

ELIZABETH L. OGBURN  
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Baltimore, MD 21205

## EDUCATION AND TRAINING

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- 2011     **Harvard University**  
Ph.D. in Biostatistics  
Dissertation title: *Causal Models for Instrumental Variables and Misclassification*
- 2006     **Columbia University Mailman School of Public Health**  
M.S. in Statistical Genetics
- 2003     **Harvard University**  
A.B. with honors in Philosophy and Mathematics  
Honors thesis title: *Consequentialism and the Person as an End-in-Itself*

## PROFESSIONAL EXPERIENCE

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- 2013–present   Assistant Professor, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health
- 2017–present   Associate, Hopkins Population Center, Johns Hopkins University
- 2017–present   Member, Institute for Data-Intensive Engineering and Science, Johns Hopkins University
- 2011–2013     Research Fellow, Program on Causal Inference, Harvard School of Public Health  
Advisor: Tyler VanderWeele
- 2012–2013     Research Fellow, Center for Communicable Disease Dynamics, Harvard School of Public Health
- 2007–08       Data Analyst and Statistical Consultant, Harvard Law School  
Supervisor: Elizabeth Warren
- 2004–06       Assistant Research Scientist, New York State Psychiatric Institute and Columbia Presbyterian  
Medical Center  
Principal Investigator: Deborah Hasin
- 1998, 2003     Research Assistant, Broad Institute, MIT  
Principal Investigator: Joel Hirschhorn

## PROFESSIONAL ACTIVITIES

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- Grant Review Panel   National Science Foundation (2018)
- Committee Member   Institute of Mathematical Statistics, New Researchers Committee (2015–2018)
- Secretary/Treasurer   American Statistical Association, Biometrics Section (2019–2020)
- Publications Officer   American Statistical Association, Section on Statistics in Epidemiology (2014–2015)

Planning committee	World Congress of Probability and Statistics New Researchers Meeting (August, 2020; Seoul, South Korea) Junior Biostatisticians in Health Research Meeting (March 22-23, 2019; Philadelphia, PA) Networks and Causal Inference Symposium (June, 2018; Paris, France) IMS New Researchers Conference (July, 2017; Baltimore, MD) Atlantic Causal Conference (May, 2016; New York, NY) Atlantic Causal Conference (May 20-21, 2013; Cambridge, MA)
Session organizer	Eastern North American Regional Meeting of the International Biometric Society (March 16-19, 2014; Baltimore, MD) Atlantic Causal Conference (May 20-21, 2013; Cambridge, MA)
Session chair	Joint Statistical Meetings (August 8-13, 2015; Seattle, WA) Joint Statistical Meetings (July 28-August 2, 2012; San Diego, CA) Eastern North American Regional Meeting of the International Biometric Society (April 1-4, 2012; Washington, DC).

## EDITORIAL ACTIVITIES

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Associate Editor	<i>Journal of the Royal Statistical Society: Series B</i> (2018–present) <i>Journal of the American Statistical Association, Theory and Methods</i> (2014–present) <i>Biostatistics</i> (2016–present) <i>Epidemiologic Methods</i> (2016–present) <i>Journal of Causal Inference</i> (2016–present)
Reviewer	<i>American Journal of Epidemiology</i> , <i>American Journal of Managed Care</i> , <i>American Journal of Political Science</i> , <i>Annals of Applied Statistics</i> , <i>Annals of Epidemiology</i> , <i>Biometrics</i> , <i>Biometrika</i> , <i>BMC Medical Research Methodology</i> , <i>Epidemiology</i> , <i>Epidemiologic Methods</i> , <i>International Journal of Biostatistics</i> , <i>International Journal of Epidemiology</i> , <i>Journal of Clinical Epidemiology</i> , <i>Journal of Causal Inference</i> , <i>Journal of Machine Learning Research</i> , <i>Journal of the Royal Statistical Society: Series B</i> , <i>Journal of the Royal Society Interface</i> , <i>Journal of Statistical Research</i> , <i>Paediatric and Perinatal Epidemiology</i> , <i>PLOS ONE</i> , <i>Statistics in Medicine</i> , <i>Statistics and Probability Letters</i> .

