

Nicole Bohme Carnegie

Curriculum vitae

Zilber School of Public Health
University of Wisconsin-Milwaukee
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EDUCATION

2009 PhD Statistics, University of Washington
2008 MS Statistics, University of Washington
2005 BA Mathematics (Statistics concentration), Magna cum Laude, St. Olaf College

PROFESSIONAL APPOINTMENTS

2014 – present Assistant Professor of Biostatistics, Zilber School of Public Health, University of Wisconsin-Milwaukee
2012 – 2014 Research Associate, Department of Biostatistics, Harvard School of Public Health
2010 – 2012 Research Assistant Professor, Department of Humanities and Social Sciences and Center for the Promotion of Research Involving Innovative Statistical Methodology, New York University
2009 Postdoctoral Research Associate, Department of Statistics, Pennsylvania State University

PUBLICATIONS

Peer-reviewed publications

- 2016 Carnegie NB, Wang, R and De Gruttola, V. Estimation of the overall treatment effect in the presence of interference in cluster-randomized trials of infectious disease prevention. *Epidemiologic Methods* Forthcoming.
- 2016 Dorie V, Harada M, Carnegie NB, and Hill J. A flexible, interpretable framework for assessing sensitivity to unmeasured confounding. *Statistics in Medicine* 35(20):3453-3470.
- 2016 Carnegie NB, Harada M and Hill JL. Assessing sensitivity to unmeasured confounding using simulated potential confounders. *Journal of Research on Educational Effectiveness* 9(3):395-420.

Carnegie CV 2

- 2015 Carnegie NB, Krivitsky PN, Hunter DR and Goodreau SM. An approximation method for improving dynamic network model fitting. *Journal of Computational and Graphical Statistics* 24(2):502-519.
- 2015 Carnegie NB, Goodreau SM, Liu A, Vittinghoff E, Sanchez J, Lama JR, Buchbinder SP. Targeting of pre-exposure prophylaxis among men who have sex with men in the United States and Peru: partnership types, contact rates, and sexual role. *JAIDS* 69(1): 119-125.
- 2014 Goodreau SM, Carnegie NB, Vittinghoff E, Lama JR, Sanchez J, Fuchs J and Buchbinder SP. Can male circumcision have an impact on the HIV epidemic in men who have sex with men? *PLoS ONE* 9(7): e102960.
- 2014 Carnegie NB, Wang R, Novitsky, V and De Gruttola, V. Linkage of viral sequences among HIV-infected village residents in Botswana: estimation of linkage rates in the presence of missing data. *PLoS Computational Biology* 10(1): e1003430.
- 2012 Goodreau SM, Carnegie NB, Vittinghoff, E, et al. What drives the US and Peruvian HIV epidemics in men who have sex with men (MSM)? *PLoS ONE* 7(11): e50522.
- 2012 Carnegie NB and Morris, M. Size matters: Concurrency and the epidemic potential of HIV in small networks. *PLoS ONE* 7(8): e43048.
- 2011 Kleit, RG, Carnegie NB. Integrated or isolated? The impact of public housing redevelopment on social network homophily. *Social Networks*, 33(2): 152-165.
- 2011 Carnegie, NB. Bootstrap confidence intervals and bias correction in the estimation of HIV incidence from surveillance data with testing for recent infection. *Statistics in Medicine*, 30(8): 854-865.
- 2006 Ingkanisorn, WP, Kwong, RY, Bohme, NS, Geller, NL, et al. Prognosis of negative adenosine stress magnetic resonance in patients presenting to an emergency department with chest pain. *Journal of the American College of Cardiology*, 47:1427-1432

Submitted manuscripts

- 2016 Harley AE, Lemke MA, Brazauskas R, Carnegie NB, Bokowy LA and Kingery, L. Youth Chef Academy: Results from a plant-based cooking and nutrition literacy program for middle-school students. *Journal of Nutrition Education and Behavior*
- 2016 Carnegie NB. Effects of contact network structure on epidemic transmission trees: implications for data required to estimate network structure. *Statistics in Medicine*

