Harrison S. Quick, Ph.D Updated October 2, 2018

CONTACT INFORMATION

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RESEARCH INTERESTS

Bayesian modeling, disclosure limitation, spatial data analysis, spatiotemporal modeling, statistical methods for occupational exposure assessment

EDUCATION

University of Minnesota, Minneapolis, MN

Ph.D., Biostatistics, July 2013

- Thesis Topic: *Spatiotemporal Gradient Modeling with Applications*
- Advisors: Bradley P. Carlin, Ph.D and Sudipto Banerjee, Ph.D

M.S., Biostatistics, Aug 2010

- Topic: *Assessing the Impact of the Density of Alcohol Establishments on Crime in Minneapolis Neighborhoods Using Univariate and Multivariate Conditionally Autoregressive Models*
- Advisor: Bradley P. Carlin, Ph.D

Minnesota State University, Mankato, MN

B.S., Mathematics and Statistics (Double Major), May 2008

- *Summa Cum Laude*

RESEARCH EXPERIENCE

Assistant Professor of Biostatistics Sept 2016 to Present
Department of Epidemiology and Biostatistics
Drexel University

Visiting Research Fellow July 2018 to Present
Division of Research Methodology
National Center for Health Statistics
Centers for Disease Control and Prevention

Senior Service Fellow Sept 2014 to Aug 2016
Small Area Analysis Team
Epidemiology and Surveillance Branch
Division of Heart Disease and Stroke Prevention
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
Supervisor: Michele Casper, Ph.D

Postdoctoral Researcher Aug 2013 to Aug 2014
NSF–Census Research Network
Department of Statistics
University of Missouri
Supervisors: Scott H. Holan, Ph.D and Christopher K. Wikle, Ph.D

Research Assistant May 2011 to July 2013
Division of Biostatistics
University of Minnesota
Supervisor: Bradley P. Carlin, Ph.D

Research Assistant June 2010 to May 2011
Division of Epidemiology
University of Minnesota
Supervisors: Traci L. Toomey, Ph.D and Bradley P. Carlin, Ph.D

Research Assistant Sept 2008 to Aug 2010
Division of Biostatistics
University of Minnesota
Supervisors: Katherine Huppler-Hullsiek, Ph.D and Jason V. Baker, M.D., M.S.

Refereed Journal Publications

1. Baker, J., Duprez, D., Rapkin, J., Huppler-Hullsiek, K., **Quick, H.**, Grimm, R., Neaton, J.D., and Henry, K. (2009). "Untreated HIV infection and large and small artery elasticity." *JAIDS*, **52**, 25–31. [jaids]

2. Baker, J., Ayenew, W., **Quick, H.**, Huppler-Hullsiek, K., Tracy, R., Henry, K., Duprez, D., and Neaton, J.D. (2010). "High-density lipoprotein particles and markers of inflammation and thrombotic activity in patients with untreated HIV infection." *Journal of Infectious Diseases*, **201**, 285–292. [jid]

3. Baker, J., **Quick, H.**, Huppler-Hullsiek, K., Tracy, R., Duprez, D., Henry, K., and Neaton, J.D. (2010). "IL-6 and d-dimer levels are associated with vascular dysfunction in patients with untreated HIV infection." *HIV Medicine*, **11**, 608–609. [hivmed]

4. Kunisaki, K.M., **Quick, H.**, and Baker, J.V. (2011). "HIV antiretroviral therapy reduces circulating surfactant protein-D levels." *HIV Medicine*, **12**, 580–581. [hivmed]

5. Toomey, T.L., Erickson, D.J., Carlin, B.P., **Quick, H.S.**, Harwood, E.M., Lenk, K.M., and Ecklund, A.M. (2012). "Is the density of alcohol establishments related to non-violent crime?" *J. Stud. Alcohol Drugs*, **73**, 21–25. [jsad]

6. Toomey, T.L., Erickson, D.J., Carlin, B.P., Lenk, K.M., **Quick, H.S.**, Jones, A.M., and Harwood, E.M. (2012). "The association between density of alcohol establishments and violent crime within urban neighborhoods." *Alcohol. Clin. Exp. Res.*, **36**, 1468–1473. [acer]

7. **Quick, H.**, Banerjee, S., and Carlin, B.P. (2013). "Modeling temporal gradients in regionally aggregated California asthma hospitalization data." *Ann. Appl. Stat*, **7**, 154–176. [aoas]

