Graphing Data

Random Variables:

- characteristics measured on individuals drawn from the population under study
- Value is not constant; it is subject to **variation**
- Examples include measurements such as height, weight, age, ethnicity, education
- **Categorical (Nominal, ordinal)** or **Numerical (Discrete, continuous)**

Types of data:

Categorical Variable

- AKA Class variables or Nominal variables
- They do not have magnitude on a numerical scale
- **Nominal**
  - Lack inherent order
- **Ordinal**
  - Inherent order
- Ex: blood type, genotype, sex, state, survival (live or die), drug treatment (aspirin vs ibuprofen)

Numerical Variables

- AKA Numerical variables
- Random Variable is a Quantitative variable
- **Continuous**
  - Ability to take any value ex.. Human weight, **age**
- **Discrete**
  - Spaces between possible values ex. Number of offspring, **age**

Graphing Data

Frequency Distributions and Probability Distributions

A ***frequency distribution*** is the number of times each value of a variable occurs in a sample

A ***probability distribution*** is the distribution of the variable in the entire population ie. the probability that the **variable** takes on particular values

Graphing Data

1. **Display frequency distribution**
   - **Bar graphs**
   - **Histograms**

2. **Display associations (or differences) between two variables**
   - **Grouped bar plot**
   - **Mosaic**
   - **Box plot**
   - **Scatter plot**
   - **Strip charts**