

2023 ASA Traveling Course: Fundamentals of Causal Inference: With R

ASA Northeastern Illinois Chapter

The NIC-ASA invites you to attend a full day Traveling Course on Fundamentals of Causal Inference: With R on Friday June 9, 2023. The course, which will be an in-person event, will be held at Astellas. Please see below to find more information about the course. Please register by June 2, 2023. We will send out additional information with access details to all those who register.

American Statistical Association 2023 Council of Chapters Traveling Course

Organized by: Northeastern Illinois Chapter

Course Title: Fundamentals of Casual Inference: With R

Instructor: Babette Brumback, PhD, Professor Emerita of Biostatistics at the University of Florida

Date and Time: June 9, 2023, 8:00 am – 4:30 pm

Location: Astellas Pharma Global Development Inc. (2375 Waterview Drive, Northbrook, IL 60062).

Registration Fee: \$25 (Please go to the following link to register and pay - [registration link](#))

About the Instructor:



Dr. Babette Brumback, a Professor Emerita of Biostatistics at the University of Florida, is an elected member of Delta Omega and a Fellow of the American Statistical Association. Her statistical work has focused on methods for longitudinal data analysis, causal modeling, bias adjustment, and analysis of data from complex sampling designs. She is well known for her work on causal inference, and she is the author of the recently published textbook Fundamental of Casual Inference: With R.

Course Description: One of the primary motivations for clinical trials and observational studies of humans is to infer cause and effect. Disentangling causation from confounding is of utmost importance. Fundamentals of Causal Inference: With R explains and relates different methods of confounding adjustment in terms of potential outcomes and graphical models, including standardization, doubly robust estimation, difference-in-differences estimation, front-door estimation, and instrumental variables estimation. These methods are compared in terms of estimating the average effect of treatment on the treated (ATT). The fundamentals of mediation analysis and adjusting for time-dependent confounding are also presented. Several real data examples, simulation studies, and analyses using R motivate and illustrate the methods throughout. The course assumes familiarity with basic statistics and probability, regression, and R. The course will be taught with a blend of lecture and worked examples.

See below for the structure of the course.

Time (on June 9, 2023)	Activity	Description
8:00 am – 8:20 am	Arrival & Snacks	Coffee and snacks will be provided
8:20 am – 8:30 am	Welcome	Introduction of Instructor and Description of Course
8:30 am – 10:15 am	Module 1	Introduction, including Definitions and Datasets, Potential Outcomes Framework, and Directed Acyclic Graphs.
10:15 am – 10:30 am	Break	
10:30 am – 12:15 pm	Module 2	Adjusting for Confounding – Discussion of Standardization and Difference-in-Differences Estimation
12:15 pm – 1:00 pm	Lunch	Box-lunch will be provided in conference room.
1:00pm – 2:45 pm	Module 3	Adjusting for Confounding, continued – Front-Door Estimation, Instrumental Variables Estimation, and Comparison of the Four Methods (in terms of estimating the average effect of treatment on the treated).
2:45pm – 3:00 pm	Break	
3:00 pm – 4:25 pm	Module 4	More Advanced Topics such as Mediation and Time-Dependent Confounding
4:25 pm – 4:30 pm	Wrap-Up	

 Saurabh Mukhopadhyay
 AbbVie Inc
