

# Reading and Writing Data

\* Material borrowed from [A. Culhane](#) (Thank you!) \*

It is not uncommon that we get a text or csv file that we want to work with in R. It is also convenient to be able to export our results after working with the file. The functions `read.table()` and `write.table()` are two basic utilities for such procedures.

## Read Data from Web

Let's begin by reading in a tab-delimited file from a website.

```
# Read in file from the web
myURL <- "http://bcb.dfci.harvard.edu/~aedin/courses/Bioconductor/Women.txt"
women <- read.table(myURL, sep = "\t", header = TRUE)
```

The text file now lives in a data frame called `women` in your R workspace.

## Reading Data from a Local File

In the section above, we read the text file from the web and stored it locally in R. Alternatively, we can download the file and apply `read.table()` to the local file.

```
# Download the file and make note of the path to where the file lives
women <- read.table("/pat/to/file/Women.txt", sep = "\t", header = TRUE)
```

## Exercises

1. Get help on the function `colnames()`. What are the column names of the imported data?
2. What is the class of this data set?
3. How many rows and columns are in the data? (try to figure this out in multiple ways using the functions `str()`, `dim()`, `nrow()`, and `ncol()`)
4. Use the `summary()` function on the data. What is the mean height, weight and age of the women?
5. Compare the above result to using the function `colMeans()`.
6. How many women have a weight under 120?
7. What is the average height of women who weigh between 124 and 150 pounds? (hint: you need to subset the data and then find the mean)

8. Sort the data by age. (hint: `?order`)
9. Give the 5th row the row name Lucy.
10. Write out this data frame as a tab delimited file using `write.table()`. (call the file `women_out.txt`)