**Intro to R Bootcamp**

* Bootcamp is from Aug 6-7
* Intro to R (4hr) – Saturday afternoon (Aug 6)
* Visualization (4hr) – Sunday afternoon (Aug 7)

**Intro to R Session**

Session 1 (45min)

* Introduction
  + About me
  + Short course info
  + Short course objective
    - Prepare you for modeling/analysis classes
    - Show analytic process – short course gets you started on the front end
  + What is R and what can it do (15min)
    - Technical definition but so much more…
    - An ecosystem of analytic tools
    - Visualization tool
    - Create packages
    - Create shiny apps
    - Create dashboards
    - RMarkdown
* Install, set-up, R basics
  + ~~Installation instructions~~
  + ~~Explain the console~~  # illustrate on second screen??
  + ~~Getting help~~  # illustrate on second screen??
  + ~~Set directory~~  # illustrate on second screen??
  + ~~R as a calculator~~
  + ~~Simple Objects: Assignment/evaluation~~  # Include ‘Your turn’
  + Workspace
  + Working with packages

Session 2 (30min)

* ~~Importing/exporting files with R~~
  + ~~.txt/.csv~~
  + ~~.xlsx~~
  + ~~R objects~~

Session 3 (60min)

* ~~Managing data structures in R~~
  + ~~First things first~~
    - ~~Key functions to apply to data objects~~
  + ~~Vectors~~
    - ~~Creating~~
    - ~~Extracting/subsetting~~
    - ~~Common functions to summarize vectors~~
  + ~~Lists~~
  + ~~Matrices~~
  + ~~Data Frames~~

Session 4 (30min)

* Working with Different Types of Data in R
  + ~~Numbers~~
    - ~~Integer vs. double~~
    - ~~Comparing~~
    - ~~rounding~~
  + ~~Character strings~~
    - ~~Creating~~
    - ~~Test, conversion, coercion~~
    - ~~Summarizing~~
    - ~~Simple manipulation~~
  + ~~Just touch on regular expressions~~
  + ~~Factors~~
  + ~~Dates~~

~~Session 5 (30min)~~

* ~~Shaping your data with tidyr~~
  + ~~Use Miami U. slide approach~~

~~Session 6 (45min)~~

* ~~Transforming your data with dplyr~~
  + ~~Use Miami U. slide approach~~

Session 7 (45min)

* Descriptive statistics with R
  + Numerical
  + Categorical

**Visualization Session**

Hour 1

* Quick plots with base R
  + Univariate
  + multivariate

Hour 2

* ggplot fundamentals
* common geoms
* colour, size, shape
* faceting
* modifying axes

Hour 3

* case studies

Hour 4

* case studies