Louisa H. Smith Curriculum Vitae

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Department of Health Sciences

Bouvé College of Health Sciences, Northeastern University 360 Huntington Avenue

2011

Boston, MA 02115

ACADEMIC POSITIONS

Bouvé College of Health Sciences, Northeastern University, Boston, MA

Department of Health Sciences

Assistant Professor August 2022 – present

Roux Institute of Northeastern University, Portland, ME

Observational Health Data Sciences and Informatics Center

Affiliate Faculty

Postdoctoral Fellow

August 2022 – present
October 2021 – August 2022

MaineHealth Institute for Research, Portland, ME

Center for Interdisciplinary & Population Health Research

Visiting Scientist January 2023 – present

École Polytechnique Fédérale de Lausanne, Switzerland

Department of Mathematics, Biostatistics Group

Visiting Scholar, hosted by Mats Stensrud

August – September 2021

EDUCATION

Harvard T.H. Chan School of Public Health, Boston, MA

PhD, Population Health Sciences 2021
MS, Biostatistics 2021

University of California, Berkeley, Berkeley, CA

MS, Epidemiology 2016

Brown University, Providence, RI

BA, Comparative Literature and Community Health

PUBLICATIONS

- [1] Stensrud MJ, **Smith L.** Identification of vaccine effects when exposure status is unknown. *Epidemiology*. 2023; 34(2):216–224. doi:10.1097/ede.0000000000001573.
- [2] Moura LMVR, Donahue MA, Yan Z, **Smith LH**, Hsu J, Newhouse JP, Schwamm LH, Haneuse S, Hernandez-Diaz S, Blacker D. Comparative effectiveness and safety of seizure prophylaxis among adults after acute ischemic stroke. *Stroke*. 2023; 54(2):527–536. doi:10.1161/strokeaha.122.039946.
- [3] Moura LMVR, Yan Z, Donahue MA, **Smith LH**, Schwamm LH, Hsu J, Newhouse JP, Haneuse S, Blacker D, Hernandez-Diaz S. No short-term mortality from benzodiazepine use post-acute ischemic stroke after accounting for bias. *Journal of Clinical Epidemiology.* 2023; 154:136–145. doi:10.1016/j.jclinepi.2022.12.013.
- [4] Smith LH, García-Albéniz X, Chan JM, Zhao S, Cowan JE, Broering JM, Cooperberg MR, Carroll PR, Hernán MA. Emulation of a target trial with sustained treatment strategies: An application to prostate cancer using both inverse probability weighting and the g-formula. *European Journal of Epidemiology*. 2022; 37(12):1205–1213. doi:10.1007/s10654-022-00929-7.

[5] **Smith LH,** Dollinger CY, VanderWeele TJ, Wyszynski DF, Hernández-Díaz S. Timing and severity of COVID-19 during pregnancy and risk of preterm birth in the International Registry of Coronavirus Exposure in Pregnancy. *BMC Pregnancy and Childbirth.* 2022; 22(1):775. doi:10.1186/s12884-022-05101-3.

- [6] Hernández-Díaz S, Smith LH, Wyszynski DF, Rasmussen SA. First trimester COVID-19 and the risk of major congenital malformations—International Registry of Coronavirus Exposure in Pregnancy. Birth Defects Research. 2022; 114(5):906–914. doi:10.1002/bdr2.2070.
- [7] Ramjee D, **Smith LH**, Doanvo A, Charpignon M-L, McNulty-Nebel A, Lett E, Desai AN, Majumder MS. Evaluating criminal justice reform during COVID-19: The need for a novel sentiment analysis package. *PLOS Digital Health*. 2022; 1(7):e0000063. doi:10.1371/journal.pdig.0000063. *Co-first author*.
- [8] Westhoff WJ, **Smith LH**, Wyszynski DF, Hernandez-Diaz S. COVID-19 pharmacotherapy utilization patterns during pregnancy: International Registry of Coronavirus Exposure in Pregnancy (IRCEP). *Pharmacoepidemiology and Drug Safety*. 2022; 31(7):804–809. doi:10.1002/pds.5440.
- [9] Modest AM, **Smith LH**, Toth TL, Collier AY, Hacker MR. Multifoetal gestations mediate the effect of in vitro fertilisation (IVF) on ischaemic placental disease in autologous oocyte IVF more than donor oocyte IVF. *Paediatric and Perinatal Epidemiology*. 2022; 36(2):181–189. doi:10.1111/ppe.12857.
- [10] Cohen AK, Ryan S, Smith LH, Ream RK, Glymour MM, Lopez A, Yen IH. Educational attainment past the traditional age of completion for two cohorts of US adults: Inequalities by gender and race/ethnicity. *Race and Social Problems*. 2022; 14(3):208–222. doi:10.1007/s12552-021-09352-1.
- [11] Hernández-Díaz S, **Smith LH**, Dollinger C, Schisterman EF, Bellocco R, Wyszynski DF. International Registry of Coronavirus in Pregnancy (IRCEP): Cohort description and methodological considerations. *American Journal of Epidemiology*. 2022; 191(6):967–979. doi:10.1093/aje/kwac046.
- [12] Mathur MB, **Smith LH**, Yoshida K, Ding P, VanderWeele TJ. E-values for effect heterogeneity and approximations for causal interaction. *International Journal of Epidemiology*. 2022; 51(4):1268–1275. doi:10.1093/ije/dyac073.
- [13] Petito LC, **Smith LH.** Important questions deserve rigorous analysis: A cautionary note about selection bias. *Journal of the American Heart Association*. 2021; 11(6):e023234. doi:10.1161/jaha.121.023234.
- [14] **Smith LH,** Schwartz GL. Mediating to opportunity: The challenges of translating mediation estimands into policy recommendations. *Epidemiology*. 2021; 32(3):347–350. doi:10.1097/ede.000000000001335.
- [15] **Smith LH,** Mathur MB, VanderWeele TJ. Multiple-bias sensitivity analysis using bounds. *Epidemiology*. 2021; 32(5):625–34. doi:10.1097/ede.0000000000001380.
- [16] Farland LV, Correia KF, Dodge LE, Modest AM, Williams PL, Smith LH, Toth TL, Hacker MR, Missmer SA. The importance of mediation in reproductive health studies. *Human Reproduction*. 2020; 35(6):1262–1266. doi:10.1093/humrep/deaa064.
- [17] **Smith LH,** VanderWeele TJ. Simple sensitivity analysis for control selection bias. *Epidemiology*. 2020; 31(5):e44–e45. doi:10.1097/ede.000000000001207.

