

# STATA<sup>®</sup>

## CSEB Workshop Introduction to Bayesian Statistics Using Stata

**Date and time:** November 17<sup>th</sup>, 2021 from 12:00pm to 2:00pm EDT

**Target Audience:** Beginner

**Preferred number of participants:** no limit

**Workshop style:** lecture style

**Software/data requirements:** Stata 17

**Admission fee:** \$25 CND plus taxes (\$0 for CSEB Members)

**Register here:** <https://events.ely.com/STATAworkshop/virtual.aspx>

### Workshop Description:

Bayesian analysis has become a popular tool for many statistical applications. Yet many data analysts have little training in the theory of Bayesian analysis and software used to fit Bayesian models. This talk will provide an intuitive introduction to the concepts of Bayesian analysis and demonstrate how to fit Bayesian models using Stata. No prior knowledge of Bayesian analysis is necessary and specific topics will include the relationship between likelihood functions, prior, and posterior distributions, Markov Chain Monte Carlo (MCMC) using the Metropolis-Hastings algorithm, and how to use Stata's Bayes prefix to fit Bayesian models.

1. Participants will learn the fundamentals of the Bayesian approach to data analysis.
2. Participants will learn about prior probability distributions, likelihood functions, posterior probability, and the relationships between them.
3. Participants will learn about Markov Chain Monte Carlo (MCMC), the Metropolis-Hastings algorithm, Gibbs sampling, and how to diagnose convergence issues with MCMC chains.
4. Participants will learn how to fit Bayesian regression models and interpret posterior means and credible intervals.

### Workshop facilitator:

**Chuck Huber** is Director of Statistical Outreach at StataCorp and Adjunct Associate Professor of Biostatistics at the Texas A&M School of Public Health. In addition to working with Stata's team of software developers, he produces instructional videos for the Stata Youtube channel, writes blog entries, develops online NetCourses and gives talks about Stata at conferences and universities. Most of his current work is focused on statistical methods used by behavioral and health scientists. He has published in the areas of neurology, human and animal genetics, alcohol and drug abuse prevention, nutrition and birth defects. Dr. Huber currently teaches introductory biostatistics at Texas A&M where he previously taught categorical data analysis, survey data analysis, and statistical genetics.

