

# ISABEL ROSE FULCHER

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## EDUCATION

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### Harvard University

Doctor of Philosophy, Biostatistics

Dissertation Advisor: Eric Tchetgen Tchetgen

Dissertation Title: "Statistical Inference for Causal Mechanisms: Mediation and Interference"

Cambridge, MA

March 2019

### Harvard University

Masters of Arts, Biostatistics

Cambridge, MA

May 2016

### McGill University

Bachelor of Arts and Science, Mathematics and Anthropology

Montreal, QC

May 2012

## ACADEMIC APPOINTMENTS

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### Harvard Data Science Initiative

*Postdoctoral Fellow*

Cambridge, MA

September 2019 – Current

### Department of Global Health and Social Medicine, Harvard Medical School

*Postdoctoral Fellow*

Boston, MA

January 2019 – Current

## PUBLICATIONS

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## REFEREED JOURNAL ARTICLES

1. **Fulcher, I. R.**, Boley, E.J., Gopaluni, A., Varney, P., Barnhart, D., Kulikowski, N., Mugunga, J.C., Murray, M., Law, M.R., & Hedt-Gauthier, B. (2021). COVID-19 syndromic surveillance using monthly aggregate health information system data: methods with application in Liberia. *In Press* at International Journal of Epidemiology.
2. **Fulcher, I. R.**, Shpister, I., Didelez, V., Zhou, K., & Scharfstein, D. (2021). Discussion on "Causal mediation of semicompeting risks" by Yen-Tsung Huang. *In Press* at Biometrics.
3. Janiak, E., Braaten, K. P., Cottrill, A. A., **Fulcher, I. R.**, Goldberg, A. B., & Agénor, M. (2021). Gender diversity among aspiration-abortion patients. *Contraception*, S0010-7824.
4. **Fulcher, I. R.**, Nelson, A., Tibaijuka, J., Seif, S., Lilienfeld, S., Abdalla O., Beckmann, N., Layer, E., Hedt-Gauthier, B., & Hoffman, R. (2020). Improving health facility delivery rates in Zanzibar, Tanzania through a large-scale digital community health volunteer program: A process evaluation. *Health Policy & Planning*.
5. Tchetgen Tchetgen, E. J., **Fulcher, I. R.**, & Shpitser, I. (2020). Auto-g-computation of causal effects on a network. *Journal of the American Statistical Association*, pp.1-12.
6. **Fulcher, I. R.\***, Neill, S.\*, Bhardwa, S., Goldberg, A.B., Janiak, E. (2020). State and federal abortion restrictions increase risk of COVID-19 exposure by mandating unnecessary clinic visits. *Contraception*.

7. Cottrill, A.A., **Fulcher, I.R.**, Goldberg, A.B., Sabino, J., Fortin, J., & Janiak, E. (2020) Time trends in Massachusetts adolescents' post-abortion contraceptive uptake. *Journal of Adolescent Health*.
8. Rindos, N.B., **Fulcher, I. R.**, & Donellan, N.M. (2020). Pain and quality of life following laparoscopic excision of endometriosis. *The Journal of Minimally Invasive Gynecology*.
9. **Fulcher, I. R.**, Shpitser, I., & Tchetgen Tchetgen, E. J. (2020). Robust inference on population indirect causal effects: the generalized front-door criterion. *Journal of the Royal Statistical Society Series B*.
10. **Fulcher, I. R.**, Hedt, K., Marealle, S., Abdalla O., Tibaijuka, J., Hoffman, R., Layer, E., Mitchell, M., & Hedt-Gauthier, B. (2020). Errors in estimated gestational ages reduce the likelihood of health facility deliveries: results from an observational cohort study in Zanzibar. *BMC Health Services Research*, 20(1).
11. Janiak, E., **Fulcher, I. R.**, ..., & Goldberg, A. (2019). Impact of Massachusetts' parental involvement law on procedural timing among adolescents seeking abortion. *Obstetrics & Gynecology*, 133(5): 978-986.
12. **Fulcher, I. R.**, Shi, X., & Tchetgen Tchetgen, E. J. (2019). Estimation of natural indirect effects robust to unmeasured confounding and mediator measurement error. *Epidemiology*, 30(6), 825-834.
13. **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.

## MANUSCRIPTS IN SUBMISSION

1. **Fulcher, I. R.**, Clisbee, M., Lambert, W., Leandre, F., & Hedt-Gauthier, B. (2020). Adapting Lot Quality Assurance Sampling to accommodate imperfect tests: application to COVID-19 serosurveillance in Haiti.
2. **Fulcher, I. R.**, Lareau, C., Shpitser, I., & Tchetgen Tchetgen, E. J. (2020). Bayesian auto-g-computation of network causal effects. *Journal of the American Statistical Association*.

## WEB-BASED PUBLICATIONS

1. **Fulcher, I. R.**, Janiak, E. (2021). Safe care at home: The untapped potential of telemedicine abortion during the COVID-19 pandemic and beyond. *Harvard Health Policy Review*.
2. **Fulcher, I. R.** (2020). Errors in estimated delivery dates: explanation, impact, and a path forward. *D-tree International Jamii ni Afya Blog*.

## HONORS & AWARDS

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University of Florida Statistics Workshop Travel Award	2019
National Science Foundation Travel Award for Atlantic Causal Inference Conference	2018
Barry R. and Irene Tilenius Bloom Fellowship	2018
Harvard University Distinction in Teaching	2017
Harvard T.H. Chan School of Public Health Rose Traveling Fellowship	2017
Maternal Health Task Force Travel Award	2017
Statistics in Epidemiology Young Investigator Award	2017
McGill University Dean's Honour List	2012
Golden Key International Honour Society	2010, 2011, 2012

## **INVITED TALKS**

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“Using routine health systems data for data-driven COVID-19 response.” Elsevier Seminar Series (November 2020).

