WEEK 1: GETTING STARTED WITH R

If you haven't yet downloaded and installed R, now is the time to do so.
Visit **https://posit.co/download/rstudio-desktop/** to download and install.

CLEAR THE ENTIRE WORKSPACE

The function `rm(list=ls())` in R is used to **clear the entire workspace** by removing all objects from the environment.
Here's how it works:

1. `ls()` lists all the objects (variables, functions, data frames, etc.) currently stored in the R environment.
2. `rm(list=...)` removes the specified objects from the environment. By passing `ls()` as the argument to `rm()`, you're telling R to remove all

the objects listed by `ls()`, which effectively clears the workspace.

In short, it deletes all objects, giving you a clean slate.

In [6]:

```
rm(list=ls())
```

INSTALL AND LOAD THE PACKAGES YOU NEED

the two lines here load the required libraries specified by the variable **ReqdLibs** that you define.

Here's how it works:

1. `ReqdLibs = c("here", "ggplot2", "dplyr")` creates a vector (`ReqdLibs`) that contains the names of the libraries (packages) you want to load: `here`, `ggplot2`, and `dplyr`.
2. `lapply(ReqdLibs, library, character.only = TRUE)` loops over each item in `ReqdLibs` and applies the function (`library`) to load each package.

The `character.only = TRUE` part tells `library()` to treat the package names as strings, rather than as variable names. This is necessary since the

package names are passed as strings in the vector.
You've now loaded the 3 packages *here*, *ggplto2* and *dplyr* Note that this only works if you've installed these pacakges previously. Suppose you hadn't installed any of them,can you think of how you modify the second line of this code to "install.packages"?

In [7]:

```
ReqdLibs = c("here","ggplot2","dplyr")
lapply(ReqdLibs, library, character.only = TRUE)
```

1. 'dplyr' · 'ggplot2' · 'here' · 'repr' · 'stats' · 'graphics' · 'grDevices' · 'utils' · 'datasets' · 'methods' · 'base'
2. 'dplyr' · 'ggplot2' · 'here' · 'repr' · 'stats' · 'graphics' · 'grDevices' · 'utils' · 'datasets' · 'methods' · 'base'
3. 'dplyr' · 'ggplot2' · 'here' · 'repr' · 'stats' · 'graphics' · 'grDevices' · 'utils' · 'datasets' · 'methods' · 'base'

SO, WHERE ARE YOU? LOCATING YOUR

WORKING DIRECTORY

now, we will use the 'here' function in the 'here' package to do this.

- The here() function in R helps you locate files and directories in a project in a reliable and reproducible way. It is particularly useful for avoiding issues with file paths when working across different systems or environments.
- Note that the output of the 'here' function is of character type. In other words, it will print out the root folder path, not link you to the path (see more next)

In [8]:

```
# working directory root
folder_path = here()
folder_path

# check the type of variable folder_path is
class(folder_path)
```

'/Users/rinivarghese/Documents/My Documents/JHU/Lab/Professional Development/ReproRehab 2024/ReproRehab_Bootcamp'

'character'

CALLING A SPECIFIC SUBDIRECTORY

Suppose that you now want to append this folder path with a subdirectory called "Subject_1" and within it you want to call a specific file, say data.csv file, then the 'here' function can help append the correct root directory up to that point in the file path.

In [9]:

```
file_path = here("Subject_1", "data.csv")
file_path
```

'/Users/rinivarghese/Documents/My Documents/JHU/Lab/Professional Development/ReproRehab 2024/ReproRehab_Bootcamp/Subject_1/data.csv'

LAST STEP: LIST PACKAGES IN USE

it is good practice to wrap up a codebook by listing the pacakges that were being used in it... even the ones we didn't call explicitly call in the first line but were there by default (e.g., base R)

In [10]:

```
search()
```

'.GlobalEnv' · 'package:dplyr' · 'package:ggplot2' · 'package:here' · 'package:repr' · 'jupyter:irkernel' · 'package:stats' · 'package:graphics' · 'package:grDevices' · 'package:utils' · 'package:datasets' · 'package:methods' · 'Autoloads' · 'package:base'

RESOURCE LINKS

1. Downloading and Installing R & R studio
    - **https://posit.co/download/rstudio-desktop/**
2. The *here* package:
    - **http://jenrichmond.rbind.io/post/how-to-use-the-here-package/**
    - **http://jenrichmond.rbind.io/post/where-is-here/**

THE END