Premise & Directions:

Throughout the semester we will be utilizing the R programming language for statistical computing and graphics. R is a free software language developed based on the statistical language S-Plus. Although R is a programming language, its use does not require advanced programming abilities and can be treated like a graphing calculator. During the class, assignments will be accompanied by examples and instructions in R to aid you in their completion. This first assignment (Homework #0) is to install R on your personal computer or access it in one of the computer labs on campus.

This assignment will **not** be collected or graded. However, if you do not have things installed, you will not be able to complete the in-class assignment on day 1 of class. **So do these four steps now!**

1. *Download and Install R* from the Comprehensive R Archive Network (CRAN). Follow the instructions for your operating system (Windows or Mac).

- The version you should be installing is 4.0.3 (most current as of January 2021).
- **If you already have an older version of R installed (from a previous semester), you must update now to 4.0.3.**

2. *Download and Install Rstudio* from the RStudio website. Choose the free version.

- RStudio is an Integrated Development Environment (IDE) for the R software package. An IDE is a user interface that is generally easier to use than the underlying software. Rstudio is what we recommend to access the features of R.
- **If you already have an older version of RStudio installed (from a previous semester), you must update RStudio now.**

3. Open RStudio and familiarize yourself with the basic interface. Feel free to play around with some basic commands.

4. Install the following packages:

- `zeallot`
- `tidyverse`
- `unvotes`
- `knitr`
- `GGally`
- `ggfortify`
- `gridExtra`
- `emmeans`
- `lindia`
- `car`
- `leaps`
- `kableExtra`
- `plotly`

- `png`
- `caret`

You can install all these packages with the following command:

```
install.packages(c("zeallot", "tidyverse", "unvotes", "knitr",
"GGally", "ggfortify", "gridExtra", "emmeans", "lindia", "car",
"leaps", "kableExtra", "plotly", "png", "caret"))
```

IMPORTANT:

- If R asks if you want to **download from source,** say **NO.**
- Be patient as the packages download and unpack. It may take several minutes.
- **If you updated** from a previous version of **R, you must reinstall all these packages also.**

R software has been around since the mid-1990s. As such, many free tutorial resources are available on the web and sites such as YouTube. Below are a handful of helpful links, but some Googling will result in many more.

- Links from our STA363 textbook
- http://www.cyclismo.org/tutorial/R/
- https://www.nceas.ucsb.edu/files/scicomp/Dloads/RProgramming/BestFirstRTutorial.pdf
- http://www.statmethods.net/
- R YouTube Channel