

*Ponds in Peril!*  
Global Change in the Classroom



Dan Preston, Oregon State University  
[daniel.preston@oregonstate.edu](mailto:daniel.preston@oregonstate.edu)

# What is global change?





# The *Ponds in Peril* Project



# Eutrophication





An aerial photograph of a rural landscape featuring a winding river or stream. The surrounding agricultural fields are overlaid with numerous semi-transparent circular markers. These circles are filled with various colors, including shades of green, orange, pink, and purple, which likely represent different data points or levels of agricultural runoff. The river itself is a dark, winding line through the lighter-colored fields.

# Agriculture Runoff

# Livestock





# Lawn Fertilizer





Impacts







Invasive Species: A nonnative species that often causes harm within its new range





# Oregon Invaders



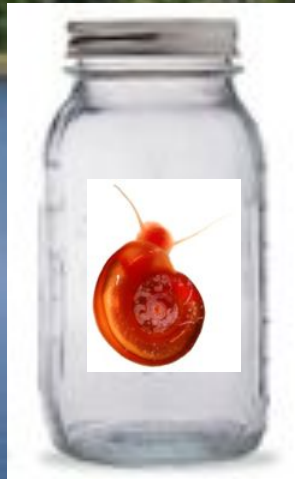


# *Ponds in Peril!*

A classroom experiment that emphasizes  
global change, food webs, and the  
scientific process (and it's fun!)



# *Ponds in Peril!*



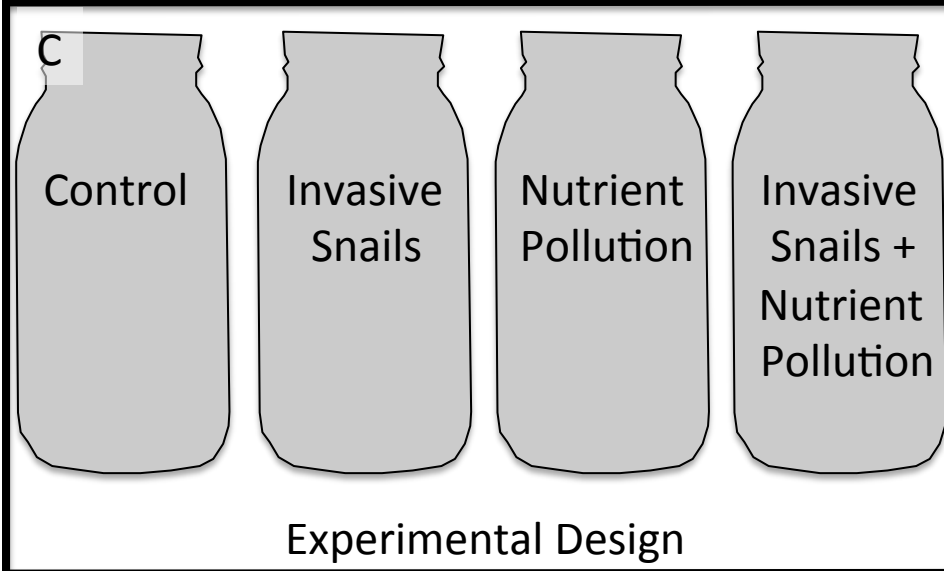






# Aquatic Macroinvertebrates!









# Today's Workshop

- Station 1: Scientific Process
  - Hypotheses, Experimental Design
- Station 2: Aquatic Organisms
  - Diversity, Food Webs, Adaptations
- Station 3: Data Collection
  - Units, Graphing, Etc.
- (Station 4: Scientific Process Cont.)





