Curriculum Vitae

Tyler Harris McCormick

Departments of Statistics & Sociology
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Education

Columbia University

Ph.D. in Statistics, with distinction, 2011
M.Phil. in Statistics, 2010
M.A. in Statistics, 2008
Google Ph.D. Fellowship in Statistics
Dissertation: Latent space models for networks using Aggregated Relational Data
Advisor: Tian Zheng; Committee: David Madigan, Andrew Gelman

University of Connecticut

M.S. in Statistics, 2008

Duke University

B.A., with distinction, 2005
Robertson Scholar

Positions

University of Washington

Professor, Department of Statistics, 2023-
Professor, Department of Sociology, 2023-
Associate Professor (with tenure), Department of Statistics, 2016-2023
Associate Professor (with tenure), Department of Sociology, 2016-2023
Senior Data Science Fellow, eScience Institute, 2014-present
Core faculty member, Center for Statistics and the Social Sciences, 2011-present
Faculty affiliate, Center for Studies in Demography and Ecology, 2011-present
Assistant Professor, Department of Statistics, 2011-2016
Assistant Professor, Department of Sociology, 2011-2016

Google PAIR (People+AI Research)

Visiting faculty researcher, 2019-2020

Journal of Computational and Graphical Statistics

Editor, 2019-2021

Publications

Lubold, S, Chandrasekhar, A. G., & McCormick, T. H. (2023+) Identifying latent space geometry through analysis of curvature (with A. Chandrasekhar and S. Lubold). To appear, *Journal of the Royal Statistical Society: Series B.*

Breza, E., Chandrasekhar, A. G., Lubold, S., McCormick, T. H., & Pan, M. (2023+) Consistently estimating graph statistics using Aggregated Relational Data To appear, *Proceedings of the National Academy of Sciences (USA).*

Marrs, F. W., Fosdick, B. K., & McCormick, T. H. (2023+). Standard errors for regression on relational data with exchangeable errors (with B. Fosdick and F. Marrs). To appear, *Biometrika (Miscellanea).*

Yoshida, T., Fan, T. S., McCormick, T., Wu, Z., & Li, Z. R. (2023). Bayesian Active Questionnaire Design for Cause-of-Death Assignment Using Verbal Autopsies. To appear, *Conference on Health, Inference, and Learning (CHIL).*

Boudreau, L., Heath, R. and McCormick, T. H. (2023+) Migrants, information, and working conditions in Bangladeshi garment factories. To appear, *Journal of Economic Behavior and Organization.*

Li, Z. R., Thomas, J., Choi, E., McCormick, T. H., & Clark, S. J. (2023+). The openVA toolkit for verbal autopsies. To appear, *The R Journal*.

Turnbull, K., Nemeth, C., Nunes, M., & McCormick, T. H. (2023+). Sequential Estimation of Temporally Evolving Latent Space Network Models (with K. Turnbull, C. Nemeth, & M. Nunes). To appear, *Computational Statistics and Data Analysis*.

Li, C., Rudin, C., & McCormick, T. H. (2022). Rethinking nonlinear instrumental variable models through prediction validity. *Journal of Machine Learning Research*, 23(96), 1-55.

Schumacher, A.E., McCormick, T.H., Wakefield, J., Chu, Y., Perin, J., Villavicencio, F., Simon, N. & Liu, L. (2022). A flexible Bayesian framework to estimate age- and cause-specific child mortality over time from sample registration data. *Annals of Applied Statistics*, 16(1), 124-143.

Perin, J., Chu, Y., Villaviciencio, F., Schumacher, A., McCormick, T., Guillot, M., & Liu, L. (2022). Adapting and validating the log quadratic model to derive under-five age-and cause-specific mortality (U5ACSM): a preliminary analysis. *Population Health Metrics*, 20(1), 1-12.

Lee, W., McCormick, T. H., Neil, J., Sodja, C., & Cui, Y. (2021). Anomaly Detection in Large-Scale Networks With Latent Space Models. *Technometrics*, 1-12.

Pan, M., Fosdick, B., & McCormick, T. H. (2021). Inference for network regression models with community structure. In *Proceedings of the 38th International Conference on Machine Learning (ICML)*.

Ng, T. L. J., Murphy, T. B., Westling, T., McCormick, T. H., & Fosdick, B. (2021). Modeling the social media relationships of Irish politicians using a generalized latent space stochastic blockmodel. *Annals of Applied Statistics*, 15(4), 1923-1944.

