

JENNA R. KRALL

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PROFESSIONAL EXPERIENCE

Assistant Professor, Department of Global and Community Health, George Mason University (2016 - present)

Faculty fellow, Project TIER (Teaching Integrity in Empirical Research) (2017-2018)

Postdoctoral fellow, Department of Biostatistics and Bioinformatics, Emory University, (2014-2016)

Mentor: Lance Waller

Statistical consultant, Anthem Engineering, Elkridge, MD (2015)

Research Assistant, Statistical Methods for Complex Environmental Health Data,
Johns Hopkins University (2013-2014)

Principal Investigator: Roger Peng

Predocctoral Fellow, Epidemiology and Biostatistics of Aging Training Grant, Johns Hopkins University
(2009-2013)

Advisors: Qian-Li Xue and Michelle Carlson

Biostatistical Consultant, Johns Hopkins University School of Nursing Biostatistics Consulting Service
(2010-2011)

EDUCATION

Ph.D. Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2014

Thesis title: Statistical methods for linking the chemical composition of particulate matter to health outcomes

Advisor: Roger Peng

Certificate in Gerontology, 2013

B.A. Mathematics and Dance, George Mason University, 2008.

summa cum laude

PUBLICATIONS

PEER REVIEWED

Published or in press

1. Golan R, Ladva C, Greenwald R, **Krall JR**, Raysoni AU, Kewada P, Winquist A, Flanders WD, Liang D, Sarnat JA. Acute pulmonary and inflammatory response in young adults following a scripted car commute. *Air Quality, Atmosphere & Health*, in press
2. **Krall JR**, Ladva CN, Russell AG, Golan R, Peng X, Shi G, Greenwald R, Raysoni AU, Waller LA, Sarnat JA. Source-specific pollution exposure and associations with pulmonary response in the Atlanta Commuters Exposure Studies. *Journal of Exposure Science and Environmental Epidemiology*, in press.

3. Boone, EM, Rossheim ME, **Krall JR**, Weiler RM. 2017. State helmet laws and helmet use among fatally injured moped riders in the United States, 2011-2015, *Traffic Injury Prevention*, in press.
4. Rossheim ME, Barry AE, Thombs DL, Weiler RM, **Krall JR**, Stephenson C, Walters ST, Reed MB, Clapp JD, Suzuki S, Barnett TE, Cannell B. 2017. Factors associated with self-estimated breath alcohol concentration among bar patrons. *Alcoholism: Clinical and Experimental Research*, in press.
5. **Krall JR**, Hackstadt AJ, Peng RD. 2017. A hierarchical modeling approach to estimate regional acute health effects of particulate matter sources, *Statistics in Medicine*, 36(9) 1461-1475.
6. **Krall JR**, Strickland MJ. Review. 2017. Recent Approaches to Estimate Associations Between Source-Specific Air Pollution and Health, *Current Environmental Health Reports*, 4(1) 68-78.
7. **Krall JR**, Mulholland JA, Russell AG, Balachandran S, Winquist A, Tolbert PE, Waller LA, Sarnat SA. 2017. Associations between Source-Specific Fine Particulate Matter and Emergency Department Visits for Respiratory Disease in Four U.S. Cities, *Environmental Health Perspectives*, 125(1) 97-103.
8. **Krall JR**, Simpson CH, Peng RD. 2015. A Model-Based Approach for Imputing Censored Data in Source Apportionment Studies, *Environmental and Ecological Statistics*, 22(4) 779-800.
9. **Krall JR**, Chang HH, Sarnat SE, Peng RD, Waller LA. Review. 2015. Current Methods and Challenges for Epidemiologic Studies of the Associations Between Chemical Constituents of Particulate Matter and Health, *Current Environmental Health Reports*, 2(4) 388-398.
10. Powell H, **Krall JR**, Wang Y, Bell ML, Peng RD. 2015. Ambient Coarse Particulate Matter and Hospital Admissions in the Medicare Cohort Air Pollution Study, 1999-2010, *Environmental Health Perspectives*, 123(11) 1152-1158.
11. **Krall JR**, Carlson MC, Fried LP, Xue QL. 2014. Examining the Dynamic, Bidirectional Associations Between Cognitive and Physical Functions, *American Journal of Epidemiology*, 180(8) 838-846.
12. **Krall JR**, Anderson GB, Dominici F, Bell ML, Peng RD. 2013. Short-term Exposure to Particulate Matter Constituents and Mortality in a National Study of U.S. Urban Communities, *Environmental Health Perspectives*, 121(10) 1148-1153.
13. Turnbull AE, **Krall JR**, Ruhl PA, Curtis JR, Halpern SD, Lau BM, Needham DM. 2013. A Scenario-Based, Randomized Trial of Patient Wishes and Functional Prognosis on Intensivist Intent to Discuss Withdrawing Life Support, *Critical Care Medicine*, 42(6) 1455-1462.
14. Eisbach SS, Cluxton-Keller F, Harrison J, **Krall JR**, Hayat M, Gross D. 2013. Characteristics of Temper Tantrums in Preschoolers with Disruptive Behavior in a Clinic Setting, *Journal of Psychosocial Nursing and Mental Health Services*, 52(5) 32-40.
15. Anderson GB, **Krall JR**, Peng RD, Bell ML. 2012. Is the Relationship Between Ozone and Mortality Confounded by Chemical Components of Particulate Matter? Analysis of 7 Components in 57 United States Communities, *American Journal of Epidemiology*, 176(8) 726-732.
16. Farley JE, Ross T, **Krall JR**, Hayat M, Caston-Gaa A, Perl T, Carroll, KC. 2012. Prevalence, Risk Factors, and Molecular Epidemiology of Methicillin-Resistant Staphylococcus Aureus Nasal and Axillary Colonization Among Psychiatric Patients on Admission to an Academic Medical Center, *American Journal of Infection Control*, 41(3) 199-203.

