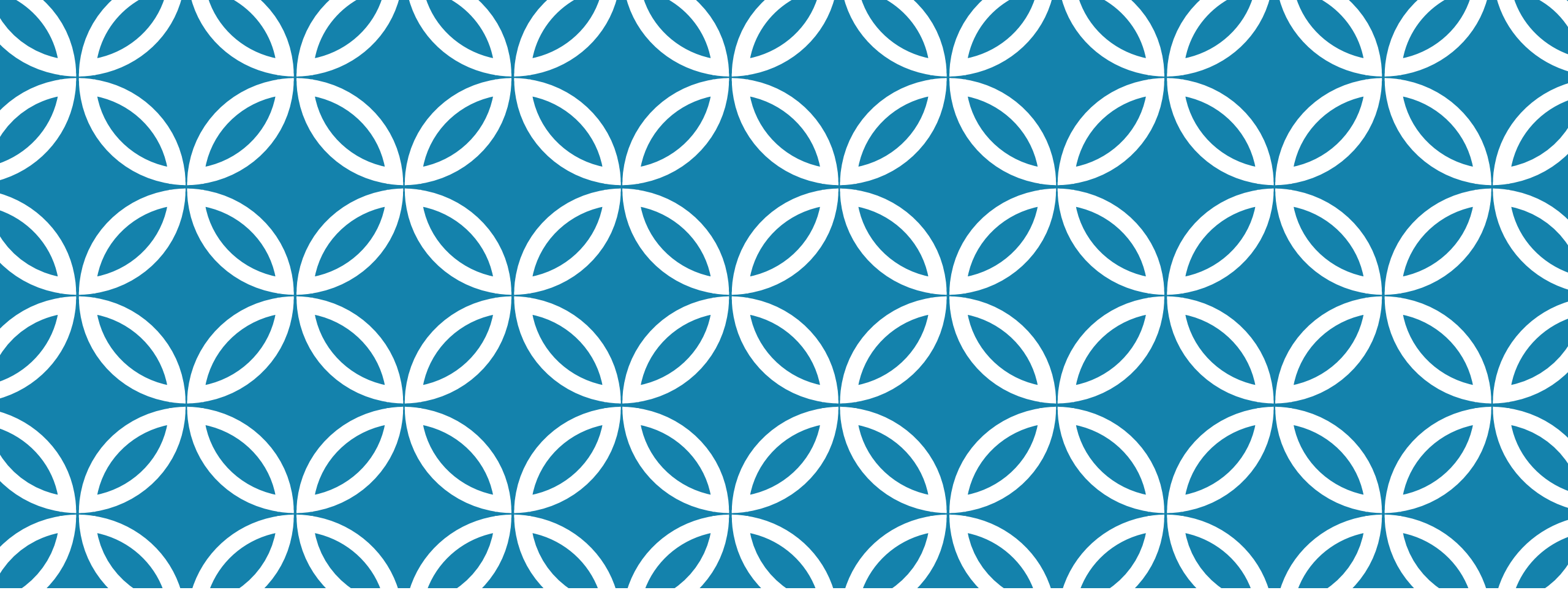


Introduction to R Workshop

Amrom Obstfeld

July 15, 2021

Course Introduction

Goals and Objectives

- Advocate for the use of R as a means of improving reproducibility in clinical data analysis
- Demonstrate how R is used to perform analyses of laboratory operational data
- Establish a basis of understanding in the 'tidy' approach to data analysis within the framework of R

July 15, 2021	**Session**	**Instructor**
1:00 pm - 1:30 pm	Instructor Introductions, Introduction to technology	Amrom Obstfeld
1:35 pm - 2:05 pm	Introduction to R and RStudio	Joe Rudolf
2:20 pm - 3:15 pm	Reproducible Reporting	Joe Rudolf
3:30 pm - 5:00 pm	Data Visualization	Stephan Kadauke
July 16, 2021		
1:00 pm - 2:30 pm	Data Transformation	Amrom Obstfeld
2:45 pm - 4:15 pm	Statistical Analysis	Dan Herman
4:30 pm - 5:00 pm	Advanced Reporting	Patrick Mathias

Who are we?

