Session 1: Intro to R and R Studio

Objectives:

By the end of this session, participants will be able to:

- Create a folder on the computer to store files (data file, R script etc)
- Make a script file
- Get data into R
- Find the current working directory
- Set the working directory
- Read in a csv file in R

Step 1: Set up a folder

Make a new folder in the main location/folder in which you store your research information.
Give the folder an informative name.

Step 2: Open R Studio and create a new script file

The script file is the file containing all instructions for R to execute.
It is a permanent, repeatable, annotated, shareable, cross- platform archive of your analysis.

Commenting (**annotation**) is a process by which you add notes, interpretation, explanation, and any other information to your script. These notes help you remember what you were thinking when you wrote the script. This could be information you need/want to remember every time you come back to the script.

To make a new **SCRIPT**, simply go to the File menu and choose *New File > R script* (OS X) or New script (Windows)

```
# My first R script!
# 1 June, 2023
# ############## Session 1 : Getting Acquainted with R ############
```

Step 3: Remove unwanted variables from workspace

Asking R to do things requires using R **functions**. R uses **functions** to do all kinds of things and return information to you. The following **functions** in R accomplish fundamental tasks at the start of an analysis/script: clear out R's memory, find out where in your computer R is looking, and tell R where to look in your computer.

To clear R's memory, we use two functions at once, **rm** and **ls. rm** stands for remove, and **ls** stands for list. We combine them in the following way:

```
rm(list=ls())

gc()
```

Step 4: Getting Data into R – Finding the current working directory and setting working directory

Understanding where your data is stored is very important for learning how to use R. The location, or address, for information on a computer is known as the **PATH**. Typing in PATHs incorrectly is one of the most common errors made. Essentially, the trick for getting paths is to copy them from the Finder (OS X) or the Explorer (Windows)

The working directory is the PATH on your computer where R is currently expecting to get things from.

Get location of current working directory

```
getwd()
```

Change the working directory to point to the location where data is stored by using the setwd() function

```
setwd("/Users/zainabsiddiq/Dropbox/Mac/Documents/Modeling workshop/data files") # set working directory
```

Look at files present in the current directory

```
dir()
```

Step 5: Getting Data into R – Reading in a CSV file

Use the read.csv() function to read ".csv" files into R.

Since we have already set the working directory to point to the correct path, we do not need to type in the complete path to read in the file

```
records <- read.csv("breastcancer.csv")
```

Alternatively, we can choose to type in the whole path

```
records <- read.csv("/Users/zainabsiddiq/Dropbox/Mac/Documents/Modeling workshop/data files/breastcancer.csv")
```