

Ameer Dharamshi

PHD CANDIDATE · BIOSTATISTICS

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Education

University of Washington

PHD IN BIOSTATISTICS

- Advisors: Daniela Witten and Jon Wakefield

Seattle, WA, USA

September 2022 - Present

University of Toronto

MSC IN STATISTICAL SCIENCES

Toronto, ON, Canada

September 2019 - June 2020

University of Waterloo

BMATH IN MATHEMATICS/CPA

- Minors in Statistics and Computer Science

Waterloo, ON, Canada

September 2013 - June 2018

Professional Experience

2024-Present **Research Consultant**, Department of Demography, University of California Berkeley

2022-Present **Graduate Research Assistant**, Department of Biostatistics, University of Washington

2020-2022 **Research & Data Consultant**, Global Education Monitoring Report, UNESCO

2021-2022 **Part-time Researcher**, Bayesian Demography Lab, University of Toronto

2018-2019 **Consultant**, Deloitte Canada

Publications

PUBLISHED

Wu, Y., **Dharamshi, A.**, & Wakefield, J. (2025). Small Area Estimation of Education Levels in Low- and Middle-Income Countries. *To appear in Annals of Applied Statistics*. Available from: <https://arxiv.org/abs/2502.07946>.

Dharamshi, A., Neufeld, A., Gao, L. L., Witten, D., & Bien, J. (2025). Thinning a Wishart Random Matrix. *To appear in Biometrika*. Available from: <https://doi.org/10.1093/biomet/asaf081>.

Dharamshi, A., Neufeld, A., Gao, L. L., Bien, J., & Witten, D. (2025). Decomposing Gaussians with Unknown Covariance. *To appear in Biometrika*. Available from: <https://doi.org/10.1093/biomet/asaf057>.

Dharamshi, A., Alexander, M., Winant, C., & Barbieri, M. (2025). Jointly estimating subnational mortality for multiple populations. *Demographic Research*, 52, 71-110. Available from: <https://doi.org/10.4054/DemRes.2025.52.3>

Neufeld, A., **Dharamshi, A.**, Gao, L. L., Witten, D., & Bien, J. (2025). Discussion of “Data fission: splitting a single data point”. *Journal of the American Statistical Association: Theory & Methods*, 120(549), 151-157. Available from: <https://doi.org/10.1080/01621459.2024.2421998>.

Dharamshi, A., Neufeld, A., Motwani, K., Gao, L. L., Witten, D., & Bien, J. (2025). Generalized data thinning using sufficient statistics. *Journal of the American Statistical Association: Theory & Methods*, 120(549), 511-523. Available from: <https://doi.org/10.1080/01621459.2024.2353948>.

Neufeld, A., **Dharamshi, A.**, Gao, L. L., & Witten, D. (2024). Data thinning for convolution-closed distributions. *Journal of Machine Learning Research*, 25(57), 1-35. Available from: <https://doi.org/10.48550/arXiv.2301.07276>.

Dharamshi, A., Ngo, V., & Rosenthal, J. S. (2024). Sampling by divergence minimization. *Communications in Statistics - Simulation and Computation*, 53(12), 6071-6095. Available from: <https://doi.org/10.1080/03610918.2023.2199352>.

Dharamshi, A., Barakat, B., Alkema, L., & Antoninis, M. (2022) A Bayesian model for estimating Sustainable Development Goal indicator 4.1.2: School completion rates. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, 71(5), 1822–1864. Available from: <https://doi.org/10.1111/rssc.12595>.

PREPRINTS

Dharamshi, A., Gao, P., & Wakefield, J. (2025). Exact variance estimation for model-assisted survey estimators using U- and V-statistics. *ArXiv preprint*. Available from: <https://arxiv.org/abs/2502.11032>.

Dharamshi, A., Antoninis, M., Montoya, S., & Barakat, B. (2023). A Bayesian cohort model for estimating out-of-school rates and populations. *SocArXiv preprint*. Available from: <https://osf.io/preprints/socarxiv/sqwb2/>

Scholarships & Awards

2024-2027	NSF-HNDS - Senior Investigator (PI: Magali Barbieri, University of California Berkeley) , National Sciences Foundation	791,403 USD (49,500 to AD)
2024	Student Paper Award , JSM Statistical Learning and Data Science Section CSSS Travel Award (EPC 2024) , University of Washington	1,000 USD 500 USD
2023-2026	NSERC PGS D , Natural Sciences and Engineering Research Council of Canada	96,250 CAD
2022	Top Scholar Recruitment Award , University of Washington Faculty of Arts and Science Doctoral Recruitment Award (Declined) , University of Toronto	7,500 USD 5,000 CAD
2013-2017	Faculty of Mathematics Entrance Scholarship , University of Waterloo	5,000 CAD
2013	President's Scholarship of Distinction , University of Waterloo	5,000 CAD

