal models. I suddenly wondered if resveratrol would influence food intake in hibernating mammals. The only paper on this topic studied gray mouse lemurs, which have very unpredictable patterns of hibernation. However, they found exactly what I would have predicted in marmots. Other than this one paper absolutely no research has studied resveratrol in hibernating mammals. I hope I can receive the support and funding to perform this research, because I believe the implications are very broad (as elaborated upon in my research paper).

In the process of finding the appropriate sources, I relied exclusively on journal articles. As long as I found the article on Pubmed, I viewed it as a legitimate source. Also, some researchers clearly have spent a long time in a particular field, as evidenced by their numerous publications on the same topic. This adds authority to the sources as well. Due to the multidisciplinary nature of this topic, I referenced journals such as

Endocrinology, Diabetes, Cell Metabolism, American Journal of Physiology, Physiology and Behavior, National Academy of Science, and several others, including German and Chinese journals. I am thankful that all these tools exist at the touch of the button on the internet, and that I can research a topic anywhere I have internet.

I value the time I spend analyzing articles on Pubmed, because it teaches me to be patient. In my opinion one cannot truly understand a topic without understanding the references, and the references of the articles in the references and so on and so forth. Eventually we must understand the history behind a research topic and study the original source. But alas reading is not even enough. Clinical experience often refutes what scientists find in the laboratories. Perusing Pubmed over the past three years and analyzing research articles for leisure, blogging, as well as for classwork, has led me to believe that knowledge is difficult to come by and thus we as scientists should be humble, calm, and patient, whilst “learning.” True knowledge is knowing that I know next to nothing.