

# Lecture 29: Chapter 11, Section 2

## Categorical & Quantitative Variable Inference in Two-Sample Design

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- Sampling Distribution of Difference between Means
- 2-sample  $t$  Statistic for Hypothesis Test
- Test with Software or by Hand
- 2-sample Confidence Interval
- Pooled 2-sample  $t$  Procedures

# Looking Back: *Review*

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## □ 4 Stages of Statistics

- Data Production (discussed in Lectures 1-4)
- Displaying and Summarizing (Lectures 5-12)
- Probability (discussed in Lectures 13-20)
- Statistical Inference
  - 1 categorical (discussed in Lectures 21-23)
  - 1 quantitative (discussed in Lectures 24-27)
  - cat and quan: paired, 2-sample, several-sample
  - 2 categorical
  - 2 quantitative

# Inference Methods for $C \rightarrow Q$ (*Review*)

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- Paired: reduces to 1-sample  $t$  (already covered)
  - Focused on mean of differences
- Two-Sample: 2-sample  $t$  (similar to 1-sample  $t$ )
  - Focus on difference between means
- Several-Sample: need new distribution ( $F$ )