ELIZABETH L. OGBURN
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Baltimore, MD 21205

EDUCATION

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

2013–present Assistant Professor, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

2017–present Associate, Hopkins Population Center, 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

Associate Editor *Journal of the American Statistical Association, Theory and Methods* (2014–2018)

Biostatistics (2016–)

Epidemiologic Methods (2016–)

Journal of Causal Inference (2016–)

Committee Member Institute of Mathematical Statistics, New Researchers Committee (2015–2018)

Publications Officer American Statistical Association, Section on Statistics in Epidemiology (2014–2015)

Planning committee	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).
Reviewer	*American Journal of Epidemiology, American Journal of Managed Care, American Journal of Political Science, Annals of Applied Statistics, Annals of Epidemiology, Biometrics, Biometrika, BMC Medical Research Methodology, Epidemiology, Epidemiologic Methods, International Journal of Biostatistics, International Journal of Epidemiology, Journal of Clinical Epidemiology, Journal of Causal Inference, Journal of Machine Learning Research, Journal of the Royal Statistical Society: Series B, Journal of the Royal Society Interface, Journal of Statistical Research, Paediatric and Perinatal Epidemiology, PLOS ONE, Statistics in Medicine, Statistics and Probability Letters.*

HONORS AND AWARDS

ACADEMIC AND RESEARCH

2016	National Academy of Sciences Kavli Fellow
2012	Thomas R. Ten Have Award, Atlantic Causal Inference Conference. (Awarded for exceptionally creative or skillful research on causal inference.)
2011	Student Research Award, Graybill Conference on Nonparametric Statistics.
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.)

TRAVEL

2013	Rose Traveling Fellowship Program in Chronic Disease Epidemiology and Biostatistics. Funding to travel to Uganda for research with HopeNet (see Research Support).
2012	Research travel grant, National Science Foundation and Association for Women in Mathematics.
2012	Travel award, International Society of Environmental Epidemiology.
2012	Scholarship, Summer Institute in Statistics and Modeling in Infectious Diseases. University of Washington, Seattle.
2011	Travel award, Society for Epidemiologic Research.

PAPERS

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

Nguyen TQ, Dafoe A, **Ogburn EL**. Collider bias in binary variable structures. (http://arxiv.org/abs/1609.00606)

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

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

Casey JA, Morello-Frosch R, Mennitt DJ, Fristrup K, **Ogburn EL**, James P (in press). Inequity in noise pollution in the 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.*

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

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*.

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.)

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 (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*.

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

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.

TEACHING AND ADVISING

ADVISING (* expected graduation)

2019 *   Youjin Lee, PhD candidate
        Department of Biostatistics, Johns Hopkins University

2016 *   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

COMMITTEE MEMBER (* expected graduation)

2017 * David Lenis, Ph.D. candidate
        Department of Biostatistics, Johns Hopkins University (oral exam committee)

2017 * Yuting XU, Ph.D. candidate
        Department of Biostatistics, Johns Hopkins University (oral exam committee)

2016 * Sara Rasmussen, Ph.D. candidate
        Department of Environmental Health, Johns Hopkins University

2015   Smita Das, Ph.D. candidate
        Department of Molecular Microbiology and Immunology, Johns Hopkins University

INSTRUCTOR

2015-present   Causal Inference II (co-taught with Constantine Frangakis)
               Department of Biostatistics, Johns Hopkins University

2014-present   Statistical Theory I
               Department of Biostatistics, Johns Hopkins University

2014   Statistics and Networks (special topics course)
               Department of Biostatistics, Johns Hopkins University

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

TEACHING ASSISTANT

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

RESEARCH SUPPORT

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, PIs. Project grant, Friends of a Healthy Uganda.
             Co-investigator, 10% effort.

PRESENTATIONS (* upcoming)

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, Madison, WI.

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.

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   Inference in the presence of network dependence due to contagion. Institute for Statistical Mathematics. January 6, Tokyo, Japan.

2015   Causal and statistical inference with social network data: Massive challenges and meager progress. Department of Biostatistics and Epidemiology, University of Pennsylvania. December 1, Philadelphia, PA.

