

BERLIN SCHOOL OF PUBLIC HEALTH

Intensive Short Course
Mastering R for Epidemiologic Research 27 - 31 July 2020 | 9am - 5pm

Instructor

Malcolm Barrett, MPH, is a PhD candidate in epidemiology at the University of Southern California.

He develops R packages for epidemiologic and biostatistical methods, teaches R, and organizes the Los Angeles R Users Group. He regularly contributes to open source software, including favorite community projects like ggplot2 and R Markdown.

In applied research Malcolm studies vision loss and eye diseases that affect vision, like diabetic retinopathy. Specifically, he works on methods to improve the study of how vision impacts quality of life, including tools from psychometrics and causal inference, to make vision-specific quality of life analyses more accurate and more interpretable.

The intensive short courses at BSPH are organized by the Institute of Public Health (IPH).

Institute of Public Health

Prof. Tobias Kurth, MD, ScD, Director

Venue

Charité – Universitätsmedizin Berlin
Campus Virchow-Klinikum

Course Information

Course language: English
ECTS points: 3
Course fees: 510 € for students
750 € for other participants

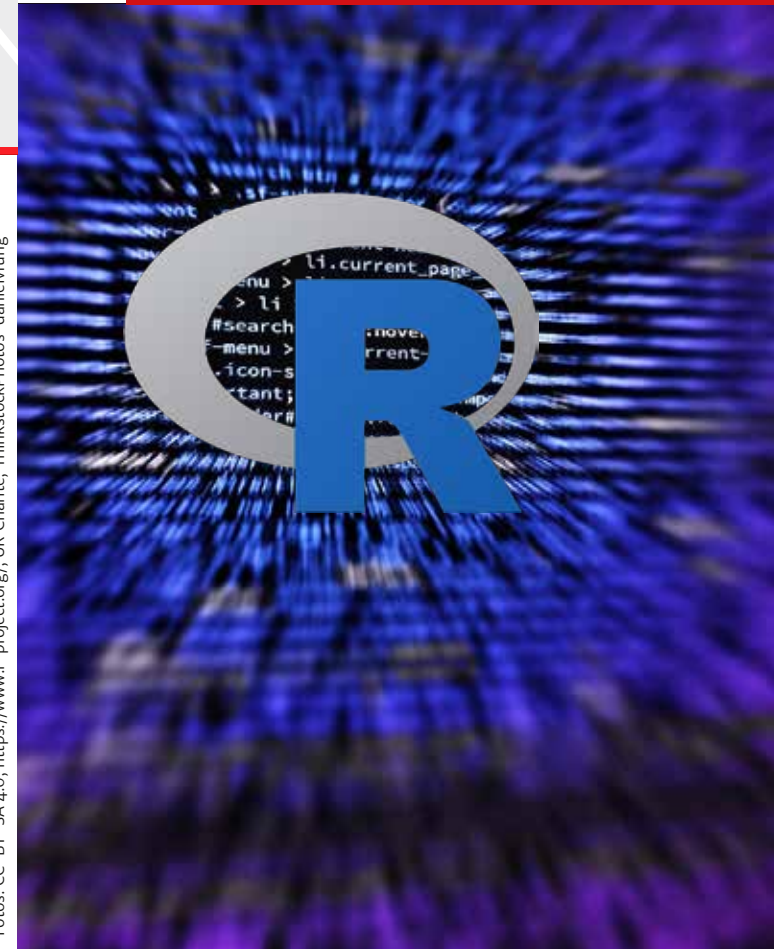
Registration Information

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Alice Salomon Hochschule Berlin
University of Applied Sciences





Course Description and Learning Objectives

The intention of this intensive short course on advanced epidemiologic methods is to strengthen the methodological skills of the research community. At the end of the week, participants will have:

- Mastered the tidyverse, a set of principled tools for data science. The tidyverse is a friendly, readable, and fast set of packages intended to work well together, to improve code readability, and to make analyses more reproducible.
- Written dynamic documents using best practices for reproducible research, including using R Markdown. R Markdown intertwines code and text so that reports and articles are fully reproducible and exportable to PDF, HTML, Word, and more. R Markdown also has excellent support for citation management and formatting for journals.
- Modeled simple statistical and causal problems using both classical regression (linear, logistic) and G-methods.
- Written robust functions, programmed with functions, and created a basic R package.
- Built ready-to-share web applications entirely in R using the Shiny framework.

Audience

The course is designed for students, researchers, public health professionals, epidemiologists and clinicians who want to improve their R coding skills, who want to learn modern tools in the R ecosystem, like the tidyverse and Shiny, or who want to get started writing software in R.

Course Pre-requisites

Basic epidemiology and statistics. Some experience with R programming will be helpful, but those new to R can take a free introductory course on Data-Camp: <https://www.datacamp.com/courses/free-introduction-to-r>

Course materials

R for Data Science (<https://r4ds.had.co.nz/>) and Advanced R, ed. 2 (<https://adv-r.hadley.nz/>), both free online

Program

27 – 31 July 2020 | 9am – 5pm

Monday, 27 July

am Data visualization with ggplot2
pm Reading and wrangling data

Tuesday, 28 July

am Modeling in R (the basics)
pm Functional programming: Writing functions and coding with purrr

Wednesday, 29 July

am Reproducible Research with R Markdown
pm Causal Modeling in R

Thursday, 30 July

am Building Web Apps with Shiny
pm Best practices in R programming

Friday, 31 July (ends 13:00)

am An introduction to writing R packages and contributing to open source software