## HONORS AND AWARDS

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2018	Society of Epidemiologic Research and American Journal of Epidemiology Article of the Year
2017	Teaching Excellence Recognition for the course <i>Statistical Theory I</i>
2016	National Academy of Sciences Kavli Fellow
2015	Teaching Excellence Recognition for the course <i>Statistical Theory I</i>
2014	Teaching Excellence Recognition for the course <i>Statistical Theory I</i>

- 2013 Rose Traveling Fellowship Program in Chronic Disease Epidemiology and Biostatistics.
- 2012 Thomas R. Ten Have Award, Atlantic Causal Inference Conference. (Awarded for exceptionally creative or skillful research on causal inference.)
- 2012 Research travel grant, National Science Foundation and Association for Women in Mathematics.
- 2012 Travel award, International Society of Environmental Epidemiology.
- 2011 Student Research Award, Graybill Conference on Nonparametric Statistics.
- 2011 Travel award, Society for Epidemiologic Research.
- 2008 Robert Balentine Reed Prize for Excellence in Biostatistical Science. Department of Biostatistics, Harvard University. (Awarded for the highest score on the doctoral qualifying exam.)
- 2005, 2006 Peter J. Sharp Scholarship, Columbia University. (Full-tuition, merit-based scholarship.)

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**PAPERS** (\* lead author was a student or my advisee at the time of writing)

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UNDER REVIEW / TECH REPORTS

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**Ogburn EL**, Sofrygin O, Diaz I, van der Laan MJ. Causal inference for social network data. (<https://arxiv.org/abs/1705.08527>)

**Ogburn EL**, Shpitser I, Lee Y. Collective behavior, causal inference, and chain graphs. (arxiv)

Lee Y, **Ogburn EL\***. Invalid Statistical Inference Due to Social Network Dependence. (<https://www.eogburn.com/selected-papers.html>)

Lee Y, **Ogburn EL\***. Testing for network and spatial autocorrelation. (<https://arxiv.org/abs/1710.03296>)

JOURNAL ARTICLES

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Wang B, **Ogburn EL\***, Rosenblum M (2019). Analysis of Covariance (ANCOVA) in Randomized Trials: More Precision and Valid Confidence Intervals, Without Model Assumptions. *Biometrics*.

Nguyen TQ, Dafoe A, **Ogburn EL\*** (2018). Collider bias in binary variable structures. *Epidemiologic Methods*.

Lucas G, Solomon SS, Solomon S, McFall AM, Srikrishnan AK, S Anand, V Verma, CK Vasudevan, P Balakrishnan, **EL Ogburn**, LH Moulton, MS Kumar, KS Sachdeva, O Laeyendecker, DD Celentano, SH Mehta (2019). Integrated HIV testing, prevention, and treatment intervention for key populations in India: results from a cluster randomized trial. *Lancet HIV*.

Casey JA, Gemmill A, Karasek D, **Ogburn EL**, Goin DE, Morello-Frosch R (2018). Increase in fertility following coal and oil power plant retirements in California. *Environmental Health*.

Casey JA, Karasek D, **Ogburn EL**, Goin DE, Dang K, Braveman PA, Morello-Frosch R (2018). Coal and oil power plant retirements in California associated with reduced preterm birth among populations nearby. *American Journal of Epidemiology*. (Paper selected as *AJE* article of the year.)

Chen O, Crainiceanu C, **Ogburn EL\***, Caffo B, Wager T, Lindquist MA (2017). High-dimensional multivariate mediation with application to neuroimaging data. *Biostatistics*.

