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Independent and Study Mentorship

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Microbial Enzymes in Bioremediation

Assessment 8 - Research

Date: 10/26/18

Subject: Biological Chemistry

MLA Citation:

“Role of Microbial Enzymes in the Bioremediation of Pollutants: A Review.” *Enzyme Research*, Hindawi, www.hindawi.com/journals/er/2011/805187/. Accessed 25 Oct. 2018.

Assessment:

The following article combines biochemistry with environmental science by addressing the role of microbial enzymes in bioremediation. The article provides insightful information on enzymes over various microorganisms involved in degrading pollutants as well as provides suggestions for efficient use of bioremediation. In addition the article addresses different enzymes such as microbial dioxygenases and microbial oxygenases. This has grabbed my interest and I would like to further assess how biochemists help solve these problems using biological chemistry techniques and instruments. However, this research article led me to new questions such as how scientists categorize pollutants and how does the slow process of bioremediation affect the pollution in that time span?

The main reason I found this article intriguing was because of how it combined biology, chemistry, and environmental science so effectively. This year in ISM I am focusing on environmental biochemistry and this article helps to understand enzymes, a significant subtopic of biological chemistry. In addition, the following article also provides a template for my original work. This is because my proposal for the original work will be an article synthesizing my research over the past few months. Having an article written over a topic of my interest, helps me to understand what a scientific article encompasses. For example, it will help construct the type of information and structure of the article.

The article over microbial enzymes cleared up previously asked questions. For example, I was confused about what bioremediation is and how it affects the environment. After analyzing the article, I found that bioremediation is the process of introducing microorganisms to break down environmental pollutants into non-hazardous substances. In addition the article provides an additional perspective with more information over cost and economic effects.

After thoroughly reading and analyzing this article, I was able to make connections back to my science classes and science fair projects. Enzymes was a prominent topic in my biology classes over the years. I never really understood why it was a important, however after careful analyzation, I realized how significant the role of enzymes are in the environment and not just for bioremediation. This will help me structure my article around reducing pollutant toxicity through environmentally-safe methods.

I realized over the past few assessments that my focus has been primarily over different types of biological chemistry. However, I have not paid close attention to each subunit of biochemistry in depth. In this research assessment, I went into depth about enzymes and

bioremediation, a key component of environmental biological chemistry. In return of stepping out of my usual assessment and analysis, I gained insight over microbial enzymes and their specific role in the environment.

In conclusion, I am pleased with the amount of information I was able to take away from this research assessment. In future research assessments, I hope to dig deeper into environmental biochemistry, such as how soil, pH, and temperature affect molecules and enzymes. I highly enjoyed this learning experience and hope to continue analyzing and synthesizing information about the environment through the lens of biological chemistry.

Link to Annotated Document using Scribble:

[Document](#)