Final Exam Preparation

Logistics:
- Mon June 12
  - 7:10 – 10:00am (170 minutes)
- Open-notes, open-handouts
  - You may bring anything that I have provided or that you produce yourself
- Bring calculator, normal probability table, $t$-table, chi-square table
  - No computer use
- Roughly two-thirds on newer material
  - Handouts 15 – 19, Quizzes 15 – 19, HW 11 – 12
- Roughly one-third on earlier material
  - Focus on big ideas that have come up repeatedly

Outline (of newer material):
- Handout 15: Chi-Square Goodness-of-Fit Tests
  - Goodness-of-fit test for one categorical variable, expected counts, chi-square statistic, largest contribution to test statistic,
- Handout 16: Chi-Square Tests for Two-Way Tables
  - Comparing proportions among more than two groups, expected counts, chi-square statistic, largest contribution to test statistic, test of independence/association for two categorical variables
- Handout 17: Analysis of Variance
  - Purpose/need, comparing variability between groups to variability within groups, ANOVA table, F-test, multiple comparisons, simultaneous confidence intervals for pairwise differences
- Handout 18: Correlation Analysis
  - Scatterplot, association (form, direction, strength), correlation coefficient, properties of correlation, simulating randomization test for correlation coefficient, theory-based $t$-test for correlation coefficient
- Handout 19: Regression Analysis
  - Residual, least squares criterion, least squares line, prediction, interpretation of slope coefficient, coefficient of determination $r^2$, calculation of least squares line from summary statistics, standard error of sample slope, $t$-test for population slope, $t$-interval for population slope

Resources available online:
- This preparation sheet
- Handouts
- Quizzes and solutions
- HW assignments and solutions
- Practice exam (on newer material) and solutions
- Previous exams and solutions