

# 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

Email: [cwright60@jhu.edu](mailto:cwright60@jhu.edu) Web: <https://carriewright11.github.io>



# About Us

**Ava Hoffman (she/her)**

Senior Staff Scientist, Fred Hutchinson Cancer Center

Associate, Department of Biostatistics, JHSPH

PhD in Ecology

Email: [ava.hoffman@jhu.edu](mailto:ava.hoffman@jhu.edu) Web: <https://avahoffman.com>



# About Us

**Clif McKee (he/him)**

Research Associate, Department of Epidemiology, JHSPH

Masters and PhD in Ecology

Email: [cmckee7@jhu.edu](mailto:cmckee7@jhu.edu) Web: <http://clifmckee.github.io>



## About Us - TA

### Lily Koffman

4th year PhD candidate in Biostatistics, BSPH

Research: wearable devices and functional data

Email: [lkoffma2@jh.edu](mailto:lkoffma2@jh.edu) Web: <https://www.lilykoff.com/>



# 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?

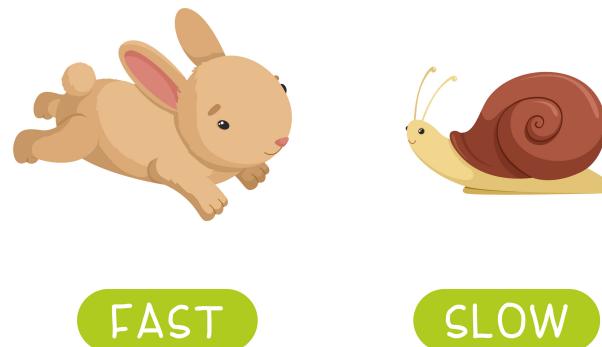
- Free (open source)
- High level language designed for statistical computing
- Powerful and flexible - especially for data wrangling and visualization
- Extensive add-on software (packages)
- Strong community



[source: [https://github.com/r-ladies/meetup-presentations\\_baltimore](https://github.com/r-ladies/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)



[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](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%

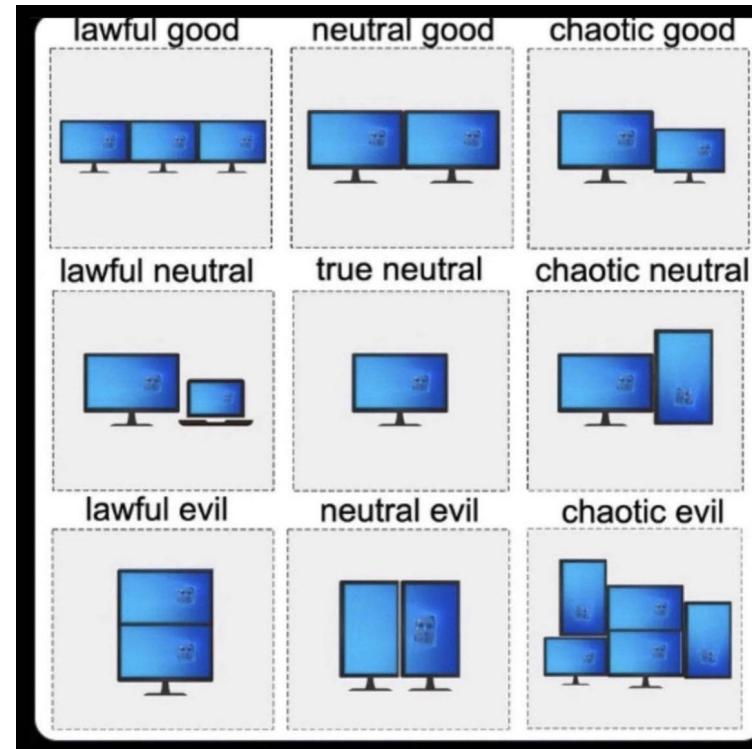
Homework and Final Project due by **Tuesday January 21st at 11:59pm ET.**

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](#)]

Where to find help

## Useful (+ mostly Free) Resources

Found on our website under the **Resources** tab:

[https://jhudatascience.org/intro\\_to\\_r/resources.html](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](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**



ME RUNNING TO GET HELP

## 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>