

Monica Alexander

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Academic Appointments

University of Toronto

Assistant Professor, Statistical Sciences and Sociology
(Maternity leave: April 2019 – December 2019)

July 2018 – *current*

Professional Appointments

Lead technical advisor

World Health Organization Group

on Estimation of Causes of Maternal Mortality

January 2019 – December 2020

Fellow

Institute for Clinical Evaluative Sciences

January 2019 – *current*

Education

Ph.D (Demography), **University of California, Berkeley**, 2018.

Dissertation title: Bayesian Methods for Mortality Estimation.

Committee: Josh Goldstein (chair); Ken Wachter; Dennis Feehan; Jas Sekhon.

M.Arts (Statistics), **University of California, Berkeley**, 2015.

M.Social Research (Demography), **Australian National University**, 2013.

B.Science (First Class Honors) (Maths and Chemistry), **University of Tasmania**, 2008.

Papers

Peer-reviewed articles

Alexander, M., Polimis, K., and Zagheni, E., ‘Combining social media and survey data to nowcast migrant stocks in the United States’, *Population Research and Policy Review*, 2020. <https://doi.org/10.1007/s11113-020-09599-3>.

Alexander, M., Polimis, K., and Zagheni, E., ‘The impact of Hurricane Maria on out-migration from Puerto Rico: Evidence from Facebook data’, *Population and Development Review*, 2019, 45(3): 617-630.

Hug, L., **Alexander, M.**, You, D., and Alkema, L. ‘National, regional, and global levels and trends in neonatal mortality between 1990 and 2017, with scenario-based projections to 2030: a systematic analysis by the United Nations Inter-agency Group for Child Mortality Estimation’, *Lancet Global Health*, 2019, 7(6): 710–720.

Kiang, M.V., Basu S., Chen J., and **Alexander, M.** ‘Assessment of Changes in the Geographical Distribution of Opioid-Related Mortality Across the United States by Opioid Type, 1999-2016’. *JAMA Network Open*. 2019, 2(2):e190040.

Gemmill, A., Kiang, M.V., and **Alexander, M.** ‘Trends in pregnancy-associated mortality involving opioids in the United States, 2007–2016’, *American Journal of Obstetrics and Gynecology*, 2019, 220(1): 115–116.

Alexander, M., Kiang, M.V., and Barbieri M., ‘Trends in Black and White Opioid Mortality in the United States, 1979–2015’, *Epidemiology*, 2018, 29(5): 707–715.

Alexander, M., and Alkema, L., ‘Global Estimation of Neonatal Mortality using a Bayesian Hierarchical Splines Regression Model’, *Demographic Research*, 2018, 38(15): 335–372.

Alexander, M., Zagheni, E., and Barbieri, M., ‘A Flexible Bayesian Model for Estimating Subnational Mortality’, *Demography*, 2017, 54(6): 2025–2041.

Howlett, M., Gray, M., and Hunter, B., ‘Wages, government payments and other income of Indigenous and non-Indigenous Australians’, *Australian Journal of Labour Economics*, 2016, 19(2): 53–76.

Hunter, B., **Howlett, M.**, and Gray, M., ‘The Economic Impact of the Mining Boom on Indigenous and Non-Indigenous Australians’, *Asia & the Pacific Policy Studies*, 2015, 2(3): 517–530.

Gray, M., **Howlett, M.**, and Hunter, B., ‘Labour Market Outcomes for Indigenous Australians’, *The Economic and Labour Relations Review*, 2014, 25(3): 497–517.

Biddle, N., **Howlett, M.**, Hunter, B., and Paradies, Y., ‘Labour Market and Other Discrimination Facing Indigenous Australians’, *Australian Journal of Labour Economics*, 2013, 16(1): 91–113.

Other published papers

Hunter, B., **Howlett, M.**, and Biddle, N., ‘Modelling Exposure to Risk of Experiencing Discrimination in the Context of Endogenous Ethnic Identification’, *IZA Discussion Paper #8040*, March 2014.

