LISPOP Workshops on

Reproducible Research using R

The Laurier Institute for the Study of Public Opinion and Policy is hosting a series of workshops on reproducible research in the social sciences during the Winter Reading Week from February 21st to the 24th. A mix of remote courses will be offered introducing undergraduate and graduate students, faculty and researchers to introductory and advanced statistical analysis and data visualization using R, RMarkdown and GitHub, geospatial mapping and dashboarding with R. Register here https://lispop.ca/2023_winter_workshops/ for one of the following courses:

1. Introduction to R (February 21st -22nd)
2. Data Visualization with R (February 23rd)
3. R and Github for Reproducible Research (February 23rd -24th)
4. Geospatial Mapping with R (February 23rd)
5. Dashboarding with R (February 24th)

Introduction to R (February 21ˢᵗ – 22ⁿᵈ)

Course Description

Introduction to R will cover everything needed to begin working with data in R and RStudio, with a focus on tidyverse styling. The workshop will cover the basic syntax of R and how to navigate the GUI as well as resources for getting help. Participants will learn about data structures and object classes in R and best practices for cleaning and wrangling data. The session will introduce methods to summarize and describe data such as visualizations and summary statistics. Finally, the workshop will cover some basic statistical tests of comparison such as chi-squared and t-tests.
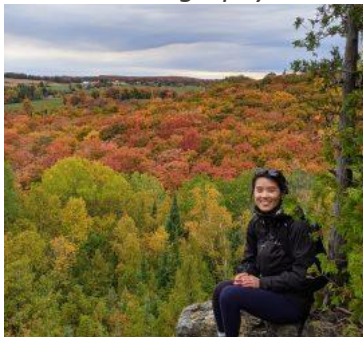
Prerequisites

Participants should install R and RStudio before the workshop, but no previous knowledge of R or programming is required.

Course Fees: $250+HST

[Register on Eventbrite](#)

Instructor Biography

Julia Ma is a Data Scientist at Precision-Analytics, a Montreal-based consultancy. She has extensive experience supporting clinical and academic research, working with data that range from electronic medical records to provincial-level administrative data. Julia's work spans observational and experimental studies including quality improvement initiatives, health economic analyses, and predictive modelling. She holds a Master's degree in Epidemiology from the Dalla Lana School of Public Health, University of Toronto.

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Data Visualization with R (February 23ʳᵈ)

Course Description

This workshop will showcase the data visualization capabilities of R with an emphasis on the expansive and highly customizable graphics that can be produced with the ggplot2 package. The session will cover commonly produced graphs to communicate scientific results (bar plots, histograms, scatter plots, cumulative incidence curves) and touch on additional packages for spatial visualisation and interactive plots. Workshop participants will have the opportunity to wrangle and prepare a data set for visualization, and thoughtful presentation and communication of data will be discussed.

Prerequisites

Attendees should have R and RStudio installed on their local machines and know-how of reading data into the working environment.

[Register on Eventbrite](#)

Instructor Biography

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Course Fees: $150+HST

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R and GitHub for Reproducible Science (February 23rd – 24th)

Course Description

This course will introduce participants to the use of GitHub as a tool for encouraging collaboration, archiving, knowledge mobilization and reproducibility. Topics for the course will include:

- Repository creation
- linking repositories with RStudio projects
- tracking, committing and pushing changes
- branch creation and merging, particularly to facilitate collaboration
- conflict resolution after merge

Register on Eventbrite

Instructor Biography

Rachael Lam is a graduate in Human-Centred Data Science at the University of Toronto with a bachelor's in Africana studies from the Claremont Colleges in California. This combination has balanced her work in critical race theory and an understanding of how structural inequalities affect all stages of the data life cycle. She's passionate about reflecting on the socio-cultural implications of data and how to better represent historically and systemically marginalized communities. Rachael's worked in several small startups, including the travel-tech and art industries, and has recently co-founded a Japanese learning language app that focuses on immersion methodologies. She is a certified Carpentries instructor and has taught several workshops in Unix Shell, Git and Github.

Course Fees: $150+HST

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Geospatial Mapping with R (February 23rd)

Course Description
This course provides an introduction to geospatial mapping with R. Using publicly available cartographic boundary files and diverse social datasets, including Canadian census and public opinion data, participants will learn how to merge social data with geospatial data frames and will practice building visually intuitive interactive maps with the leaflet package. The course will cover the visualization of polygon boundaries (such as Provinces, Forward Sortation Areas, federal electoral boundaries, etc.) and the use of longitude and latitude coordinates for pinpoint mapping of geocoded data.

Prerequisites: Participants should have basic proficiency in importing data to R and some knowledge of tidyverse syntax.

Register on Eventbrite

Instructor Biography

At Crestview Strategy, Marcus provides critical insight on research methodologies, data collection and analysis, and statistical modelling techniques. He is a published academic researcher with advanced expertise in variance estimation strategies including linear and logistic regression, multi-level modelling, and time series analysis. Previously, Marcus worked as a Researcher at Simon Fraser University where contributed to research projects related to political behaviour, public opinion, and public policy. Marcus is highly skilled at data wrangling and visualization using R open-source computing software and has exceptional abilities in communicating results to diverse audiences.

Marcus is a doctoral candidate (ABD) in Political Science at Simon Fraser University and holds a master's degree in Political Science as well as a Bachelor of Arts (Hons.) in International Studies. His doctoral research investigates the extent to which contextual circumstances influence personal political expressions in Canada and across Western democracies.

Course Fees: $150+HST

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Dashboarding with R (February 24ᵗʰ)

Course Description
This course introduces students to custom interactive html dashboards with R using the flexdashboard package. Course participants will learn how to build dashboards from the ground up using the flexdashboard template and will learn best practices for visualizing datasets and associated graphics (plots, maps, and data tables). In this session, students will practice building their own dashboards with provided data, however participants are encouraged to bring their own data for use in visualization exercises.

Prerequisites: Participants should have basic proficiency in importing data to R and some understanding of base or tidyverse syntax.

Register at Eventbrite

Instructor Biography

At Crestview Strategy, Marcus provides critical insight on research methodologies, data collection and analysis, and statistical modelling techniques. He is a published academic researcher with advanced expertise in variance estimation strategies including linear and logistic regression, multi-level modelling, and time series analysis. Previously, Marcus worked as a Researcher at Simon Fraser University where contributed to research projects related to political behaviour, public opinion, and public policy. Marcus is highly skilled at data wrangling and visualization using R open-source computing software and has exceptional abilities in communicating results to diverse audiences.

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