**Week 4: Random Variables and Probability Distributions**

This week we will be talking about what is perhaps the most important topic in statistics, random variables. We are going to be focusing on discrete or ordinal data to make our calculations easier. This week will introduce the concept of a probability distribution. You will learn how to calculate the expected value and variance of probability distributions. We will learn about a particular type of probability distribution known as the probability mass function. Then we will learn about the related concept of a cumulative distribution function, and the relationship between a probability distribution and a CDF.

Readings:

* Open Intro Stats ch. 2.4 (p. 104-112)
* Khan Academy section on Discrete Random Variables (<https://www.khanacademy.org/math/statistics-probability/random-variables-stats-library>)
* <https://www.youtube.com/watch?v=wUoIHGlYRGM>

Problem set:

* Distributed in class