# Take Home Messages

## 1) Scientific Process

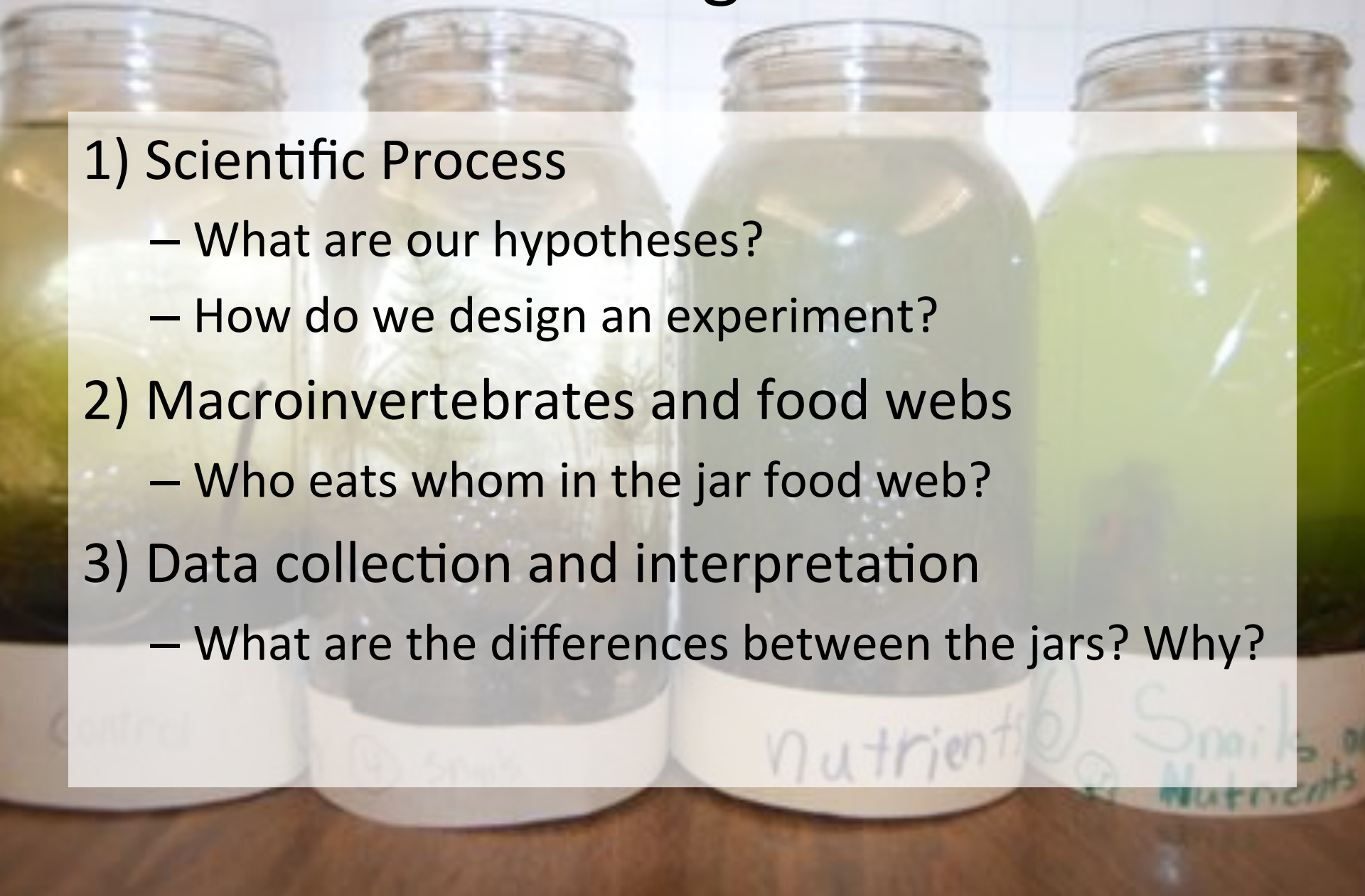
- What are our hypotheses?
- How do we design an experiment?

## 2) Macroinvertebrates and food webs

- Who eats whom in the jar food web?

