

4 present

☐ R in Jupyter Notebooks

☐ R Wiki Page

☐ According to Wiki: 15,000+ packages in

- CRAN - Comprehensive R Archive Network -  $4.6 \times 10^7$  results
- Bioconductor - Open Src S/W for BINF -  $1.5 \times 10^6$  results
- Omegahat - Project for Stat Comp. -  $2.6 \times 10^4$  results
- Github R - Trending R Repositories -  $3.0 \times 10^8$  results

☐ Wide Variety of Statistical and Genomics Packages

☐ Lecture and Syllabus Posted on UALR Blackboard

☐ R Syntax: Conditionals, Loops, Functions - Exam 1

☐ ggplot: Publication Quality Figures - Exam 2

☐ machine learning:

☐ Exams are:

- closed book
- multiple choice
- based on H/W

☐ Class Time Changed to 3:00 - 4:15 PM  
Location TBD

☐ Mary Yang:  
Office EIT 303  
Office Hours 2-3 pm T-R

☐ Books are:

- R for Data Science by Hadley Wickham, Garrett, Grolemund
- The Art of R Programming by Norman Matloff
- Machine Learning with R by Brett Lantz
- R Graphics Cookbook by Winton Chang

Some version divergence in old and new versions of R  
RStudio 1.2 won't run < MacOS 12 but RStudio 1.1 will.  
 Installed old on the laptop and new on the desktop.

R in Jupyter Notebooks is OK.  
 So I will build an R project in Jupyter  
 and try looking at its environment in RStudio,  
 kinda like vi versus Netbeans.

Installed R Jupyter and RStudio on  
 both machines. Works great so far.  
 That's four installations - a bit of maintenance.

Three styles of code execution:

- Line
- Selected Region
- Entire Document

Exporting Images From Jupyter  
 Exporting Images From RStudio

Facilitating Group Collaboration

Read Data From File:

- .csv Comma Separated Values
- .txt File
- .xls .xlsx, .xla Excel Files

Write/Save Data To File:

- See Example Runs
- Load Source to See Previous Sessions
- .RData is suffix to save session file

R Types: Integer, Numeric, Logical, Character

R Structure: Vector, Matrix, Array, List, Data frame

- Vector, Matrix, Array are Homogeneous
- List, Data frame can be Heterogeneous

☐ Cleaning Data with `na.rm` and `na.omit`

☐ Including libraries like `ggplot` with each session

☐ Questions:

- How to check version?
- How to install from CRAN, in Jupyter and RStudio?
- Does environment in RStudio show proper package versions?

☐ Unix-Like Commands:

- `ls()` and `rm(obj)` work within the scope of R itself
- `setwd()`, `getwd()`, `dir()` and `dir.create()` affect OS state
- `!cd`, `!pwd`, `!mkdir` are Jupyter notebook equivalents

☐ Multiple libraries accessible from Bioconductor

- Including OMIM, PUBMED:

☐ Extra Programming Hints on R Data Camp

☐ Codify today's work as a web page for quick access.

☐ Nick Trick: Cross Compare Two Datasets