**Ogburn EL**, VanderWeele TJ (2017). Vaccines, contagion, and social networks. *Annals of Applied Statistics*.

- Casey JA, Morello-Frosch R, Mennitt DJ, Frstrup K, **Ogburn EL**, James P (2017). Race/Ethnicity, Socioeconomic Status, Residential Segregation, and Spatial Variation in Noise Exposure in the Contiguous United States. *Environmental Health Perspectives*.
- Tsai AC, Kakuhikire B, Perkins JM, Vořechovská D, McDonough AQ, **Ogburn EL**, Downey JM, Bangsberg DR. Measuring Personal Beliefs and Perceived Norms about Intimate Partner Violence: Population-Based Survey Experiment in Rural Uganda (2017). *PLOS Medicine*.
- Gittelsohn J, Jock B, Redmond L, Fleischhacker S, Eckmann T, Bleich SN, Loh H, **Ogburn EL**, Gadhoke P, Swartz J, Pardilla M, Caballero B (2017). OPREVENT2: Design of a multi-institutional intervention for obesity control and prevention for American Indian adults. *BMC Public Health*.
- Rasmussen SG, **Ogburn EL**, McCormack M, Casey JA, Bandeen-Roche K, Mercer DG, Schwartz BS (2016). Asthma exacerbations and unconventional natural gas development in the Marcellus Shale. *JAMA Internal Medicine*.
- Casey JA, Savitz DA, Rasmussen SG, **Ogburn EL**, Pollak J, Mercer DG, Schwartz BS (2016). Unconventional natural gas development and birth outcomes in Pennsylvania, USA. *Epidemiology*.
- Staples PC, **Ogburn EL**, Onnela JP (2015). Incorporating contact network structure in cluster randomized trials. *Scientific Reports*.
- Casey JA, **Ogburn EL**, Rasmussen SG, Irving JK, Pollak J, Locke PA, Schwartz BS (2015). Predictors of Indoor Radon Concentrations in Pennsylvania, 1989–2013. *Environmental Health Perspectives*.
- Solomon SS, Mehta SH, Srikrishnan AK, Vasudevan CK, McFall AM, Balakrishnan P, Anand S, Nandagopal P, **Ogburn EL**, Laeyendecker O, Lucas GM, Solomon S, Celentano DD (2015). High HIV prevalence and incidence among men who have sex with men (MSM) across 12 cities in India. *AIDS*.
- Lucas GM, Solomon SS, Srikrishnan AK, Agrawal A, Iqbal S, Laeyendecker O, McFall AM, Kumar MS, **Ogburn EL**, Celentano DD, Solomon S, Mehta SH (2015). High HIV burden among people who inject drugs in 15 Indian cities. *AIDS*.
- Ogburn EL**, Rotnitzky A, Robins JM (2015). Doubly robust estimation of the local average treatment effect curve. *Journal of the Royal Statistical Society, Series B*. (Paper selected for presentation at the Royal Statistical Society Journal Club.)
- Ogburn EL**, VanderWeele TJ (2015). Causal diagrams for interference. *Statistical Science* 29: 559-578.
- Cacioppo JT, Cacioppo S, Gonzaga GC, **Ogburn EL**, VanderWeele TJ (2013). Marital satisfaction and breakups differ across online and offline meeting venues. *Proceedings of the National Academy of Sciences*.
- Ogburn EL**, VanderWeele TJ (2013). Bias Attenuation Results for Nondifferentially Mismeasured Ordinal and Coarsened Confounders. *Biometrika*.
- Ogburn EL**, VanderWeele TJ (2012). Analytic results on the nondifferential misclassification of a binary mediator. *American Journal of Epidemiology* 176: 555-561.
- Ogburn EL**, VanderWeele TJ (2012). On the nondifferential misclassification of a binary confounder. *Epidemiology* 23: 433-439.
- VanderWeele TJ, **Ogburn EL**, Tchetgen Tchetgen EJ (2012). Why and when “flawed” network analyses still yield valid tests of no contagion. *Statistics, Politics, and Policy* 3: 1-11.
- VanderWeele TJ, Valeri L, **Ogburn EL** (2012). The role of measurement error and misclassification in mediation analysis: mediation and measurement error. *Epidemiology* 23: 561-564.
- Heiman G, **Ogburn E**, Gorroochurn P, Keyes K, Hasin D (2008). Evidence for a two-stage model of dependence using the NESARC and its implications for genetic association studies. *Drug and Alcohol Dependence* 92: 258-266.
- Blanco C, **Ogburn E**, de los Cobos JP, et al. (2008). DSM-IV criteria-based clinical subtypes of cannabis use disorders: Results from the National Epidemiological Survey on Alcohol and Related Conditions (NESARC). *Drug and Alcohol Dependence* 96:136–144.

Blanco C, Olfson M, Goodwin RD, **Ogburn E**, et al. (2008). Generalizability of clinical trial results for major depression to community samples: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry* 69: 1276-80.

