

EMMA DAVIES SMITH

Research Associate

Center for Biostatistics in AIDS Research
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EDUCATION

- 2019 to 2023** **Ph.D. Epidemiology and Biostatistics, Biostatistics**
Schulich School of Medicine & Dentistry, University of Western Ontario
Nonparametric Methods for the Analysis of Cluster Randomization Trials with Multiple Endpoints
Advisors: Dr. Guangyong (GY) Zou and Dr. Vipul Jairath
- 2016 to 2017** **M.Sc. Mathematics & Statistics, Applied Statistics**
College of Physical & Engineering Sciences, University of Guelph
Quantifying Health with Missing Data: Measuring the Impact of Fecal Microbiota Transplantation on Health-Related Quality of Life
- 2011 to 2015** **B.Sc.H. Mathematics & Statistics, Statistics (Mathematics Minor)**
College of Physical & Engineering Sciences, University of Guelph

RESEARCH INTERESTS

- Randomized controlled trials
- Causal inference
- Correlated data

TEACHING INTERESTS

- Regression methods
- Statistical programming
- Statistical inference

RESEARCH EXPERIENCE

- Oct 2024 to now** **Research Associate**
Center for Biostatistics in AIDS Research
Harvard T.H. Chan School of Public Health
- Sept 2023 to 2024** **Postdoctoral Research Fellow**
Department of Biostatistics, Harvard T.H. Chan School of Public Health
- 2019 to 2023** **Graduate Research Assistant**
Department of Epidemiology and Biostatistics, Western University

Summer 2017	Graduate Research Assistant Department of Mathematics & Statistics, University of Guelph
Fall 2016	Graduate Student Assistant Data Resource Centre, McLaughlin Library, University of Guelph
Summer/Fall 2016	Associate Statistical Consultant Community Engaged Scholarship Institute, University of Guelph
2016 to 2017	Research Assistant Infectious Disease & Microbiology, St. Joseph's Healthcare Hamilton
Summer 2015	Undergraduate Research Assistant Department of Mathematics & Statistics, University of Guelph

PROFESSIONAL EXPERIENCE

2018 to 2019	Data Scientist	Machine Learning / Adknown Inc. / Canada
2017 to 2018	Statistical Analyst	Insight & Discovery / Sun Life Financial / Canada

ARTICLES PUBLISHED IN PEER-REVIEWED JOURNALS

1. Fichtenbaum, C., Malvestutto, C., Watanabe, M.G., **Davies Smith, E.**, Ribaud, H.J., et al. (2025) Effects of antiretrovirals on major adverse cardiovascular events in the REPRIEVE trial: a longitudinal cohort analysis. *The Lancet HIV*, 12(7): e496-e505. Doi: [10.1016/j.lancethiv.2025.101010](https://doi.org/10.1016/j.lancethiv.2025.101010)
2. **Davies Smith, E.**, Jairath, V., Zou, G. (2025) Rank-based estimators of global treatment effects for cluster randomized trials with multiple endpoints on different scales. *Statistical Methods in Medical Research*, 34(6): 1267-1289. doi: [10.1177/09622802251338387](https://doi.org/10.1177/09622802251338387)
3. **Davies Smith, E.**,* Malvestutto, C.,* et al. (2025) Cardiovascular Hazards of Abacavir- Versus Tenofovir-Containing Antiretroviral Therapies: Insights from an Analysis of the REPRIEVE Trial Cohort. *Open Forum Infectious Diseases*, 12(4): ofaf177. doi: [10.1093/ofid/ofaf177](https://doi.org/10.1093/ofid/ofaf177)
4. Zou, G., **Smith, E.**, Zou, L., Qiu, S., Shu, D. (2023). A rank-based approach to design and analysis of pretest-posttest randomized trials, with application to COVID-19 ordinal scale data. *Contemporary Clinical Trials*, 126: 107085. doi: [10.1016/j.cct.2023.107085](https://doi.org/10.1016/j.cct.2023.107085)
5. Zou, G., **Smith, E.**, & Jairath, V. (2022). A nonparametric approach to confidence intervals for concordance index and difference between correlated indices. *Journal of Biopharmaceutical Statistics*, 32(5): 1-28. doi: [10.1080/10543406.2022.2030747](https://doi.org/10.1080/10543406.2022.2030747)
6. Speicher, D.J., Luinstra, K., **Smith, E.J.**, Castriciano, S., Smieja, M. (2020) Non-invasive detection of IgG antibodies from common pathogenic viruses using oral flocked swabs. *Diagnostic Microbiology and Infectious Disease*. 97(3): 115038. doi: [10.1016/j.diagmicrobio.2020.115038](https://doi.org/10.1016/j.diagmicrobio.2020.115038)

* Co-primary authors.

