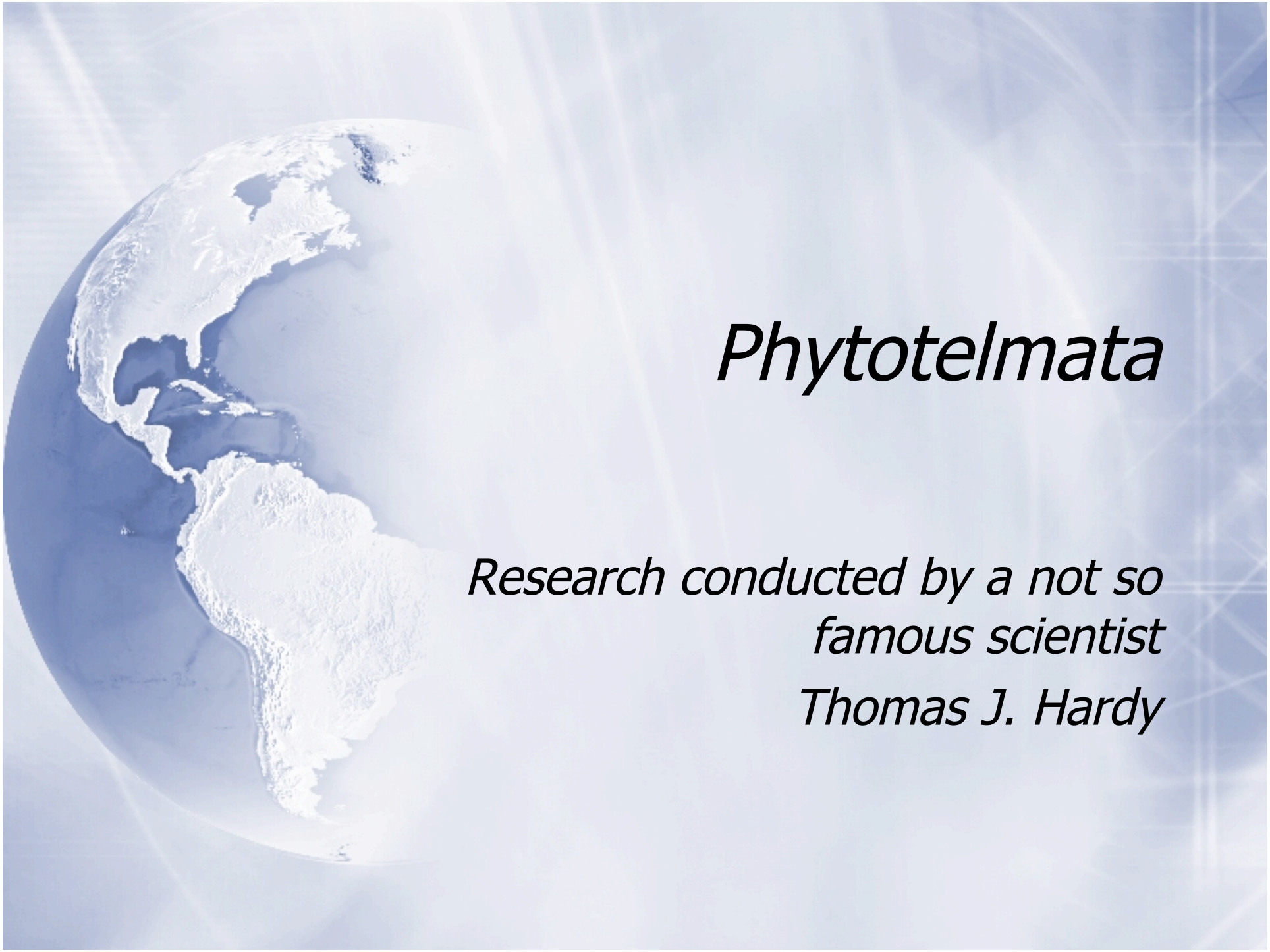