Gray, M., Hunter, B., and **Howlett, M.**, ‘Indigenous Employment: A Story of Continuing Growth’, *CAEPR Topical Issue 2/2013*, Australian National University, Canberra.

Current working papers and manuscripts in progress

Alexander, M., and Alkema, L., ‘A Bayesian cohort component projection model to estimate adult populations at the subnational level in data-sparse settings’, <https://arxiv.org/abs/2102.06121>.

Alexander, M., Chong, M.Y.C., and Pejcinovska, M. ‘Estimating causes of maternal death in data-sparse contexts’. <https://arxiv.org/abs/2101.05240>.

Alexander, M., and Root, L., ‘Competing effects on the average age of infant death’. <https://osf.io/preprints/socarxiv/z4qg9/>.

Sussman, H., **Alexander, M.**, and Alkema, L.. ‘Temporal models for demographic and global health outcomes in multiple populations: Introducing a new framework to review and standardize documentation of model assumptions and facilitate model comparison’. <https://arxiv.org/abs/2102.10020>.

Alexander, M., and Goldstein, J., ‘Deaths without denominators: using a matched dataset to study mortality patterns in the United States’, <https://osf.io/preprints/socarxiv/q79ye/>.

Maheu-Giroux, M, Sardinha, L, Stöckl, H, Meyer, S, Godin, A, **Alexander, M.**, and García-Moreno, C. ‘A framework to model global, regional, and national estimates of intimate partner violence’. <https://www.medrxiv.org/content/10.1101/2020.11.19.20235101v1>.

Kiang, M. V., Chen, J. T., Krieger, N., Buckee, C. O., **Alexander, M.**, Baker, J. T., Buckner, R. L., Coombs III, G., Rich-Edwards, J. W., Carlson, K. W. and Onnela, J.-P. ‘Sociodemographic Characteristics of Missing Data in Digital Phenotyping’. <https://www.medrxiv.org/content/10.1101/2020.12.29.20249002v1>.

Chung, P.H., and **Alexander, M.**, ‘Kin Dependency Ratios: An Extension and Application of the Goodman Method for Estimating the Availability of Kin’, <https://p-chung.com/paa/2019/abstract/>.

Grants awarded

Principal Investigator:

Social Sciences and Humanities Research Council	2019–2022
Insight Development Grant	
<i>Using Facebook data to measure and understand international migration patterns in Canada</i>	
CAD \$59,000	
University of Toronto Connaught New Researcher Award	2019–2021
CAD \$18,900	

Partner Investigator:

Australian Research Council	2019–2022
Discovery Project Grant	
<i>Developing Robust Small Area Population Forecasts for Planning and Policy</i>	

Professional Experience

World Health Organization	
<i>Consultant</i>	September 2016 – June 2017
Data Science for Social Good	
<i>Fellow</i>	May 2016 – September 2016
Human Mortality Database	
<i>Graduate Student Researcher</i>	January 2015 – May 2016
UNICEF Technical Advisory Group	
<i>Consultant</i>	March 2014 – July 2015
The Centre for Aboriginal Economic Policy Research	
<i>Research Officer</i>	April 2012 – December 2014
Reserve Bank of Australia	
<i>Analyst/Senior Analyst</i>	February 2010 – June 2013

Teaching

University of Toronto

Applied Statistics II (graduate, statistics)	Winter Semester, 2020, 2021
Demographic Methods (graduate, statistics)	Winter Semester, 2019
<i>Materials:</i> https://github.com/MJAlexander/demographic-methods	
Intermediate data analysis (graduate, sociology)	Winter Semester, 2021
Intermediate quantitative methods (undergraduate, sociology)	Fall Semester, 2020