BOOK CHAPTERS

Krall JR, Chang, HH. 2017. Statistical Methods for Source Apportionment. *Handbook of Environmental and Ecological Statistics*. Ed. Gelfand AE, Fuentes M, Hoeting JA, Smith RL. Chapman and Hall/CRC Press, to appear.

POPULAR PRESS

Krall JR, Peng RD. 2015. The Volkswagen Scandal: Deception, Driving, and Deaths, *Significance*, 12(6) 12-15.

PRESENTATIONS

INVITED

- “Sources of air pollution and their impacts on human health in multicity studies.”
International Conference on Health Policy Statistics (upcoming 2018)
- “A Bayesian hierarchical model to estimate associations between air pollution and cause-specific cardiorespiratory emergency department visits.”
Georgetown University, Department of Mathematics and Statistics Colloquium Series, Washington, DC (2017)
- “Estimating health effects of source-specific air pollution in multicity studies.”
American Public Health Association Annual Meeting, Atlanta, GA (2017)
- “A Bayesian hierarchical model to estimate associations between air pollution and cause-specific cardiorespiratory emergency department visits.”
Vanderbilt University, Nashville, TN (2017)
- “Estimating sources of air pollution and their impact on human health.”
Georgetown University, Department of Biostatistics, Bioinformatics and Biomathematics Department of Biostatistics, Bio3 Seminar Series, Washington, DC (2017)
- “Approaches for estimating sources of air pollution and their health effects.”
R. Clifton Bailey Statistics Seminar Series, George Mason University, Fairfax, VA (2016)
- “Identifying the most harmful sources of ambient air pollution to better protect public health.”
Joint Statistical Meetings, Chicago, IL (2016)

TOPIC CONTRIBUTED, SYMPOSIUMS, AND WORKSHOPS

- “Do your exposures need supervision?” Statistical Approaches for Assessing Health Effects of Environmental Chemical Mixtures in Epidemiology Studies, NIEHS (2015)
- “PM_{2.5} Sources and Cardiovascular Disease ED Visits.” EPA clean air research center scientific advisory committee meeting, Atlanta, GA (2014)
- “Estimating Health Effects of Particulate Matter Sources in the Presence of Censored Air Pollution Concentrations.”
Joint Statistical Meetings, Montréal, Canada, *topic contributed* (2013)
- “Assessing the Feed-Forward and Feedback Relationship Between Cognitive and Physical Functions.”
Gerontological Society of America Annual Meeting, San Diego, CA *symposium* (2012)

CONTRIBUTED

- “Bayesian Hierarchical Models to Estimate Associations Between Air Pollution and Cause-Specific Morbidity in Multicity Epidemiologic Studies.” Joint Statistical Meetings, Baltimore, MD (2017)
- “Estimating associations between source-apportioned particulate matter and emergency department visits in multicity studies.” Joint Statistical Meetings, Seattle, WA (2015)
- “A Method to Identify Regional Particulate Matter Sources and their Health Effects.” Joint Statistical Meetings, Boston, MA (2014)
- “Censoring Adjustment Methods for Source Apportionment Models.” ENAR Spring Meeting, Baltimore, MD, (2014)

