Why Causation Matters
Stanford 2nd Colloquium on Causal Inference and Machine Learning
Monday, April 29th, 9am-4pm   -   SIEPR/Koret-Taube Room

Speaker and Panelist Biographies

Jennifer Hill, PhD is Professor of Applied Statistics and Data Science at NYU, Co-Director of the Center for Practice and Research at the Intersection of Information, Society, and Methodology (PRIISM) and Co-Director of the MS Program in Applied Statistics for Social Science Research (A3SR). Most recently she has been pursuing two major strands of research. The first focuses on Bayesian nonparametric methods that allow for flexible estimation of causal models without the need for methods such as propensity score matching. The second involves strategies for exploring the impact of violations of assumptions requiring that all confounders have been measured. Hill earned her PhD in Statistics from 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.

Jennifer Ahern, MPH, PhD is Associate Dean for Research and Associate Professor of Epidemiology at University of California, Berkeley, School of Public Health. She examines the effects of the social and physical environment, and programs and policies that alter the social and physical environment, on many aspects of health (e.g., violence, substance use, mental health, and gestational health). Dr. Ahern has a methodological focus to her work, including application of causal inference methods and semi-parametric estimation approaches, aimed at improving the rigor of observational research, and optimizing public health intervention planning. Her research has been supported by a New Innovator Award from the National Institutes of Health (NIH).

Susan Athey, PhD is the Economics of Technology Professor at Stanford Graduate School of Business. She received her bachelor's degree from Duke University and her PhD from Stanford. She previously taught in the economics departments at MIT, Stanford and Harvard. Her current research focuses on the economics of digitization, marketplace design, and the intersection of econometrics and machine learning. Her application areas include timber auctions, internet search, online advertising, the news media, and the application of digital technology to social impact applications. As one of the first "tech economists," she served as consulting chief economist for Microsoft and now serves on the boards of Expedia, Lending Club, Rover, Turo, and Ripple, as well as non-profit Innovations for Poverty Action. She also serves as an advisor to the British Columbia Ministry of Forests, developing their auction-based pricing. She is the director of the Shared Prosperity and Innovation Initiative at Stanford GSB, and associate director of the Stanford Institute for Human-Centered Artificial Intelligence.

Mike Baiocchi, PhD is an Assistant Professor of Medicine (Stanford Prevention Research Center), and, by courtesy, of Statistics and of Epidemiology. He specializes in creating simple, easy to understand methodologies for causal inference and observational studies. He is works in the field as a designer and analyst of international programs to prevent sexual violence, work for which he and colleague Clea Sarnquist were awarded the 2017 Rosenkranz Prize for Health Care Research in Developing Countries.

Manisha Desai, PhD is Professor of Medicine and of Biomedical Data Science and (by courtesy) Health Research & Policy (Epidemiology). She joined Stanford in 2009 after 9 years on the faculty of the Department of Biostatistics at Columbia University. Dr. Desai founded and directs the Stanford Quantitative Sciences Unit, a collaborative group of about 30 data scientists. Her methodological interests include the handling of missing data, longitudinal data analysis, the translation of clinical trial findings into real world populations, the processing and analysis of accelerometer data, and the integration of mobile health data into clinical trials. Dr. Desai is a recent recipient of a PCORI award to study multiple imputation methods for handling missing data induced by time-varying covariates in comparative effectiveness studies of HIV patients.

Nigam Shah, MBBS, PhD is an Associate Professor of Medicine (Biomedical Informatics) at Stanford University, Assistant Director of the Center for Biomedical Informatics Research, and a core member of the Biomedical Informatics Graduate Program. His research focuses on combining machine learning and prior knowledge in medical ontologies to enable use cases of the learning health system. Dr. Shah received the AMIA New Investigator Award for 2013 and the Stanford Biosciences Faculty Teaching Award for outstanding teaching in his graduate class on "Data driven medicine". Dr. Shah was elected into the American College of Medical Informatics (ACMI) in 2015 and the American Society for Clinical Investigation (ASCI) in 2016. He holds an MBBS from Baroda Medical College, India, a PhD from Penn State University and completed postdoctoral training at Stanford.

Maria Glymour, ScD, MS is a Professor of Epidemiology and Biostatistics at UCSF, co-leading their PhD program in Epidemiology and Translational Science. Her research focuses on healthy aging, and time-varying lifecourse determinants of stroke and dementia risk in late life. She draws on both design and data innovations, in particular applying instrumental variables (IV), difference-in-difference, and multilevel models to novel data linkages to evaluate causal hypotheses. She evaluates social determinants of health and health disparities, topics in which attention to causal inference challenges is critical. She received both her Masters degree and doctorate from Harvard T.H. Chan School of Public Health.