Joseph Rudolf

Assistant Professor, Department of Pathology, University of Utah Medical School

Medical Director, Automated Core Laboratory, ARUP Laboratories

Patrick Mathias

Assistant Professor, Department of Laboratory Medicine

University of Washington School of Medicine

Associate Medical Director, Laboratory Medicine Informatics

Stephan Kadauke

Assistant Professor of Clinical Pathology and Laboratory Medicine

University of Pennsylvania Perelman School of Medicine

Assistant Director of the Cell and Gene Therapy Laboratory

Children's Hospital of Philadelphia

Daniel Herman

Assistant Professor of Pathology and Laboratory Medicine

University of Pennsylvania Perelman School of Medicine

Director, Endocrinology Laboratory

Hospital of the University of Pennsylvania

Amrom Obstfeld

Assistant Professor of Clinical Pathology and Laboratory Medicine

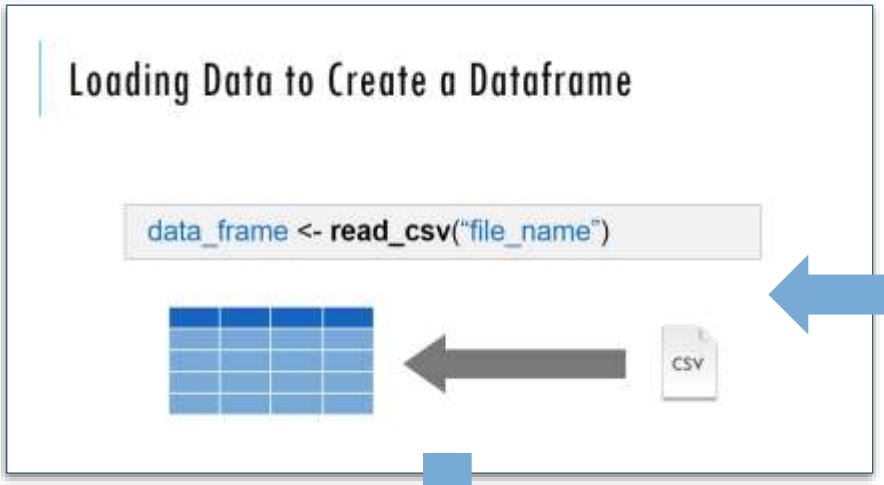
University of Pennsylvania Perelman School of Medicine

