Spring 2016

In the spring of 2016, I took Bio 230 Genetics. This course is devised of both a lecture and lab section. For the lab section we are required to complete two major lab reports with subsequent smaller reports following each weekly lab experiment. This specific lab report dealt with the *Lac operon* system and mechanisms. We carried out a lab experiment over two weeks, making small modifications the second week to see how these changes would affect our results.

The *lac operon* is a set of genes that controls and regulates the amount of lactose present in a cell. The lac operon can be thought of as a switch. When lactose is present the lac operon is activated, but when lactose is absent the lac operon is repressed; a binary decision.

Our assignment was to write a lab report about the *lac operon* and the effect of different substrates on the timing and quantity of the enzyme produced. This report included all of the necessary parts with figures and appropriate references. I have always had a passion and interest in Science, especially within the specific fields of Biology and Genetics. It is rather rewarding to be able to run an experiment, collect results, and then present and discuss those findings at depth in a lab report. When this lab report was first assigned the Library Specialist, Tara Hart, came into our lab and discussed all available resources and databases for students within the library. Prior to her speaking in our lab, I was unaware of the diverse selection of databases the J. Eugene Smith Library possessed. After Tara Hart came to our class, and made me aware of these resources, I was able to utilize databases such as *Science Direct* and *Science Full*
Both of these databases proved to be very beneficial in writing my lab report.

Requiring a multitude of scientific journals to validate and analyze the results of our experiment, our lab report relied on having as many database resources as possible. By looking for different sources and scientific journals I was able to learn how to use keywords and search terms to receive the best results. In the beginning, I included the full title of my lab experiment in the search bar. However, the search did not yield the journals I was looking for. I decided to create a list of the keywords pertaining to my lab experiment that I would need to collect information on. This allowed me to focus my research around the keywords.

One main criterion that I look for in each and every source I use is its credibility, so much so that I use a specific acronym to help me analyze the credibility of the sources. The acronym is RAVEN: R is for reputation, A is for author, V is for vested interest, E is for expertise, and N is for neutrality referring to the author's bias. Whenever I find a new source, I always preview it for these factors to make sure the sources I am using are credible and advantageous to my research. The sources I found through the library databases were very credible and reliable compared to those that I found with a simple Google search. Most of the sources I used were academic journals, specifically scientific journals, and peer reviewed articles as well. I would suggest and recommend to my peers the importance of making sure the sources are credible, and when you develop a formula or method to check the credibility, it can save you a lot of time and effort. If you can identify from the beginning that the article or journal is not credible,
then you have saved yourself many potential errors and missteps along the way to your final report.

During my research I found an over abundance of articles dealing with enzymes, the lac operon, lactose etc. While this is a great advantage to have so much supporting research and evidence, it was also a frustration, as it required me to carefully select each resource I used and cited. I read the sources multiple times in order to determine which ones would be most beneficial. It was also challenging because I was, as of yet, unaware of how many sources are considered enough sources.

However, with this lab report I planned out ahead of time where I wanted supporting research and where I just needed background information, which better allowed me to gauge how many sources I needed. After all, writing lab reports of this nature, finding research and sources, is the rewarding part for me. After completing the experiment, you can analyze your methods, results, and data to draw conclusions while simultaneously comparing or supporting your results with other research. My passion for science, specifically Biology, is partially due to the research I can perform or discover, as it provides me with endless opportunities to explore my own interests and engross myself in all aspects of the available research of the field.