**Objectives Organized by Subject**

* Prepatory (non-research)
  + Enroll in American Statistical Association
  + JSM Prep
* Initial Research
  + Introduction to LMEM and GEE Theory
  + LMEM and GEE methodological comparisons and summaries
  + Background research on R packages
  + Solidify scientific question(s) of research
    - Determine
      * minimum success threshold
      * desirable result
      * possible further exploration if possible
  + Initial data investigation
    - How well does the data relate to the questions? Can the data answer my scientific questions of research?
    - What will my final result look like?
    - What answer is satisfactory?
  + What other resources do I need?
* Analysis
  + Import & Upload Data (Personal PC, Math Cluster)
  + Data Cleaning
    - Correct variable types
    - Rename, filter, delete variables as necessary & appropriate
    - Merging data sets
    - Perform EDA
      * Qualitative Variable Descriptions (if possible)
      * Quantitative variable descriptions
      * Illogical data concerns (removal recommendations)
      * Outlier & influential observation reports (removal recommendations)
      * Missing data (removal recommendations)
    - Data visualization methods
      * 2 dimensional projection array
      * Data-heads
  + Analytic Approaches:
    - Linear Regression (not controlling for anything)
    - Regression on Mean effects of each individua
    - Linear regression with fixed effect for individual
    - Linear mixed effects model
    - Generalized estimating equations
  + For each approach
    - Perform model comparison using as many loss criteria as possible, and using as many algorithmic approaches (greedy, exhaustive) as possible
    - Evaluate highest performing models for assumptions made from theoretical approaches and make suitable corrections (if possible) and re-compare new model
* Paper
  + Develop Abstract
  + When/if to submit for review?
  + Sections Relevant to possibly consider
    - Introduction: Basic Principles, notation, definitions
    - Results
    - Discussion: current limitations, applications, future considerations
    - Analysis: experimental design, visualization strategies, analytic methods, transformations, industry “standards”/ & protocol
    - References: supplementary material
    - Figures
    - Tables
    - Graphs
    - Pictures
    - Acknowledgements
* Presentation
  + Power-point?
  + How long?
  + Same-sections as paper?
  + Handouts?
  + When to schedule/when to schedule for?
  + Committee?