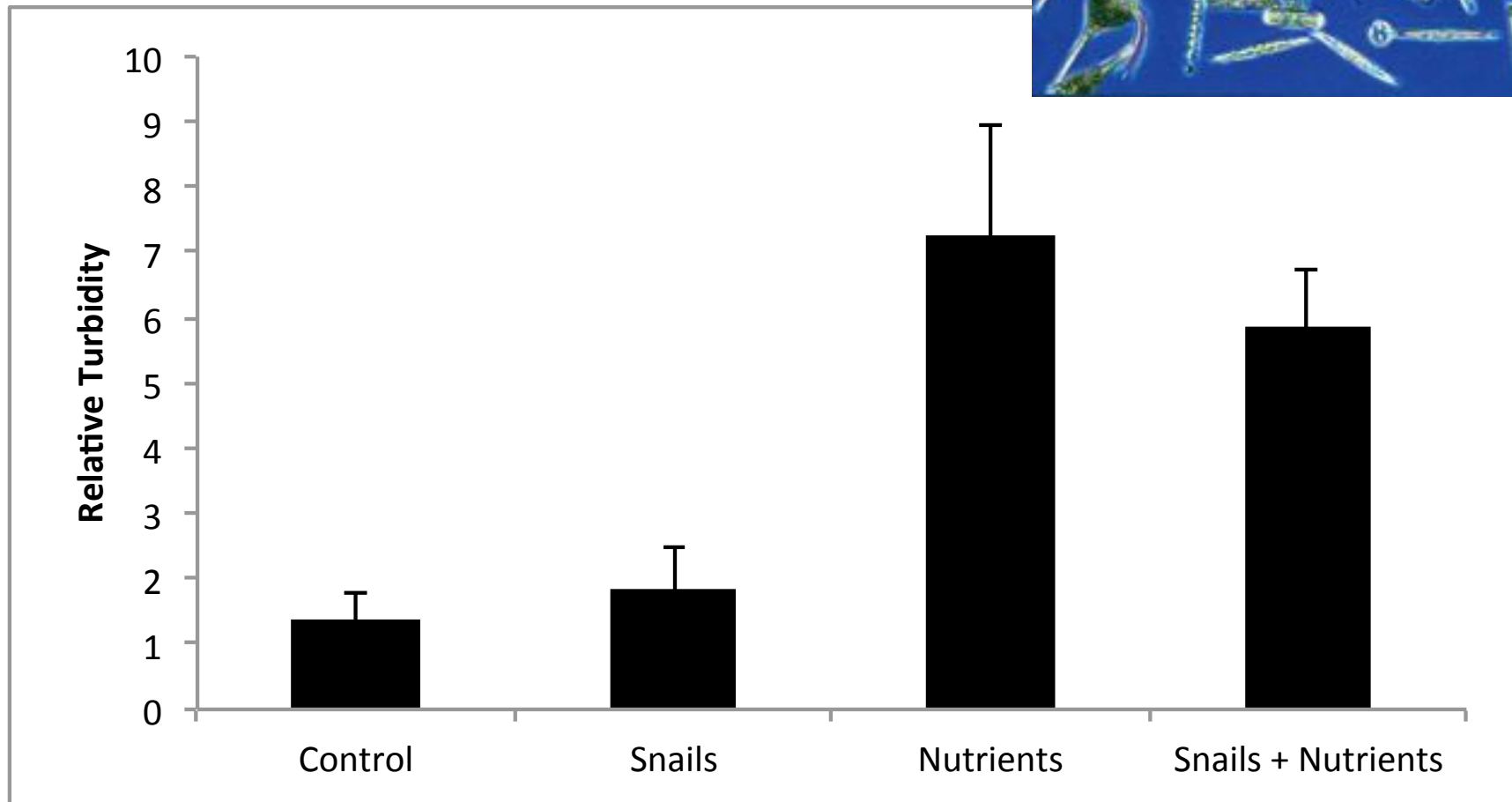
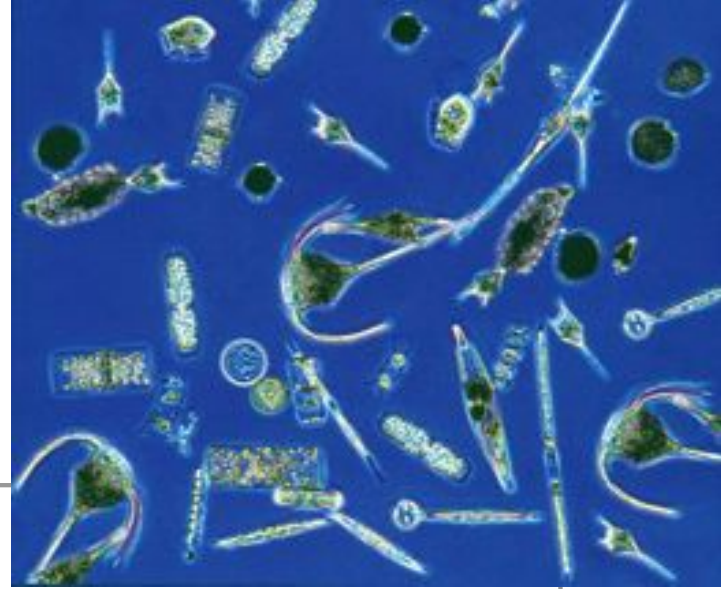
## 3) Data collection and interpretation

- What are the differences between the jars? Why?