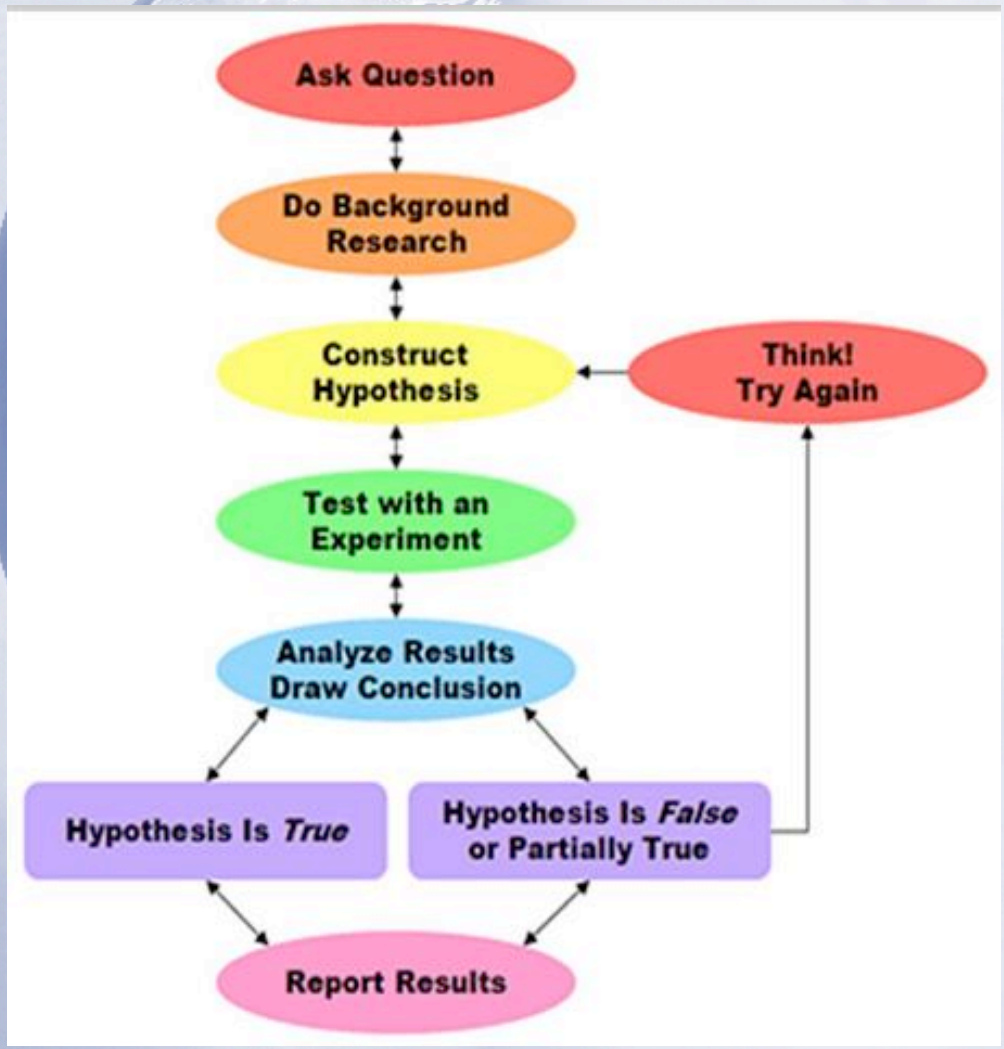


