Final Projects

Scientific Method

1. Ask a question
2. Do background research
3. Construct a hypothesis
4. Test with experiment
5. Analyze result & draw conclusions
6. Report

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Collect → Wrangle → Analyze → **Communicate**

Visualize data and write-up results

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Hypothesis

What is the scientific goal?

- Determine your objectives

What are you trying to understand?

- Select process factors:
  - Inputs/outputs, factors/responses

Hypothesis

Questions should be

- Well-defined
  - Specific, measurable
- Intriguing
- Non-obvious

Hypothesis

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What are some of the environmental factors that occurred in Durham, NC between January and February 2014 that would cause chickens to cross Broad Street?

Which factors are significant? How significant are these factors?

Hypothesis

▷ How did Twitter behavior change in response to Hurricane Harvey?

▷ **I**s the sentiment of Yelp! Reviews correlated with global and local economic trends?

Hypothesis

Topic areas to explore:

- Public health
- Econometrics
- Social media
- Education
- Urban development
- Business analytics

Hypothesis

Make sure you're thinking about your analytical framework when discussing your hypothesis:

- What models do you want to use?
- Do you want to explore existing relationships and/or predict unobserved values?
- How would you be able to communicate your results?