8. **Quick, H.**, Groth, C., Banerjee, S., Carlin, B.P., Stenzel, M.R., Stewart, P.A., Sandler, D.P., Engel, L.S., and Kwok, R.K. (2014). "Exploration of the use of Bayesian modeling of gradients for censored spatiotemporal data from the *Deepwater Horizon* oil spill." *Spat. Stat.*, **9**, 166–179. [spasta]

9. Erickson, D.J., Carlin, B.P., Lenk, K.M., **Quick, H.S.**, Harwood, E.M., and Toomey, T.L. (2015). "Do neighborhood attributes moderate the relationship between alcohol establishment density and crime?" *Prevention Science*, **16**, 254–264. [prevsci]

10. Casal, C., Alvarez, J., Bezos, J., **Quick, H.**, Diez-Guerrier, A., Romero, B., Saez, J.L., Liandris, E., Navarro, A., Perez, A., Dominguez, L., and de Juan, L. (2015). "Effect of the inoculation site on the outcome of the cervical intradermal tuberculin test in cattle." *Preventive Veterinary Medicine*, **121**, 86–92. [prevetmed]

11. **Quick, H.**, Banerjee, S., and Carlin, B.P. (2015). "Bayesian modeling and analysis for gradients in spatiotemporal processes." *Biometrics*, **71**, 575–584. [biom]

12. **Quick, H.**, Holan, S.H., and Wikle, C.K. (2015). "Zeros and ones: A case for suppressing zeros in sensitive count data with an application to stroke mortality." *Stat*, **4**, 227–234. [stat]

13. **Quick, H.**, Carlin, B.P., and Banerjee, S. (2015). "Heteroscedastic conditional auto-regression models for areally referenced temporal processes for analysing California asthma hospitalization data." *J. Roy. Statist. Soc., Ser. C (Applied Statistics)*, **64**, 799–813. [jrss-c]

14. **Quick, H.**, Holan, S.H., Wikle, C.K., and Reiter, J.P. (2015). "Bayesian marked point process modeling for generating fully synthetic public use data with point-referenced geography." *Spat. Stat.*, **14**, 439–451. [spasta]

15. Vaughan, A.S., **Quick, H.**, Pathak, E., Kramer, M., and Casper, M. (2015). "Disparities in temporal and geographic patterns of declining heart disease mortality by race and sex in the United States, 1973–2010." *J. Am. Heart Assoc.*, **4**, doi: 10.1161/JAHA.115.002567. [jaha]

16. Huynh, T., **Quick, H.**, Ramachandran, G., Banerjee, S., Stenzel, M., Blair, A., Sandler, D., Engel, L., Kwok, R.K., and Stewart, P.A. (2016). "A comparison of the β-substitution method and a Bayesian approach for analyzing left-censored data for the GuLF STUDY." *Ann. Occ. Hyg.*, **60**, 56–73. [annhyg]

17. Casper, M., Kramer, M., **Quick, H.**, Schieb, L., Vaughan, A.S., and Greer, S. (2016). "Changes in the geographic patterns of heart disease mortality in the United States 1973 to 2010." *Circulation*, **133**, 1171–1180. [circ]

18. **Quick, H.**, Huynh, T., and Ramachandran, G. (2017). "A method for constructing informative priors for Bayesian modeling of occupational hygiene data." *Ann. Work Exp. Health*, **61**, 67–75. [annweh]

19. **Quick, H.**, Waller, L.A., and Casper, M. (2017). "Multivariate spatiotemporal modeling of age-specific stroke mortality." *Ann. Appl. Stat*, **11**, 2170–2182. [aoas]

20. **Quick, H.**, Waller, L.A., and Casper, M. (2018). "A multivariate space-time model for analysing county-level heart disease death rates by race and sex." *J. Roy. Statist. Soc., Ser. C (Applied Statistics)*, **67**, 291–304. [jrss-c]

21. **Quick, H.**, Holan, S.H., and Wikle, C.K. (2018). "Generating partially synthetic geocoded public use data with decreased disclosure risk using differential smoothing." *J. Roy. Statist. Soc., Ser. A (Statistics in Society)*, **181**, 649–661. [jrss-a]

22. Tabb, L.P., McClure, L.A., **Quick, H.**, Purtle, J., and Diez Roux, A.V. (2018). "Assessing the spatial heterogeneity in overall health across the United States using spatial regression methods: The contribution of health factors and county-level demographics." *Health & Place*, **51**, 68–77. [healthplace]

23. **Quick, H.** and Waller, L.A. (2018). "Using spatiotemporal models to generate synthetic data for public use." *Spatial Spatio-temporal Epidemiol.*, **27**, 37–45. [sste]

