

# BioMarin R Training Roadmap

[RStudio.Cloud projects link](#)



## Intro to R Programming

Introduction to data types, syntax, and grammar.

## Other topics & packages covered:



Tibbles vs. data frames

## Resources

PDF slides:

<https://github.com/mjfrigaard/intro-to-r-programming/blob/main/docs/pdfs/intro-to-r-programming.pdf>

HTML slides:

<https://mjfrigaard.github.io/intro-to-r-programming/Index.html#1>

Exercises:

[https://mjfrigaard.github.io/r-meetup-tutorials/bk00\\_functions-and-objects.html](https://mjfrigaard.github.io/r-meetup-tutorials/bk00_functions-and-objects.html)

# Studio® **R Workflow Best Practices**

Introduction to RStudio, file naming, and projects.

## **Other topics & packages covered:**



Reproducible examples with  
reprex and datapasta

## Resources

PDF slides:

<https://github.com/mjfrigaard/r-workflow-best-practices/blob/main/docs/pdfs/r-workflow-slides.pdf>

HTML slides:

<https://mjfrigaard.github.io/r-workflow-best-practices/Index.html#1>

Exercises:

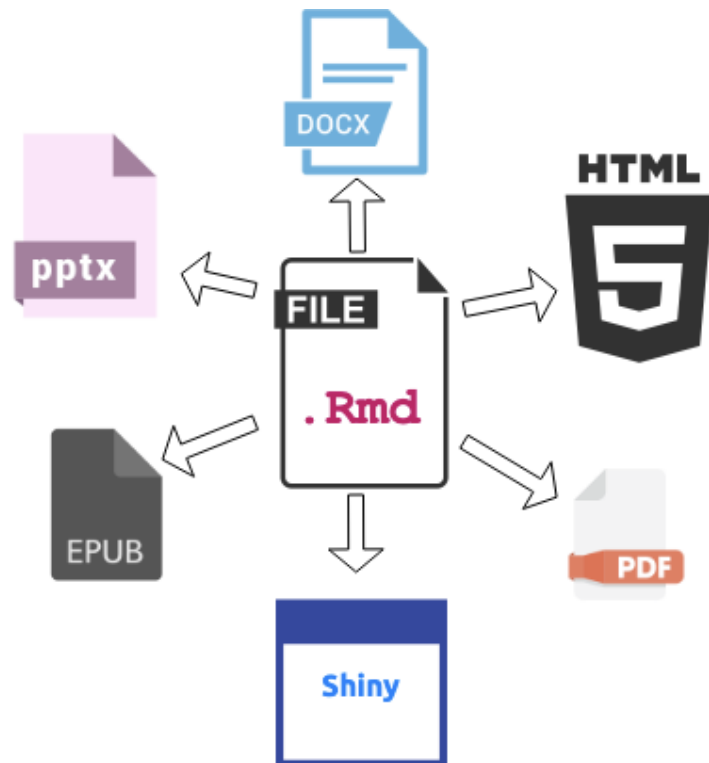
[https://mjfrigaard.github.io/r-meetup-tutorials/bk01\\_workflow-best-practices.html](https://mjfrigaard.github.io/r-meetup-tutorials/bk01_workflow-best-practices.html)



# R Markdown

Introduction to reproducible reports (YAML, markdown, knitr, and pandoc).

## Other topics & packages covered:



Create multiple file outputs with .Rmd and knitr

## Resources

PDF slides:

<https://github.com/mjfrigaard/rep-res-rmarkdown/blob/master/docs/pdfs/intro-to-rmarkdown-slides.pdf>

HTML slides:

<https://mjfrigaard.github.io/rep-res-rmarkdown/Index.html#1>

Exercises:

[https://mjfrigaard.github.io/r-meetup-tutorials/mk00\\_rmarkdown-exercises.html](https://mjfrigaard.github.io/r-meetup-tutorials/mk00_rmarkdown-exercises.html)



# Introduction to Data Manipulation

Common data manipulation tasks, dplyr's verbs, the pipe (`%>%`).

## Other topics & packages covered:



Write clearer code with pipelines, logical string detection with **filter()**

## Resources

PDF slides:

<https://github.com/mjfrigaard/data-manip-intro/blob/main/docs/pdfs/data-manip-intro-slides.pdf>

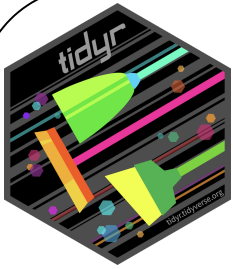
HTML slides:

<https://mjfrigaard.github.io/data-manip-intro/Index.html#1>

Exercises:

[https://mjfrigaard.github.io/r-meetup-tutorials/dt00\\_data-manipulations.html](https://mjfrigaard.github.io/r-meetup-tutorials/dt00_data-manipulations.html)





# Data Transformation & Joins

Pivoting data, multiple table joins, manipulating columns and rows.