Arinaminpathy, N., Das, J., McCormick, T. H., Mukhopadhyay, P., & Sircar, N. (2021). Quantifying heterogeneity in SARS-CoV-2 transmission during the lockdown in India. *Epidemics*, 36, 100477.

McCormick, T. H. (2021). The "given data" paradigm undermines both cultures. *Observational Studies*, 7(1), 157-159.

Wang, S., McCormick, T. H., and Leek, J. (2020). Methods for correcting inference based on outcomes predicted by machine learning. *Proceedings of the National Academy of Sciences (USA).*, 117, 48.

Breza, E., Chandrasekhar, A., Pan, M., & McCormick, T. H. (2020). Using Aggregated Relational Data to feasibly identify network structure without network data. *The American Economic Review*, 110, 8.

Li, Z. R., McCormick, T. H., & Clark, S. J. (2020). Using Bayesian latent Gaussian graphical models to infer symptom associations in verbal autopsies. *Bayesian Analysis*, 15, 3.

Green, A., McCormick, T. H., & Raftery, A. E. (2020). Consistency for the tree bootstrap in respondent-driven sampling. *Biometrika (Miscellanea)*, 107, 2.

Li, Z. R., McCormick, T. H., & Clark, S. J. (2020) Non-confirming Replication of "Performance of InSilicoVA for Assigning Causes of Death to Verbal Autopsies: Multisite Validation Study using Clinical Diagnostic Gold Standards", *BMC Medicine* 2018; 16:56. *BMC Medicine*, 18, 69.

Kunihama, T., Li, Z. R., Clark, S. J., & McCormick, T. H. (2020). Bayesian factor models for probabilistic cause of death assessment with verbal autopsies. *Annals of Applied Statistics*, 14, 1.

McCormick, T. H. The network scale-up method. (2020). In *Oxford Handbook of Social Networks*. Editors R. Light and J. Moody.

Li, Z. R., McCormick, T. H., and Clark, S. J. Bayesian Joint Spike-and-Slab Graphical Lasso. (2019). In *Proceedings of the 35th International Conference on Machine Learning (ICML)*.

Li, Z. R., & McCormick, T. H. (2019). An Expectation Conditional Maximization approach for Gaussian graphical models. *Journal of Computational and Graphical Statistics*, 28, 4.

Wang, F., McCormick, T. H., Rudin, C., and Gore, J. (2019) Modeling recovery curves with application to Prostatectomy. *Biostatistics*, 20, 4.

Eadie, G., Huppenkothen, D., Springford, E., & McCormick, T. H. (2019). Introducing Bayesian Analysis with m&m's: an active-learning exercise for undergraduates. *Journal of Statistics Education*, 27, 2.

Westling, T., & McCormick, T. H. (2019). Beyond prediction: A framework for inference with variational approximations in mixture models. *Journal of Computational and Graphical Statistics*, 28, 4.

Jha, P., Kumar, D., Dikshit, R., Budukh, A., Begum, R., Sati, P., Kolpak, P., Wen, R., Raithatha, S.J., Shah, U., Li, Z.R., Aleksandrowicz, L., Shah, P., Piyasena, K., McCormick, T. H., Gelband, H. & Clark, S. J. (2019) Automated versus physician assignment of cause of death for verbal autopsies: randomized trial of 9374 deaths in 117 villages in India. *BMC Medicine*, 17, 116.

Cesare, N., Lee, H., McCormick, T. H., Spiro, E., and Zagheni, E. (2018) Promises and pitfalls of using digital traces for demographic research. *Demography*, 55, 1979-1999.

Fosdick, B., McCormick, T. H., Murphy, T. B., Ng, T. L., and Westling, T. (2018) Multiresolution network models. *Journal of Computational and Graphical Statistics*, 28, 185-196.

Lee, W., Fosdick, B., and McCormick, T. H. (2018) Inferring social structure from continuous-time interaction data. *Applied Stochastic Models in Business and Industry,* 34, 87-104. *Discussion paper with rejoinder*.

Clark, S., Wakefield, J, McCormick, T. H., and Ross, M. (2018) Hyak mortality monitoring system: Innovative sampling and estimation methods. *Global Health, Epidemiology and Genomics*, 3, E3.

Salter-Townshend, M. and McCormick, T. H. (2017) Latent space models for multiview network data. *Annals of Applied Statistics*, 11: 1217-1244.

McCormick, T. H., Li, Z., Calvert, C., Crampin, A. C., Kahn, K., and Clark, S. J. (2016) Probabilistic Cause-of-death Assignment using Verbal Autopsies. *Journal of the American Statistical Association*, 111: 1036-1049.