24. Vaughan, A., Schieb, L., **Quick, H.**, Kramer, M.R., and Casper, M. (2018+). "Before the here and now: What can we learn from variation in spatiotemporal patterns of changing heart disease mortality by age group, time period, and birth cohort?" To appear in *Soc. Sci. Med.*

Submitted Manuscripts

25. Huynh, T., Ramachandran, G., **Quick, H.**, Hwang, J., Raynor, P.C., Alexander, B.H., and Mandel, J.H. "Real-time fine aerosol exposures in taconite mining operations." Under revision at *Annals of Work Exposures and Health.*

26. Vaughan, A., Schieb, L., Kramer, M., **Quick, H.**, Taylor, H., and Casper, M. "Changing rate orders of race-gender heart disease death rates: An exploration of county-level race-gender disparities." Under revision at *SSM — Population Health.*

27. Schinasi, L.H., **Quick, H.**, Clougherty, J.E., and De Roos, A.J. "Green space and infant mortality in Philadelphia, PA." Submitted to *Journal of Urban Health.*

28. **Quick, H.**, Tootoo, J., Li, R., Vaughan, A., Schieb, L., Casper, M., Miranda, M.L. "The Rate Stabilizing Tool: Generating stable local-level measures of chronic disease." Submitted to *Preventing Chronic Disease.*

29. **Quick, H.** "Estimating county-level mortality rates using highly censored data from CDC WONDER." Submitted to *Preventing Chronic Disease.*

External Research Support

Active

- Role: Co-Investigator (PI: Bilal); $1,249,997 / 10% effort — Sept 2018 – Aug 2021
  The Health Consequences of Urban Scaling
  NIH Director's Early Independence Awards

- Role: Principal Investigator; $95,530 / 100% effort — July 2018 – Dec 2018
  Improving the utility of CDC WONDER via the development of software for analyzing censored data and dissemination of synthetic data for public use
  ASA & NCHS Research Fellowship Program

- Role: Co-Investigator (PI: Diez Roux); $12,191,632 / 5% effort — Apr 2017 – Mar 2021
  What makes cities healthy, equitable and environmentally sustainable? Lessons from Latin America [drexel]
  Wellcome Trust

Internal Research Support

Past

- Role: Principal Investigator; $20,000 (salary for graduate student) — July 2017 – June 2018
  Development of Bayesian spatiotemporal models for small area estimation with an application to tract-level obesity rates in Philadelphia County [drexel]
  Urban Health Collaborative, Drexel University

Awards

Travel Awards

- International Travel Award, Drexel University — Aug – Sept 2017

- Financial assistance to present my research at the EPICOH 2017 symposium in Edinburgh, UK and the Geomed 2017 conference in Porto, Portugal.
- Student Paper Competition Award, Section on Bayesian Statistical Science — Aug 2013
  - Financial assistance to present my research (Quick et al., 2015) at the Joint Statistical Meetings in Montréal, Canada.
- Workshop on Environmetrics, Raleigh, NC — Oct 2012
- Case Studies in Bayesian Statistics and Machine Learning, Pittsburgh, PA — Oct 2011
- IMS/ISBA Joint International Meeting, Park City, UT — Jan 2011

Student Awards — University of Minnesota, Division of Biostatistics

- Best Student Paper Award (Quick et al., 2015) — May 2013
- Outstanding Teaching Assistant Award — May 2012
- Outstanding Research Assistant Award — May 2011
- James R. Boen Student Achievement Award — May 2009

Student Awards — University of Minnesota, Graduate School

- Doctoral Dissertation Fellowship — 2012–2013
  - The Doctoral Dissertation Fellowship (DDF) program is intended to give the most accomplished final-year PhD candidates an opportunity to complete the dissertation within the 2012–13 academic year by devoting full-time effort to research and writing.