Blanco C, Alderson D, **Ogburn E**, et al. (2007). Changes in the prevalence of non-medical prescription drug use and drug use disorders in the United States: 1991–1992 and 2001–2002. *Drug and Alcohol Dependence* 90: 252-260.

Hasin DS, Stinson FS, **Ogburn E**, Grant BF (2007). Prevalence, correlates, disability and comorbidity of DSM-IV alcohol abuse and dependence in the United States. *Archives of General Psychiatry* 64: 830-842.

Hasin D, Hatzenbuehler ML, Keyes-Wild K, **Ogburn E** (2007). Vulnerability to alcohol and drug use disorders. In: Stone WS (Ed): *Recognition and prevention of major mental and substance use disorders*. American Psychiatric Publishing: 115-155.

Hasin D, Hatzenbuehler ML, Keyes-Wild K, **Ogburn E** (2007). Substance use disorders. In: Saunders JB, Schuckit MA, Sirovatka P (Eds): *Diagnostic issues in substance use disorders: refining the research agenda for DSM-V*. American Psychiatric Association: 93-129.

Hasin D, Hatzenbuehler M, **Ogburn E**, Keyes K (2006). Substance Use Disorders: Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and International Classification of Diseases (ICD-10). *Addiction* 101: 59-75.

Campbell CD, **Ogburn EL**, Lunetta KL, Lyon HN, Freedman ML, Groop LC, Altshuler D, Ardlie KG, Hirschhorn JN (2005). Demonstrating stratification in a European American population. *Nature Genetics* 37: 868-872.

#### COMMENTARIES

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**Ogburn EL** (2017). Comment on “Personalized Dose Finding Using Outcome Weighted Learning” by G Chen, D Zeng & MR Kosorok. *JASA, Theory and Methods*.

**Ogburn EL** (2012). Discussion of “Mediation analysis without sequential ignorability: Using baseline covariates interacted with random assignment as instrumental variables” by Dylan Small. *Journal of Statistical Research*.

VanderWeele TJ, **Ogburn EL** (2012). Theorems, proofs, examples and rules in the practice of epidemiology. *Epidemiology* 23: 443-445.

#### CHAPTERS

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**Ogburn EL** (2018). Challenges to estimating contagion effects from observational data. In *Complex Spreading Phenomena in Social Systems* (pp. 47-64). Springer, Cham.

**Ogburn EL**, Volfovsky A (2016). Networks. In *Big Data Handbook*. Buhlman P, Kane M, Drineas P, and van der Laan MJ, eds. Chapman and Hall. (Invited book chapter.)

#### PRACTICE ACTIVITIES

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Consulted for the Equal Employment Opportunity Commission, 2014 - 2015

#### TEACHING AND ADVISING

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ADVISING (\* expected graduation)

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- 2021\* Bonnie Smith, PhD candidate  
Department of Biostatistics, Johns Hopkins University
- 2019 Youjin Lee, PhD  
Department of Biostatistics, Johns Hopkins University  
Thesis: "Statistical Reasoning in Network Data"
- 2017 Kathryn Risher, Ph.D. candidate in Epidemiology and MHS candidate in Biostatistics (co-advisor)  
Department of Biostatistics, Johns Hopkins University
- 2015 Oliver Chen, ScM  
Department of Biostatistics, Johns Hopkins University
- 2014 Caroline Epstein, ScM  
Department of Biostatistics, Johns Hopkins University

PRELIMINARY ORAL EXAM COMMITTEE MEMBER (\* expected graduation)

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- 2020\* Lamar Alexander, Ph.D. candidate  
Department of Biostatistics, Johns Hopkins University
- 2020\* Zixuan Lin, Ph.D. candidate  
Department of Biomedical Engineering, Johns Hopkins University
- 2019\* Ben Ackerman, Ph.D. candidate  
Department of Biostatistics, Johns Hopkins University
- 2018 Claire Ruberman, Ph.D.  
Department of Biostatistics, Johns Hopkins University
- 2017 Yuting XU, Ph.D.  
Department of Biostatistics, Johns Hopkins University
- 2016 Sara Rasmussen, Ph.D.  
Department of Environmental Health, Johns Hopkins University

FINAL ORAL EXAM COMMITTEE MEMBER (\* expected graduation)