Director of Pathology Informatics

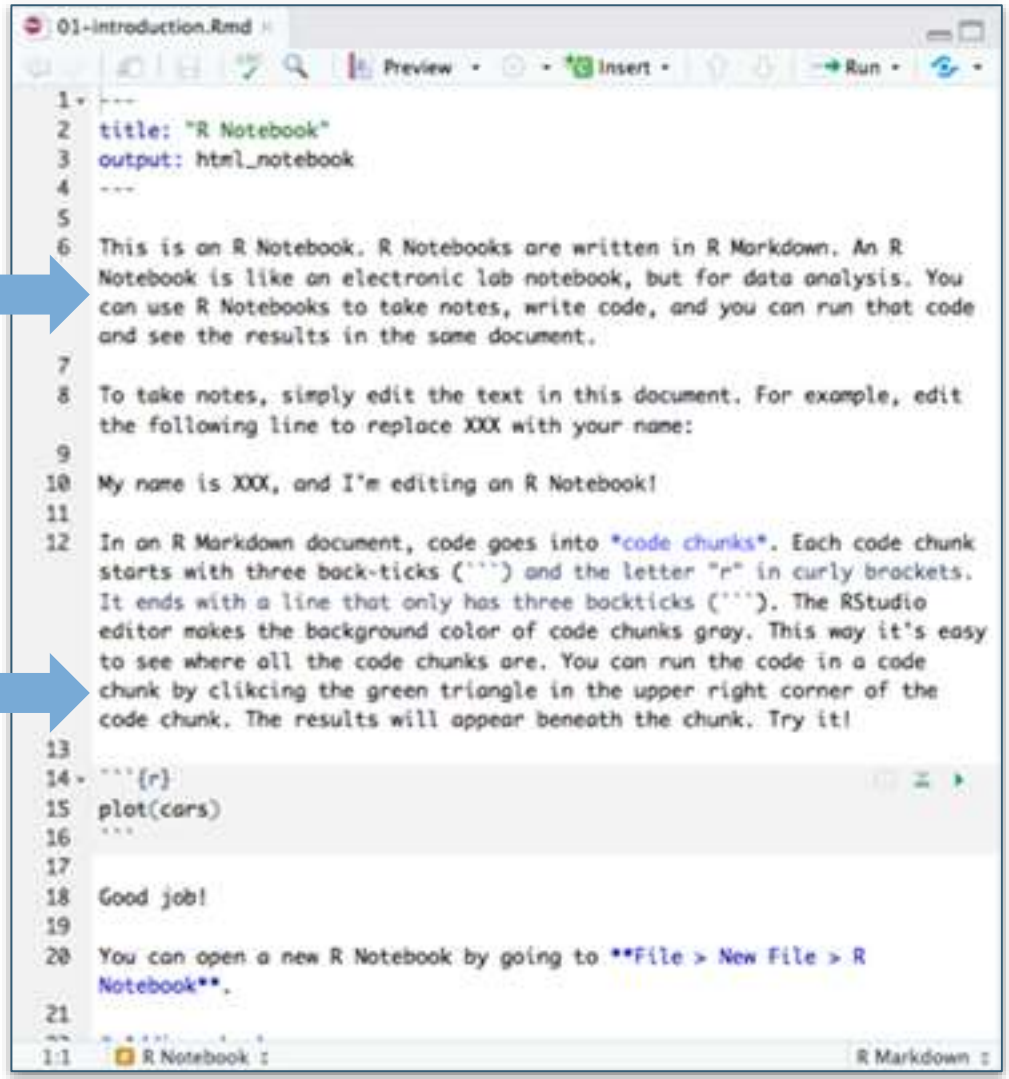
Children's Hospital of Philadelphia

Workshop Workflow

Sessions


Loading Data to Create a Dataframe
data_frame <- read_csv("file_name")
CSV

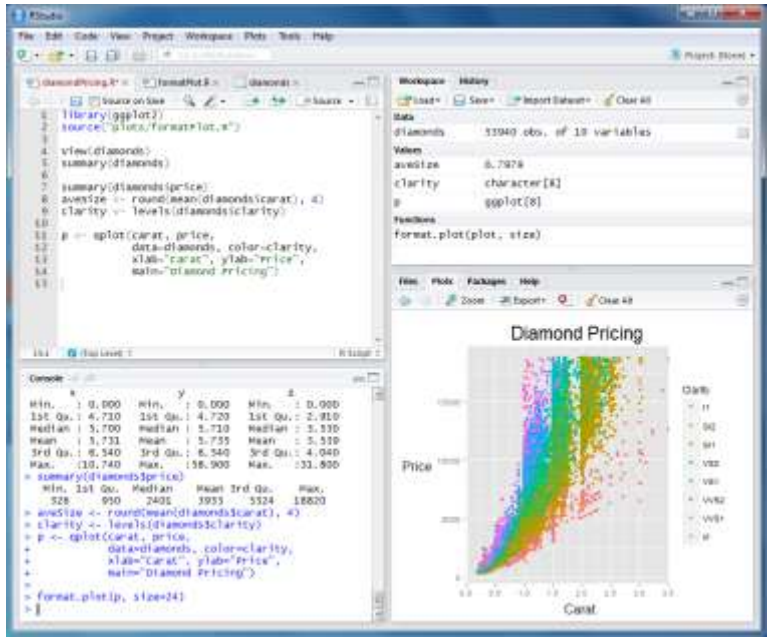

Your Turn
Introduce yourself to your neighbors
Who are you?
Where are you from?
What do you do with data?
Have you ever used R?
3:00

