BIO183L Spring 2023 – Research Project

During a regular semester, you would be asked to design and run an experiment, using bean beetles as a model organism. The purpose of this project is to expose students to the experience of real world laboratory research. Through this project, students will have the opportunity to hone their skills in experimental design, data collection, data analysis, and oral/written presentations of the collected data.

Unfortunately, the uncertainty of the pandemic and COVID-19 illness during the Spring semester will likely provide an undue burden to students with required weekly in-class data collection. However, we can still run projects that will familiarize you with some of the key aspects of scientific research.

This semester, you will be asked to collaborate with 3 other students in your lab section (groups of 4 students). The groups will be randomly assigned by your lab TA.

Your semester-long project will consist of a review of literature research in which you will gather scientific information and data, interpret them, and present your results by writing a Review Paper and orally presenting your research during our final lab class.

The Review Paper Project:

1. As a group, pick a pathogen of interest (any prokaryote, protozoan, fungus, virus, or multicellular parasite will do), and describe its history, anatomy, and mode of action. In other words, describe how/when/where your virus of interest was discovered and how it has been studied in the research. What is the host (it doesn't have to be humans), and how is it affected by the pathogen?

2. Pathogen anatomy and physiology – What does your pathogen of interest look like? What is it made of? How does it affect specific tissues in specific species? How is it transmitted? What does it bind to, and how does it make its way into the host? How does it affect the host? You should be describing these aspects of your pathogen at the molecular level, in as much detail as you can find and understand.

Important Due Dates:

Jan. 30- Feb. 1 - Create google folder for your group and TA, create a google doc for idea brainstorming. → Get initial TA approval for the topic before leaving lab. Your TA may suggest alternative options if your project overlaps another group too closely.

Feb. 6-8- Follow the Assignment Details and submit the written Group Review Paper Proposal for your project on Moodle. Submit 1 copy per group. Your TA will provide feedback before you start working on the final project. (20 points)

Feb. 27-Mar. 1 - Submit preliminary outline with text and input from each group member building upon the written plan. (10 points)

Apr. 3-5- Submit first Draft of Review Paper. This should be a complete paper. (15 points)

Apr. 17-19 - Group Presentations (30 pts) of Project and Final Review Paper (35 pts).