Dennis M. Feehan

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Current positions

Assistant Professor
Department of Demography
University of California, Berkeley

Education

Ph.D. Demography, Princeton University (2008-2015).
Dissertation: *Network reporting methods.*
Committee: Matthew J. Salganik (chair); Noreen Goldman; Scott Lynch; Doug Massey
General exams: Demographic Methods; Mortality; and
Mathematical and Statistical Methods in Population Health

A.B., Mathematics, Harvard University (2002).

Working papers

Feehan, D. M., Mahy, M., and Salganik, M. J. (2016a). The network survival method for estimating adult mortality: Evidence from a survey experiment in Rwanda (Under review; available from `https://arxiv.org/abs/1603.08588`.)

Peer-reviewed publications

Feehan, D. M. and Salganik, M. J. (2016a). Generalizing the Network Scale-Up Method: A New Estimator for the Size of Hidden Populations. *Sociological Methodology.* To appear (Accepted at *Sociological Methodology*; available from `http://arxiv.org/abs/1404.4009.`)

Feehan, D. M., Umubyeyi, A., Mahy, M., Hladik, W., and Salganik, M. J. (2016b). Quantity Versus Quality: A Survey Experiment to Improve the Network Scale-up Method. *American Journal of Epidemiology*, 183(8):747–757

Lozano, R., Soliz, P., Gakidou, E., Abbott-Klafter, J., Feehan, D., Vidal, C., Ortiz, J., and Murray, C. (2006). Benchmarking the performance of Mexican states with effective coverage. *The Lancet*, 368(9548):1729–1741

Gakidou, E., Lozano, R., González-Pier, E., Abbott-Klafter, J., Barofsky, J., Bryson-Cahn, C., Feehan, D., Lee, D., Hernandez-Llamas, H., and Murray, C. (2006). Assessing the effect of the 2001-2006 Mexican Health Reform: an interim report card. *The Lancet*, 368:1920–1935

Murray, C., Lopez, A., Chin, B., Feehan, D., and Hill, K. (2007a). Estimation of potential global pandemic influenza mortality on the basis of vital registry data from the 1918--20 pandemic: a quantitative analysis. *The Lancet*, 368(9554):2211–2218

Murray, C., Lopez, A., Feehan, D., Peter, S., and Yang, G. (2007b). Validation of the symptom pattern method for analyzing verbal autopsy data. *PLoS Medicine*, 4(11)

Open-Source Software

Feehan, D. M. and Salganik, M. J. (2016b). surveybootstrap: Tools for the Bootstrap with Survey Data (Available from CRAN:
`http://cran.r-project.org/web/packages/networkreporting/index.html`)

Feehan, D. M. and Salganik, M. J. (2014b). networkreporting: tools for analyzing network reporting data (Available from CRAN:
`http://cran.r-project.org/web/packages/networkreporting/index.html`)

Works in progress

"The network reporting estimator for adult mortality: evidence from Rwanda." (Joint with Mary Mahy and Matthew Salganik.) I develop a new survey-based estimator for adult death rates based on respondents' reports about their social networks, and show empirical results from the first application of the method to a national sample of 5,000 Rwandans.

"Network reports for estimating adult mortality: validation in Brazil" (Joint with Matthew Salganik.) I use the network reporting estimator that I develop in my dissertation to estimate adult mortality rates among 25,000 survey respondents in 27 Brazilian cities. Since the cities have high quality vital registration data, I am able to compare the network reporting estimates to a gold standard in each city, resulting in 27 separate validation studies from a wide range of socioeconomic conditions.

"How should we measure mortality at the oldest ages?" Many theories aim to explain the process of human aging, and different theories lead to different predictions about the trajectory that mortality should take at very old ages. I use 285 country-years with the best available data on old-age mortality and statistical techniques from the model selection literature to test which theory has the most empirical support.

Talks and Conference Presentations

"Generalizing the network scale-up method," presentation at Population Association of America conference, Washington, D.C, 2016.

"Network reporting methods," presentation at the Workshop on Incomplete Network Data, Sandia National Lab, March 2016.

"Quantity vs. Quality: A Survey Experiment to Improve the Network Scale-up Method," presentation at the American Sociological Association, Chicago, August 2015.

"Using sampled social network data to estimate the size of hidden populations," presentation at the Joint Statistical Meetings, Seattle, August 2015.

"Using sampled social network data to estimate the size of hidden populations," presentation at the Guttmacher Institute, New York, August 2015.

"Using sampled social network data to estimate the size of hidden populations (including deaths)," presentation at Centers for Disease Control, Division of Global HIV/AIDS (DGHA), March 2015.

"Social networks and surveys," presentation at RAPIDD Workshop on Globalization and the spatial scale of disease spread and elimination: opportunities and challenges of existing and novel data-streams, Princeton, February 2015.

"Network reporting methods for estimating adult mortality," Center for the Study of Complex Systems, U. of Michigan, January 2015.

"Network reporting methods for estimating adult mortality," Departments of Sociology and Statistics, UCLA, December 2014.

"Network reporting methods for estimating adult mortality," Department of Demography, Berkeley, November 2014.

"Network reporting methods for estimating adult mortality," presented at Disease Group, Department of Ecology and Evolutionary Biology, Princeton, November 2014.

"An experimental framework for continual improvement in survey research," presented at Population Association of America conference, Boston, 2014.

