Monica Alexander

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Education

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

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

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

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

Professional Experience

University of Massachusetts, Amherst
Graduate Student Researcher January 2017 – *current*
As a member of a Bill & Melinda Gates Foundation funded project, I am developing a model to estimate subnational populations of women of reproductive age. This will help to improve monitoring of family planning indicators in regions where data are sparse or difficult to collect in low-income settings.

World Health Organization
Consultant September 2016 – June 2017
In collaboration with the Department of Health Statistics and Information Systems, I created a framework to help understand and inform modeling decisions on estimating national health indicators.

Data Science for Social Good
Fellow May 2016 – September 2016
In consultation with Tulsa Public Schools in Oklahoma, I formulated a predictive machine learning model to help identify students who were at risk of not reaching third grade reading levels.

Human Mortality Database
Graduate Student Researcher January 2015 – May 2016
I was the lead researcher in developing a Bayesian model to estimate age-specific mortality rates at the subnational level. I also investigated methods for visualizing diagnostics of quality of mortality data.

UNICEF Technical Advisory Group
Consultant March 2014 – July 2015
In collaboration with Leontine Alkema, I formulated a model to estimate neonatal mortality rates for all UN-member countries. This model is now used by UNICEF to produce official estimates of neonatal mortality.

The Centre for Aboriginal Economic Policy Research
Research Officer April 2012 – December 2014
As part of a small research team, I researched Australian Indigenous policy in health, employment and education contexts. We produced research and policy briefs for the Indigenous Affairs department in the Australian Government.

Reserve Bank of Australia
Analyst/Senior Analyst February 2010 – June 2013
My research involved developing statistical models to estimate and predict the volume of counterfeit banknotes in circulation, as well as designing a new sampling framework to assess the quality of banknotes in circulation.

Papers

Peer-reviewed articles

Alexander, M., Zagheni, E., and Barbieri, M., 'A Flexible Bayesian Model for Estimating Subnational Mortality', `https://link.springer.com/article/10.1007/s13524-017-0618-7` (forthcoming, *Demography*).

Alexander, M., and Alkema, L., 'Global Estimation of Neonatal Mortality using a Bayesian Hierarchical Splines Regression Model', `https://arxiv.org/abs/1612.03561` (forthcoming, *Demographic Research*).

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., Barbieri M., and Kiang, M.V., 'Opioid deaths by race in the United States, 2000–2015.', `https://osf.io/preprints/socarxiv/jm38s`.

Alexander, M., 'Temporal smoothers for use in demographic estimation and projection.', `monicaalexander.com/pdf/temporal_smoothing.pdf`.

Alexander, M., and Alkema, L., 'A Bayesian hierarchical model for estimating subnational female populations in developing countries.'

Alexander, M., and Kiang, M.V., 'Seasonality in suicide deaths and unintentional opioid overdoses in the United States.'

Kiang, M.V., **Alexander, M.,** Zhang, Z., and Chen, J., 'The spatial distribution of opioid mortality by race in the United States, 1999-2015.'

Goldstein, J.R., and **Alexander, M.,** 'Increasing Mortality Disparities in Old Age? An Analysis of the CenSoc 1940 Census-Social Security Deaths Matched Dataset.'

Zagheni, E., Polimis, K., **Alexander, M.,** Weber, I., and Billari, F., 'Combining Social Media Data and Traditional Surveys to Estimate and Predict Migration Stocks.'

Teaching Experience

University of California, Berkeley

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

University of Tasmania

Tutor, Calculus and Applications I	Semester 1, 2009
Tutor, Data Handling and Statistics I	Semester 2, 2008
Demonstrator, Chemistry I	Semester 1, 2008

Other

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

Presentations

Conference presentations

Alexander, M., Temporal Smoothers for use in Demographic Estimation. IUSSP 2017: Cape Town, South Africa (October 2017).

Alexander M., Barbieri M., and Kiang M.V., Opioid-related deaths by race in the United States: Trends and patterns in multiple causes of death. PAA Annual Meeting 2017: Chicago, IL (April 2017).

Goldstein, J.R., and **Alexander, M.**, Towards a New, Public Data Set for Studying Mortality Inequality: Matching the 1940 U.S. Census With Social Security Death Records, 1963-2011. PAA Annual Meeting 2017: Chicago, IL (April 2017).

Alexander, M., Zagheni, E., and Barbieri, M., A Flexible Bayesian Model for Estimating Subnational Mortality. PAA Annual Meeting 2016: Washington, DC (April 2016) and European Population Conference 2016: Mainz, Germany (August 2016).

Alexander, M., and Alexander, R., Mothers returning to study. International Conference on Population Geographies. Queensland, Australia (June 2015).

Alexander, M., Estimating Neonatal Mortality. PAA Annual Meeting 2015: San Diego, CA (April 2015).

Goldstein, J.R., and **Howlett, M.**, Tempo and the economy: decomposing the effect of economic shocks on births into tempo and quantum. European Population Conference 2014: Budapest, Hungary (August 2014).

Howlett, M., Social and Cultural Determinants of the Self-Assessed Health of Indigenous Australians. PAA Annual Meeting 2014: Boston, MA (April 2014) (Poster).

Invited talks

Teach-outs: Causal Inference; and Data Visualization, *Data Science for Social Good Fellowship* (June and July 2017).

Temporal Smoothers for use in Demographic Estimation. Statistics working group, *University of Massachusetts, Amherst* (February 2017)

A Flexible Bayesian Model for Estimating Subnational Mortality. Statistics working group, *University of Massachusetts, Amherst* (November 2016); Bayesian working group, *Department of Statistics, University of Washington, Seattle* (May 2016); and Demography brown bag, *University of California, Berkeley* (March 2016).

Global estimation of neonatal mortality. *UNICEF Inter-agency Group on Mortality Estimation, Technical Advisory Group.* (March, April and May 2014).

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.

Premier of Tasmania National Scholarship (*University of Tasmania*) 2005-2008
One of four undergraduate scholarships awarded to outstanding secondary school students.

Australian Student Prize (*National award*) 2004
For academic excellence in secondary school. One of 500 awarded nationally, and 13 awarded to Tasmanian students.