Baraff, A., McCormick, T. H., and Raftery, A. E. (2016) Estimating Uncertainty in Respondent-Driven Sampling Using a Tree Bootstrap Method. *Proceedings of the National Academy of Sciences (USA)*, 113: 14668-14673.

Cesare, N., Spiro, E., Lee, H., and McCormick, T. H. Examining community policing on Twitter: Precinct use and community response. (2016). *SocInfo*, Bellevue, WA.

Arseniev-Koehler, A., Lee, H., McCormick, T. H., and Moreno, M. (2016) #Proana: Pro-Eating Disorder Socialization on Twitter. *Journal of Adolescent Health*, 58: 659-664.

McCormick, T. H. and Zheng, T. (2015) Latent surface models for networks using Aggregated Relational Data. *Journal of the American Statistical Association*, 110: 1684-1695.

Ertekin, S., Rudin, C., and McCormick, T. H. (2015) Predicting power failures with Reactive Point Processes. *Annals of Applied Statistics*, 9: 122-144.

Letham, B.,Rudin, C., McCormick, T. H., and Madigan, D. (2015) Interpretable classifiers using rules and Bayesian analysis: Building a better stroke prediction model. *Annals of Applied Statistics*, 9: 1350-1371.

McCormick, T. H., Lee, H., Cesare, N., Shojaie, A., and Spiro, E. (2015) Using Twitter for Demographic and Social Science Research: Tools for Data Collection. *Sociological Methods and Research*, 1-32.

Maltiel, R., Raftery, A. E., McCormick, T. H., and Baraff, A. (2015) Estimating Population Size Using the Network Scale Up Method. *Annals of Applied Statistics*, 9: 1247-1277.

Lee, H., McCormick, T. H., Wildeman, C., and Hicken, M. (2015) Racial inequalities in connectedness to imprisoned individuals in the United States. *Du Bois Review: Social Science Research on Race*, 12: 269-282.

McParland, D., Gormley, I. C., McCormick, T. H., Clark, S. J., Kabudula, C. and Collison, M. (2014) Clustering South African households based on their asset status using latent variable models. *Annals of Applied Statistics*, 8: 747-776.

McCormick, T. H., Ferrell, R., Karr, A., and Ryan, P. B. (2014) Knowledge Discovery in Output from Large-Scale Medical Analytics. *Statistical Learning & Data Mining*, 7: 404-412.

Rudin, C., Ertekin, S., Passonneau, R., Radeva, A., Tomar, A., Xie, B., Lewis, S., Riddle, M., Pangsrivinij, D, and McCormick, T. H. Analytics for Power Grid Distribution Reliability in New York City. (2014) *Interfaces*, 44: 364-383.

Westling, T., and McCormick, T. H. Sandwich covariance estimation for Variational Inference. (2014). *Neural Information Processing Systems Workshop on Advances in Variational Inference*.

Young, W. M., Blumenstock J. E., Fox, E. B., and McCormick, T. H. (2014). Detecting and classifying anomalous behavior in spatiotemporal network data. *The 20th ACM Conference on Knowledge Discovery and Mining (KDD 2014), Workshop on Learning About Emergencies Through Social information*, New York, NY.

Letham B., Rudin, C., McCormick, T. H., and Madigan, D. Stroke prediction using Bayesian Decision Lists. (2014). *The 20th ACM Conference on Knowledge Discovery and Mining (KDD14), Workshop on Data Science for Social Good*, New York, NY.

McCormick, T. H., and Zheng, T. (2013) Network-based methods for accessing hard-to-reach populations using standard surveys. In *Hard-to-Survey Populations*. Editors K. Wolter and R. Tourangeau.

Letham B., Rudin, C., McCormick, T. H., and Madigan, D. Building interpretable classifiers with rules using Bayesian Analysis. (2013). *Proceedings of AAAI (late breaking track)*.

Ertekin, S., Rudin, C., and McCormick, T. H., Predicting power failures with Reactive Point Processes. (2013). In *Proceedings of Association for the Advancement of Artificial Intelligence (late breaking track)*.

McCormick, T. H., Ruf, J., Moussa, A., Diprete, T. D., Gelman, A., Teitler, J., and Zheng, T. (2013) A practical guide to measuring social structure using indirectly observed network data. *Journal of Statistical Theory and Practice*, 7: 120-132.

McCormick, T. H., and Zheng, T. (2012) Latent demographic profile estimation in at-risk populations. *Annals of Applied Statistics*, 6: 1795-1813.

