

ANNA L. SMITH

UNIVERSITY OF KENTUCKY

CONTACT INFORMATION Dr. Bing Zhang Department of Statistics Anna.L.Smith@uky.edu
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ACADEMIC POSITIONS July 2019 – present **Assistant Professor**
Department of Statistics at **University of Kentucky**
June 2017 – June 2019 **Postdoctoral Research Scientist**
Department of Statistics at **Columbia University**
Advised by Prof. Tian Zheng

EDUCATION May 2017 **PhD Statistics, The Ohio State University**
Dissertation: Statistical Methodology for Network Comparison
Committee: Catherine A. Calder (advisor), Christopher R. Browning (Sociology), Eloise Kaizar, Sebastian Kurtek, and David Sivakoff (joint with Mathematics)
May 2014 **MS Statistics, The Ohio State University**
May 2011 **BS Computational Mathematics, Marquette University**
Summa Cum Laude, Honors Program
Minor in Anthropology

RESEARCH INTERESTS network modeling · Bayesian methods · latent space models · predictive assessment
reproducible modeling of behavioral data · data visualization · social science applications

PUBLICATIONS Wu, J., **Smith, A. L.**, and Zheng, T. (2021), “Diagnostics and Visualization of Point Process Models for Event Times on a Social Network,” *Applied Modeling Techniques and Data Analysis 1*, edited by Dimotilakis, Y., Karagrigoriou, A., Parpoula, Ch. and Skiadas, Ch. iSTE, Wiley, 7, 129-146.
This manuscript also appears in conference proceedings: *18th Applied Stochastic Models and Data Analysis International Conference with Demographics Workshop, Florence, Italy, 11-14 June 2019*, 837-850.
Smith, A. L., Asta, D. M., and Calder, C. A. (2019), “The Geometry of Continuous Latent Space Models for Network Data,” *Statistical Science*, 34:3, 428-453.
Browning, C. R., Calder, C. A., Boettner, B., and **Smith, A.** (2017), “Ecological networks and urban crime: The structure of shared routine activity locations and neighborhood-level informal control capacity,” *Criminology*, 55, 754-778.

Browning, C. R., Calder, C. A., Krivo, L. J., **Smith, A. L.**, and Boettner, B. (2017), “Socioeconomic segregation of activity spaces in urban neighborhoods: Does shared residence mean shared routines?” *RSF: The Russel Sage Foundation Journal of the Social Sciences*, 3:2, 210-231.

Browning, C. R., Calder, C. A., Ford, J. L., Boettner, B., **Smith, A. L.** and Haynie, D. (2017), “Understanding racial differences in exposure to violent areas: Integrating survey, smartphone, and administrative data resources,” *The ANNALS of the American Academy of Political and Social Science*, 669, 41-62.

Smith, A., Calder, C. A., and Browning, C. R. (2016), “Empirical reference distributions for networks of different size,” *Social Networks*, 47, 24-37.

MANUSCRIPTS UNDER REVIEW

Smith, A., Zheng, T., and Gelman, A. (*under review*), “Prediction scoring for measuring the replicability of data-driven discoveries,” doi:10.7916/D82F95D0.

Wu, J., Ward, O., **Smith, A. L.**, Zheng, T. (*under review*), “Markov-Modulated Hawkes Processes for Sporadic and Bursty Event Occurrences,” arXiv:1903.03223.

WORKING PAPERS

Broderick, T., Gelman A., Meager, R., **Smith, A.**, and Zheng, T. “Toward a Taxonomy of Trust for Probabilistic Machine Learning.”

TALKS AND SEMINARS

*Presented by
Coauthor

(**Invited**) CMStatistics. Virtual. Dec 19 – Dec 21, 2020.

Posterior predictive differences for comparing multiple networks;

(Contributed) Network Hawkes Process Models for Exploring Latent Hierarchy in Social Animal Interactions (with Owen Ward* and Tian Zheng)

(Topic-Contributed) Joint Statistical Meetings. Virtual. Aug 2 – Aug 6, 2020.

Posterior predictive distributions in network inference.

(**Invited**) Statistical Learning and Data Science Conference. Irvine, CA. May 27 – 29, 2020.
Better Data Science for Better Science. [Cancelled due to COVID-19]

(**Invited**) Department of Biostatistics, *University of Louisville*. Louisville, KY. Oct. 11, 2019.
Predictive inference for preregistered studies.

New Researchers Conference, *Colorado State University*. Fort Collins, CO. Jul 24 – 27, 2019.
A geometric perspective on latent network methods (poster).

(**Invited**) RAND Corp. Statistics Group. Pittsburgh, PA. Feb. 21, 2019.

A geometric perspective on latent network methods.

(**Invited**) Department of Statistics, *University of Kentucky*. Lexington, KY. Feb. 15, 2019.

A geometric perspective on latent network methods.

Joint Statistical Meetings. Baltimore, MD. Jul 29 – Aug 3, 2017.

A hierarchical model for network data in a latent hyperbolic space.

(**Invited**) Department of Mathematics, Statistics, and Computer Science, *Marquette University*. Milwaukee, WI. Apr. 18, 2016.