Presentations

Statistical Meetings

- Joint Statistical Meetings, Vancouver, BC, Canada — July 2018
- Geomed 2017, Porto, Portugal — Sept 2017
- Intl. Symp. on Epi. in Occupational Health (EPICOH), Edinburgh, UK — Aug 2017
- Joint Statistical Meetings, Baltimore, MD — Aug 2017
- New England Statistical Symposium, Storrs, CT — Apr 2017
- Biometric Society (ENAR) Regional Meeting, Washington, DC — Mar 2017
- Joint Statistical Meetings, Chicago, IL — Aug 2016
- Biometric Society (ENAR) Regional Meeting, Austin, TX — Mar 2016
- Joint Statistical Meetings, Seattle, WA — Aug 2015
- G70: A Celebration of Alan Gelfand's 70th Birthday, Durham, NC — Apr 2015
- NCRN Fall Meeting, New York, NY — Sep 2014
- Joint Statistical Meetings, Boston, MA — Aug 2014
- IMS New Researchers Conference, Cambridge, MA — July 2014
- International Indian Statistical Association, Riverside, CA — July 2014
- Joint Statistical Meetings, Montréal, Québec, Canada — Aug 2013
- Biometric Society (ENAR) Regional Meeting, Orlando, FL — Mar 2013
- Workshop on Environmetrics, Raleigh, NC — Oct 2012
- Joint Statistical Meetings, San Diego, CA — Aug 2012
- Biometric Society (ENAR) Regional Meeting, Washington, D.C. — Apr 2012
- Case Studies in Bayesian Statistics and Machine Learning, Pittsburgh, PA — Oct 2011
- Biometric Society (ENAR) Regional Meeting, Miami, FL — Mar 2011
- IMS/ISBA Joint International Meeting, Park City, UT — Jan 2011

Federal Government

- Ask the Methodologist, NCHS, Hyattsville, MD — July 2018
- CDAC/FCSM Workshop on New Advances in Disclosure Limitation Washington, DC — Sept 2017
- CDC Statistics Day, Chamblee, GA — Sept 2015

- CDC GIS Day, Chamblee, GA — Nov 2014, 2015

University of Minnesota
- Mostly Markov Chain Seminar Series — Nov 2011
- School of Public Health Research Day — Apr 2011, 2013

Other Invited Presentations
- Philadelphia Department of Public Health, Philadelphia, PA — Sept 2017
- Department of Epidemiology and Biostatistics, SUNY-Albany, Albany, NY — Apr 2016
- Division of Biostatistics, The Ohio State University, Columbus, OH — Mar 2016
- Department of Biostatistics, University of Michigan, Ann Arbor, MI — Feb 2016
- Department of Statistics, Colorado State University, Ft. Collins, CO — Feb 2016
- Department of Epidemiology and Biostatistics — Jan 2016
  Drexel University, Philadelphia, PA
- Department of Biostatistics and Epidemiology — Jan 2016
  University of Massachusetts Amherst, Amherst, MA
- Department of Bioinformatics and Biostatistics — Dec 2015
  University of Louisville, Louisville, KY

Teaching Experience

Instructor — Spring 2018 – present
BST 565 - Applied Bayesian Data Analysis
Department of Epidemiology and Biostatistics, Drexel University

Instructor — Summers 2017 – present
Introduction to Bayesian Analysis for Public and Urban Health
One week shortcourse in conjunction with the UHC Summer Institute
Urban Health Collaborative, Drexel University

Co-instructor — Summers 2013 – 2017
PUBH 6400/6431 - Topics in Hierarchical Bayesian Analysis
with Bradley P. Carlin
In conjunction with the Summer Public Health Institute
Division of Biostatistics, University of Minnesota

Teaching Assistant — Springs 2011 & 2012
PUBH 7440 - Introduction to Bayesian Analysis
Instructor: Bradley P. Carlin, Ph.D
Division of Biostatistics, University of Minnesota

Service

Departmental Service (Drexel University)
- Co-Chair, Epi/Bio Seminar Committee, Dept. of Epi/Bio — 2017 – 2019
- Assist. Prof. Biostat. Faculty Search Committee, Dept. of Epi/Bio — 2017/2018
- Open-Rank Biostat. Faculty Search Committee, Dept. of Epi/Bio — 2016/2017

Departmental Service (University of Minnesota)
- Recruiting Committee, Division of Biostatistics — May 2010 – May 2013
- Search Committee, School of Public Health — June 2010 – Aug 2010
  Position to fill: SPH Coordinator of Recruitment and Student Leadership

Outside Mentoring
- Mentor, Philadelphia Chapter of the ASA — 2017 – present
- Mentor, SPH Mentor Program, University of Minnesota — 2015 – present

Manuscript Referee

- *American Journal of Preventative Medicine*; *Annals of Applied Statistics*; *Biometrics*; *BMC Medical Research Methodology*; *Epidemiology*; *International Statistical Review*; *Journal of Biopharm. Statistics*; *Journal of the American Statistical Association, Applications and Case Studies*; *Journal of the Royal Statistical Society, Series A*; *Journal of the Royal Statistical Society, Series C*; *Journal of Survey Methodology*; *Obesity*; *Population Research and Policy Review*; *Spatial Statistics*; *Statistics and Its Interface*; *Statistics in Medicine*; *The American Statistician*