STAT371: Introductory Applied Statistics for the Life Sciences   **Fall 2017**

Part 1 — Introduction Summary

1. What is Statistics?

    - Statistics is the science of converting data into knowledge.
    - Statistics is "learning in the presense of variation. " (Wardrop)

2. Populations and Samples

    - A **population** is any well-defined collection of things.
    - A **sample** is any subset of a population.

3. Types of Statistics

    - Descriptive statistics: Summarizing data either graphically or numerically.
    - Inferential statistics: Using a sample to make statements (infer) about the properties of a population.
        - Estimation
        - Testing
        - Fitting models

4. Types of Data

    - Numerical: Data that consists of numbers.
        - Continuous: Any value in a specified range is possible. (measurements)
        - Discrete: Only certain specific values are possible. (for example, counts)
    - Categorial: Data that is not numbers.
        - Nominal: No natural order.
        - Ordinal: A natural order exists, but no associated numbers.