Class Activities

# Chapter #4: Quantitative Designs

1. In a small group, read the three scenarios presented below. Discuss whether the associations observed suggest that there is a causal relationship between these variables. Explain your answers.
   * Researcher A finds an association between the consumption of peanut butter and number of fatal accidents in the state of Massachusetts. He concludes that eating peanut butter causes fatal accidents.
   * Researcher B finds an association between ice cream eating and sunburns. She concludes that eating ice cream causes people to have more sunburns.
   * Researcher C is studying the effects of school lunches on student body mass index. School A notices a decrease in studying body mass index in January 2017. In this same month, School A made dramatic changes to their school lunch program, offering more healthy options. Researcher C concludes that changes in the school lunch program in January 2017 caused changes in student body mass index in January 2017.
2. You are interested in researching the effectiveness of a treatment drug for rosacea, a skin condition characterized by facial redness. Design an experimental study to test whether this treatment is effective for people who suffer from rosacea. More specifically, discuss:
   * What is your independent variable?
   * What is your dependent variable?
   * What is your null hypothesis?
   * What is your alternative hypothesis?
   * What are some ethical considerations related to conducting this study? How will you address any ethical considerations?
3. You are interested in studying changes in voting patterns among 18–24 year olds in Massachusetts in 2016. You propose to use a longitudinal design and collect data at two time points (Time 1 and Time 2). There are three types of longitudinal designs, panel, trend, and cohort. For each type of design identify the following key elements:

|  |  |  |  |
| --- | --- | --- | --- |
| **Study type** | **Population** | **Sample at Time 1 (describe your sample)** | **Sample at Time 2 (describe your sample)** |
| Panel |  |  |  |
| Trend |  |  |  |
| Cohort |  |  |  |