*DSA 6100: Statistical Methods for Data Science*
*Wayne State University*
*Winter 2018*

# Week 4, classical hypothesis testing

## Journal entry (due before 2018-02-06)

- Take a data set and formulate and test some hypothesis. Explain
    - the goal of the analysis,
    - the process you followed, including
        - data exploration,
        - assumptions made,
        - modeling choices, including any relevant details about the
            - test statistic(s)
            - multiple comparison effects,
            - power, and
            - significance
    - your results and conclusions, and
    - your takeaways from the experience.

Some suggestions:

- Try varying the sample sizes. How does the p-value change? Why?
- Try multiple test statistics or modeling approaches (e.g. use simulation to test by permutation or resampling). How much does the model affect the results?

## Sources

- Elements of Statistical Learning (chapter 18.7)
- Think Stats 2e (chapter 9)
- Statistics, an Introduction using R (basically the whole book)