

# **Stony Brook University The Graduate School**

## **Doctoral Defense Announcement**

### **Abstract**

#### **The Early History of Biology Secondary Education in New York State**

By

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There have been several historical studies on science education in secondary schools however, none have been specific to Biology in New York State. Through the utilization of rich primary source documents from New York State Libraries and archives, the historical growth of Biology as a subject and course in New York State is documented. This study details the history of the development, establishment, and long-term success of the high school course of Biology in New York State. It examines the course origins, and its evolution based on the complex political and social circumstances that led to its development and refinement.

The Biology course created in New York State in 1905 traces its roots to the biological sciences of botany, zoology, and physiology. Although these courses shared common aims, they were taught as separate subjects independent of one another. They were elective half-year courses and were not considered as college entrance subjects. Consequently, biological science courses were generally held in low regard, when compared to the year-long courses of Chemistry and Physics.

Traditional teaching methods for the biological sciences during the nineteenth century focused on textbook study and rote memorization following the pedagogical practices of mental discipline. As a growing movement for standardization in the sciences emerged, the Biology course was designed to be administratively feasible as year-long course with laboratory work that would meet college entrance requirements. Biology moved away from the textbook method, in favor of more student-centered learning with real world application for the average high school student.

Four common themes emerged. These were identified as the impact of educational standardization, the changes in student demographics, the influence of changing pedagogical practices, and the effects of various socio-political movements. The adaptability of the Biology course contributed to its growth and expansion, while indirectly leading to the decline of Zoology, Botany, and Physiology courses. Biology eventually became the leading high school science course in New York State by 1940.

**Date:** May 13<sup>th</sup>, 2021

**Program:** PhD in Science Education

**Time:** 3:30 p.m.

**Dissertation Advisor:** Dr. Keith Sheppard

**Place:** Virtual Conferencing (If an outside member of the community would like to attend the defense, please contact [judith.nimmo@stonybrook.edu](mailto:judith.nimmo@stonybrook.edu).)