

BI 221: PRINCIPLES OF BIOLOGY - CELLS

Dr. Lori Kayes and Dr. Carmen Harjoe

Poster by Chris Fryefield, Bryan Lynn and Jazlee Crowley



Course-based Undergraduate Research Experience (CURE)

What is a CURE project? A Course-based Undergraduate Research Experience provides all undergraduates with the opportunity to participate in real scientific research, including designing and executing their own experiment over the course of the term. The entire BI22X series is constructed around CURE projects, each term with focusing on a specific scientific project.

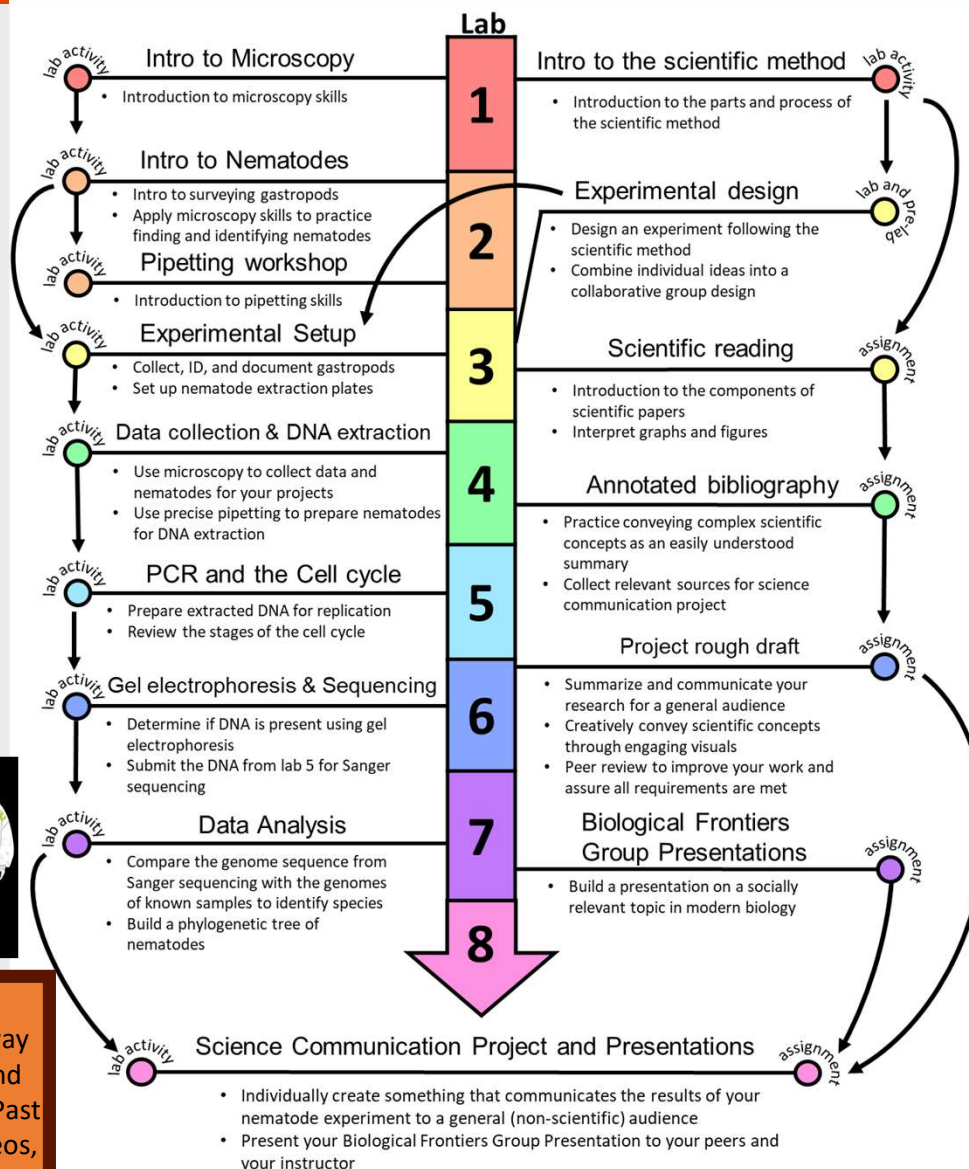
Lab Skills Developed through CURE:

By learning about biology through direct research experience, every term students will continue to real world develop skills in:

- Experimental design
- Scientific writing and various forms of communication
- Group collaboration
- Statistical Analysis



Communication Focus: General Public
Students will present their findings in a way that is accessible to the general public and should be creative and visually engaging. Past examples have included infographics, videos, books and graphic designs.



Biology Lab Skills

Development for Fall Term:

- Microscopy
- Precision pipetting
- Field collection and identification of target organisms
- DNA extraction, gel electrophoresis, and PCR

UNDERGRADUATE RESEARCH PROJECT: NEMATODE SPECIES AND ABUNDANCE

What is a nematode? These microscopic roundworms are some of the most abundant organisms on the planet! Some nematodes are parasites of gastropods (slugs and snails) and can be used as a biological control to protect crops from damage by slugs. This control method is already being used in other countries, but its use here depends on knowing more about the existing local nematode population.



Pacific Banana Slug, *Ariolimax columbianus*
Photo credit to Emily Taylor

Nematode under microscope



What does the nematode CURE involve? As depicted in the lab outline diagram, students will design a collaborative experiment that investigates the prevalence of nematodes in local gastropod populations. Lab groups will extract DNA from nematodes and analyze it using real-world microbiology techniques like PCR (polymerase chain-reaction) and Sanger sequencing.



Oregon State University