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The University of Chicago Political Science Department



For more information about The Urban Network, the 2013 Urban Forums, or to find follow-up materials from this event, please visit urban.uchicago.edu





On behalf of The Urban Network and the University of Chicago, I would like to welcome you to the 2013 Urban Forums. This series of conferences is intended to highlight urban research done by faculty and students at the University of Chicago, and to bring together the best minds from across the country and around the world to share and discuss urban research.

Our 2013 Forums are broad in their scope, and in many ways examine the fundamental aspects of urban areas -- the environment and architecture, people and citizenship, and the systems of cities. Each was the proposal of a faculty member or campus organization, and has resulted in exciting collaborations with groups across campus. We would like to thank each of our partners for their contributions -- in particular Amy Lippert, Ramón Gutiérrez, Betsy Sinclair, and the Center for Health and the Social Sciences; the 2013 Urban Forums would have been impossible without them.

In addition to sharing ideas and improving connections among researchers, these Forums aim to explore the intersection of theory and practice. All of the papers being presented and ideas being discussed have real-world implications for our cities and can inform how our urban communities function. Our hope is that these events spur exciting conversations and innovation in both research and in practice.

Thank you for joining us.

Sincerely,

Scott W. Allard
Faculty Director, The Urban Network
Associate Professor, School of Social Service Administration

Elizabeth Ogburn is a postdoctoral research fellow in the Program on Causal Inference at the Harvard School of Public Health. She received her Ph.D. in 2011 from the Department of Biostatistics at Harvard under advisors Andrea Rotnitzky and Jamie Robins. Beginning in August, 2013, she will be an assistant professor in the Department of Biostatistics at Johns Hopkins University.

Ogburn is interested in developing new methods and describing the behavior of traditional statistical machinery for settings in which standard assumptions are not met. She has worked on characterizing the bias that results from misclassification, i.e. violations of the assumption that variables were measured accurately. Much of her dissertation focused on semiparametric estimation of instrumental variables models, as these models are useful for certain violations of “no unmeasured confounding” assumptions. As a postdoc, she has worked on the nonparametric identification of causal effects in the presence of interference (when one subject’s treatment may affect other subjects’ outcomes) and am currently working to develop new methods for statistical and causal inference for social and other network data; these represent violations of assumptions of independence among observations.

Cyrus Samii is an Assistant Professor with the Wilf Family Department of Politics, New York University. He writes and teaches on quantitative social science methodology and evaluation of governance and conflict management strategies. He has designed and implemented studies in Burundi, Colombia, Cote d'Ivoire, Indonesia, Liberia, and Nepal. He holds a PhD and MA from Columbia University and a BA from Tufts University.

Cosma Shalizi is an associate professor of statistics at Carnegie Mellon University, and external faculty at the Santa Fe Institute. His research focuses on inference for complex systems, especially nonparametric prediction and causal inference from observational data.

Michael Sobel is a professor of statistics and sociology at Columbia University. In current research, he has constructed frameworks for making valid causal inferences in neuroimaging and in meta-analyses. He is also (with political scientists at Columbia and Berkeley) working on estimating gender effects on judicial decision-making in the federal courts.

Rocio Titiunik works on political methodology and American politics. Her methodological interests center on the validity and limitations of employing experimental and non-experimental research designs to the study of politics. She is particularly interested in causal inference in the study of political institutions. Her current projects focus on incumbency advantage, minority representation and turnout, legislative behavior, and party identification.

Rocio was born and raised in Buenos Aires, Argentina, where she completed her undergraduate education at the Universidad de Buenos Aires. She received her Ph.D. from UC-Berkeley in 2009. She joined the Michigan faculty in September 2010, after spending one year as a postdoctoral fellow.

Nicholas W. Weller is an assistant professor at the University of Southern California. His research interests are focused on the way that information affects individual and collective behavior. He uses experimental methods to study how information networks affect the ability of decentralized actors to solve collective tasks that require both coordination and cooperation. This research helps to identify the various ways that networks either facilitate or impede collective action, and in doing so improves our understanding of how social structure can affect behavior.



Causality in Political Networks

Jude Hays (Ph.D. Political Science 2000, University of Minnesota) is Associate Professor of Political Science at the University of Pittsburgh. Much of his methods research, collaborative with Robert Franzese, focuses on how to identify the causes of correlated behaviors and coutcomes across actors and aggregate units of analysis in observational data, distinguishing exposure to common stimuli, contagion, and selection mechanisms. One of his more recent, related papers on netetwork-behavior coevolution, coauthored with Franzese and Aya Kachi, won the Gosnell Prize for 2011.

