Annotated Bibliography Guide and Example

"An **annotation** is a summary and/or evaluation. Therefore, an **annotated bibliography** includes a summary and/or critical evaluation of each of the sources. The annotated bibliography looks like a References page but includes an annotation after each full citation.

Annotated bibliographies can be part of a larger research project or a stand-alone report.

Depending on your project or the assignment, your annotations may do one or more of the following:

- *Summarize*
    - Some annotations merely summarize the source. What are the main arguments? What topics are covered? The length of your annotations will determine how detailed your summary is. Who wrote the document? When and where was the document written?
- *Assess*
    - After summarizing a source, it may be helpful to evaluate it. Is it a useful source? How does it compare with other sources in your bibliography? What is the goal of this source?
- *Reflect*
    - Once you've summarized and assessed a source, ask yourself how it fits into your research. How does it help shape your argument? How can you use this source in your research project?

Your annotated bibliography may include some of these, all of these, or even others. If you're doing this for a class, you should get specific guidelines from your instructor."

The following pages show an example of an annotated bibliography.

Felician University. (2024, May 17). *Annotated Bibliography.* Felician University Library. https://felician.libguides.com/APA7/annotatedbib.

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Annotated Bibliography

Li, R., Filippelli, G., & Wang, L. (2023). Precipitation and discharge changes drive increases in Escherichia coli concentrations in an urban stream. *Science of The Total Environment*, *886*, 163892.

This study focuses on *E. coli* growth in one specific urban stream across a timespan of over twenty years. The researchers compared these results to precipitation rates within the same area and found that there was a positive correlation between precipitation and *E. coli* proliferation in this single stream. They were looking to be able to predict the abundance of *E. coli* in this urban area for future use. Eventually, they state that climate change may play a significant role in *E. coli* as our planet changes in the next century. This means that the researchers are proposing that there may be an influx of *E. coli* as CO2 emissions rise. It is beneficial that this study is so new and has many different avenues to explore within this research; however, I am not sure that it is specific enough towards the proposed question; other sources might have more relevant information.

Rhodes, M. W., & Kator, H. I. (1990). Effects of sunlight and autochthonous microbiota on Escherichia coli survival in an estuarine environment. Current Microbiology, 21, 65-73.

This study done by Rhodes and Kator catered to the effects that sunlight and microorganism exposure had on *E. coli*. The research was done in the Chesapeake Bay. By using four different chambers, they exposed the *E. coli* to different amounts of sunlight and microbes. This allowed for *E. coli* to be carefully studied closely with conditions relative to each other. They found that sunlight played a significant role in the survival of *E. coli*. In fact, within hours of sunlight exposure, most of the damage had been done with much of the *E. coli* dying. However, this phenomenon quickly subsided as they got deeper in the water. This is due to the water's light-absorbing abilities. With both factors in play, the mortality of *E. coli* seemed to increase with the concentration of either sunlight or other microorganisms. This study is a great example of how sunlight can play into the role of *E. coli* growth in water, and it can be used to compare to other weather conditions. The study is somewhat dated, so finding sources that maybe show similar results or deviations from this research is necessary.

Shehata, T. E., & Marr, A. G. (1971). Effect of nutrient concentration on the growth of Escherichia coli. *Journal of bacteriology*, *107*(1), 210-216.

This older article is a great foundation for understanding the different nutrients that *E. coli* uses for its growth. It takes a look at the growth of *E. coli* with three different nutrients: tryptophan, phosphate, and glucose. The study finds that when there are high concentrations of nutrients available, the state of growth remains constant. However, when there are lower concentrations of nutrients available, the growth rate of *E. coli* becomes completely dependent on the amount of nutrients available. This is similar to what a scientist named Molod had predicted, and they eventually tried using his proposed formulas to calculate the expected growth rate versus the actual growth rate. They found that his estimations were off, and growth rate was highly dependent on concentrations of nutrients. These researchers also looked at the size of *E.*

coli cells, and they found that size may be heavily affected by the type of nutrients being absorbed. So, size is not entirely dependent on growth rate, but more so the nutrient being taken in. This study is good for giving a proper introduction towards the effects of how precipitation may influence the proliferation of *E. coli* in oligotrophic lakes. Despite being a bit dated, there is still valuable content in this study. For instance, it gives a great explanation of the growth of cells and how it correlates with different nutrients. On top of this, it provides the fundamentals for size of *E. coli*, and how this may also change with concentration of nutrients versus the rate of growth.

Vidovic, S., Block, H. C., & Korber, D. R. (2007). Effect of soil composition, temperature, indigenous microflora, and environmental conditions on the survival of Escherichia coli O157: H7. Canadian journal of microbiology, 53(7), 822-829.

This study looks at one single strain of *E. coli* and its growth behavior in different soil conditions. They used two different kinds of silty clay loam soil—one with low carbon content and one with high carbon content. They also decided that three different temperatures (-21, -4, and 22 degrees C) were to be used as well. Across this, they were also kept in sterile and nonsterile environments meaning that they were free of other microorganisms. They found that oftentimes the presence of microorganisms often harmed the survival of *E. coli*. On top of this, a lack of carbon content made it difficult for growth to occur. They found that within the soil kept at a warmer temperature, there were increases in comparison to their counterparts. Although this study might not be totally relevant because it looks at terrestrial *E. coli* instead of aquatic *E. coli*, it has provided a better understanding of how temperature seems to affect the chances of survival. It has also painted a better picture of how other microorganisms may inhibit this survival, as they may be competing for many of the same nutrients.

Whitman, R. L., & Nevers, M. B. (2008). Summer *E. coli* patterns and responses along 23 Chicago beaches. Environmental science & technology, 42(24), 9217-9224.

The study looked at the fluctuations *E. coli* concentrations in recreational beach water, trying to understand the underlying patterns on different scales. Traditionally, beach contamination studies have been site-specific, treating each beach as independent and managing them as such. However, this study challenges this thought by analyzing *E. coli* data that has been collected over five years from 23 beaches in Chicago along Lake Michigan. It reveals that wave height and barometric pressure were found to have fairly significant correlation with *E. coli* presence. This study was done in hopes of being able to predict future *E. coli* outbreaks along these beaches in Chicago. This study is a great resource to have for different reasons. First, it looks at Chicago beaches along Lake Michigan. This is very helpful because it was done with similar instruments I was using during my internship with the Minnesota Department of Health. On top of this, this study brings up the idea of looking at barometric pressure, something that I have not thought about. For this reason, I now want to look into this as a possible factor that plays a significant role in *E. coli* formation and survival.