Phytotelmata

Research conducted by a not so famous scientist

Thomas J. Hardy

Scientific Method (review)



- I. Observation
- II. Ask Questions
- III. Hypothesize
- IV. Design Experiment
- V. Collect Data
- VI. Analyze Data
- VII. Evaluate Hypothesis

I. Observation

What strange adaptations!…

My Observations

II. Ask Questions

My Questions

- What are phytotelmata?
- Where are phytotelmata found?
- What is the reason for this adaptation?
- What role do the organisms inside play?
  - What mechanism acts to control community composition?
    - Top-down (Sarracenia purpurea)
- Does the presence of organic matter result in N,P,K deposits?

III. Hypothesize

- Must be testable!!

My Hypotheses

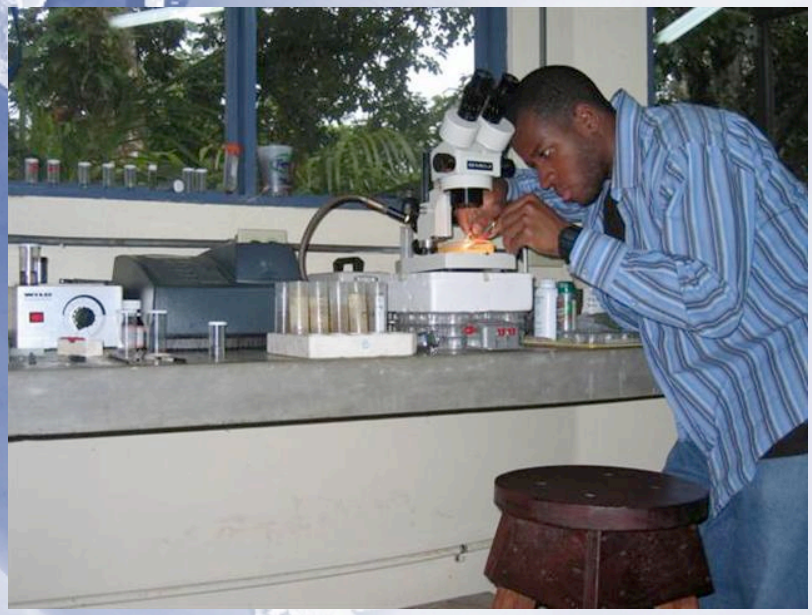
H_0 Communities in different phytotelmata will be the same.

H_1 Community composition will be controlled via top-down pressure as seen in *S. purpurea.*

- Interactions between invertebrates will be similar to those observed in *S. purpurea.*

H_2 Organic N,P,K will be present in the water of tropical phytotelmata.

Design an Experiment



- Remember:
  - Safety measures
  - Get permission
  - Have a control group
  - Keep a detailed lab notebook

My Experimental Design

50ml (blue caps) / 15ml (orange caps) vials

My Objectives

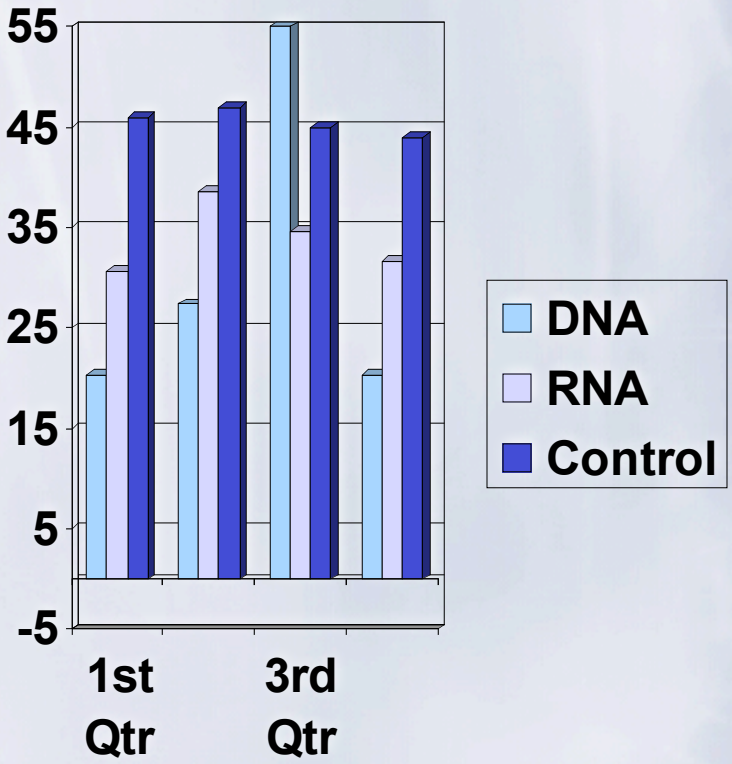
- To compare invertebrate communities in phytotelmata
- To discover the mechanism for why the communities may be similar or different (keystone species concept)
- To determine whether phytotelmic plants could potentially benefit from the presence of N,P,K in the water