Guanglei Hong is Associate Professor in the Department of Comparative Human Development and the Committee on Education at the University of Chicago. She obtained a Master's degree in Statistics and a Ph.D. in Education from the University of Michigan in 2004. She focuses her research on devel- oping causal inference theories and methods for evaluating educational policies and instructional programs in multi-level, longitudinal settings. Her work addresses issues including (1) how to conceptu- alize and evaluate the causal effects of educational treatments when student response depends on features of the organizational settings, (2) how to adjust for selection bias in estimating the effects of concurrent multi-valued treatments, (3) how to study instruction as time-varying treatments, and (4) how to investigate causal mediation mechanisms in evaluating an intervention. Her publications have appeared in Educational Evaluation and Policy Analysis, the Journal of the American Statistical Association, the Journal of Educational and Behavioral Statistics, Psychological Methods, the Journal of Research on Educational Effectiveness, and Developmental Psychology among others. Her research has been funded by the Spencer Foundation, the William T. Grant Foundation, the Social Sciences and Humanities Research Council of Canada, and the US Department of Education Institute of Education Sciences.

Luke J. Keele pursues research and teaching interests in and in methodology (causal inference, design-based inference, and nonparametric statistics) and American politics (public opinion and elections) He has published articles in the Journal of Politics, American Journal of Political Science, and American Political Science Review. His research focuses on developing methods for drawing causal inferences with political data. Current projects include extending structural mean models to estimate effect modification by post-treatment variables. Other projects seek to understand how variation in geography can be used to draw causal inferences.

Peter J. Lamberson is a Senior Lecturer of Management and Organizations at the Kellogg School of Management and a Senior Research Associate at the Northwestern Institute on Complex Systems (NICO). He received his PhD in Mathematics from Columbia University, was a Postdoctoral Research Fellow at the University of Michigan Center for the Study of Complex Systems, and taught on the MIT Sloan faculty for three years. He has published research in Mathematics, Ecology, Epidemiology, Transportation, Genetics, Political Science, Network Science, Economics, and Management. He developed and teaches the Kellogg course Social Dynamics and Networks in the Kellogg MBA and executive MBA programs in Evanston, Chicago, Miami, and Tel Aviv and he received a Chair's Core Course Teaching award in 2012.

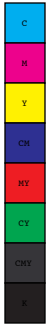
David W. Nickerson is an associate professor of political science at the University of Notre Dame. He employs field experiments to study how organizations can motivate people to vote, volunteer, and donate.

Friday, 10 May | Harper Hall Room 103, University of Chicago

- 9:00amIntroduction
Jake Bowers, Betsy Sinclair, Guanglei Hong
- 9:30amIGNITE: *Notions of Causation in Network Analysis: Can We Study the Causal Effect of an Endogenous Network?* **Rocio Titiunik**
- 9:45am*What Can We Learn about Influence from Observing Social Networks?* **Cosma Shalizi**
- 10:45amBreak
- 11:15amIGNITE: *Quantifying the Robustness of an Inference between Network Location and Policy-Oriented Behavior?* **Ken Frank**
- 11:30am*Estimating Average Causal Effects Under General Interference* **Cyrus Samii, Peter Aronow**
- 12:30pmLunch
- 2:00pm*Models of Effects: A Field Experiment on a Network in Ghana* **Jake Bowers, Mark Fredrickson**
- 3:00pmBreak
- 3:30pm*Experiments with Networked Collective Action* **Nick Weller**
- 4:00pm*Inferring Policy Diffusion Networks in the American States* **Bruce Desmarais**
- 4:45pmSoftware Pioneers
- 6:15pmIGNITE: *Missing Data in Social Network Analysis is Handled Poorly* **Jeff Gill**

Saturday, 11 May | Harper Hall Room 103, University of Chicago

- 9:00amIGNITE: *Replication, Replications...* **Wendy Tam Cho**
- 9:15am*Inference for Network Dependent Data* **Elizabeth Ogburn**
- 10:15amBreak
- 10:30am*Designing Experiments to Detect Social Influence* **David Nickerson**
- 11:30amLunch
- 1:00pm*Identification of Treatment Effects in Fixed Effects Regression for Panel Data* **Michael Sobel**
- 2:00pm*SUTVA Violations in Geographic Discontinuity Designs* **Luke Keele**
- 3:00pmBreak
- 3:30pm*Choosing the Next Experiment: Tradition, Innovation, and Efficiency in the Selection of Scientific Ideas* **James Evans**
- 4:00pm*Social Influence in the Calculus of Voting* **PJ Lamberson**
- 4:30pm*Community Structures: Networks, Detection, and Voter Mobilization* **Erin Hartman, Betsy Sinclair**
- 5:00pmIGNITE: *Some Challenges for Inference Given Network Effects and Effects on Networks*
Robert Franzese, Jude Hayes
- 5:15pmCollaborations and Closing Remarks





Speakers

Peter M. Aronow is a Ph.D. candidate in the Department of Political Science at Yale University and is currently in residence as a predoctoral staff associate at Columbia University.

Jake Bowers (Assistant Professor of Political Science and Statistics at the University of Illinois at Urbana-Champaign) focuses his methodological work on the use of research design as a basis for statistical and causal inference. He is currently exploring the ways that specific theories of effects can help us reason about experiments involving networks and interference between units. He has also worked on multilevel models and the analysis of field experiments with imperfect compliance. His substantive work investigates the contexts, catalysts, and inhibitors of the political activity of ordinary people.