GRANT FUNDING

- 2015-2019 Methods to Advance the HIV Prevention Research Agenda (De Gruttola, PI)

Carnegie CV 3

NIH R37AI051164, Total: \$1,757,588
Role: Subcontract PI

2016-2017 Life Course Energy Balance and Breast Cancer Risk in Black/White Women Under 50 (Velie, PI)
NIH R01CA136861, Total: \$4,597,812
Role: Co-Investigator

2012-2015 Methods to Advance the HIV Prevention Research Agenda (De Gruttola, PI)
NIH R37AI051164, Total: \$1,590,775
Role: Co-Investigator

Under review

2017-2021 Optimizing a Combination Multi-Level Biomedical/Behavioral HIV Prevention Package for African American MSM (Kelly, PI)
NIH R01, Total: TBD
Role: Modeling Team Director, Subcontract PI

2017-2021 Integration of Multiple Data Sources to Understand Local Drivers of HIV Epidemics
NIH R21, Total: \$275,000
Role: Principal Investigator

Submitted, not funded

2016-2020 Youth Chef Academy: Effectiveness of a cooking and nutrition literacy intervention for urban youth (Harley, PI)
NIH R01, Total: TBD
Role: Co-Investigator

2016-2021 Contact networks and epidemic spread: merging theory and data
James S. McDonnell Foundation, Scholar Award-Complex Systems Science
Total: \$450,000
Role: Principal Investigator

In development

2017-2021 A Randomized Intervention to Inhibit Network Growth (The RIING Study) (Little, PI)
NIH R01, Total: TBD
Role: Subcontract PI

SOFTWARE DEVELOPMENT

treatSens R package for sensitivity analysis in causal inference
(cran.r-project.org/web/packages/treatSens/index.html)

TEACHING EXPERIENCE

University of Wisconsin-Milwaukee, Instructor of Record

Introduction to Biostatistics (Fall 2016)

Biostatistics and Applications for Nursing Practice (Fall 2015)

Analyzing Observational and Experimental Data (Spring 2015, 2016) (Developed course)

New York University, Instructor of Record

Basic Statistics (Spring 2011)

Epidemiology (Spring 2010)

Statistical Analysis of Social Networks (Winter 2010) (Developed course)

St. Olaf College, Co-Instructor

Global Health and Biostatistics (Winter 2007)

INVITED PRESENTATIONS

- 2015 “Estimation of the overall treatment effect in the presence of interference in cluster-randomized trials of infectious disease prevention,” Seminar Series, Division of Biostatistics, Medical College of Wisconsin, October 20th
- 2015 “Accounting for interference between clusters in CRTs of infectious disease prevention,” Atlantic Causal Inference Conference, May 20-21.
- 2014 “Social networks in health research,” SAMSI Undergraduate Modeling Workshop, May 19-23.
- 2014 “Viral genetic linkage analysis in cluster randomized trials: estimation of linkage rates in the presence of missing data,” New England Statistics Symposium, Boston, Massachusetts, April 25-26.
- 2013 “Viral genetic linkage among HIV-infected village residents in Botswana: estimation of linkage rates in the presence of missing data,” Applied Statistics Seminar, PRIISM Center, New York University, September 19.
- 2011 “A Bayesian model for estimation of HIV incidence using prevalence surveillance data,” Statistics and Probability Seminar, University of Massachusetts – Amherst, September 19.

- 2011 “Issues surrounding estimation of HIV incidence from surveillance data with testing for recent infection,” Preventive Medicine and Community Health Seminar, University of Medicine and Dentistry New Jersey, January 14.

