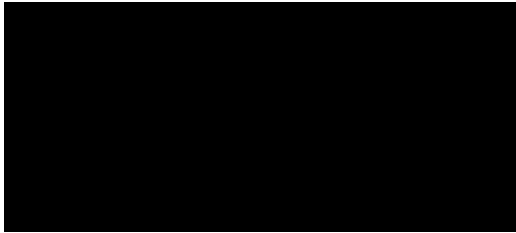


Honors Project Proposal
BIOL 1108K: Principles of Biology



Project Description

██████████ is a member of the Lake Allatoona Research Group (LARG), a co-curricular program which trains students to perform various laboratory assays on samples of lake water to help evaluate the impact of urban development and recreational use on water quality and the health of associated ecosystems. Students in the LARG collect samples from different sites on the lake to test for chemical composition, nutrient availability, and the presence and population density of potentially hazardous fecal coliform bacteria.

Principles of Biology II is the second course in the introductory biology sequence for STEM majors. Course objectives include understanding the evolutionary history of life on earth, diversity of organisms, and fundamentals of ecosystem ecology. ██████████ proposes to use her work with the LARG to develop a deeper understanding of how chemical composition of the water influences the prokaryotic organisms living there. She plans to investigate possible correlations between chemical properties such as the availability of oxygen and other nutrients, pH, and temperature with the number of coliform bacteria present in the water.

For her Honor's project, ██████████ will develop an experiment in which she will compare various chemical components with the presence or absence of fecal coliform bacteria. Background research will include a minimum of three scientific articles relating to the metabolism, reproduction, and potential pathogenicity of *E. coli*, a coliform species of interest. She will then make hypotheses based on her background research, and use data collected through her work with the LARG to test her hypotheses. Successful completion of the Honors project is contingent upon selection of appropriate sources, discussion of each source with ██████████ in order to generate experimental questions and hypotheses, and presentation of her results to the class in the form of a mini-lecture.

Timeline for Completion

Week of Feb 28 - Submission of Proposal to Honors Committee

Week of March 7 - Selection and approval of sources by ██████████

Week of March 14 - Discussion of article #1

Week of March 21 - Discussion of article #2

Week of March 28 - Discussion of article #3

Week of April 11 - Discussion of data and hypotheses

Week of April 18 - Summary of data analysis

Week of April 25 - Presentation of project design and results in mini-lecture; submission of final report to Honors Director

*Data collection with the LARG is ongoing and will continue throughout the semester.

Description of Honors Experience

This project will provide [REDACTED] with a research experience above and beyond the scope of regular course content and evaluation. As a member of the Lake Allatoona Research Group (LARG), she is gaining valuable experience in field methods, laboratory techniques, and data collection and management. This Honors project will elevate that experience by associating the knowledge gained through participation in the LARG with course content from BIOL 1108K. The ability to associate the practical skills she is developing in the lab with the theory learned in class is a valuable way to make the course material relevant and enhance her understanding of prokaryotic diversity and ecosystem dynamics. She will also gain useful experience in experimental design, data analysis, and scientific communication. The final deliverable will be a slideshow which will be used for her class presentation as well as submitted to the Honors Director upon completion.