Analyzing Uncertainty

SBCA Professional Development Workshop

July 30 - 31, 2024

For more information and to register: https://www.benefitcostanalysis.org/workshops

Description: Estimates of the costs and benefits of proposed programs or regulations are inherently uncertain. To develop such estimates, analysts must construct models attempting to predict the future. They rely on information that may be subject to limitations related to the quality of the methods used to collect the data and the extent to which the data address the same population, industries, or geographic areas as the proposed initiative. The models also require many assumptions, such as how affected entities will respond to the proposed change and the likely future state of the world.

A critical challenge for analysts is to clearly describe key sources of uncertainty associated with these estimates in qualitative or quantitative terms. The goal is to ensure that decision-makers and other stakeholders understand the extent to which uncertainty – in data, models, and assumptions – affects the main analytic conclusions. A well-developed presentation of uncertainty can aid decision-makers in understanding the confidence they should have in the results and the magnitude of any bias.

This two-day workshop provides theoretical information about different types of uncertainty and practical guidance around how to select approaches used to characterize uncertainty, such as scenario analysis, Monte Carlo simulation, decision trees, and sensitivity analysis. Instructors will also provide guidance on how to conduct expert elicitation and communicate uncertain findings. It is targeted to those interested in conducting these analyses and those interested in better understanding the strengths and limitations of analyses they review. Although a background in economics will be helpful for workshop participants, those without formal economics training will also find the workshop helpful. Upon completion of the course, attendees should have a clear understanding of the theory and practice of uncertainty analysis.

Instructors

 Rob Moore (organizer) is the principal for Scioto Analysis. Rob has worked as an analyst in the public and nonprofit sectors and has analyzed diverse issue areas such as economic development, environment, education, and public health. He holds a Master of Public Policy from the University of California Berkeley's Goldman School of Public Policy and a Bachelor of Arts in Philosophy from Denison University.
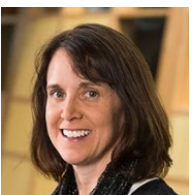
 Robin L. Dillon-Merrill is a Professor and the Operations and Analytics Area Chair in the McDonough School of Business at Georgetown University. In her research, Professor Dillon-Merrill seeks to understand and explain how and why people make the decisions that they make under conditions of uncertainty and risk. She has a B.S./M.S. from the University of Virginia in Systems Engineering and a Ph.D. from Stanford University.

 Michael Hartnett is a policy analyst for Scioto Analysis, a Midwest public policy analysis practice. He holds a Masters of Science in Statistics from the University of Minnesota Twin Cities and a Bachelors of Arts in Economics from Bates College. His focus is in using advanced statistical methods to better understand the effects of public policies and to promote evidence-based decision making. He has previously done research on issues of gender equity and the criminal justice system.
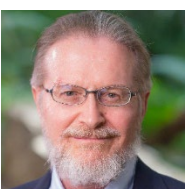
 David Weimer is the Edwin E. Witte Professor of Political Economy at the La Follette School of Public Affairs at the University of Wisconsin-Madison. Professor Weimer is the author of *Behavioral Economics for Cost-Benefit Analysis* and co-author of *Policy Analysis: Concepts and Practice (sixth edition)*, and *Cost-Benefit Analysis: Concepts and Practice (fourth edition)*. He received his doctorate in public policy from the University of California, Berkeley.