Data Collection

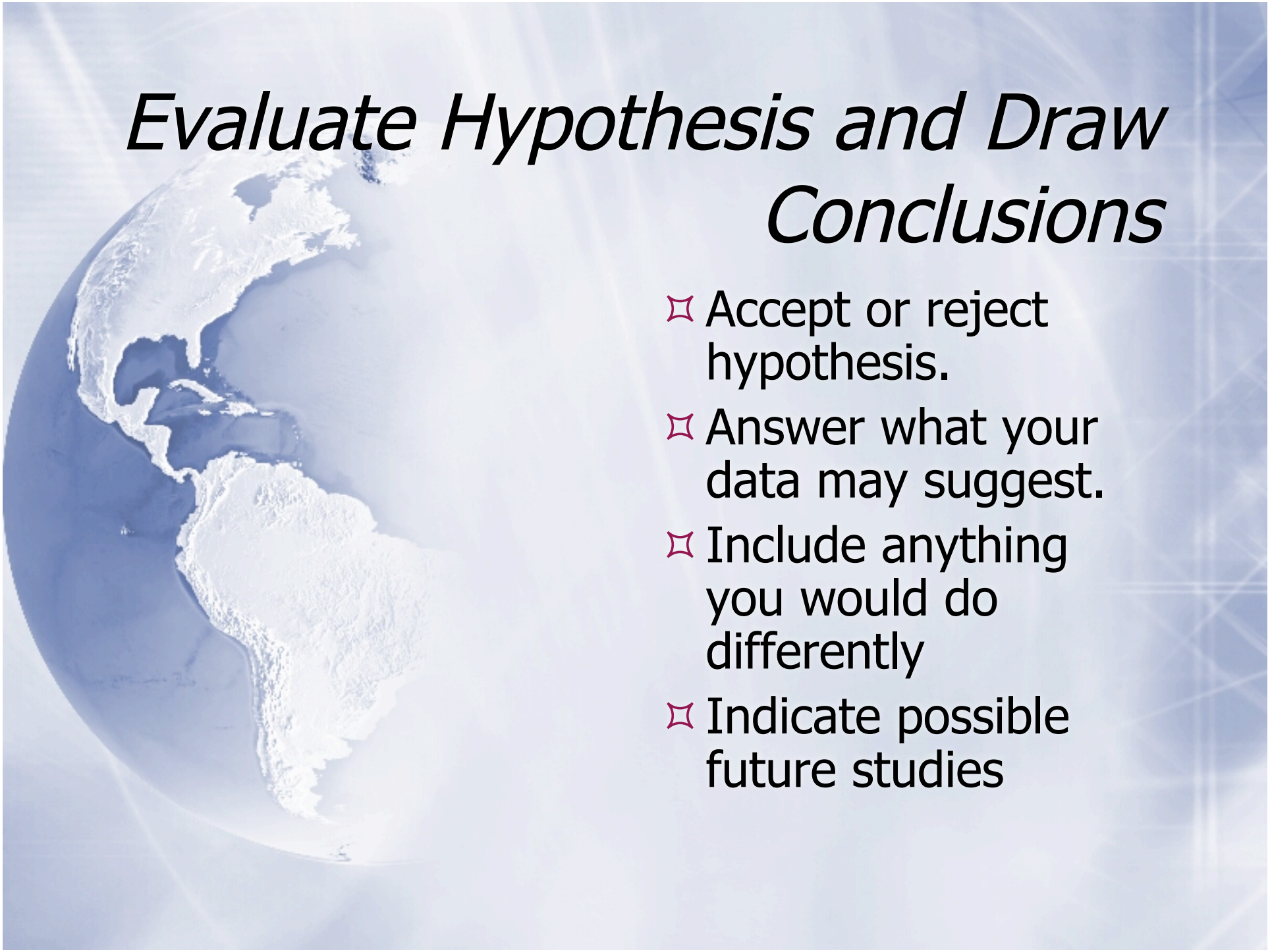
My Data Collection

Analyze Data

- Statistical Analysis



Evaluate Hypothesis and Draw Conclusions



- Accept or reject hypothesis.
- Answer what your data may suggest.
- Include anything you would do differently
- Indicate possible future studies