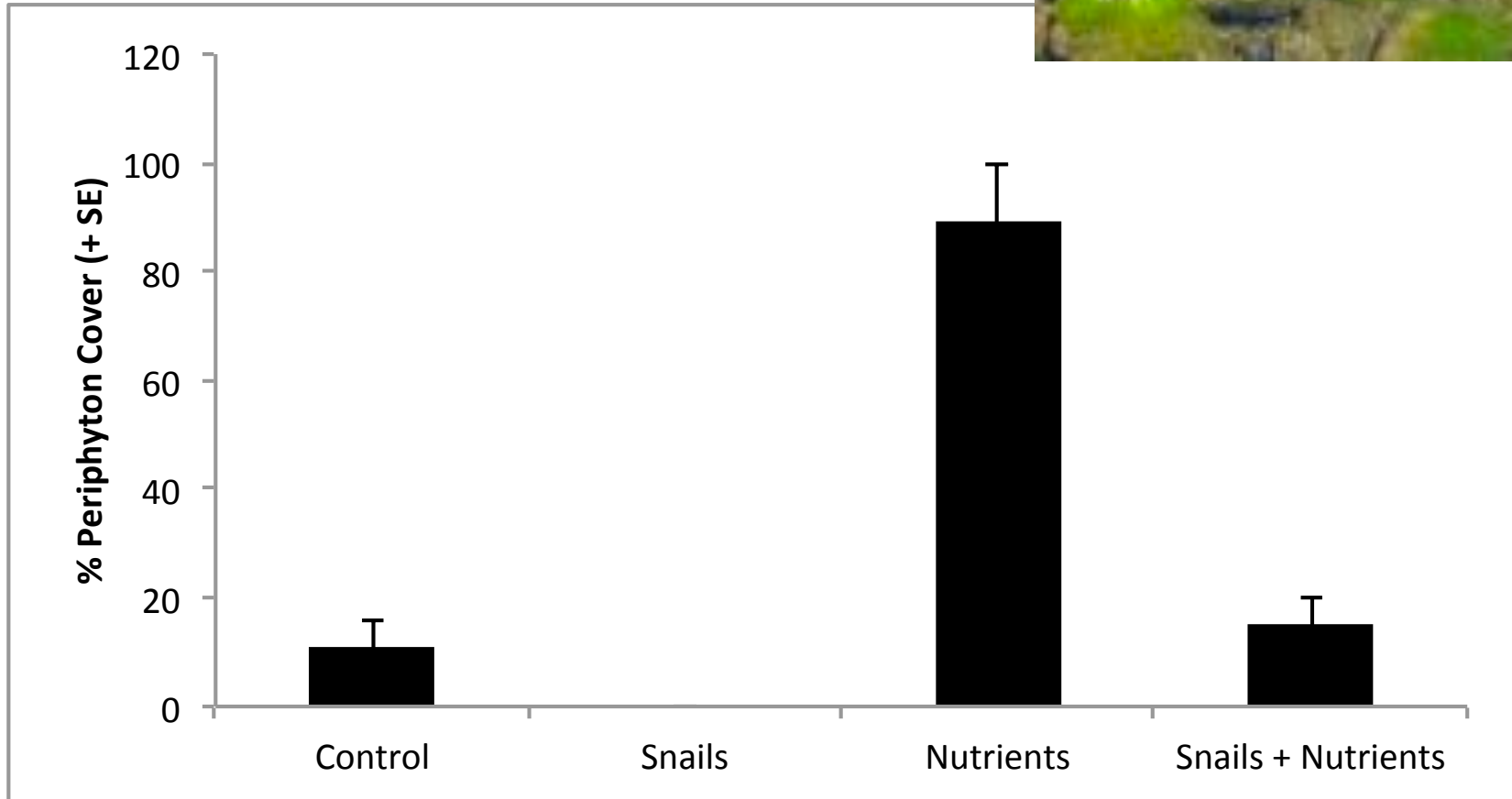




# Phytoplankton – Algae in the water column



# Periphyton – Attached algae







The project is...

Low cost, engaging, incorporates science standards, flexible, fun!

Resources Available:

- *Science Scope* Article
  - Instructions, Materials List, etc.
- 10 Worksheets

# HOW THE DEAD ZONE FORMS