ARTICLES UNDER REVIEW

1. **Davies Smith, E.**, Choi, Y., Jairath, V., Zou, G. (2025) Generalized pairwise comparisons for cluster randomized trials using win fractions. Submitted to *Clinical Trials*.
2. Kileel, E.M., Malvestutto, C.D., Zanni, M.V., **Davies Smith, E.**, et al. (2025) Risk of obesity, diabetes, hypertension, and MACE following a switch to an integrase inhibitor among treatment experienced people with HIV: A target trial emulation in REPRIEVE. Submitted to *Lancet HIV*.
3. **Davies Smith, E.**, Douglas, P.S., ..., Ribaud, H.J. (2025) Win Ratio Aligns with and Enhances Interpretation of REPRIEVE's Primary Findings. Submitted to *Clinical Infectious Diseases*.

ARTICLES IN PREPARATION

1. **Davies Smith, E.**, Nigam, G., Jairath, V., et al. (2025) Bedside prognostic model for death due to severe upper or lower GI bleeding: Development and external validation using HALT-IT trial and UK audit cohorts. Original Article targeted at *Lancet Gastroenterology*.

PRE-PRINTS

1. McIntyre, K., Weiner, J., **Davies Smith, E.** (2024) Statistical pitfalls of multiple exposures in causal observational studies and tools to address them. [Pre-print available on medRxiv](#),
2. Zou, G., Zou, J., **Davies Smith, E.**, Choi, Y., Bi, Y., Qiu, S. (2025) An alternative approach to generalized pairwise comparisons for estimating the landmark win probability in longitudinal randomized controlled trials with missing data.

CONFERENCE PROCEEDINGS

1. **Davies Smith, E.**, Douglas, P.S., ..., Ribaud, H.J. (2025, March 9-12) Time-Updated Win Ratio Aligns With Primary REPRIEVE Findings and Suggests Early Pitavastatin Benefit. Poster presented at *Conference on Retroviruses and Opportunistic Infections (CROI)*, San Francisco, California.
2. Lee, C., Kim, P., **Smith, E.** (2017, May 6-9) Outcome of Fecal Microbiota Transplantation for recurrent *Clostridium Difficile* infection on quality of life. Poster presented at *Digestive Disease Week*, Chicago, Illinois. doi: [10.1016/S0016-5085\(17\)33230-4](https://doi.org/10.1016/S0016-5085(17)33230-4)

PRESENTATIONS

1. 2024 Feb. Rank-based estimators of global treatment effects for cluster randomized trials with multiple endpoints. HIV Working Group, Harvard School of Public Health. Boston MA.
2. 2023 Dec. Challenges and opportunities of clinical trials with multiple endpoints. Department of Population Medicine, Harvard Pilgrim Health Care Institute. Boston MA.
3. 2016 Jul. Quantifying Health: Measuring the Impact of Fecal Microbiota Transplantation on Quality of Life. The Canadian Statistical Sciences Institute Joint Analysis of Neuroimaging Data Meeting. Victoria, BC.

PROFESSIONAL DEVELOPMENT

2022 Apr. SAS Certified Business Analyst Using SAS 9: Regression and Modeling
2021 Aug. SAS Certified Specialist, Base Programming Using SAS 9.4
2021 Jun. Project Management, Essential Elements I & II (UWO OYF program)
2020 Aug. Teaching Assistant Training Program (UWO CTL)

TEACHING AND MENTORING EXPERIENCE

2024 **Co-supervisor, Ph.D. Independent Research Project**
Department of Biostatistics, Harvard T.H. Chan School of Public Health
2021 to 2023 **Graduate Teaching Assistant**
Department of Epidemiology and Biostatistics, Western University
Fall 2022 **Guest Lecturer**
Department of Family Medicine, Western University
2016 to 2017 **Graduate Teaching Assistant**
Department of Mathematics & Statistics, University of Guelph

HONOURS AND AWARDS

2025	CROI New Investigator Award	Conference / Research
2021 to 2023 x2	Ontario Graduate Scholarship	Provincial / Research
2020 to 2021	Dean's Research Scholarship	Western University / Research
2019 to 2023 x4	Graduate Research Scholarship	Western University / Academic
2016 to 2017	Canada Graduate Scholarship M	National / Research
2016 to 2017	Graduate Tuition Scholarship	University of Guelph / Academic
Declined	Ontario Graduate Scholarship	Provincial / Research
2015	Gordon Ashton Scholarship	University of Guelph / Academic
2015	Statistics Graduation Prize	University of Guelph / Academic
2014	Tucker Scholarship for Women	University of Guelph / Leadership

EXTRACURRICULARS

2025 to present Peer Reviewer

Statistical Methods in Medical Research (x1), HIV Medicine (x1),
Statistical Communications in Infectious Disease (x1),
Osteoarthritis and Cartilage (x1)

2024 to present HIV Working Group Seminar Organizer

Department of Biostatistics, Harvard School of Public Health

2020 to 2021 Society of Graduate Students (SOGS) Representatives

Western Epidemiology and Biostatistics Student Council

2020 to 2021 Organizer / Facilitator

Western Epidemiology and Biostatistics Journal Club

Summer 2016 Coordinator

Southern Ontario Graduate Mathematics & Statistics Conference

2014 to 2015 Student Representative

Department of Mathematics & Statistics Curriculum Committee

2014 to 2015 Secretary

University of Guelph Mathematics & Statistics Club