CONTRIBUTED PRESENTATIONS

- 2016 “Assessing sensitivity to unmeasured confounding in multilevel models using a simulated potential confounder,” Joint Statistical Meetings, July 30-August 4.
- 2016 “Sensitivity analysis for multilevel models,” Atlantic Causal Inference Conference, May 25-27.
- 2015 “Potential for detection of contact network structure from epidemic transmission trees” (poster) NIAID Workshop on Infectious Disease Research: Quantitative Methods and Models in the Era of Big Data, November 9-10.
- 2015 “Estimation of the treatment effect in the presence of interference in cluster-randomized trials of infectious disease prevention,” Joint Statistical Meetings, August 8-13.
- 2014 “Estimation of the overall treatment effect in the absence of interference in cluster-randomized trials of infectious disease prevention” (poster), Atlantic Causal Inference Conference, May 15-16.
- 2014 “Estimation of contact network properties using multiple epidemic data sources,” XXXIV Sunbelt Social Networks Conference, St. Pete Beach, Florida, February 18-23.
- 2013 “Estimation of viral genetic linkage rates in the presence of missing data,” Joint Statistical Meetings, Montreal, Quebec, August 3-8.
- 2013 “Detection of contact network clustering from epidemic transmission trees,” XXXIII Sunbelt Social Networks Conference, Hamburg, Germany, May 21-26.
- 2012 “What drives the US and Peruvian HIV epidemics in men who have sex with men (MSM)?” (Poster MOPE143), XIX International AIDS Conference, Washington, D.C., July 22-27.
- 2011 “A Bayesian model for estimation of HIV incidence using serial prevalence data,” Joint Statistical Meetings, Miami, Florida, July 30 - August 4.
- 2011 “Cross-sectional approximation to STERGM parameters,” XXXI Sunbelt Social Networks Conference, St. Pete Beach, Florida, February 8-13.

- 2009 “Issues surrounding estimation of HIV incidence from surveillance data with testing for recent infection,” Joint Statistical Meetings, Washington, D.C., August 1-6.
- 2009 “Concurrency, connectivity and HIV transmission in small networks,” XXIX Sunbelt Social Networks Conference, San Diego, California, March 10-15.
- 2008 “Estimation of HIV incidence in sub-Saharan Africa,” University of Washington Graduate Research Symposium, Seattle, Washington, April 4.

AWARDS AND HONORS

- 2016 Winner “Is Your SATT Where It’s At?” data analysis competition, ACIC
- 2011 Young Investigator Award, ASA Section on Statistics in Epidemiology
- 2005-2006 NSF VIGRE Graduate Fellowship, University of Washington
- 2005 Gertrude Cox Scholarship Honorable Mention, American Statistical Association
- 2005 Phi Beta Kappa, St. Olaf College

PROFESSIONAL DEVELOPMENT

- 2015 Health Equity Leadership Institute, The University of Wisconsin-Madison School of Medicine and Public Health & The University of Maryland School of Public Health, Madison, WI.
- 2011 NISS/ASA Writing Workshop, Joint Statistical Meetings, Miami, FL.

SERVICE

- 2015 – 2017 Graduate Program Committee, Zilber SPH
- 2014 – 2015 MPH Coordinating Committee, Zilber SPH
- 2009 – present Member, Statistics without Borders

Grant reviewer:

- 2016 Poland National Science Center PRELUDIUM grant program
- 2015 Netherlands ZonMw TOP grant program

Referee since:

- 2016 Annals of Applied Statistics
- 2015 JAIDS
- 2015 Annals of Epidemiology
- 2014 Journal of Mathematical Sociology
- 2014 BMC Bioinformatics
- 2014 Emerging Themes in Epidemiology
- 2013 PLoS ONE
- 2012 Sociological Methodology

2012 Statistical Communications in Infectious Diseases
2011 Open AIDS Journal
2011 Social Forces

CONSULTING

2011 World Health Organization, Department of Immunization & Biologicals,
Geneva, Switzerland.
2009 – 2010 Population Services International, Gaborone, Botswana.
2008 – 2009 Relevant Strategies, Seattle, WA.
2005 World Health Organization, Department of Immunization & Biologicals,
Geneva, Switzerland.

LANGUAGES

Spanish: conversational, read well, write with dictionary

PROFESSIONAL MEMBERSHIPS

2004-present American Statistical Association