

Stat 145: Data and Studies

Group Members

List your group members here.

Some Terminology

For each pair of terms below, work together to (a) write down a clear and succinct description of the key distinction being made, and (b) illustrate the difference with a clear example.

a. Case (observational unit) vs. Variable

b. Categorical vs Numerical (Quantitative)

c. Explanatory vs Response

d. Population vs Sample

e. Parameter vs Statistic

f. Experiment vs Observational Study

Using data to answer questions

Consider the following questions.

- a. Does tagging penguins for identification harm them?
- b. Does giving lots of high fives to teammates (once COVID is over), help sports teams win?
- c. Which is better for peak performance: A short, mild warm-up or a longer, more intense warm-up?
- d. Does watching cat videos improve your mood?
- e. Does late night eating impair concentration?
- f. Does electrical stimulation of the brain help with problem solving?
- g. Do antibiotics taken in infancy affect the tendency to be overweight?
- h. Do online sites charge different amounts depending on what type of device/browser combination you are using?
- i. Who will win the November presidential election? (Note: this is more complex than you might first think.)

As a group, pick 1 – 3 that seem most interesting to you and outline a study to answer the question(s). Be sure to address the following:

- What data would you collect?
 - observational units?
 - variables?
 - * categorical/numerical?
 - * explanatory/response?
- Is your study an observational study or an experiment?
- How would you collect data?
- How would the data help you?

Make use of our new vocabulary as you do this.