Resources

This page contains links to course materials, software setup, and shared resources. I will update it throughout the term.

Textbook and readings

Primary textbook

Introductory Statistics for the Life and Biomedical Sciences by Julie Vu and David Harrington

- The textbook website is https://openintro.org/book/biostat/
- The full PDF is free (with an optional contribution).
- A tablet-friendly PDF version with smaller margins is also available and may be easier to read.

Supplementary reading (optional)

- *An Introduction to R* (free pdf)

Course platforms

Sakai

Assignments, submissions, and grades will be managed through Sakai, OHSU's learning management system.

Links to Sakai assignments will be provided on this website.

Shared course folder (OneDrive)

A shared OneDrive folder will be used to distribute datasets, handouts, and other course files that do not live directly on this website.

- The folder will include datasets used in class and on homework.
- Files will be organized by topic or week.
- Links to specific files may also appear on the Schedule page.

Link to class OneDrive folder

Office hours platform

Webex will be used for virtual office hours when applicable.

To help sessions run smoothly:

- Please stay muted until you want to ask a question.
- Use the chat to indicate when you have a question.
- Video is encouraged but not required.

Statistical software

We will use **R** and **RStudio** for homework assignments and in-class examples.

Quarto will be used for creating reproducible reports.

Installation

Please install the following software:

1. R https://www.r-project.org/
2. RStudio Desktop https://posit.co/download/rstudio-desktop/
3. Quarto https://quarto.org/docs/get-started/

Helpful installation documentation is available here: https://rstudio-education.github.io/hopr/starting.html

Also, this handout by Meike Neiderhausen which contains some good additional resources for R.

I encourage you to install these before the first class. We will reserve time early in the term to troubleshoot installation issues.

If you run into problems, please email me and include:

- Your operating system (Windows or Mac)
- The full error message (copy/paste or screenshot)
- What you have already tried

RStudio cheatsheets and shortcuts

RStudio provides helpful reference materials for common tasks and packages.

Official RStudio cheatsheets

These one-page reference guides are extremely helpful when learning R:

- Access them in RStudio: **Help → Cheatsheets**
- Or download directly: https://posit.co/resources/cheatsheets/

Most relevant for this course:

- **RStudio IDE Cheat Sheet** - Overview of RStudio interface and keyboard shortcuts
- **Data Transformation with dplyr** - The verbs we use for data manipulation
- **Data Visualization with ggplot2** - Creating effective visualizations
- **R Markdown Cheat Sheet** - Also applies to Quarto documents

I recommend printing or bookmarking the dplyr and ggplot2 cheatsheets - you'll reference them frequently!

Keyboard shortcuts

Learning a few keyboard shortcuts will make your workflow much faster.

View essential keyboard shortcuts - A quick reference for Mac and PC with the shortcuts you'll use most.

The most important ones:

- `Cmd/Ctrl + Shift + M` - Insert pipe `%>%`
- `Cmd/Ctrl + Enter` - Run current line/selection
- `Cmd/Ctrl + Shift + C` - Comment/uncomment lines

You can view all available shortcuts in RStudio: **Tools → Keyboard Shortcuts Help** (or press `Option/Alt + Shift + K`)

Additional R resources (optional)

These resources are not required, but may be helpful if you want extra practice or alternative explanations.

Useful online R resources

- R for the rest of us
- Statistical tools for high-throughput data analysis: ggplot2 essentials
- R-bloggers
- Stack Overflow for troubleshooting
- R Graphical Manual
- Quick-R. Accessing the power of R
- R for SAS, STATA, and SPSS Users
- ggplot2
- Learn R 4 free
- Join a local R user groups
- Learning Machines
- Data and Analytics for Research Training Program: Look at Modules with R coding language

Online R courses to complement or refresh material from class

- R for the rest of us
- Coursera: R programming
- edX: R basics
- Data Carpentry for Biologists
- Data Carpentry: For Ecologists
- Psychiatric R
- R coder

Course reference materials

These documents are intended as ongoing references throughout the course. Bookmark or download them for use on homework and exams.

Statistical interpretation guide

A checklist and worked example for writing up complete statistical results, including how to state hypotheses, what to report, and how to phrase conclusions.

Elements of a Complete Statistical Interpretation

Weekly materials

Lecture slides, datasets, and handouts will be linked from the Schedule page by week, with files hosted either on this website or in the shared OneDrive folder.

Attribution note: Portions of this Resources page were adapted from course materials by Nicky Wakim, with permission, and modified for BMSC 620.