Introduction to R and RStudio, Part I
Objectives

• The introduction here will focus on:
  
  - installation/accessibility of R and RStudio,
  - the use of *script* files and
  - basic uses of R such as arithmetic operations, generating sequences of numbers and storing them in data objects, performing operations on data objects, sampling and importing data sets.

• R will be used throughout this class and new features will be introduced as needed.
Basic Introduction to R and RStudio
Accessing R and RStudio

- R and RStudio can be installed in your PC. For the installation of R and RStudio to your PC see the first two sections of the IntRrMark.pdf which you will find on the course website.

- R and RStudio can also be accessed in the computer labs on campus, and also on line by going to https://lat.tlt.psu.edu/home/remoteaccess/oss-web-apps/ and choosing RStudio. From home you will need to connect through the ISPttoPSU VPN.

- START RSTUDIO NOW.
The R console

• The window which opens when R is started is called the R console. Commands are typed at the prompt sign (> ) either individually or jointly in the same line separated by a semi colon, and are executed by hitting the return key.

• Anything that appears in the command line after the # sign is ignored. The output/result from each command is printed underneath the command line, unless the result is stored in a named object (to be discussed shortly).

• The RStudio window is split in four sections/quadrants, which we will refer to as Panes. In a typical arrangement the lower left Pane is the Console pane.
Basic Introduction to R and RStudio

Script (.R) files

- From the menu bar of the R console click on New Document. A window displaying an untitled document will appear. This is the script window which is used to write and edit commands.

- To start a new script file in RStudio go to New File under the File menu and choose R Script. The untitled script document will appear in the Editor pane.

**START A SCRIPT FILE NOW.**

- **COPY AND PASTE THE CONTENT OF THE IntRrSt.R FILE FROM THE COURSE WEBSITE ONTO YOUR UNTITLED SCRIPT DOCUMENT.**
• An untitled script document can be saved as a name.R document by clicking Save As under the File menu. Saved script documents are filed in the working directory.

• **FIND OUT YOUR WORKING DIRECTORY BY TYPING**
  getwd()

• **SAVE YOUR SCRIPT DOCUMENT AS** IntRrSt.R.

• The contents of your working directory can be viewed by clicking on the Files tab of the Management Pane which is the lower right Pane.
An existing .R (or .Rmd) file can be opened by clicking on it. (Can also use the Open existing file icon on the RStudio’s menu bar.)

To send some lines of commands to the console, highlight them and press Command-Return (for Mac) or Control-R (for PC).

To send one line, just place your cursor somewhere on that line and press the platform-appropriate key combination.

In RStudio commands can also be sent to the console by clicking the Run button on the file menu of the Editor pane.

The Introduction to R continues from the opened IntRrSt.R document.