Isabel Rose Fulcher

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Education

Harvard University — **Cambridge, MA**
Doctor of Philosophy, Biostatistics — Expected: March 2019

Harvard University — **Cambridge, MA**
Masters of Arts, Biostatistics — May 2016

McGill University — **Montreal, QC**
Bachelor of Arts and Science, Mathematics and Anthropology — May 2012

Research Experience

Department of Biostatistics, Harvard T.H. Chan School of Public Health — **Boston, MA**
Doctoral Candidate — January 2016 – Present
Dissertation Advisor: Eric Tchetgen Tchetgen, PhD

Developing robust statistical methods to enable scientists to infer causation about an intervention of interest in the presence of (1) unmeasured confounding and (2) spillover effects on a network of individuals

Graduate Researcher — June 2016 – March 2017
Supervised by: Paige Williams, PhD

Estimated the direct and indirect effects of HIV infection on timing of sexual maturity mediated by height in the Pediatric HIV/AIDS Cohort Study

Department of Global Health and Social Medicine, Harvard Medical School — **Boston, MA**
Graduate Researcher — June 2016 – March 2017
Supervised by: Bethany Hedt-Gauthier, PhD

Assessed the impact of planning for delivery on health facility delivery rates among women enrolled in the Mobilizing Maternal Health program in rural Tanzania

Consulting & Industry Experience

Research Center, Planned Parenthood League of Massachusetts — **Boston, MA**
Statistician — August 2017 – Present

Leading statistical analyses on two major studies that aim to evaluate: (1) the impact of the Massachusetts's parental consent law on contraceptive choice among minors; (2) quality of care received by opioid users; (3) inequities in contraceptive autonomy by ability status, gender identity, race, and educational level

Department of OB/GYN/RS, University of Pittsburgh School of Medicine — **Pittsburgh, PA**
Statistical Consultant — April 2018

Assessed long-term impact of laparoscopic excision of endometriosis on pain reduction and quality of life improvement

Safer Deliveries Program, D-tree International **Zanzibar, Tanzania**
Visiting researcher May 2017 – August 2017
Conducted research and evaluation question development, analysis planning, and application of statistical methods to assess the program's effectiveness at reducing high rates of maternal and neonatal mortality in Zanzibar

ZS Associates **Evanston, IL**
Business Associate September 2012 – July 2014
Engaged with global pharmaceutical and biotech companies on a variety of market research projects for drugs and their indications. Created and fielded surveys, conducted in-person interviews, and led statistical analyses.

TEACHING EXPERIENCE

Harvard T.H. Chan School of Public Health **Boston, MA**
Instructor, Biostatistics Preparatory Course: Methods and Computing in R Summer 2018
Instructor, Stata Orientation for Incoming Graduate Students Summer 2016, 2017, 2018
Graduate Student Mentor, Pipelines into Biostatistics Summer Program Summer 2018
Teaching Fellow, Global Initiative for Neuropsychiatric Genetics Education in Research Spring 2018
Head Teaching Assistant, ID 201: Core Principles of Biostatistics and Epidemiology Fall 2015, 2016, 2017
Teaching Assistant, HPM 543: Quantitative Methods in Program Evaluation Spring 2017
Teaching Assistant, BIO 507: Methods for Monitoring and Evaluation Spring 2016

University of Global Health Equity **Kigali, Rwanda**
Teaching Assistant, Program Monitoring, Evaluation, and Research Methods Spring 2017, 2018

D-tree International **Zanzibar, Tanzania**
Instructor, Data Analysis and Stata Software Training Course Summer 2017

McGill University **Montreal, QC**
Teaching Assistant, MATH 323: Probability Fall 2010, 2011
Teaching Assistant, MATH 324: Statistics Spring 2012

HONORS & AWARDS

National Science Foundation Travel Award (1 of 5 best posters at Atlantic Causal Inference Conference) 2018
Barry R. and Irene Tilenius Bloom Fellowship (full funding for the 2017-2018 academic year) 2018
Harvard University Distinction in Teaching (outstanding teaching assistant award for the 2016-2017 academic year) 2017
Rose Traveling Fellowship (funding for international research) 2017
Maternal Health Task Force Travel Award (funding for international maternal health research) 2017
Statistics in Epidemiology Young Investigator Award (1 of 3 best papers in Epidemiology) 2017
McGill University Dean's Honour List (awarded to top 10% of graduating class; highest graduating honor) 2012
McGill University Golden Key Society (awarded to top 15% of class) 2010, 2011, 2012

SELECTED INVOLVEMENT

Harvard T.H. Chan School of Public Health Student Tutor 2017, 2018
Department of Biostatistics Chair of the Student Committee 2017, 2018
Department of Biostatistics HIV Working Group Coordinator 2016, 2017
Boston Cares X-Cel Adult Education Math HiSeT Tutor 2014, 2015, 2016

PUBLICATIONS

Fulcher, I. R., Tchetgen Tchetgen E. J., & Williams, P. L. (2017). Mediation analysis for censored survival data under an accelerated failure time model. Epidemiology, 28(5), 660-666.

Evans, K., **Fulcher, I. R.**, & Tchetgen Tchetgen, E. J. (2017). A coherent likelihood parametrization for doubly robust estimation of a causal effect with missing confounders. Biometrika (*In revision*).

Tchetgen Tchetgen, E. J., **Fulcher, I. R.**, and Shpitser, I. (2018). Auto-g-computation of causal effects on a network. Journal of American Statistical Association (*In revision*). arXiv preprint arXiv:1709.01577.

Fulcher, I. R., Shpitser, I., & Tchetgen Tchetgen, E. J. (2018). Robust inference on indirect causal effects. Journal of the Royal Statistical Society Series B (*In revision*). arXiv preprint arXiv:1711.03611.

Fulcher, I. R., Shi, X., & Tchetgen Tchetgen, E. J. (2018). Estimation of natural indirect effects robust to unmeasured confounding and mediator measurement error. Epidemiology (*In revision*). arXiv preprint arXiv:1808.03692.

PRESENTATIONS

Fulcher, I. R., Tchetgen Tchetgen, E., and Shpitser, I. Nonparametric identification and robust estimation of indirect causal effects in the presence of exposure-outcome confounding. Atlantic Causal Inference Conference, Pittsburgh, PA (2018).

Fulcher, I. R., Tchetgen Tchetgen, E., and Shpitser, I. The Generalized Front-Door Formula for Estimation of Indirect Causal Effects of a Confounded Treatment. ENAR Spring Meeting, Atlanta, GA (2018).

Fulcher, I. R., Data for decision-making in digital health programs: how analysis of routine data from the Safer Deliveries program in Zanzibar improved program implementation and mothers' outcomes. Global Digital Health Forum, Washington, DC (2017).

Fulcher, I. R., Tchetgen Tchetgen, E., and Williams, P.L. Mediation Analysis for Censored Survival Data under an Accelerated Failure Time Model. Joint Statistical Meetings, Baltimore, MD (2017).

Fulcher, I. R., Tchetgen Tchetgen, E., and Shpitser, I. The Generalized Front-door Formula for Identification of Partial Causal Effects. ENAR Spring Meeting, Washington, DC (2017).

Fulcher, I. R., Tchetgen Tchetgen, E., and Williams, P.L. Mediation Analysis for Censored Survival Data under an Accelerated Failure Time Model. ENAR Spring Meeting, Austin, TX (2016).

SOFTWARE

frontdoorpiie (R package) Estimation and inference for the Population Intervention Indirect Effect

autognet (R package) Auto-g-computation for estimation of network causal effects