2015   Inference in the presence of network dependence due to contagion. Department of Biostatistics, Brown University. November 23, Providence, RI.

2015   Inference in the presence of network dependence due to contagion . Department of Statistics, Carnegie Mellon University. November 16, Pittsburgh, PA.

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   Network dependence: from Euclidean planes to complex graphs. Department of Biostatistics, University of Washington. May 7, Seattle, WA.

2015   Inference in the presence of network dependence and contagion. Fred Hutchinson Cancer Research Center. May 6, Seattle, WA.

2015   Causal and statistical inference with social network data: Massive challenges and meager progress. United Kingdom Causal Inference Meeting. April 15-17, Bristol, UK.

2015   Doubly robust estimation of the local average treatment effect curve. Royal Statistical Society Journal Club. February 24, webinar.

2015   Causal and statistical inference with social network data: Massive challenges and meager progress. Department of Biostatistics, Rochester University. February 12, Rochester, NY.

2015   Interference and inference. Causal Inference Seminar, McGill University. January 21, Montreal, Canada.

2014   Inference with social network data: Inflated effective sample sizes, deflated standard errors, and other perils. Grand Rounds, Department of Biostatistics, Johns Hopkins University. September 8, Baltimore, MD.

2014   Causal inference with social network data: Inflated effective sample sizes, deflated standard errors, and other perils. Department of Biostatistics, University of Pennsylvania. September 4, Philadelphia, PA.

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   Institut National de la Santé et de la Recherche Médicale. June 19, Paris, France.

2014   SAMSI Computational Methods for the Social Sciences Transition Workshop. May 5-7, Research Triangle Park, NC.

2014   Causal and Statistical Inference with Social Network Data. Department of Politics, New York University. May 2, New York, NY.

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   Some Challenges and Results for Causal and Statistical Inference with Social Network Data. Department of Statistics and Biostatistics, Rutgers University. October 9, Piscataway, NJ.

2013   Some Challenges and Results for Causal and Statistical Inference with Social Network Data. Department of Political Science, Yale University. September 19, New Haven, CT.

2013   Causal Inference for Interference and Social Networks: Challenges and Tools. SAMSI Computational Methods for the Social Sciences Opening Workshop. August 20-23, Research Triangle Park, NC.

2013   Uses and Limitations of GLMs and GEEs for Social Network Data. Joint Statistical Meetings, August 3-8, Montreal, Canada. (Topic Contributed)

2013   Analytic Results on Bias Due to Nondifferential Misclassification. Society for Epidemiologic Research. June 18-21, Boston, MA.

2013   Causal Inference for Infectious Disease Transmission in Social Networks. Atlantic Causal Inference Conference. May 20-21, Cambridge, MA.

2013   Causal and Statistical Inference with Social Network Data. Causality in Networks Conference. May 9-10, Chicago, IL.

2013   Some Challenges and Results for Causal and Statistical Inference with Social Network Data. Department of Statistics, Columbia University. February 4, New York, NY.

2013   Some Challenges and Results for Causal and Statistical Inference with Social Network Data. Department of Statistics, The Wharton School, University of Pennsylvania. January 23, Philadelphia, PA.

2013   Some Challenges and Results for Causal and Statistical Inference with Social Network Data. Department of Biostatistics, Yale University. January 15, New Haven, CT.

2012   Some Challenges and Results for Causal and Statistical Inference with Social Network Data. Johns Hopkins Bloomberg School of Public Health. December 17, Baltimore, MD.

2012   Several Analytic Results on Bias Due to Nondifferential Misclassification. EMPH Seminar, Columbia University Mailman School of Public Health. November 13, New York, NY.

2012   Doubly Robust Estimation and Variation Independent Models for the Local Average Treatment Effect Curve. Johns Hopkins Bloomberg School of Public Health. October 18, Baltimore, MD.

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 and Novel Parameterization of the Local Average Treatment Effect Curve. Causal Inference Group, University of Pennsylvania. November 14, Philadelphia, PA.

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)

WORKSHOP AND MEETING PARTICIPATION (* upcoming)

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.