[18] **Smith LH.** Selection mechanisms and their consequences: Understanding and addressing selection bias. *Current Epidemiology Reports*. 2020; 7(4):179–189. doi:10.1007/s40471-020-00241-6.

- [19] **Smith LH,** VanderWeele TJ. Bounding bias due to selection. *Epidemiology*. 2019; 30(4):509–516. doi:10.1097/ede.000000000001032.
- [20] **Smith LH,** VanderWeele TJ. Mediational E-values: Approximate sensitivity analysis for unmeasured mediator-outcome confounding. *Epidemiology*. 2019; 30(6):835–837. doi:10.1097/ede.0000000000001064.
- [21] Cohen AK, Richards T, Allen BL, Ferrier Y, Lees J, Smith LH. Health issues in the industrial port zone of Marseille, France: The FOS EPSEAL community-based crosssectional survey. *Journal of Public Health*. 2017; 26(2):235–243. doi:10.1007/s10389-017-0857-5.
- [22] Deardorff J, **Smith LH**, Petito L, Kim H, Abrams BF. Maternal prepregnancy weight and children's behavioral and emotional outcomes. *American Journal of Preventive Medicine*. 2017; 53(4):432–40. doi:10.1016/j.amepre.2017.05.013.

Α	W	ΑI	RΠ	S

Harvard Biostatistics Certificate of Distinction in Teaching	2020
Harvard Epidemiology Teaching Assistant Award	2020
Winner, Harvard Epidemiology Student Podcast Competition	2020
Bok Center Certificate of Distinction in Teaching $(\times 3)$	2017, 2018, 2019
Runner-up, Harvard T.H. Chan School Poster Day	2019
Ralph & June Catalano Award Scholarship	2015
Reshetko Scholarship	2014
U.C. Berkeley Graduate Division Block Grant	2014
Phi Beta Kappa	2011
Magna cum laude; Brown University departmental honors	2011
C.V. Starr Fellowship for Public Service	2008

INVITED TALKS

"Challenges in estimating effects of time-varying exposures during pregnancy." Advanced Methods Workshop, Society for Pediatric and Perinatal Epidemiologic Research (SPER). June 16, 2022. (Chicago, IL)

"Causal inference in epidemiology using target trial principles: Applications in pregnancy and prostate cancer." Statistics seminar, École Polytechnique Fédérale de Lausanne. September 17, 2021. (Lausanne, Switzerland)

"Multiple-bias sensitivity analysis using bounds." Joint Statistical Meetings (JSM). August 9, 2021. (Virtual)

"Simple sensitivity analysis for selection bias using bounds." 13th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics). December 19, 2020. (Virtual)

"Discussion of 'Selection bias in 2020.'" Online Causal Inference Seminar. December 8, 2020. (Virtual)

"The magic of R." Master of Food and Resource Economics Program, University of British Columbia. August 20, 2020. (Virtual)

"Data gets personal." Maine Medical Center R User Group. July 16, 2020. (Virtual)

"Data manipulation in R." Maine Medical Center R Group. July 14, 2020. (Virtual)

"Data gets personal." RLadies Boston, January 29, 2020. (Boston, MA)

"Simple sensitivity analysis for selection bias." Koenen trauma epidemiology research group, Harvard T.H. Chan School of Public Health. December 4, 2019. (Boston, MA)

"Simple sensitivity analysis for selection bias." Department of Medical Epidemiology and Biostatistics student seminar, Karolinksa Institute. November 12, 2019. (Stockholm, Sweden)

"Simple sensitivity analysis for selection bias." Monthly methods call, Vaccine Safety Datalink. September 12, 2019. (Virtual)

CONTRIBUTED PRESENTATIONS & WORKSHOPS

"Evaluating missingness assumptions for items in a frailty index." Society for Epidemiologic Research (SER). Planned for June 2023 (Portland, OR). Oral Abstract Session.

