Introduction To R

Nick Hathaway and the Bootstrappers

Who are the Bootstrappers?

- We are a self-organized student group of mostly bioinformatics students who formed this group to teach some basic skills to students that seemed to be lacking in core classes

- We are an open group and if people wish to pass on their skills as well you can welcome to join, just email our president, Jill Moore, jill.Moore@umassmed.edu

What is R?

- R is an free computational package that has grown to include a wide range of libraries that can be used to analyze/visualize data of a wide variety

- Advantages

  - It can be used on most operating systems (Windows, Mac, Ubuntu)

  - Free

  - Can do everything SPSS and SAS can do

  - Much better at handling large amounts of data than Excel and can create much nicer graphs

- Disadvantages

  - Much more writing code than interacting with the data that people are use to

What is RStudio?

- RStudio is layered over R to make it much easier to interact with R

- It also has a built in R Code editor

Course Outline

- Four Sessions

  - 1st Session (Today)

    - Just introducing people to the basics of R and how the course will be run

    - Making sure everyone has been able to install RStudio and R itself and the packages that we will be using

    - Less hands on than the other session will be

  - 2nd Session

    - Will be reviewing reading data into R

    - Going over how to manipulate your data once you've read it into

    - Going over how to get some simple stats on data

    - Getting subsets of data

Course Outline (cont.)

- 3rd Session

  - Going over how to create plots of your data and the various types of plots

  - How to deal with missing data or typos in your data

  - How to save your commands in scripts so you can run commands again at another time to create same figures

- 4th Session

  - Finishing up anything we didn't finish on 3rd session

  - Going over some cooler graphics like interactive interactive plots

  - Going over from start to finish small projects to see how it all fits together