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Mr. Speice

Independent Study and Mentorship

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**New Methodology of Molecular History**

**Assessment 4 - Research**

**Date:** 09/28/18

**Subject:** Biological Chemistry

**MLA Citation:**

Klyosov, A.A. "Biological chemistry as a foundation of DNA genealogy: the emergence of

'molecular history'." *Biochemistry* [Moscow], vol. 76, no. 5, 2011, p. 517+. *Academic*

*OneFile*,

<http://link.galegroup.com/apps/doc/A345694806/AONE?u=j043905010&sid=AONE&xi>

d=df29b86c. Accessed 25 Sept. 2018.

**Assessment:**

A.A Klyosov presented a paper that describes the new scientific discipline, DNA genealogy, that translates DNA mutation into time spans to the most recent common ancestors and dating their ancestral migration patterns. With support from DNA sequencing images and professional references to authors, Klyosov highlights how the new addition of molecular history contributes to peaceful relationships in ancient chromosomal lineages by comparing “Indo-Europeans” to ethnic Russians. However, this raises new questions such as: when did these tribes have a common ancestor and where did they live?

This research assessment helps to focus on DNA genealogy as a foundation for genetic biochemistry. As per earlier classwork and research, this new scientific field effectively blends history, environmental science, linguistics, and biological chemistry. I believe this allows for a better understanding of how biochemists transfer haplotypes to experimental data. In addition, I was surprised to see how 200-year-old Aryan mystery was solved by separating the 2023 mutations from other chromosomal data.

The information found in these article is relevant to my field of study, biological chemistry, as it relates genetic history and gene methodology and its importance to animal life, one of the main goals of biochemistry as a topic. This goal is important because it, although general, helps me gear my research towards DNA mutational patterns and biological and chemical kinetics.

More importantly, questions that were previously confused were answered after this research assessment. For example, I was puzzled over how geneticists fused their experimental data with that of chromosomal data and create a ring of mutations. After reading the article, I found that scientists use haplotypes to essentially compare molecular history of both ancient tribes to create a ring of similar mutations.

After completing this research assessment, I was able to make connections to previous knowledge from Pre-AP biology and AP Environmental science from freshman and sophomore years (respectively). From those previous classes, they analyzed evolution and population pyramids. Similarly, I was able to take those terms and apply it to the article. For example, the article mentioned that “population bottlenecks” is one of the many challenges faced by geneticists because of how the extreme reduction in number of individuals in a population can severely alter the lineage of ancestors.

In the future, I plan to take this information and somehow apply it to my final product. The idea of how biochemists combine different elements of research into creating DNA genealogy grappled my interest and I would like to further assess how biochemists help solve these problems using biological chemistry techniques and instruments. In addition, I feel that I should create a final product that reflects on genetic coding and molecular history. This is also because I realized that the past two research assessments I have been mainly focusing on gene altering scientific studies and how they affect human history.

In conclusion, I am pleased with the amount of information I was able to take away from this research assessment. DNA genealogy altogether is an intriguing topic that I hope to further explore in the future. For next assessments, I plan to complete a interview assessment about a biochemist professional studying and experimenting the basics of gene methodology. In addition, I plan to also complete another research assessment focusing on forensics science, another subtopic of biochemistry I am interested in.

Link to Annotated Website from Scribble:

[**Document 1**](http://scrible.com/s/2KJwS)