

113 Lab Learning Objectives

Week 14: Information and Natural Selection lab #9

Learning Objectives for Environmental Information and Natural Selection

Skills

- Write a clear lab report summarizing complex data generated in the lab.

Cognitive

- Employ a scientific approach to answer biological questions and test hypotheses.
- Analyze experimental data and reach logical conclusions.
- Construct a generalizable explanation linking genetically defined taste capacity to natural selection and evolution.
- Identify possible sources of environmental information that communicates the level of toxicity for plant tissues.
- Design an experiment to use model organisms to extrapolate potential toxicity of a compound or mixture.

Week 14: Information and Evolution Lab #6

Learning Objectives for Bacterial Evolution

Skills

- Pipet accurately.
- Work with bacterial cells using sterile technique.
- Make dilutions of stock solutions.

Cognitive

- Employ a scientific approach to answering biological questions and test hypotheses.
- Describe the big idea of evolution based on lab experiences.
- Explain how antibiotic resistant bacteria can appear quickly in the population.
- Translate the MIC data you determined experimentally into an experimental protocol for directed evolution of antibiotic resistance in bacteria.
- Formulate an hypothesis how antibiotic resistant bacteria evolve outside the laboratory.
- Propose a mechanism that allows bacteria to evolve rapidly when exposed to antibiotics.