REVIEW TOPICS EXAM 1 – STA 3024

Chapter 10 STA2023 Material:

- **Which Case?**
  - One mean
  - Matched pairs difference
  - 2 independent means
  - One proportion
  - 2 independent proportions

- **CI for comparing TWO groups:**
  (- , +) NO sig diff
  (-, , -) group 2 sig higher
  (+ , +) group 1 sig higher

- **P-value** REJ Ho if p-val< α
  Usual α levels: .10, .05, .01

Chapter 14 ANOVA

- **Identify:**
  - experiment vs observational study
  - response variable
  - experimental units
  - factors, treatments
  - replications

- **ANOVA -** used to compare means of several groups by comparing variability between trts to variability within trts

  - **Assumptions:** SRS (read story)
    Normal Distn (no outliers)
    Equal variances (compare stdev)
  - **Ho:** $\mu_1 = \mu_2 = \ldots = \mu_g$ where g=# treatment groups
  - **Ha:** not all treatment means are equal
  - **ANOVA Table:** GIVEN SS, **FIND** df, MS, F, p-value (only alpha=.05 table)
  - **Conclusions**
  - **Follow Up** – compare the means
    - CI for each mean, Tukey, Fisher from output
    - Bonferroni by hand (formula margin of error given)
    - Family confidence vs Individual confidence
    - Put means in order, draw lines to summarize

- **TWO-Way ANOVA –** Two Factors
  - **ANOVA Table:** Sources of Variability, df, MS, F
  - **Interactions** are possible:
    - Test for Interaction FIRST
    - Plot of Means – non parallel lines → interaction