Syllabus

Epi/Biostats Summer and Winter Institutes - Introduction to R for Public Health Researchers 140.886.13

Class Website: <http://johnmuschelli.com/intro_to_r/>

Day/Time: January 6-10: 8:30AM-11:50PM in room W5030

Instructors: John Muschelli ([jmusche1@jhu.edu](mailto:jmusche1@jhu.edu)) and Andrew Jaffe ([andrew.jaffe@libd.org](mailto:andrew.jaffe@libd.org))

Course website: <http://johnmuschelli.com/intro_to_r/>

Overview: This course will provide “hands-on” training for learning how to analyze data in the R statistical software package. We will cover data input/output, data management and manipulation, and how to make useful and informative graphics

Course Format: Each class will consist of 2 or 3 hour-long modules: each module features an “interactive” lecture (where students can work follow along on their laptops) and an R programming lab, where student apply the skills taught in the modules to real data.

By the end of the course, students should be comfortable:

* Reading data into R
* Recoding and manipulating data
* Using R add-on packages
* Making exploratory plots
* Performing basic statistical tests
* Understanding basic programming syntax
* Creating reproducible R documents

# Tentative Schedule:

## Day 1

* Introduction
* R Studio
* Basic R: Variables/Objects in R
* Data Input/Output

## Day 2

* Subsetting
* Summarization

## Day 3

* Data Classes
* Data Cleaning

## Day 4

* Manipulation
* Visualization

## Day 5

* Statistics
* Reproducible Research
* Functions

### Grading

1. Attendance/Participation: 20%
2. Nightly Homework: 3 x 15%
3. Final “Project”: 35%