



JOINT PROGRAM IN SURVEY METHODOLOGY

BAYESIAN INFERENCE IN SURVEYS

An Online short course sponsored by the Joint Program in Survey Methodology

Monday, April 07- Friday, April 18 2025.

COURSE OBJECTIVES

Bayesian methods in statistics are increasingly popular, spurred by advances in computational power and tools. Bayesian inference provides solutions to problems that cannot be solved exactly by standard frequentist methods. Students learning the Bayesian approach will obtain new analysis tools and a deeper understanding of competing systems of statistical inference, including the frequentist approach. The objective of this course is to describe the application of the Bayesian approach to survey sampling, where the focus of inference is on finite population quantities. Both instructors have conducted research in Bayesian methods, and have developed applications to real-world problems.

THE INSTRUCTORS

RODERICK LITTLE is Richard D. Remington Distinguished University Professor of Biostatistics, School of Public Health and Research Professor, Survey Research Center, Institute for Social Research at the University of Michigan. He previously served as the first Associate Director for Research and Methodology and Chief Scientist at the U.S. Bureau of the Census. His areas of research expertise primarily focus on how to handle missing data in variety of statistical analyses, and inference from sample surveys. He has published numerous articles on these topics, chaired a recent National Research Council Study on missing data in clinical trials, and is the coauthor with Donald Rubin of the book, *Statistical Analysis with Missing Data*. He is the 2005 Wilks Award recipient from the American Statistical Association and was the 2012 COPSS Fisher Lecturer at the Joint Statistical Meetings.

TRIVELLORE RAGHUNATHAN (Raghu) is Professor of Biostatistics, University of Michigan School of Public Health, Research Professor in the Survey Research Center, University of Michigan Institute for Social Research, and Research Professor, the Joint Program in Survey Methodology at the University of Maryland. Until recently he was Director of the Survey Research Center at Michigan. His research interests are in the analysis of incomplete data, Bayesian methods, design and analysis of sample surveys, small area estimation, statistical disclosure longitudinal data analysis and statistical methods for epidemiology. He has published two books, *Missing Data Analysis* in



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Practice and Multiple Imputation in Practice (co-authored with Patricia Berglund and Peter Solenberger).

CLASS STRUCTURE

The course will be in an online format from April 07 to April 18 ,2023. Participants will have online access to the course packet (slides) and to the recorded lectures. Participants can watch the videos at their own pace. **Live group online discussions are scheduled for Friday 04/11/25 and 04/18/25 from 1PM to 2:30PM EST.**

These sessions will be used to discuss questions that came up over the week when watching the videos.