AMS 7 - First Lecture 4/3/18

- Final SMT Exams are take home
- Official Note-taker
  - Lehow you did in classes previously (math classes)
  - Email professor
  - Will receive bonus!

TAs
- Head TA: Raquel Barata (rbartata@ucsc.edu)
- Bohan Liu (bliu47@ucsc.edu)
- Xingchen Yu (xyu2@ucsc.edu)
- Refer to worksheet for more info

- Webcasting: recorded lectures
  - Under David Draper - AMS 7 (UCSC course webcast)

- Office Hours: TBA
  - No office hours this week → starting next week
  - There will be extra office hours on weekends

- Attendance is not mandatory, but beneficial for asking questions

- Permission codes will be given
  - Email professor & explain why you would like to be or need to be added

- Section/Discussion
  - Quizes will be 20% of your grade
    - So do not miss them (attend 1 each week)

- AMS 7L
  - Not connected to this class, contact instructors separately
Done holiday May 28th
- Discussions will not be cancelled that week 1.
  make sure to attend another section that is not on
  Monday

Stay on track! Don't fall behind
- If you fall behind, seek help
  * MEP
  * MSI
  * LSS

Reading (Mandatory)
- "Statistical Methods for the Biological, Environmental, 
  & Health Sciences" by Draper D (2016)
  * will be available later this week/next week

Permission codes & pre-regs
- Permission codes will be given out after 
  reviewing emails. Send an email explaining why 
  you need to be in this class
- pre-regs: online (my ucsc)

Course req. & Grades
- Complete assignments & do all quizzes (material is cumulative)
  - HW (25%) 4-5 assignments
    - Late HW will rarely be accepted (excused)
  - Worst HW grade will be dropped
  - For HW solutions, ask Professor & TAs
  - Midterm (25%)
    - Take home, open book = open note
  - Quizzes (20%)


Final (30%)
* If the class does not cheat on MT, this will be taken home as well

Homework & Midterm/Final Submission
* Download PDF converters on smartphone & turn in on Canvas (canvas.ucsc.edu)

- Collaboration, Plagiarism, & Cheating
  -> you can discuss problems, but need to write your own answers

- Calculators
  -> Scientific is not required (can use your phone) but recommended
  -> Graphing calculator not required
  * Always have an idea of what answer should be because calculators are not always right!

- Bring lecture notes & reader in a binder in every meeting

- Preparing written work for submission
  * Name, legible/coherent writing, & preview PDF file before submission
    -> write in pen & adjust contrast
    -> Write on scratch paper first before final submission
  * Always try the problems
  -> Don't leave anything blank
**General Content**

Statistics is the study of uncertainty.

THIS TIME: Intro. to Samples & Populations

Next Time: Descriptive methods

<table>
<thead>
<tr>
<th>Seasons</th>
<th># of polio causes</th>
<th>Amount of soft drink consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Summer</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Fall</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Winter</td>
<td>L</td>
<td>L</td>
</tr>
</tbody>
</table>

*There is a positive association between soft drinks and polio.*
<table>
<thead>
<tr>
<th>Season</th>
<th># of Polo Cases</th>
<th>Amount of Soft Drinks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Summer</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Fall</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Winter</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Scatter plot:

- Positive slope → Positive association between the two
- *Positive association does not mean that it is causal. Many positive associations are not causal.

Glass bottles were reused by company, could be insufficiently sterilized.
- Turned out not to be due to soft drink consumption.
- Swimming pools was not chlorinated, they were causing polo spread.

How to determine if a relationship is causal:
- Will be discussed in a week.