The Department of Educational Psychology's Research Methods, Measurement, & Evaluation (RMME) program and the Department of Statistics at the University of Connecticut present:

thinkCausal: One Stop Shopping for Answering your Causal Inference Questions

Dr. Jennifer Hill, New York University
Friday, 4/30/2021, 12pm

https://uconn-cmr.webex.com/uconn-cmr/j.php?MTID=m8c032f2f335a1c377fcd8a293df02bbc

Causal inference is a necessary tool in education research for answering pressing and ever-evolving questions around policy and practice. Increasingly, researchers are using more complicated machine learning algorithms to estimate causal effects. These methods take some of the guesswork out of analyses, decrease the opportunity for "p-hacking," and are often better suited for more fine-tuned causal inference tasks such as identifying varying treatment effects and generalizing results from one population to another. However, these more sophisticated methods are more difficult to understand and are often only accessible in more technical, less user-friendly software packages. The thinkCausal project is working to address these challenges (and more) by developing a highly scaffolded multi-purpose causal inference software package with the BART predictive algorithm as a foundation. The software will scaffold the researcher through the data analytic process and provide options to access technology-based teaching tools to understand foundational concepts in causal inference and machine learning. This talk will briefly review BART for causal inference and then discuss the challenges and opportunities in building this type of tool. This is work in progress and the goal is to create a conversation about the tool and role of education in data analysis software more broadly.

Dr. Jennifer Hill develops and evaluates methods that help us answer the causal questions that are vital to policy research and scientific development. In particular she focuses on situations in which it is difficult or impossible to perform traditional randomized experiments, or when even seemingly pristine study designs are complicated by missing data or hierarchically structured data. Most recently Hill has been pursuing two intersecting strands of research. The first focuses on Bayesian nonparametric methods that allow for flexible estimation of causal models and are less time-consuming and more precise than competing methods (e.g. propensity score approaches). The second line of work pursues strategies for exploring the impact of violations of typical causal inference assumptions such as ignorability (all confounders measured) and common support (overlap). Hill has published in a variety of leading journals including Journal of the American Statistical Association, Statistical Science, American Political Science Review, American Journal of Public Health, and Developmental Psychology. Hill earned her PhD in Statistics at Harvard University in 2000 and completed a post-doctoral fellowship in Child and Family Policy at Columbia University's School of Social Work in 2002. Hill is also the Director of the Center for Practice and Research at the Intersection of Information, Society, and Methodology (PRIISM) and Co-Director of and the Master of Science Program in Applied Statistics for Social Science Research (A3SR).

ONLINE INTERDISCIPLINARY SEMINARS ON STATISTICAL METHODOLOGY FOR SOCIAL AND BEHAVIORAL RESEARCH: Support for this seminar comes from Department of Educational Psychology's Research Methods, Measurement, & Evaluation (RMME) program and the Department of Statistics at the University of Connecticut (UCONN), the Statistical and Applied Mathematical Sciences Institute (SAMSI), and the New England Statistical Society (NESS). This seminar aims to promote connection between the statistics and social/behavioral science communities and encourage interdisciplinary research across faculty and students.

For announcements and WebEx live streaming links, please contact Tracy Burke (tracy.burke@uconn.edu).
For questions related to the seminars, please feel free to contact the session organizers, Prof. Xiaojing Wang (xiaojing.wang@uconn.edu) and/or Prof. Betsy McCoach (betsy.mccoach@uconn.edu). For information about previous and upcoming speakers, please visit https://stat.uconn.edu/online-seminars/ or https://rmme.education.uconn.edu/.