"How should we measure mortality at the oldest ages?" presented at Population Association of America conference, Boston, 2014.

Discussant for session "Digital records for Demographic Research", Population Association of America conference, Boston, 2014.

"Social network methods for estimating adult mortality: evidence from Brazil and Rwanda," presented at Notestein Lecture Series, Office of Population Research, Princeton University, 2014.

"Network reporting methods for estimating adult mortality: evidence from Brazil and Rwanda," presented at Center for the Study of Democratic Policy Networks Workshop, Princeton University, 2014.

"Social network methods for measuring adult mortality: evidence from Rwanda," presentation at American Sociological Association meeting, New York, 2013.

"Social network methods for measuring adult mortality: evidence from Brazil," presentation at Population Association of America conference, New Orleans, 2013.

"Social network methods for measuring adult mortality: evidence from Rwanda," presentation at Chaire Quetelet conference, Louvain, Belgium, December, 2012.

"Social network methods for measuring adult mortality: evidence from Rwanda," presentation at Population Association of America conference, San Francisco, CA, 2012.

Discussant for session on Adult mortality at Population Association of America conference, San Francicso, CA, 2012.

"Some generalizations of the network scale-up method," presentation at UNAIDS meeting, New York, New York, March 2012.

"Social network methods for measuring adult mortality: evidence from Rwanda," presentation at Union for African Population Studies conference, Ougadougou, Burkina Faso, 2011.

"Network scale-up estimates for hidden populations," presentation at VIII Congresso Brasileiro de Epidemiologia, Sao Paulo, Brazil, November, 2011.

"How plausible are small-area estimates of fertility in sub-Saharan Africa," presentation at Population Association of America conference, Washington, D.C., 2010.

"How should we choose models of old-age mortality rates?" poster at Population Association of America conference, Washington, D.C., 2010.

Reviewer

Demography, Demographic Research, Population Research and Policy Review

Work experience

Research Scientist (earlier, Core Data Science Intern), **Facebook** (Menlo Park, CA; summer 2014 and fall/winter 2015). I used Facebook's data about 1.3 billion users to study migration, social networks, and online survey research, in addition to other problems at the intersection of sociology, social networks and statistics.

Visiting student, **Microsoft Research** (New York, NY; 2014). I visited the lab every week to attend seminars and meet with researchers in MSR's New York office.

Researcher, **Institute for Health Metrics and Evaluation** (Seattle, WA; 2007-2008). I focused on statistical strategies for analyzing verbal autopsy data and on some of the methodological issues involved in the ongoing update of the Global Burden of Disease Study. I also supervised two research assistants.

Post Bachelor Fellow, **Harvard Initiative for Global Health** (Cambridge, MA; 2005-2007). I was selected in a competitive application process. The fellowship involved classwork in public health and statistical methodology, as well as participation in research projects focusing on health system metrics in the developing world. Part of my work was conducted on Pemba Island, and in Dar Es Salaam, Tanzania.

Software engineer, **SmarterLiving** and **Actifunds** (Cambridge, MA; summer 2000 and 2001). As an undergraduate, I spent two summers as a software engineer for start-ups. I worked on a mixture of designing back-end systems, database interfaces, and web scrapers; most of the work was in Perl, with some C.

Honors and awards

Charles F. Westoff Prize in Demography, 2016

Princeton Center for Health and Wellbeing Global Health Grand Challenge award for graduate research funding

Princeton Institute for International and Regional Studies dissertation support award

NIH grant for graduate study

Harvard College Scholarship

Presidential Scholar Finalist

Teaching

UC Berkeley, Assistant Professor

- *Demography 260: Social Networks*, Spring 2016 - graduate seminar in social networks (http://www.dennisfeehan.org/teaching/201601_demog260.html).

Princeton University, Preceptor

- *Sociology 504: Social Statistics*, Spring 2009 - the second class in the Sociology Department's graduate statistics sequence, which covered statistical models and graphics with examples, exercises, and homeworks in R
- *Introduction to R*, Spring 2009 - co-taught a day-long departmental introduction to R with Matthew J. Salganik
- *Economics/Sociology 572: Demographic Methods*, Spring 2010 - the Office of Population Research's graduate-level methods class, covering life-table methods, stable population theory, methods for direct and indirect estimation, and survival analysis
- *Introduction to Demographic Methods*, Summer 2012 and 2011 - the Office of Population Research's demography 'boot camp' for incoming graduate students

Harvard University, Teaching Fellow

- *CS50: Introduction to Computer Science I (two years)* the first course in computer science for majors; we covered the fundamentals of programming, basic algorithms and their analysis, and computer architecture. I taught a section, held office hours, led review sessions, and graded homeworks and exams. All of the problems sets and exams were in C and Assembler. I was awarded a Certificate of Distinction in Teaching as a result of my outstanding student evaluations.

- *CS51: Introduction to Computer Science II (Summer)* - the second class in the introductory computer science sequence. We covered design and analysis of more advanced algorithms, and introductory functional and object oriented programming languages. The homeworks and exams were in LISP, Java, and C++. At the end of the class, the students wrote most of a garbage-collected LISP interpreter.

- *Introduction to Probability and Combinatorics* - an Extension School class in the mathematics of probability and combinatorics. I led sections, held office hours, and graded homeworks and exams.