"Reproducible epidemiology in R." Society for Epidemiologic Research (SER). Planned for June 12, 2023 (Portland, OR). Pre-Conference Workshop.

"COVID-19 and preterm birth: Understanding the relationship." Society for Pediatric and Perinatal Epidemiologic Research (SPER). June 16, 2021 (Virtual). Speed Talk Session.

"Challenges in estimating effects of COVID-19 on preterm birth." Society for Epidemiologic Research (SER). June 23, 2021 (Virtual). Oral Abstract Session.

"E-values, unmeasured confounding, measurement error, and selection bias." Society for Epidemiologic Research (SER). June 18, 2019 (Minneapolis, MN); December 11, 2020 (Virtual); May 21, 2021 (Virtual). Pre-Conference Workshop, with Tyler VanderWeele / Maya Mathur.

"Simple sensitivity analysis for selection bias. Society for Epidemiologic Research (SER)." June 20, 2019 (Minneapolis, MN). Concurrent Contributed Session Oral Presentation.

Posters (first author)

Smith LH, Zaidi J. Identifying direct effects of in vitro fertilization on placental disease. Harvard T.H. Chan School of Public Health Poster Day. Boston, MA, April 25, 2019. Runner-up: Best graduate student poster.

Smith LH, Deardorff J, Petito L, Kim H, & Abrams BF. Maternal prepregnancy weight and children's behavioral and emotional outcomes. Society For Research in Child Development (SCRD). Austin, TX, April 8, 2017.

Smith LH, Petito L, Cohen A, Deardorff J, & Abrams B. Gestational weight gain and math and reading achievement among U.S. children. Society for Pediatric and Perinatal Epidemiologic Research (SPER). Miami, FL, June 20, 2016.

SOFTWARE & ONLINE TOOLS

Smith LH. Simple sensitivity analysis for selection bias. *Online tool available at selection-bias.louisahsmith.com*.

Mathur MB, **Smith LH**, Ding P, VanderWeele TJ. EValue: Sensitivity analyses for unmeasured confounding or selection bias in observational studies and meta-analyses. R Package on CRAN.

Smith LH. PHS Summer Prep. Online introduction to R, probability, and statistics for incoming PhD students available at bit.ly/phs-prep.

TEACHING EXPERIENCE

Northeastern University, Boston, MA

PHTH 6800: Causal Inference in Public Health Research

2023

Instructor

Harvard T. H. Chan School of Public Health, Boston, MA

EPI 207: Advanced Epidemiologic Methods

2018 - 2020

Head teaching fellow Instructor: James Robins

BST 256: Theory and Methods for Causality I

2020

Teaching fellow

Instructor: Andrea Rotnitzky

Introduction to R

2019 - 2020

Instructor and course developer

Introduction to Epidemiology

2019 - 2020

Co-instructor

Co-instructor: David Cote

PHS 2000: Quantitative Research Methods

2017 - 2019

Teaching fellow

Instructors: Tyler VanderWeele, Jarvis Chen, Michael Hughes, Jessica Cohen

University of California, Berkeley, Berkeley, CA

PH 150A: Introduction to Epidemiology and Human Disease

Graduate student instructor

Instructor: Lisa Barcellos and Mahasin Mujahid

PH 250A: Epidemiologic Methods

2015

2016

Graduate student instructor Instructor: Sandra McCoy

Guest lectures

SBS 245: Social and Behavioral Research Methods, Harvard T.H. Chan School of Public Health.

MPH 677: Regression Models in the Health Sciences, University of Southern Maine.

PHTH 5202: Epidemiology, Northeastern University.

OTHER

Ad-hoc reviewer: American Journal of Epidemiology, Biometrika, Epidemiologic Methods, Epidemiologic Reviews, Epidemiology, International Journal of Epidemiology, JAMA Psychiatry, Journal of Causal Inference, Journal of Epidemiology, Patient Preference and Adherence, Paediatric and Perinatal Epidemiology, Scientific Reports, Sociological Methods and Research

Member, Society for Epidemiologic Research (SER), SER Education Committee Member, Society for Pediatric and Perinatal Epidemiologic Research (SPER)

OTHER Little Wound School, Kyle, SD

Professional Elementary school teacher 2011 – 2014

EXPERIENCE 3rd grade teacher of 10-20 students

Taught reading, writing, math, science, social studies

Lesson planning, curriculum mapping, analysis of student progress