Statistics 305/605: Introduction to Biostatistical Methods for Health Sciences

Getting Started with RStudio

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The Stat Workshop

- Workshop hours and location.
- BM office hours are Wed 11:00-noon in the Workshop.

Getting Started with RStudio

- In Stat305/605,
  - software demos will be in **RStudio**
    - RStudio allows you to better organize your work in R.
  - exercise templates will be in **R Markdown**
    - R Markdown documents allow you to integrate your written comments with R commands and their output.

What is RStudio?

- RStudio is a free "integrated development environment" (IDE) for R.
- Basically it is an interface that makes it easier to work with R and get organized on your computer.

What is R Markdown?

- R Markdown is a file format for making documents with R.

- An R Markdown document is written in markdown, a simple plain text format, and allows you to integrate chunks of embedded R commands as well as their output.

- R Markdown allows you to author documents in file formats such as PDF, Word and HTML.

- The R-Markdown document interface is available in RStudio. (For Jupyter users, an R Markdown document is like a Jupyter Notebook.)

Getting-Started Videos

- ▶ Below are links to short videos to give a flavour of RStudio and R Markdown:

- ▶ Katie Ann Jager on "Getting Started with RStudio" (time 8:53)
  https://www.youtube.com/watch?v=ikGdOt1WJyo

- ▶ Roger Marin on "Installing R and R Studio" (time 4:53)
  https://www.youtube.com/watch?v=cX532N_XLIs and "What is R Studio" (time 5:20)
  https://www.youtube.com/watch?v=riONFzJdXcs

- ▶ Roger Peng on "R Markdown with RStudio" (time 6:38)
  https://www.youtube.com/watch?v=DNS7i2m4sB0

- ▶ Nicolas Horton on "First steps with R Markdown" (time 3:49)
  https://www.youtube.com/watch?v=w4hLT7WyjnM

- ▶ Watch these on your own.

R Resources on the Course Canvas Page

- This overview on R/RStudio options for the course.
- Note that the overview links to material on getting started in R/RStudio.

Example R Markdown File

- ▶ After installing R, RStudio and the tidyverse, install the `gapminder` package.
- ▶ Exercise: Make sure you can "knit" the `example.Rmd` RMarkdown document in the getting started folder of R tutorials.
    - ▶ To save this file to your computer, click the "Raw" button to switch to raw view, then use your browser's `File -> Save as` feature to save the file. If your browser tries to add a `.txt` extension, you must **remove this extension**.
    - ▶ Once you have saved the file, open it in RStudio and click "Knit". An html file titled Example RMarkdown File should appear in the RStudio Viewer. This html file should contain some exploratory analyses of the gapminder data.
    - ▶ (Note: You do not need to understand the data analysis. The point of this exercise is to ensure that you can successfully download RMarkdown files containing analysis commands from the class Canvas site to your personal computer and then "knit" them on RStudio to obtain an html file with the results of the analysis commands.)