BSTA 511/611 textbook & software information

Textbook

The primary textbook for BSTA 511 Section 1 will be *Introductory Statistics for the Life and Biomedical Sciences* by Vu and Harrington.

- The textbook website is https://openintro.org/book/biostat/, which includes links to acquire the book as either a pdf or paperback. The pdf of the textbook is free, other than an optional contribution.
- After acquiring the pdf version of the book, you will also have the option to download a tablet friendly version pdf with smaller margins – *I actually prefer the tablet version even on my computer*.

Software: R & RStudio

Many of the biostatistics courses in the SPH are taught using the statistical computing software R, and within the application RStudio. Below are links for downloading these programs, as well as resources to help get you started in learning how to use them.

If you have never used R before, I highly recommend watching the recordings of the **Introduction to R and RStudio for Exploratory Data Analysis workshops** listed below in 2a. If you are already familiar with R, it might be sufficient to go through the slides for a review. We will be covering some of these topics in the first few weeks of BSTA 511. If you're not already familiar with R, it can be overwhelming though and I recommend getting a head start.

Please make sure you have both R and RStudio installed on the first day of BSTA 511 so that you can follow along in class.

1. Install R and RStudio
    a. R and RStudio are two separate programs. You must install R first. Then install RStudio desktop. Even if you have R installed already, I highly recommend installing the latest version if it has been a while since you installed it.
    b. Install **R** (first)
        i. Windows: Download from https://cran.rstudio.com/bin/windows/base/ from the link "Download R 4.5.1 for Windows"
        ii. Mac OS X: Download the latest .pkg file (top link, currently R-4.5.1.pkg) from https://cran.rstudio.com/bin/macosx/
    c. Install **RStudio Desktop** Open Source License (second)
        i. Select download file corresponding to your operating system from https://posit.co/download/rstudio-desktop/#download
    d. Prefer tutorials or videos? Check out some of these options:
        i. Kristen Sosulski's *Installing R and RStudio (2024)*: https://www.youtube.com/watch?v=3f8TMPOZTLE
        ii. Tutorial on downloading R and RStudio: https://learnr-examples.shinyapps.io/ex-setup-r/

iii. OpenIntroOrg's YouTube video: https://www.youtube.com/playlist?list=PLkIselvEzpM73U-0ONpe7eHp2WCuItVWQ
iv. Installing R and RStudio on your own pc: https://www.youtube.com/watch?v=kOQDdJZ7Hl4

2. Get started with R and RStudio
   a. Intro to R & RStudio notes for 1st day
      i. These were the slides from last year and they will be similar this year. If you have no prior experience with R or programming, I recommend taking a look at them before class.
      ii. **https://niederhausen.github.io/BSTA_511_F24/slides/Day01_bsta511.html**
   b. RStudio tutorials (don't need R on your own computer to run these): https://posit.cloud/learn/primers
   c. RYouWithMe is a series pf videos showing how to use R, created by R-Ladies Sydney
      i. https://rladiessydney.org/
      ii. Tour of RStudio in the BasicBasics section.
      iii. The other sections go into data wrangling (CleanItUp), data visualization (VizWhiz), and Markdown (MarkyMark).
   d. R bootcamp: https://r-bootcamp.netlify.app/