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- 2020\* Lamar Alexander, Ph.D.  
Department of Biostatistics, Johns Hopkins University
- 2019\* Ben Ackerman, Ph.D.  
Department of Biostatistics, Johns Hopkins University
- 2018 Claire Ruberman, Ph.D.  
Department of Biostatistics, Johns Hopkins University
- 2015 Smita Das, Ph.D.  
Department of Molecular Microbiology and Immunology, Johns Hopkins University

CLASSROOM INSTRUCTION

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- 2015-present Causal Inference II (co-taught with Constantine Frangakis)  
Department of Biostatistics, Johns Hopkins University  
Enrollment approximately 5 students
- 2014-present Statistical Theory I  
Department of Biostatistics, Johns Hopkins University  
Enrollment approximately 10 students

- 2014            Statistics and Networks (special topics course)  
 Department of Biostatistics, Johns Hopkins University  
 Enrollment approximately 5 students
- 2010–2011     Summer preparatory introduction to statistical theory for incoming Ph.D. students  
 Department of Biostatistics, Harvard School of Public Health
- 2003–04        9th, 10th, and 11th Grade Math Teacher, American School of Paris  
 Classes: Algebra 2, Geometry, Pre-Calculus

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 TEACHING ASSISTANT
 

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- 2009–2011     Department of Epidemiology, Harvard School of Public Health  
 Class: Advanced Epidemiologic Methods  
 Professors: Eric Tchetgen Tchetgen, James Robins, Miguel Hernan
- 2009–2011     Department of Biostatistics, Harvard School of Public Health  
 Class: Statistical Inference  
 Professors: Yi Li, Rebecca Betensky
- 2011            Departments of Biostatistics and Epidemiology, Harvard School of Public Health  
 Class: Methods for Mediation and Interaction  
 Professor: Tyler VanderWeele
- 2008            Department of Biostatistics, Kitasato University (Tokyo, Japan)  
 Class: Statistical Methods  
 Professor: Louise Ryan
- 2007–08        Harvard Law School  
 Class: Empirical Analysis of Law  
 Professor: Elizabeth Warren

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 RESEARCH SUPPORT
 

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- 2018–2022     A pragmatic trial to evaluate the intermediate-term effects of early, aggressive versus escalation therapy in people with multiple sclerosis. Ellen Mowry, PI. PCORI.  
 Co-investigator.
- 2018–2021     Uncertainty and Networks. Project grant, Office of Naval Research.  
**Primary Investigator** (with Ilya Shpitser). \$600,000 over the life of the grant.
- 2018–2021     Causal mediation methods for studying mechanisms in mental health. Elizabeth Stuart, PI. R01, NIMH.  
 Co-investigator.
- 2015–2018     Valid statistical inference for network dependent data. Project grant, Office of Naval Research.  
**Primary Investigator**. \$400,000 over the life of the grant.
- 2015–2020     OPREVENT2. Joel Gittelsohn, PI. R01, NIH/NHLBI.  
 Co-investigator, 12% effort.
- 2016–2020     Individual, Network and Environmental Drivers of HIV and HCV among drug users in India. Sunil Solomon, PI. R01, NIDA.  
 Co-investigator, 10% effort.
- 2015–2017     Patients' Views of Streamlined Ethical Oversight. Nancy Kass, PI. Project grant, PCORI.  
 Co-investigator, 5% effort.

2012–2015 Health outcomes, progressive entrepreneurship, and networks (HopeNet). Alexander Tsai and Bernard Kakuhikire, Pls. Project grant, Friends of a Healthy Uganda.  
Co-investigator, 10% effort.