“Improving the delivery of healthcare to pregnant women in sub-Saharan Africa with statistics and data science.” Mathematics Colloquium, Gettysburg College, Gettysburg, PA (October 2020).

“Using routine health systems data for data-driven COVID-19 response.” Department of Global Health and Social Medicine, Harvard Medical School (September 2020).

“Supporting data-driven COVID-19 responses in low and middle income countries.” Coronavirus Visualization Team (August 2020).

“Auto-g-computation of network causal effects: incarceration and infection in a high risk network.” Statistics Seminar, University of Rhode Island, Kingston, RI (March 2020).

“Auto-g-computation of network causal effects: incarceration and infection in a high risk network.” Statistics Seminar, University of Massachusetts Amherst, Amherst, MA (December 2019).

“Improving the delivery of healthcare to pregnant women in sub-Saharan Africa with statistics and data science.” Mathematics and Statistics Colloquium, Colby College, Waterville, ME (December 2019).

## **CONFERENCE PARTICIPATION**

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### **INVITED PAPERS**

“Identification and estimation of indirect effects robust to unmeasured confounding” Society for Epidemiological Research, Boston, MA (December 2020).

“Estimation of natural indirect effects robust to unmeasured confounding and mediator measurement error.” Joint Statistical Meetings, Online (August 2020).

“Bayesian auto-g-computation of network causal effects: incarceration and infection in a high risk network.” ENAR, Online (March 2020).

“Bayesian auto-g-computation of network causal effects: incarceration and infection in a high risk network.” Joint Statistical Meetings, Denver, CO (July 2019).

“Bayesian auto-g-computation of network causal effects: incarceration and infection in a high risk network.” New England Statistical Society, Hartford, CT (May 2019).

### **CONTRIBUTED PAPERS**

“The generalized front-door formula for estimation of indirect causal effects of a confounded treatment.” ENAR Spring Meeting, Atlanta, GA (2018).

“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).

“Mediation analysis for censored survival data under an accelerated failure time model.” Joint Statistical Meetings, Baltimore, MD (2017).

“The generalized front-door formula for identification of partial causal effects.” ENAR Spring Meeting, Washington, DC (2017).

“Mediation analysis for censored survival data under an accelerated failure time model.” ENAR Spring Meeting, Austin, TX (2016).

## POSTERS

“Bayesian auto-g-computation of network causal effects: incarceration and infection in a high risk network.” 21st Meeting of New Researchers in Statistics and Probability. Fort Collins, CO (2019).

“Estimation of natural indirect effects robust to unmeasured confounding and mediator measurement error.” University of Florida Winter Workshop, Gainesville, FL (2019).

“Nonparametric identification and robust estimation of indirect causal effects in the presence of exposure-outcome confounding.” Atlantic Causal Inference Conference, Pittsburgh, PA (2018).

“Auto-g-computation of causal effects on a sexual and injection-drug use network.” Harvard Data Science Conference, Cambridge, MA (2018).

“Working towards safer deliveries in Zanzibar, Tanzania.” Future Health Campaign Celebration, Harvard T.H. Chan School of Public Health, Boston, MA (2018).

“Nonparametric identification and robust estimation of indirect causal effects in the presence of exposure-outcome confounding.” Atlantic Causal Inference Conference, Pittsburgh, PA (2018).

## TEACHING EXPERIENCE

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<b>Harvard Medical School</b>	<b>Boston, MA</b>
<i>Instructor</i> , COVID-19 Surveillance Training Course	March 2021

<b>Global Initiative for Neuropsychiatric Genetics Education in Research</b>	<b>Addis Ababa, Ethiopia</b>
<i>Teaching Fellow</i> , Interactive Biostatistics Workshop	November 2019

<b>Harvard T.H. Chan School of Public Health</b>	<b>Boston, MA</b>
<i>Instructor</i> , Biostatistics Preparatory Course: Methods and Computing in R	Summer 2018
<i>Instructor</i> , Stata Orientation for Incoming Graduate Students	Summer 2016, 2017, 2018
<i>Head Teaching Assistant</i> , Core Principles of Biostatistics and Epidemiology	Fall 2016, 2017
<i>Teaching Assistant</i> , Core Principles of Biostatistics and Epidemiology	Fall 2015
<i>Teaching Assistant</i> , Quantitative Methods in Program Evaluation	Spring 2017

*Teaching Assistant, 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, Probability* Fall 2010, 2011  
*Teaching Assistant, Statistics* Spring 2012

## PROFESSIONAL SERVICE

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### PEER REVIEW

**Pre-Publication Support Service (PREPSS) Peer Reviewer** November 2020 - Present

#### Ad-Hoc Peer Reviewer

*Biometrics, Epidemiology, Journal of American Statistical Association, Journal of Causal Inference, Statistical Methods in Medical Research, Statistics in Medicine, Annals of Global Health, BMJ Open, BMC Pregnancy and Childbirth*

### UNIVERSITY ACTIVITY

*Coordinator, DGHE/DGHSM Joint Working Group, Harvard Medical School* 2021  
*Mentor, Pipelines into Biostatistics Summer Program, Harvard T.H. Chan School of Public Health* 2018  
*Student Committee Chair, Department of Biostatistics, Harvard T.H. Chan School of Public Health* 2018  
*Organizer, HIV Working Group, Department of Biostatistics, Harvard T.H. Chan School of Public Health* 2017