Sharad Goel, PhD is an Assistant Professor in the Department of Management Science & Engineering, and holds courtesy appointments in Computer Science and Sociology. He is also the Executive Director of the Stanford Computational Policy Lab. Sharad looks at public policy through the lens of computer science, bringing a computational perspective to a diverse range of contemporary issues, including police practices, bail reform, political polarization, voter fraud, and online privacy. He also writes general-audience pieces about contemporary policy issues from a statistical perspective, including algorithms in the courts (NYT and Washington Post), police stops (Slate and The Huffington Post); election polls (New York Times); and claims of voter fraud (Slate, and This American Life). Before joining Stanford, Sharad was a senior researcher at Microsoft in New York City.

Steven Goodman, MD, MHS, PhD is Associate Dean of Clinical and Translational Research and Professor of Medicine and of Health Research & Policy, directing Stanford's CTSA/Spectrum training programs in medical research methods and serving as chief of the Division of Epidemiology. He is co-founder and co-director of the Meta-research Innovation Center at Stanford (METRICS), devoted to issues affecting the validity of scientific research. His research concerns the proper measurement, conceptualization and synthesis of research evidence, with particular emphasis on Bayesian approaches to quantitation. He was awarded the 2016 Spinoza Chair in Medicine from the University of Amsterdam for his work on inference.

Daniel E. Ho, PhD, JD is the William Benjamin Scott and Luna M. Scott Professor of Law, Professor (by courtesy) of Political Science, Senior Fellow at the Stanford Institute for Economic Policy Research, and Faculty Fellow at the Center for Advanced Study in the Behavioral Sciences. His scholarship centers on quantitative empirical legal studies, with a substantive focus on administrative law, regulatory policy, antidiscrimination law, and courts. He directs the Regulation, Evaluation, and Governance Lab (RegLab) at Stanford. He received his J.D. from Yale Law School and his Ph.D. in political science from Harvard University, and clerked for Judge Stephen F. Williams on the U.S. Court of Appeals, District of Columbia Circuit.

Guido Imbens, MSc, PhD is Professor of Economics at the Stanford Graduate School of Business. Guido does research in econometrics and statistics; his research focuses on developing methods for drawing causal inferences in observational studies, using matching, instrumental variables, and regression discontinuity designs. He is a fellow of the Econometric Society and the American Academy of Arts and Sciences. He is co-author with Don Rubin the 2015 Cambridge University Press book "Causal Inference for Statistics, Social, and Biomedical Sciences."

Kristian Lum, PhD is the Lead Statistician at the Human Rights Data Analysis Group (HRDAG), where she studies US criminal justice. Previously, Kristian worked as a research assistant professor in the Virginia Bioinformatics Institute at Virginia Tech and as a data scientist at DataPad, a small technology start-up. Kristian's research examines the uses of machine learning in the criminal justice system and has demonstrated the potential for machine learning-based predictive policing models to reinforce historical racial biases in law enforcement. She has also explored the causal impact of setting bail on pleading or being found guilty; and used agent-based epidemiological modeling methods to study the disease-like spread of incarceration through a social influence network. Additionally, Kristian's work encompasses the development of new statistical methods that explicitly incorporate fairness considerations and methods for estimating the number of undocumented conflict casualties.

Michelle Odden, PhD is an Associate Professor of Epidemiology in the Stanford Department of Health Research and Policy. Her research aims to find optimal preventive strategies for chronic disease in older adults, particularly those who have been underrepresented in research, including the very old, frail, and racial/ethnic minorities. Her work has focused on prevention of cardiovascular and kidney outcomes, as well as preservation of physical and cognitive function in older adults. Dr. Odden came to Stanford from Oregon State University, where she helped develop the new College of Public Health and Human Sciences. She completed her Ph.D. in Epidemiology from the University of California, Berkeley (2009), a postdoctoral fellowship at UCSFin Primary Care Research (2011).

Maya Petersen, PhD, MD's is an Associate Professor of Biostatistics & Epidemiology at the UC Berkeley School of Public Health. Dr. Petersen's methodological research focuses on the development and application of novel causal inference methods to problems in health, with an emphasis on longitudinal data and adaptive treatment strategies (dynamic regimes), machine learning methods, and study design and analytic strategies for cluster randomized trials. Her applied work focuses on developing and evaluating improved HIV prevention and care strategies in resource-limited settings. Her course "Introduction to Causal Inference", with Laura Balzer, was awarded the 2014 American Statistical Association's Causality in Statistics Education Prize. She received her MD from UCSF, her PhD in Biostatistics from Berkeley, and was a fellow of the Howard Hughes Medical Institute.

Julia Fridman Simard, ScD is an Assistant Professor of Health Research and Policy in the Epidemiology Division, and, by courtesy, of Medicine in Immunology and Rheumatology at Stanford. Dr. Simard studies outcomes in systemic autoimmune rheumatic diseases, such as malignancy, stroke, infection, and mortality, more recently focusing on the intersection between reproductive epidemiology and rheumatic disease. She is also interested in disentangling social and biological constructs in the reported disparities in systemic lupus erythematosus with respect to sex, gender, race, and ethnicity, both from the etiologic and outcomes perspectives.