## ACADEMIC SERVICE

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### DEPARTMENT OF BIOSTATISTICS

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Awards committee, 2018-present  
Hiring committee, 2014-2016  
Department retreat planning committee, 2018  
Organizer, Causal Inference Working Group, 2013-present  
PhD mentoring: Youjin Lee, Bonnie Smith  
MSc mentoring: Oliver Chen, Caroline Epstein, Kathryn Risher

## PRESENTATIONS (\* upcoming)

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### SCIENTIFIC MEETINGS

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2019\* ISI World Statistics Congress. August 18-23, Kuala Lumpur, Malaysia.  
2019\* Joint Statistical Meetings. July 27 - August 1, Denver, CO.  
2019\* Atlantic Causal Inference Conference. May 22-24, Montreal, Canada.  
2019\* Causal Inference and Data Science Conference, University of Minnesota. May 2-4, Minneapolis, MN.  
2018 CMStatistics. December 14-16. University of Pisa, Italy.  
2018 ISBA. June 24-29. Edinburgh, Scotland.  
2018 NetSci. June 11-15. Paris, France  
2018 Atlantic Causal Inference Conference, Carnegie Mellon University. May 21-23, Pittsburgh, PA.  
2017 Joint Statistical Meetings. July 31-August 3, Baltimore, MD.  
2017 European Meeting of Statistics. July 24-27, Helsinki, Finland.  
2017 NetSci. June 21-22, Indianapolis, IN.  
2017 Time and Causality in the Sciences. June 6-9, Stevens Institute of Technology, Hoboken, NJ. (Keynote)  
2017 Atlantic Causal Inference Conference. May 23-25, UNC, Chapel Hill, NC. (Discussant)  
2017 IMAG 10th Anniversary Meeting. March 22-24, NIH, Bethesda, MD.



- 2017 NetSciX. January 14-18, Tel Aviv, Israel.
- 2015 Imputing missing demographic information using aggregate data. Joint Statistical Meetings. August 8-13, Seattle, WA.
- 2015 Causal and statistical inference with social network data: Massive challenges and meager progress. Workshop on Advances in Causal Inference, Uncertainty and Artificial Intelligence Conference. July 16, Amsterdam, The Netherlands.
- 2015 Estimating mechanism-specific peer effects using social network data. Atlantic Causal Inference Conference. May 20-21, Philadelphia, PA.
- 2015 Causal and statistical inference with social network data: Massive challenges and meager progress. United Kingdom Causal Inference Meeting. April 15-17, Bristol, UK.
- 2014 Causal inference with social network data: Inflated effective sample sizes, deflated standard errors, and other perils. Joint Statistical Meetings. August 2-7, Boston, MA. (Topic Contributed)
- 2014 Causal Inference for Infectious Disease Transmission in Social Networks. International Biometric Conference. July 5-7, Florence, Italy. (Contributed)
- 2014 SAMSI Computational Methods for the Social Sciences Transition Workshop. May 5-7, Research Triangle Park, NC.
- 2014 Causal Inference with Social Network Data: Inflated Effective Sample Sizes, Deflated Standard Errors, and Other Perils. Eastern North American Regional meeting of the International Biometric Society. March 16-19, Baltimore, MD.
- 2013 SAMSI Computational Methods for the Social Sciences Opening Workshop. August 20-23, Research Triangle Park, NC.
- 2013 Joint Statistical Meetings, August 3-8, Montreal, Canada. (Topic Contributed)
- 2013 Society for Epidemiologic Research. June 18-21, Boston, MA.
- 2013 Atlantic Causal Inference Conference. May 20-21, Cambridge, MA.
- 2013 Causality in Networks Conference. May 9-10, Chicago, IL.
- 2012 Analytic Results on Bias Due to Nondifferential Misclassification of a Mediator. International Society of Environmental Epidemiology. August 26-30, Columbia, SC.
- 2012 Causal Inference with Longitudinal Data: Challenges and New Solutions. Joint Statistical Meetings. July 28-August 2, San Diego, CA. (Discussant)
- 2012 Causal Diagrams for Interference and Contagion. Joint Statistical Meetings, July 28-August 2, San Diego CA. (Topic Contributed)
- 2012 Causal Diagrams for Interference and Contagion. Atlantic Causal Inference Conference, May 24-25, Baltimore MD. (Poster)
- 2012 Analytic Results on the Bias due to Confounder Measurement Error. Eastern North American Regional meeting of the International Biometric Society. April 1-4, Washington, DC.
- 2012 Frontiers in the Analysis of Causal Mechanisms. March 2, Cambridge, MA. (Discussant)

