1.3.6: Putting Reproducible Research Principles Into Practice

(Asynchronous-Online)

COMING SUMMER 2025

Module "1.3.6: Putting Reproducible Research Principles Into Practice" will be posted prior to the In-Person Workshops in Summer 2025.

Session Objectives

1. Discuss reproducible research principles.
2. Apply reproducible research principles to data analysis using R Markdown.

Key points to cover:

1. Reproducible research principles
2. What is R Markdown
3. How to create a report using R Markdown

   - Customize the layout of presentations or reports
   - Insert and create objects, such as tables, images, or videos, within a document

Iannone, Richard, Joe Cheng, Barret Schloerke, Ellis Hughes, Alexandra Lauer, JooYoung Seo, Ken Brevoort, and Olivier Roy. 2024. *Gt: Easily Create Presentation-Ready Display Tables.* https://gt.rstudio.com.

Kassambara, Alboukadel. 2023. *Ggpubr: Ggplot2 Based Publication Ready Plots.* https://rpkgs.datanovia.com/ggpubr/.

Meyer, David, Achim Zeileis, and Kurt Hornik. 2006. "The Strucplot Framework: Visualizing Multi-Way Contingency Tables with Vcd." *Journal of Statistical Software* 17 (3): 1–48. https://doi.org/10.18637/jss.v017.i03.

Meyer, David, Achim Zeileis, Kurt Hornik, and Michael Friendly. 2023. *Vcd: Visualizing Categorical Data.* https://CRAN.R-project.org/package=vcd.

Mock, Thomas. 2024. *gtExtras: Extending Gt for Beautiful HTML Tables.* https://github.com/jthomasmock/gtExtras.

Pedersen, Thomas Lin. 2024. *Patchwork: The Composer of Plots.* https://patchwork.data-imaginist.com.

R Core Team. 2024. *R: A Language and Environment for Statistical Computing.* Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Schloerke, Barret, Di Cook, Joseph Larmarange, Francois Briatte, Moritz Marbach, Edwin Thoen, Amos Elberg, and Jason Crowley. 2024. *GGally: Extension to Ggplot2.* https://ggobi.github.io/ggally/.

Sievert, Carson. 2020. *Interactive Web-Based Data Visualization with r, Plotly, and Shiny.* Chapman; Hall/CRC. https://plotly-r.com.

Sievert, Carson, Chris Parmer, Toby Hocking, Scott Chamberlain, Karthik Ram, Marianne Corvellec, and Pedro Despouy. 2024. *Plotly: Create Interactive Web Graphics via Plotly.js.* https://plotly-r.com.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis.* Springer-Verlag New York. https://ggplot2.tidyverse.org.

Wickham, Hadley, Winston Chang, Lionel Henry, Thomas Lin Pedersen, Kohske Takahashi, Claus Wilke, Kara Woo, Hiroaki Yutani, Dewey Dunnington, and Teun van den Brand. 2024. *Ggplot2: Create Elegant Data Visualisations Using the Grammar of Graphics.* https://ggplot2.tidyverse.org.

Wickham, Hadley, Romain François, Lionel Henry, Kirill Müller, and Davis Vaughan. 2023. *Dplyr: A Grammar of Data Manipulation.* https://dplyr.tidyverse.org.

Zeileis, Achim, David Meyer, and Kurt Hornik. 2007. "Residual-Based Shadings for Visualizing (Conditional) Independence." *Journal of Computational and Graphical Statistics* 16 (3): 507–25. https://doi.org/10.1198/106186007X237856.