“Mortality Effects of Particulate Matter Constituents in a National Study of U.S. Urban Communities.” ENAR Spring Meeting, Washington, DC (2012)

“Accounting for Spatial Misalignment in a National Study of PM_{2.5} Constituents and Mortality.” ENAR Spring Meeting, Miami, FL (2011)

POSTERS

“Constrained Estimation of Source-Specific Air Pollution in the Atlanta Commuter Exposure Studies.” ENAR Spring Meeting, Washington, DC (2017)

“A Method to Identify Regional Particulate Matter Sources and their Health Effects.” Women in Statistics Conference, Cary, NC (2014)

“The Impact of Values Below the Minimum Detection Limit on Source Apportionment Results.” ENAR Spring Meeting, Orlando, FL (2013)

“Mortality Effects of Particulate Matter Constituents in a National Study of U.S. Urban Communities.” International Society for Environmental Epidemiology Conference, Columbia, SC (2012)

“Predicting Baseball Winners Using Just Noticeable Differences.” Association for Psychological Science Annual Convention, Washington, DC (2007)

PROFESSIONAL DEVELOPMENT

Participant, TIER Faculty Development Workshop (2017)

Participant, ENAR Workshop for Junior Biostatisticians in Health Research (2017)

Participant, NCAR/CDC Colloquium on Climate and Health, Boulder, CO (2013)

TEACHING

GEORGE MASON UNIVERSITY

GCH 601, Introduction to Biostatistics (2017)

GCH 804, Advanced Quantitative Data Analysis for Health Care Research I (2017)

GCH 805, Advanced Quantitative Data Analysis for Health Care Research II (2016, 2017)

OTHER

Introduction to R short course, *Centers for Disease Control and Prevention* (2016)

Introduction to R for Epidemiologists, *Emory University* (2015)

GUEST LECTURE

Environmental Epidemiology, George Mason University (2017)

Public Health Research Methods, George Mason University (2016)

Statistical Methods in Public Health I-II, Johns Hopkins University (2012, 2013)

Statistical Literacy and Reasoning in Nursing Research, Johns Hopkins University (2010-2011)

AWARDS

Poster award, Women in Statistics Conference, Cary, NC (2014)
Phi Beta Kappa, Johns Hopkins University (2014)
Helen Abbey Award for Excellence in Teaching, Johns Hopkins University (2014)
Louis I. and Thomas D. Dublin Award for the Advancement of Epidemiology and Biostatistics,
Johns Hopkins University (2013)
Second place, Research on Aging Showcase Poster Competition, Johns Hopkins University (2013)

GRANT SUPPORT

CURRENT AS PRINCIPAL INVESTIGATOR

GEST DC: Gestational ExpoSure to Traffic in the DC Metro Area
Source: 2017-2018 George Mason University Provost Award
PI: Krall, co-PIs: Pollack, Lee, Motti
Direct cost: \$38,000

CURRENT AS CO-INVESTIGATOR

Modeling Prospects of Malaria Elimination in Haiti
Source: 2017-2018 George Mason University Provost Award
PI: von Fricken
Direct cost: \$33,000

SERVICE

REFEREE

2014 Biostatistics
2015 Journal of the American Statistical Association; Journal of Agricultural, Biological, and Environmental
Statistics; Journal of Exposure Science and Environmental Epidemiology; Environmental Health Perspectives
(2); Transactions in GIS; Chemosphere; International Journal of Environmental Health Research
2016 Environment International; International Journal of Environmental Research and Public Health;
Environmental Health Perspectives; Environmental Health
2017 Biostatistics (2); Environmental Reviews; BMJ Open; Environmental Pollution; Current Environmental Health
Reports; Statistics in Medicine; American Journal of Epidemiology; Epidemiology

SERVICE AND LEADERSHIP

Statistical Advisory Board, STATS.org (2016-present)
Volunteer, Statistics Without Borders (2015-present)
Membership Co-Chair, Caucus for Women in Statistics (2017)
Session Chair, ENAR (2017)
Session Chair, Joint Statistical Meetings, (2013, 2016)

COMPUTING

Proficient in R, \LaTeX , Stata, SAS, Microsoft Office

Experience with UNIX shell scripting, git

R packages on github:

`share`: Estimates sources that are SHared Across a REgion ([github link](#))

`handles`: HANdles Detection Limits when Estimating Sources ([github link](#))

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