Network comparison methods: Reference distributions for networks of different sizes.

(**Invited**) Joint Statistical Meetings. Chicago, IL. Jul 30 – Aug 4, 2016.

Geometric methods for network comparison and multilevel modeling (e-poster);
(Contributed) Empirical reference distributions for networks of different size.

Joint Statistical Meetings. Seattle, WA. Aug 8 – 13, 2015.

Comparing networks of different sizes: An extension of the HERGM (poster).

Sunbelt. *International Network for Social Network Analysis*. Brighton, UK. Jun 23 – 25, 2015.

Network comparison methods: Reference distributions for networks of different sizes.

TEACHING POSITIONS

- Au 2019 - 2021 **Lead Instructor.** STA 605, *University of Kentucky*
Introductory course in computational inference for 10-15 first-year graduate students.
- Sp 2019 **Lead Instructor.** STA 381, *University of Kentucky*
Online intermediate statistics for 150 – 200 undergraduate students with majors in engineering.
- Au 2012, Sp 2013 **Lecturer; Teaching Assistant.** STAT 1350, *The Ohio State University*
Au 2013, Sp 2014 Prepared and presented weekly lecture materials and problem solving sessions for 100-200 students in an introductory undergraduate statistics course for non-science majors; instructed weekly lab sessions for groups of 25-30 students.
- Summer 2013 **Teaching Assistant.** STAT 1450, *The Ohio State University*
Instructed weekly lab sessions for groups of 25-30 students in an introductory undergraduate statistics course for students with some math background.

SERVICE

COMMITTEE MEMBERSHIPS

- 2020 – present Steering Committee Member. **Cooperative for the Humanities and Social Sciences (CHSS).** University of Kentucky.
- 2019 – present Member. **Undergraduate Studies.** Department of Statistics, University of Kentucky.

CONFERENCE ORGANIZING

- Session chair. Joint Statistical Meetings. Virtual. Aug 2 – Aug 6, 2020.
- Session chair and local committee member. Statistical Learning and Data Science / Nonparametric Statistics. New York, NY. Jun 4 – 6, 2018.
- Session chair. Joint Statistical Meetings. Baltimore, MD. Jul 29 – Aug 3, 2017.
- Local committee member. ENVR/EnviBayes Workshop on Bayesian Environmetrics. Columbus, OH. Mar 31 – Apr 2, 2016.

JOURNAL REVIEWING

- Journal of Nonparametric Statistics, 2020
Machine Learning, 2020
Criminology, 2019
Annals of Applied Statistics, 2018
Bayesian Analysis, 2018

Journal of Statistics Education, 2014

- AWARDS**
- TRAVEL AWARD. *Women in Statistics Conference*. 2018.
Awarded to early career researchers to help fund travel to the conference.
- WHITNEY AWARD. *The Ohio State University*, Department of Statistics. 2017.
Awarded annually to the top post-candidacy students for excellence in statistical research.
- OUTSTANDING RESEARCH ASSISTANT. *The Ohio State University*, Department of Statistics. 2015.
Awarded annually to graduate student research assistants in the department.
- KOCH TRAVEL AWARD. *The Ohio State University*, Department of Statistics. 2015, 2016.
Awarded to graduate students in the department for conference travel.
- UNIVERSITY FELLOWSHIP. *The Ohio State University*, Graduate School. 2011-2012.
Awarded to top incoming graduate students; waives teaching responsibilities for one academic year.
- UNDERGRADUATE MATHEMATICS AWARD. *Marquette University*. 2011.
Awarded annually to one graduating student for outstanding performance in the study of mathematics.
- OUTSTANDING UNDERGRADUATE PAPER. Who counts? Math across the curriculum for global learning. 2009.
- ADDITIONAL RESEARCH EXPERIENCE**
- May 2014 – May 2017 **Graduate Research Assistant**
Institute for Population Research at The Ohio State University
Advised by Prof. Catherine A. Calder, Prof. Christopher R. Browning (Sociology), and Bethany Boettner
- Summer 2009, 2010 **Student Researcher**
RESEARCH EXPERIENCE FOR UNDERGRADUATES
Department of Mathematics, Statistics, and Computer Science at Marquette University
- 2010 Risk Modeling for Pyroclastic Volcano Flows. Advised by Prof. Elaine Spiller.
- 2009 Foot and Mouth Disease: Analysis for Establishing Testing Sites at Wisconsin Dairy Farms. Advised by Prof. Kim Factor.
- ADDITIONAL TRAINING**
- Women in Statistics Conference.
Cincinnati, Ohio. Oct. 18 – 20, 2018.
- Short Course on Dynamic Space-Time Modeling. ENVR/EnviBayes Workshop on Bayesian Environmetrics.
Columbus, Ohio. Mar. 31, 2016
- Summer School on Computer Models and Geophysical Risk Analysis
Vancouver, Canada. Aug 8 – 10, 2010
- COMPUTER SKILLS**
- R, MATLAB
familiarity with C, SAS, MiniTab, JMP, Tableau, Stan, NIMBLE, JAGS, WinBUGS