

Introduction

Welcome to class!

1. Introductions
2. Class overview
3. Getting R up and running



[Photo by [Belinda Fewings](#) on [Unsplash](#)]

Before we start ..

Poll: How are you feeling right now?

About Us

Carrie Wright (she/her)

Senior Staff Scientist, Fred Hutchinson Cancer Center

Associate, Department of Biostatistics, JHSPH

PhD in Biomedical Sciences

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About Us

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About Us

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Research Associate, Department of Epidemiology, JHSPH

Masters and PhD in Ecology

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About Us - TA

Lily Koffman

4th year PhD candidate in Biostatistics, BSPH

Research: wearable devices and functional data

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About you!

Please introduce yourself on Slack!

[Slack Workspace](#)

The Learning Curve

Learning a programming language can be very intense and sometimes overwhelming.

We recommend fully diving in and minimizing other commitments to get the most out of this course.

Like learning a spoken language, programming takes **practice**.



The Learning Curve

Learning R has been career changing for all of us, and we want to share that!

We want you to succeed – We will get through this together!



What is R?

- R is a language and environment for statistical computing and graphics developed in 1991
- R is both open source and open development



[source: <http://www.r-project.org/>]

Why R?

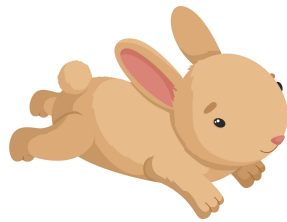
- Free (open source)
- High level language designed for statistical computing
- Powerful and flexible - especially for data wrangling and visualization
- Extensive add-on software (packages)
- Strong community



[source: https://github.com/rladies/meetup-presentations_baltimore]

Why not R?

- Little centralized support, relies on online community and package developers
- Annoying to update
- Slower, and more memory intensive, than the more traditional programming languages (C, Perl, Python)



FAST



SLOW

[[source - School vector created by nizovatina - www.freepik.com](http://www.freepik.com)]

Introductions

What do you hope to get out of the class?

Why do you want to use R?



[Photo by [Nick Fewings](#) on [Unsplash](#)]

Logistics

Course Website

http://jhudatascience.org/intro_to_r

Materials will be uploaded the night before class. We are constantly trying to improve content! Please refresh/download materials before class.



Learning Objectives

- Understanding basic programming syntax
- Reading data into R
- Recoding and manipulating data
- Using add-on packages (more on what this is soon!)
- Making exploratory plots
- Performing basic statistical tests
- Writing R functions
- **Building intuition**

Course Format

- Lecture with slides, interactive
- Lab/Practical experience
- Two 10 min breaks each day - timing may vary
- January 6-16, 2025 1:30 p.m. - 4:50 p.m. ET on Zoom
- Final classes will focus on final project

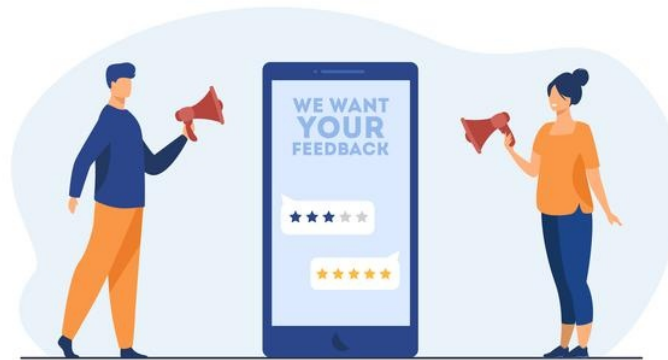
CoursePlus

<https://courseplus.jhu.edu/core/index.cfm/go/course.home/coid/22418/>

- Upload homework/project

Surveys

- *End of class* Survey from JHU: <https://courseevaluations.jhsph.edu/>
- Daily survey / pulse check : <https://forms.gle/rdsXr6u964H6PyRQA>



[[source - Banner vector created by pch.vector - www.freepik.com](http://www.freepik.com)]

Grading

1. Attendance/Participation: 20% - this can be asynchronous - just some sort of interaction with the instructors/TAs (turning in assignments, emailing etc.)
2. Homework: 3 x 15%
3. Final "Project": 35%

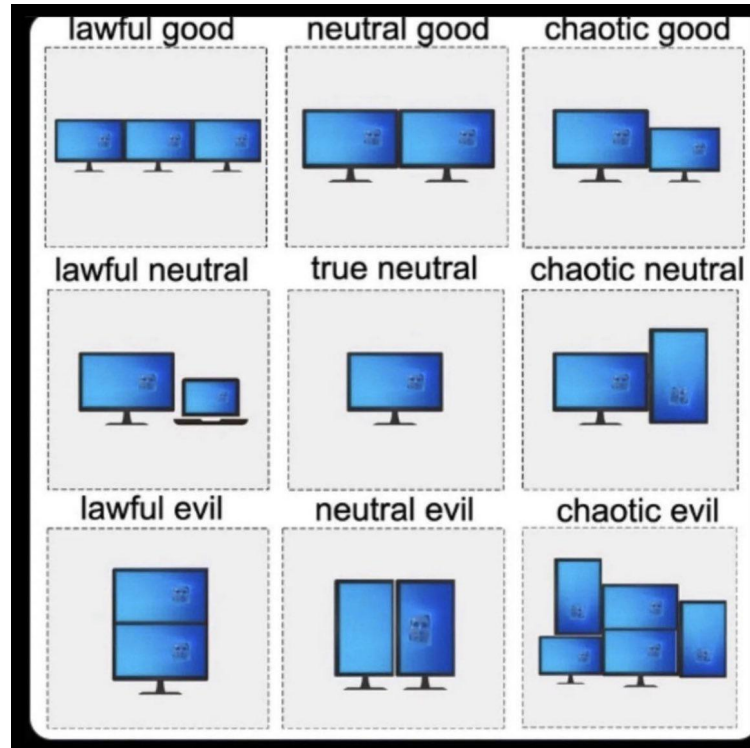
Homework and Final Project due by **Tuesday January 21st at 11:59pm ET.**

If you turn homework in earlier this can allow us to potentially give you feedback earlier.

Note: Only people taking the course for credit must turn in the assignments. However, we will evaluate all submitted assignments in case others would like feedback on their work.

Your Setup

If you can, we suggest working virtually with a **large monitor or two screens**. This setup allows you to follow along on Zoom while also doing the hands-on coding.



[[source - reddit.com](https://www.reddit.com)]

Where to find help

Useful (+ mostly Free) Resources

Found on our website under the Resources tab:

https://jhudatascience.org/intro_to_r/resources.html

- videos from previous offerings of the class
- cheatsheets for each class

Help!!!

Error messages can be scary!

- Check out the FAQ/Help page on the website:
https://jhudatascience.org/intro_to_r/help.html
- Ask questions in Slack! Copy+pasting your error messages is really helpful!

We will also dedicate time today to debug any installation issues



Installing R

- Install the [latest R version](#) (4.4.2 (called 'Pile of Leaves') as of 2024-10-31)
- [Install RStudio](#)

More detailed instructions [on the website](#).

RStudio is an **integrated development environment** (IDE) that makes it easier to work with R.

More on that soon!

Summary

- [Class Website](#) - logistics, resources, and help!
- Pulse Check - <https://forms.gle/rdsXr6u964H6PyRQA>