Presentations

INVITED TALKS

Expanding the scope of post-selection inference. McGill University. (December 2025)

Expanding the scope of post-selection inference. ETH Zürich. (December 2025)

Expanding the scope of post-selection inference. University of Toronto. (December 2025)

Expanding the scope of post-selection inference. NUS-IMS Young Mathematical Scientists Forum - Statistics and Data Science 2025. (November 2025)

Expanding the scope of post-selection inference. University of Cambridge. (November 2025)

Estimating Residential Displacement in Puget Sound using Household Survey Data. Public Health Seattle & King County. (June 2025)

Generalized data thinning using sufficient statistics. JSM 2024. (August 2024)

Data thinning with applications in the health sciences. SSC Annual Meeting 2024. (April 2024)

Generalized data thinning using sufficient statistics. G-Research ML College Talk. (August 2023)

Generalized data thinning using sufficient statistics. International Seminar on Selective Inference. (April 2023)

Estimating SDG 4 Indicators with a Bayesian Modelling Framework: Completion and Out-of-School Rates. 9th Annual Meeting of the Technical Cooperation Group on SDG4 Indicators (TCG): Joint EMIS and Surveys Working Group. (November 2022)

A Bayesian Cohort Model for Estimating SDG Indicator 4.1.4: Out-of-School Rates. STAB Working Group, University of Washington. (November 2022)

Estimating Out-of-School Rates. Bayes Working Group, University of Massachusetts Amherst. (December 2021)

Out-of-School Rate Modelling. 8th Annual Meeting of the Technical Cooperation Group on SDG4 Indicators (TCG): Household Surveys Working Group. (October 2021)

Adjusted Bayesian Completion Rates (ABC). Bayes Working Group, University of Massachusetts Amherst. (June 2021)

CONTRIBUTED PRESENTATIONS

Estimating subnational fertility rates with a principal component-based Bayesian spatiotemporal model. Oral presentation: International Population Conference 2025 (July 2025)

Estimating the Composition of the Cystic Fibrosis Pulmonary Microbiome. Poster and thematic poster session speaker: North American Cystic Fibrosis Conference 2024 (September 2024)

A Principled Approach to Model Validation in the Context of Estimating Age-Specific Rates. Poster: European Population Conference 2024 (June 2024)

A Bayesian Hierarchical Model for Jointly Estimating Subnational Mortality for Multiple Populations. Oral presentation: PAA Annual Meeting. (April 2022)

A Bayesian Hierarchical Model for Jointly Estimating Subnational Mortality for Multiple Populations. Oral presentation: 6th HMD Symposium (June 2022)

A Bayesian Hierarchical Model for Jointly Estimating Subnational Mortality for Multiple Populations. Oral presentation: European Population Conference 2022 (June 2022)

CSEye: A Proposed Solution for Accurate and Accessible One-to-Many Face Verification. Poster: AAAI-2019 (January 2019)

Teaching Experience

University of Washington

Spring 2024 **DATA 558: Statistical Machine Learning for Data Scientists**, Teaching Assistant

Winter 2024 **BIOST 515: Biostatistics II**, Teaching Assistant

University of Toronto

Summer 2020 **STA 302: Methods of Data Analysis I**, Teaching Assistant

Winter 2020 **STA 238: Probability, Statistics and Data Analysis II**, Teaching Assistant

Fall 2019 **STA 237: Probability, Statistics and Data Analysis I**, Teaching Assistant

University of Waterloo

Summer 2015 **MATH 127: Calculus 1 for the Sciences**, Teaching Assistant

Fall 2014 **MATH 135: Algebra for Honours Mathematics**, Teaching Assistant

Outreach & Professional Development

PEER REVIEW

Journal of the American Statistical Association - Theory & Methods, Electronic Journal of Statistics, Demographic Research, Population Health Metrics, Journal of Survey Statistics and Methodology

COMMUNITY SERVICE

2025-Present **Space Time Analysis Bayes (STAB) Research Group Organizer**, University of Washington

2024-Present **Biostatistics Student Seminar Organizer**, University of Washington

2023-Present **EPTEC Committee Member (Biostatistics Curriculum)**, University of Washington

2023-2024 **PARS Reviewer**, University of Washington

2022-2023 **Biostatistics EDI Committee Member**, University of Washington

Additional Information

- Technical Skills: R/RMarkdown, Stan, INLA, Python, SQL, C/C++, MATLAB, Julia
- General Skills: LaTeX and Microsoft Office
- Languages: English (native), French (basic)
- Hobbies: reading, squash, tennis, skating, baking