Wendy K. Tam Cho is Professor in the Departments of Political Science, Statistics, and Asian American Studies, Senior Research Scientist at the National Center for Supercomputing Applications, Faculty in the Illinois Informatics Institute, and Affiliate of the Cline Center for Democracy and the Computational Science and Engineering Program at the University of Illinois at Urbana-Champaign.

Bruce A. Desmarais received his PhD from UNC Chapel Hill in 2010 and joined UMass Amherst that year as an assistant professor in the Department of Political Science and a core faculty member in the Computational Social Science Initiative. Bruce's research focuses on the development and application of methods for the analysis of political networks. Substantive applications in his work include international security, legislative collaboration and communication networks within local government organizations.

James Evans is Associate Professor of Sociology at the University of Chicago and in the College, member of the Committee on the Conceptual and Historical Studies of Science, and Fellow at the Computation Institute. His work explores how social and technical institutions shape knowledge—science, scholarship, law, news, religion—and how these understandings reshape the social and technical world. Evans is particularly interested in the relation of markets to science and knowledge more broadly. He has studied how industry collaboration shapes the ethos, secrecy and organization of academic science; the web of individuals and institutions that produce innovations; and markets for ideas and their creators. Evans has also examined the impact of the Internet on knowledge in society.

His work uses natural language processing, the analysis of social and semantic networks, statistical modeling, and field-based observation and interviews. Evans' research is funded by the National Science Foundation and the National Institutes of Health and has been published in Science, American Journal of Sociology, Social Studies of Science, Administrative Science Quarterly and other journals. His work has been featured in Nature, the Economist, Atlantic Monthly, Wired, NPR, BBC, El Pais, CNN and many other outlets.

Kenneth Frank received his Ph.D. in measurement, evaluation and statistical analysis from the School of Education at the University of Chicago in 1993. He is currently a professor in Counseling, Educational Psychology and Special Education as well as in Fisheries and Wildlife at Michigan State University. His substantive interests include the study of schools as organizations, social structures of students and teachers and school decision-making, and social capital. His substantive areas are linked to several methodological interests: social network analysis, causal inference and multi-level models. His publi-

methodological interests: social network analysis, causal inference and multi-level models. His publications include quantitative methods for representing relations among actors in a social network, robustness indices for inferences, and the effects of social capital in schools and other social contexts. He teaches general introductory courses in research methods and quantitative methods as well as advanced courses in multivariate analysis and seminars in social network analysis and causal inference. Dr. Frank's current projects include studies of how schools respond to increases in core curricular requirements, cognitive linkages among how aspects of knowledge, how adolescents respond to their social contexts in schools, the diffusion of knowledge about climate change, and how the decisions about natural resource use in small communities are embedded in social contexts.

Robert Franzese (Ph.D. Government 1996, A.M. Economics 1995, Harvard University) is Professor of Political Science at the University of Michigan and President of The Society for Political Methodology. Much of his recent research, collaborative with Jude Hays, focuses on spatial-econometric models of interdependence, especially on the specification, estimation, and interpretation of empirical models that respect the profound, and distinct, implications of spatially distributed exposure, of spatial contagion/spillovers, and of endogenous formation of the connections between spatial units by which their exposure may be correlated and/or their outcomes contagious. Their several articles and chapters on these topics appear in methodological and substantive journals and volumes in political science, statistics, and economics. Beyond spatial-econometric models of interdependence, on which the two are also currently completing a book, Franzese's research focuses on other areas of empirical methodology, most notably methods appropriate for complex context-conditionality and for time-series-cross-section data, and substantively on comparative & international political economy. Combined, these research agendas have yielded 3 books and 28 articles & chapters in journals/volumes across these three disciplines (and five languages: English, Japanese, Italian, German, & Chinese), winning five best-paper awards, two each for work in comparative politics/political-economy and political methodology and one in network methodology.

Mark M. Fredrickson is a PhD student in the Political Science department of the University of Illinois at Urbana-Champaign, where he also completed a Master's Degree in Statistics. His research interests focus on how democratic institutions influence behavior at the both the elite and mass levels. His dissertation explores citizen behavior and attitudes under institutions of leadership selection that involve elements of random chance. Other research interests include the biological underpinnings of politics, corruption and its effects, and experimental research design.

Jeff Gill is a professor of statistics in the Department of Political Science, the Division of Biostatistics, and Department of Surgery (Public Health Sciences) at Washington University. His research applies Bayesian modeling and data analysis (decision theory, testing, model selection, elicited priors) to questions in general social science quantitative methodology, political behavior and institutions, medical/health data analysis including dosage effects and psychiatric trauma, and epidemiological measurement/data issues, using computationally intensive tools (Monte Carlo methods, MCMC, stochastic optimization, non-parametrics).

Erin K. Hartman is a Ph.D candidate in the Department of Political Science at UC Berkeley. Her research focuses on political methodology, causal analysis, social networks, voting behavior, and American Politics.