- 2011 Doubly robust estimation of the local average treatment effect curve. Graybill Conference on Nonparametric Statistics, June 23-24, State College CO. (Poster)
- 2011 Results on causal effects under nondifferential misclassification of a confounder. Society for Epidemiologic Research, June 21-24, Montreal QC.
- 2011 Variation independent parameterization of the local average multiplicative treatment effect with binary outcome. Eastern North American Regional meeting of the International Biometric Society, March 20-23, Miami FL. (Poster)
- 2010 Doubly robust estimation of  $LATE(x)$ . Eastern North American Regional meeting of the International Biometric Society, March 21-24, New Orleans LA. (Contributed)

## INVITED SEMINARS

- 2019\* Econometrics and Statistics Colloquium, The University of Chicago Booth School of Business. June 6, Chicago, IL.
- 2019\* Department of Statistics, Carnegie Mellon University. April 29, Pittsburgh, PA.
- 2019\* Department of Statistics, University of Pennsylvania. March 20, Philadelphia, PA.
- 2018 Department of Statistics, Columbia University. November 28, New York, NY.
- 2018 Department of Biostatistics, University of Michigan. April 5, Ann Arbor, MI.
- 2017 Causal Inference Research Group, University of North Carolina. November 3, Chapel Hill, NC.
- 2017 Department of Biostatistics, University of North Carolina. November 2, Chapel Hill, NC.
- 2017 Center for Demography & Ecology and Center for Demography of Health & Aging, University of Wisconsin. October 24, Madison, WI.
- 2017 Office of Naval Research meeting on "Predictive and Causal Modeling - Bridging the Gap," MIT. September 21-22, Cambridge, MA.
- 2016 Kavli Frontiers of Science Symposium, National Academy of Sciences. November 4-6, Irvine, CA.
- 2016 Department of Statistics, Duke University. February 19, Durham, NC.
- 2016 Computational Social Science Institute, University of Massachusetts. February 12, Amherst MA.
- 2016 Institute for Statistical Mathematics. January 6, Tokyo, Japan.
- 2015 Department of Biostatistics and Epidemiology, University of Pennsylvania. December 1, Philadelphia, PA.
- 2015 Department of Biostatistics, Brown University. November 23, Providence, RI.
- 2015 Department of Statistics, Carnegie Mellon University. November 16, Pittsburgh, PA.
- 2015 Department of Biostatistics, University of Washington. May 7, Seattle, WA.
- 2015 Fred Hutchinson Cancer Research Center. May 6, Seattle, WA.

- 2015 Royal Statistical Society Journal Club. February 24, webinar.
- 2015 Department of Biostatistics, Rochester University. February 12, Rochester, NY.
- 2015 Causal Inference Seminar, McGill University. January 21, Montreal, Canada.
- 2014 Grand Rounds, Department of Biostatistics, Johns Hopkins University. September 8, Baltimore, MD.
- 2014 Department of Biostatistics, University of Pennsylvania. September 4, Philadelphia, PA.
- 2014 Institut National de la Santé et de la Recherche Médicale. June 19, Paris, France.
- 2014 Department of Politics, New York University. May 2, New York, NY.
- 2013 Department of Statistics and Biostatistics, Rutgers University. October 9, Piscataway, NJ.
- 2013 Department of Political Science, Yale University. September 19, New Haven, CT.
- 2013 Department of Statistics, Columbia University. February 4, New York, NY.
- 2013 Department of Statistics, The Wharton School, University of Pennsylvania. January 23, Philadelphia, PA.
- 2013 Department of Biostatistics, Yale University. January 15, New Haven, CT.
- 2012 Johns Hopkins Bloomberg School of Public Health. December 17, Baltimore, MD.
- 2012 EMPH Seminar, Columbia University Mailman School of Public Health. November 13, New York, NY.
- 2012 Causal inference group, Johns Hopkins Bloomberg School of Public Health. October 18, Baltimore, MD.
- 2011 Causal Inference Group, University of Pennsylvania. November 14, Philadelphia, PA.

**WORKSHOP AND MEETING PARTICIPATION** (\* upcoming)

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- 2015-16 Workshop on Collective Problem Solving hosted by the MacArthur Foundation's Research Network on Opening Governance.
- 2016 DARPA ISAT What If? Machine Learning for Causal Inference Workshop. MIT and Harvard University. February 11-12, Cambridge, MA.
- 2013-14 Workshop on Computational Methods in Social Science. SAMSI. Research Triangle Park, NC.