INSTALLING R AND RSTUDIO

These instructions should work for Windows and MAC users for installing R and RStudio.

INSTALLING R:

- Go to http://www.r-project.org/, and in the "Getting Started" section, click on "download R." · Find a site of your choice. (The one at Duke university is closest to us, but it doesn't matter.) Click to go to that site
- Click on your operating system (Windows, MAC, Linux) and follow directions. · If Windows, click on "base" and then on Download R-4.1.3 for Windows. (Note that R-4.1.3 is the current version as this is being written, but use whatever shows up as current.) You may need to save the file "R-4.1.3-win.exe," and then click on it to execute it. When the dialog box opens, click "RUN." A Setup Wizard should appear. Keep clicking "Next" (or change features if you understand them), until it is finished. You should now see an icon on your desktop, with a large capital "R."

INSTALLING RSTUDIO:

- Go to https://www.rstudio.com/products/rstudio/ download either RStudio Desktop (local) or RStudio Server (cloud based). Either should work for our purposes.

USING R AND RSTUDIO:

- Open R Studio by clicking on the icon in your start up menu or desktop.

INSTALLING PACKAGES IN RSTUDIO:

R is an open source language, meaning that anyone can contribute to the language. People often write useful functions for a particular analysis or format and share them with the larger R community in the form of packages. We'll be using several packages in our analysis, but first, we need to download from the repository of R packages, or CRAN (Comprehensive R Archive Network). **The packages we'll be using are: tidyverse, openxlsx, ggplot2, ggpubr.**

1. Open RStudio
2. In the lower right quadrant is the help manual and package manager. Click on the packages tab.
3. You can select packages using the search bar, or type them directly if installing multiple packages at once.
4. Below the tab heading there is an install icon. Click it.
5. Type each package name separated by a comma into the window. Click install.
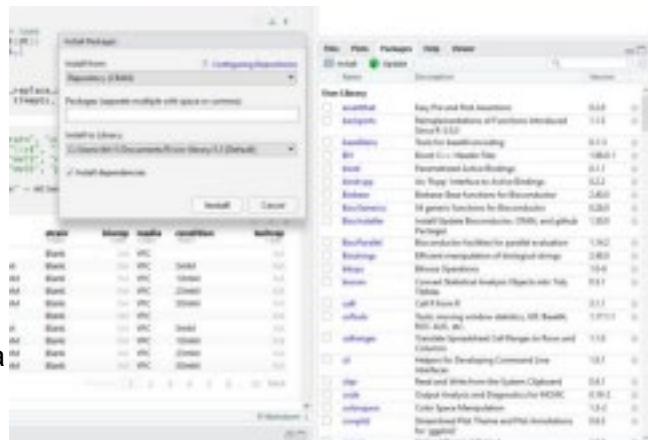
LOADING AN .RData FILE:

Bio432S Spring 2022
Data Expedition
Hackley & Schott

If you have issues installing/loading packages of the data we will be working with, you can use the available .Rdata file. RData files are "workspace images" and can store as many objects as you'd like within a single file. Our .RData file has all of the data loaded and saved in the appropriate format for our analyses.

In a code chunk, run the following command: `load(file = "PATH/TO/FILE.RData")`

HELPFUL TUTORIALS:
- RNotebooks (AKA how to run code):
  https://bookdown.org/yihui/rmarkdown/notebook.html
- dplyr (AKA how to read the code we're running):
  https://www.kaggle.com/code/jessemostipak/dive-into-dplyr-tutorial-1/notebook
  - Data for this tutorial are provided, but you need to download it and load it into RStudio to follow along. Good practice!
- ggplot2 (AKA how to make pretty graphs, or, more realistically, how to change the colors): http://r-statistics.co/Complete-Ggplot2-Tutorial-Part1-With-R-Code.html
  - Uses preloaded data in R.