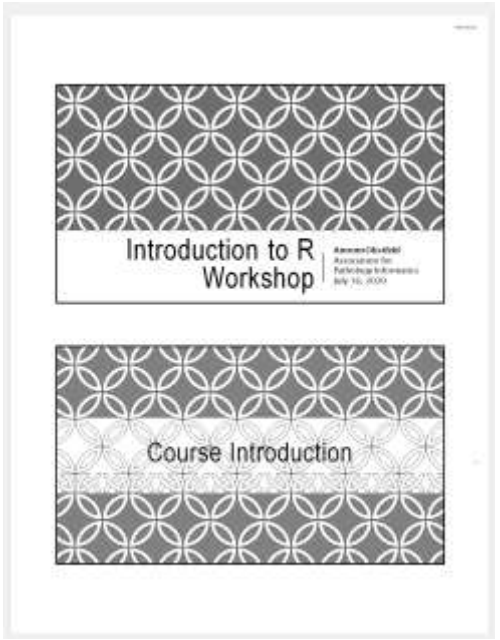

01-introduction.Rmd
Preview
Insert
Run
---
title: "R Notebook"
output: html_notebook

This is an R Notebook. R Notebooks are written in R Markdown. An R Notebook is like an electronic lab notebook, but for data analysis. You can use R Notebooks to take notes, write code, and you can run that code and see the results in the same document.
To take notes, simply edit the text in this document. For example, edit the following line to replace XXX with your name:
My name is XXX, and I'm editing an R Notebook!
In an R Markdown document, code goes into *code chunks*. Each code chunk starts with three back-ticks (```) and the letter "r" in curly brackets. It ends with a line that only has three backticks (```). The RStudio editor makes the background color of code chunks gray. This way it's easy to see where all the code chunks are. You can run the code in a code chunk by clikcing the green triangle in the upper right corner of the code chunk. The results will appear beneath the chunk. Try it!
```{r}
plot(cars)
```
Good job!
You can open a new R Notebook by going to **File > New File > R Notebook**.
R Notebook
R Markdown

Your Setup


zoom


Diamond Pricing
Price
Carat


Introduction to R Workshop
Course Introduction


1


2

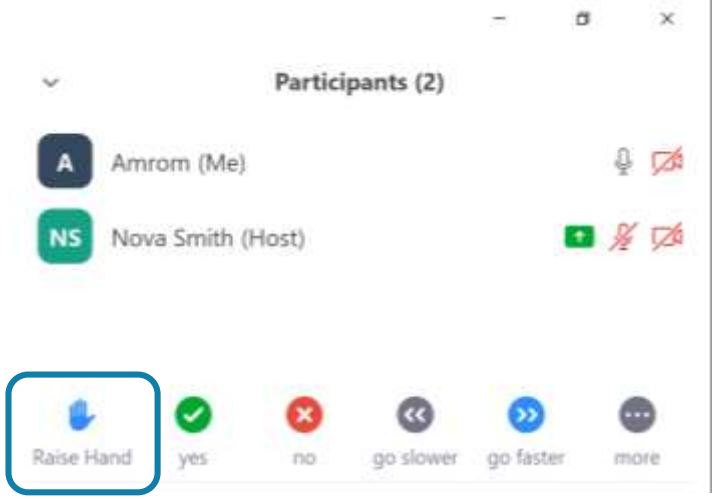
Workshop Coursebook

- Print out of all slides
- Appendix
  - Cheat sheets
  - Useful resources

Using Zoom

- Participants muted
- Chat window
- Non-verbal feedback
- Breakout sessions

Getting Help



- Simple question – Chat window
- More complicated - Raise hand, instructor will message
- Really complicated – Breakout session

Who are you?

Your Turn

Introduce yourself to your breakout roommates

Who are you?
Where are you from?
Why are you here?
Have you ever used R?

Final Tips

- The best way to learn to code is by doing
- Practice is key!