AMS 7
Lecture 1
6/20/2016

Section 1: Intro and Descriptive Methods

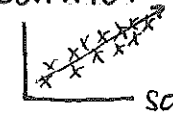
An estimate is a good guess
- point-estimate
- we attach a measure of uncertainty to each estimate

Relationships
- _____ causes _____
- ask: what is true?
  what is the chance something will happen?

Ex. soda causes polio

month	1 2 3 4 5 6 7 8 9 10 11 12
amt soda sold	Low → Med → High → Med → Low
# new polio cases	" "

- Amt of soda sold is the same as # polio cases
- Cannot prove it, but related, called "associated"



in this example: positive association
actual cause: swimming pools

Cause + Effect is the most important relationship

This class will help us refine our "bullshit detector" + be a better skeptic

Predictions - attach a level of uncertainty
"if" - how to choose the future

More data = less uncertainty
↑ if it is good data

Time + Money are finite resources

We can take data from the world
→ sample, sample size, sample size det

How do we summarize this data ①numerical ②graphical
- then we make meaning from data
- compare <u>factual</u> + <u>counter factual</u> ("what if")
  - both cannot be measured at once

ex. which route will get me to work faster?
if a friend drives the other way, proxy

1.1 Intro

A sample is a good guess if cannot do a "census"

<u>Dichotomous or Binary</u>

if the variable doesn't have a spot on the number line, choose a number for yes/no to get a percentage

Coding yes: 1 no: 0

#deer	← variables → disease
1	no
2	yes
3	no

↑ subjects ↓

$\begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}$

<u>sum</u> = <u>Average/Mean</u>
total to get proportion