

# Welcome to **instats**

**The Session Will Begin Shortly**

**START**



# Statistics in R with Tidyverse

Session 1: Introduction to R: Basics and Advanced  
Techniques

# Welcome and Introduction

Dr. Chester Ismay

- PhD in Statistics
- Worked in academia, online education, corporate training, tech bootcamps, and independent consulting
- Currently,
  - Faculty Member in Data Analytics, Portland State University
  - Vice President of Data and Automation, MATE Seminars
  - Freelance data scientist and educator
- Fun Fact: Slept a night or eaten a meal in all 50 US states



# Course Learning Objectives

By the end of this course, you will be able to

- Perform data wrangling techniques in R via the `tidyverse`
- Develop skills in data visualization with `ggplot2`
- Apply fundamental concepts of statistical inference with `infer`
- Build and interpret regression models with `moderndive`
- Integrate Theory-Based and Simulation-Based Approaches

# Agenda

Day 1: Working with Data in R - Explore, Visualize, Wrangle, Import

- Session 1: Introduction to R – Basics and Advanced Techniques
- Session 2: Data Visualization using ggplot2
- Session 3: Data Wrangling and Tidy Data

# Introduction to R and RStudio

- R: programming language mainly for statistical computing and data analysis
- RStudio: IDE
- R vs RStudio

**R: Engine**



**RStudio: Dashboard**





# Installing R and RStudio

- R: <https://cloud.r-project.org/>
- RStudio: <https://posit.co/download/rstudio-desktop/>
- Download and install for your operating system

# Coding in R

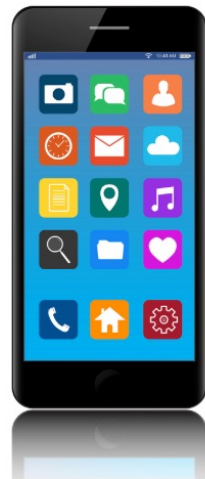
- Commands entered as code in the Console or via scripts.
- Key concepts include objects, vectors, and data types
- Conditional statements and functions help perform tasks
- Learning to code takes frequent practice, but it is one of the most rewarding things you can do!

# Using R packages

- Extend R's capabilities with additional functions and/or datasets
- First install the package with `install.packages()`
- Load the package using `library()`

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**R: A new phone**



**R Packages: Apps you can download**



# Exploring Data in R with RStudio

- Data frames are like tables with rows and columns
- Use `View()`, `glimpse()`, or `kable()` to inspect
- The `$` operator extracts columns from data frames
- Identification versus measurement variables/columns

# *Demo & Exercises*

Q & A



**STOP**