University of California, Berkeley

<i>Instructor</i> , Formal Demography Workshop	June, 2017
<i>Instructor</i> , Formal Demography Workshop	August, 2015
<i>Graduate Student Instructor</i> , Demographic Methods	Fall Semester, 2014

Other

<i>Instructor</i> , Introduction to Causal Inference, ITAM	March, 2017
<i>Instructor</i> , IUSSP Workshop on social media data and demography	August, 2016

Conference presentations and invited talks

2020

Future Projections of State-Level Foster Care Populations in the United States
APPAM Annual Meeting, *Virtual meeting* (November)

Bayesian hierarchical models in demographic research
CERSI seminar series, *Yale University* (November)

Using social media data to estimate migration
Toronto Data Workshop (December)
Berkeley Formal Demography Workshop (June)
NEST seminar series, *Western University* (March)

2019

Reproducibility in demographic research
MPIDR Open Science Workshop, Rostock, Germany (October)

Combining social media data and traditional surveys to predict migration stocks
MPIDR-IUSSP Workshop on Migration Data and Models for a Better World: Perspectives from Academia, Data Science, and International Organizations, at ASA 2019: New York, NY (August)
Cornell Population Center, *Cornell University* (February)

2018

Combining social media data and traditional surveys to predict migration stocks
European Symposium in Computational Social Science: Cologne, Germany (December)
School of Geography, *University of Queensland* (November)
Institute for the Study of Social Change, *University of Tasmania* (October)
Symposium of Digital Demography: Rostock, Germany (October)
Center for Population Dynamics, *McGill University* (September)
European Population Conference: Brussels, Belgium (June)

Estimating subnational populations of women of reproductive age

International Society for Bayesian Analysis World Meeting: Edinburgh, Scotland (June)

European Population Conference: Brussels, Belgium (June)

Max Planck Institute for Demographic Research (May)

PAA Annual Meeting: Denver, CO (April)

Institute of Disease Modeling Symposium: Seattle, WA (April)

The spatial distribution of opioid mortality by race in the United States

European Population Conference: Brussels, Belgium (June)

2017***Modeling and understanding mortality disparities***School of Demography, *Australian National University* (December)Department of Statistics, *University of Toronto* (December)Department of Sociology, *University of Washington, Seattle* (November)***Temporal smoothers for use in demographic estimation***

IUSSP: Cape Town, South Africa (October)

Statistics working group, *University of Massachusetts, Amherst* (February)***Opioid-related deaths by race in the United States: trends and patterns in multiple causes of death***

PAA Annual Meeting: Chicago, IL (April).

Honors**Doctoral Completion Fellowship** (*UC Berkeley*) 2017-2018**Elizabeth Scott Memorial Award** (*UC Berkeley*) 2015

Statistics MA student showing the most promise in statistical research.

Regents-Intern Fellowship (*UC Berkeley*) 2013-2015**Lado Ruzicka Prize in Social Research** (*Australian National University*) 2013

Awarded to the most outstanding Master of Social Research candidate.

W.D. Borrie Prize (*National essay competition, Masters category*) 2012

For best student paper on a population-related topic.

University Medal (*University of Tasmania*) 2008

One of three awarded to the most outstanding Science and Technology undergraduates.

Edith Rita Lowenstern Prize (*University of Tasmania*) 2008

Awarded to the most outstanding mathematics honors student.

Service**Panel Member:** *International Union of Scientific Study of Populations panel on Digital Demography.***Team Member:** *Consortium on Analytics for Data-Driven Decision-Making (CAnD3).***Founder and Organizer:** *R-Ladies Toronto.* This community-led group aims to promote gender diversity in the R community in Toronto. Our community is designed to develop our members' R skills and knowledge through social, collaborative learning and sharing.

Reviewer: *Australian Journal of Labour Economics; Annals of Applied Statistics; Demography; Demographic Research; Epidemiology; European Journal of Population; Genus; Population and Development Review; Population Research and Policy Review.*