## Other topics & packages covered:



Rename columns,  
reproducible file  
management

## Resources

PDF slides:

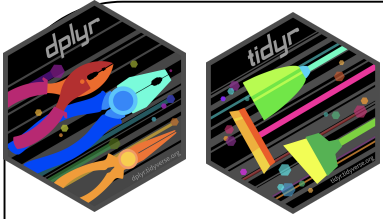
<https://github.com/mjfrigaard/data-transformations-joins/blob/main/docs/pdfs/data-transformation-joins-slides.pdf>

HTML slides:

<https://mjfrigaard.github.io/data-transformations-joins/Index.html#1>

Exercises:

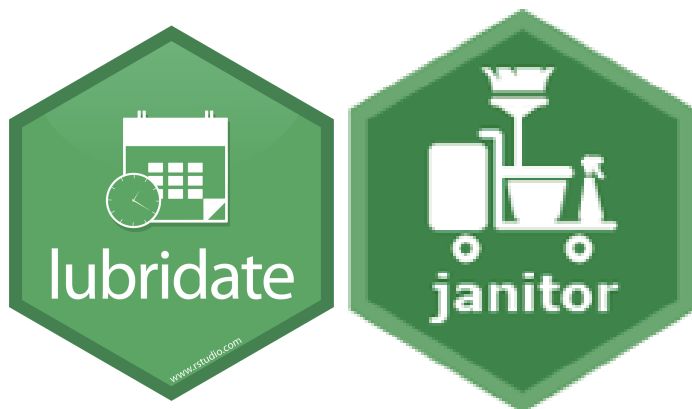
[https://mjfrigaard.github.io/r-meetup-tutorials/dt01\\_data-trans-joins-exercises.html](https://mjfrigaard.github.io/r-meetup-tutorials/dt01_data-trans-joins-exercises.html)



# Advanced Data Manipulations

Conditional mutations, create multiple columns at once, and missing data.

## Other topics & packages covered:

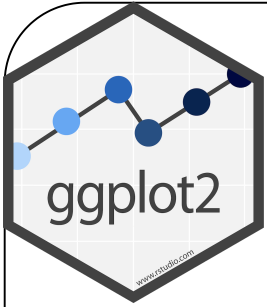


Dealing with date/times, standardizing column names, etc.

## Resources

Exercises:

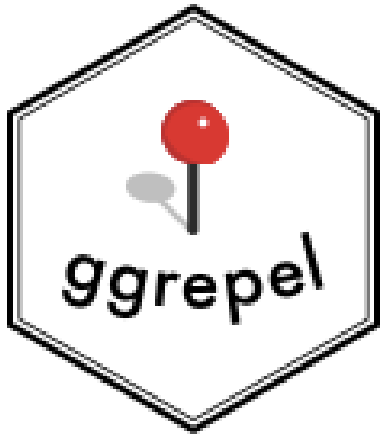
[https://mjfrigaard.github.io/r-meetup-tutorials/dt02\\_adv-data-manip-joins.html](https://mjfrigaard.github.io/r-meetup-tutorials/dt02_adv-data-manip-joins.html)



# Data Visualization

Introduction to the grammar of graphics, aesthetics, and themes.

## Other topics & packages covered:



Repel text labels, themes, etc.

## Resources

PDF slides:

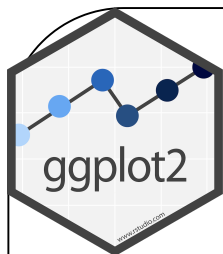
<https://github.com/mjfrigaard/data-viz-intro/blob/main/docs/pdfs/data-viz-intro-slides.pdf>

HTML slides:

<https://mjfrigaard.github.io/data-viz-intro/Index.html#1>

Exercises:

[https://mjfrigaard.github.io/r-meetup-tutorials/gg00\\_intro-to-data-viz.html](https://mjfrigaard.github.io/r-meetup-tutorials/gg00_intro-to-data-viz.html)



# Data Visualization as Communication

Extending the grammar of graphics with distributions, annotations, and facetting.



ggridges, facetting with  
ggforce, geographical facets  
with geofacet

## Resources

PDF slides:

<https://github.com/mjfrigaard/data-viz-as-comm/blob/main/docs/pdfs/data-viz-as-comm-slides.pdf>

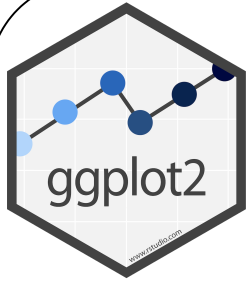
HTML slides:

<https://mjfrigaard.github.io/data-viz-as-comm/Index.html#1>

Exercises:

[https://mjfrigaard.github.io/r-meetup-tutorials/gg01\\_data-viz-as-comm.html](https://mjfrigaard.github.io/r-meetup-tutorials/gg01_data-viz-as-comm.html)





# Advanced Data Visualization

Extending ggplot2

## **Other topics & packages covered:**

Fit text (ggtext & ggfittext), distributions (ggdist & distributional), color (wesanderson & khroma), interactivity (plotly), and animations (gganimate)



## Resources

Exercises:

[https://mjfrigaard.github.io/r-meetup-tutorials/gg02\\_adv-data-viz.html](https://mjfrigaard.github.io/r-meetup-tutorials/gg02_adv-data-viz.html)



# Data Dashboards

Introduction to flexdashboards.

## Other topics & packages covered:



Create interactive dashboards with R Markdown and shiny.

## Resources

PDF slides:

<https://github.com/mjfrigaard/intro-to-dashboards/blob/main/docs/pdfs/intro-to-dashboards-slides.pdf>

HTML slides:

<https://mjfrigaard.github.io/intro-to-dashboards/Index.html#1>



# Shiny Apps

Introduction to shiny applications.

## Other topics & packages covered:



Google trend searches (gtrendsR),  
dashboards (flexdashboard)

## Resources

PDF slides:

<https://github.com/mjfrigaard/intro-to-shiny/blob/main/docs/pdfs/intro-to-shiny-slides.pdf>

HTML slides:

<https://mjfrigaard.github.io/intro-to-shiny/Index.html#1>