Isabel Fulcher

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Education

Harvard University — **Cambridge, MA**
Doctor of Philosophy, Biostatistics — Expected: May 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**
Graduate Researcher — January 2016 – Present
Dissertation Advisor: Eric Tchetgen Tchetgen, PhD

My dissertation research aims to develop statistical methods to enable scientists to infer causation about an intervention of interest in the presence of (1) unmeasured confounding of the relationship of interest and (2) spillover effects of the intervention given to one person on another person's outcomes.

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

Estimated the direct and indirect effects of perinatal 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 effectiveness of D-tree International's Mobilizing Maternal Health program in rural Tanzania.

Consulting Experience

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

Leading statistical analyses to assess long-term impact of laparoscopic excision of endometriosis on pain reduction and quality of life improvement.

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

Leading statistical analyses to evaluate the impact of the Massachusetts parental consent law on contraceptive choice among minors.

Safer Deliveries Program, D-tree International — **Zanzibar, Tanzania**
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.

INDUSTRY EXPERIENCE

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 online surveys and in-person interviews. Led statistical analysis, project planning, and deliverable creation.

TEACHING EXPERIENCE

Harvard T.H. Chan School of Public Health **Boston, MA**
Head Teaching Assistant, ID 201: Core Principles of Biostatistics and Epidemiology Fall 2016, 2017
Session Instructor, Stata Orientation for Incoming Graduate Students Summer 2016, 2017
Teaching Assistant, HPM 543: Quantitative Methods in Program Evaluation Spring 2017
Teaching Assistant, BIO 507: Methods for Monitoring and Evaluation Spring 2016
Teaching Assistant, ID 201: Core Principles of Biostatistics and Epidemiology Fall 2015

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

D-tree International **Zanzibar, Tanzania**
Course Organizer and Lead 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

Barry R. and Irene Tilenius Bloom Fellowship (1 of 1 student to receive financial support for the academic year) 2018
Global Initiative for Neuropsychiatric Genetics Education in Research Teaching Fellow 2018
Harvard University Distinction in Teaching (outstanding teaching assistant during 2016-2017 school year) 2017
Harvard T.H. Chan School of Public Health Rose Traveling Fellowship 2017
Maternal Health Task Force at the Women and Health Initiative Travel Award 2017
Statistics in Epidemiology Young Investigator Award (1 of 4 graduate students to win best paper in Epidemiology) 2017
McGill University Dean's Honour List (awarded to top 10% of graduating class) 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
Appalachia Service Project, Adult Group Leader 2012, 2013

PUBLICATIONS

Fulcher, Isabel R., Hedt, K., Marealle, S., Abdalla O., Tibaijuka, J., Hoffman, R., Layer, E., and Hedt-Gauthier, B. (2018). Errors in estimated gestational ages reduce the likelihood of health facility deliveries: results from an observational cohort study in Zanzibar. BMC Pregnancy and Childbirth (Under review).

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

Tchetgen Tchetgen, Eric J., **Fulcher, I.**, and Shpitser, I. (2017). Auto-G-Computation of Causal Effects on a Network. Journal of the American Statistical Association (Under review). arXiv:1709.01577.

Fulcher, Isabel 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.

PRESENTATIONS

Fulcher, Isabel 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, Isabel 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, Isabel 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, Isabel 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, Isabel 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, Isabel 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 & RESOURCES

frontdoorpiie R package for estimation and inference of the Population Intervention Indirect Effect