McCormick, T. H., Rudin, C., and Madigan, D. (2012) Bayesian hierarchical rule modeling for predicting medical conditions. *Annals of Applied Statistics*, 6: 652-668.

McCormick, T. H., He, R., Kolaczyk, E., and Zheng, T. (2012) Surveying hard-to-reach groups through sampled respondents in a social network: A comparison of two survey strategies. *Statistics in Biosciences*, 4: 177-195.

McCormick, T. H., Raftery, A. E., Madigan, D., and Burd, R. (2011). Dynamic logistic regression and dynamic model averaging for binary classification. *Biometrics*, 68, 23-30.

McCormick, T. H., Rudin, C., and Madigan, D. (2011) Predicting Medical Conditions with Bayesian Hierarchical Rule Modeling. In *Proceedings of the 6th INFORMS Workshop on Data Mining and Health Informatics (DM-HI).*

Diprete, T. D., Gelman, A., McCormick, T. H., Teitler, J., and Zheng, T. (2011). Segregation in social networks based on acquaintanceship and trust. *American Journal of Sociology*, 116, 1234-83.

McCormick, T. H., Salganik, M. J. and Zheng, T. (2010). How many people do you know?: Efficiently estimating personal network size. *Journal of the American Statistical Association*, 105, 59-70.

Popular press and non-reviewed proceedings

Adjiwanou, V., Alkema, L., Long, J., and McCormick, T. H. Big data, big models, uncertainty, and bias: Data collection and modeling in low resource settings. (2018). White paper prepared for the *NIH BD2K Behavioral and Social Sciences and Big Data Workshop*.

Helleringer, S., Noymer, A., Clark, S. J., and McCormick, T., H. Did Ebola relatively spare children? (2015). *The Lancet*, 386:1442 - 1443.

Rudin, C., Dunson D., Irizarry, R., Ji, H., Laber, E., Leek, J., McCormick, T. H., Rose, S., Schafer, C., van der Laan, M., Wasserman, L., Xue, L., Discovery with Data: Leveraging Statistics with Computer Science to Transform Science and Society. *American Statistical Association white paper*.

Rose, S. Dunson, D., McCormick, T. H., and Rudin C. (2014). Four high impact zones in statistical discovery with big data. *FierceBigData*.

McCormick, T. H. (2011). Bayesian analysis of social network data. *ISBA Bulletin*, 18, 6-9.

McCormick, T. H. and Zheng, T. (2010). A latent space representation of overdispersed relative propensity in "How many X's do you know?" data. Conference Proceedings. Joint Statistical Meetings: Vancouver, B.C.

McCormick, T. H. and Zheng, T. (2009). Towards a unified framework for inference in Aggregated Relational Data. Conference Proceedings. Joint Statistical Meetings: Washington, D.C.

McCormick, T. H., Ruf, J., Moussa, A., Diprete, T. D., Gelman, A., Teitler, J., and Zheng, T. (2009). Comparing two methods for predicting opinions using social structure. Conference Proceedings. Joint Statistical Meetings: Washington, D.C.

McCormick, T. H. and Zheng, T. (2007). Adjusting for recall bias in "How many X's do you know?" surveys. Conference Proceedings. Joint Statistical Meetings: Salt Lake City, Utah.

Sponsored Research

2022-2027 *Improving Age- and Cause-Specific Under-Five Mortality Rates (ACSU5MR) by Systematically Assessing and Accounting Measurement Errors to Inform Child Survival Decision Making in Low Income Countries*, NIH NICHD R01.
Total Award: $ 2,631,078. Role: PI (multi-PI with Li Liu, Johns Hopkins Dept of Maternal and Child Health).

2022-2025 *Panel Data for the Study of Network Economics and Risk Sharing*, NSF-SES.
Total award: $775,089. Role: co-PI, additional co-PIs Arun Chandrasekhar & Emily Breza.

2022-2027 *Demography Center*, NIH NICHD P2C Population Dynamics Research Infrastructure Program. Total award: $3,865,281. Role: Science Core PI, overall PI: Sara Curran.

2020-2021 *Novel approaches to sampling industrial workers during a pandemic*, UW Population Health Initiative Covid-19 Rapid Response Grant
Total Award: $20, 000. Role: PI, Multi-PI with Rachel Heath.

2020-2025 *Data Science Training in Demography and Population Health*, NIH/NICHD T32 Training Grant. Total Award: $1.3M. Role: PI, Multi-PI with Sara Curran Jon Wakefield, and Zack Almquist.

2019-2024 *Big Data, Big Models, and Big Bias?: A decision making framework for vital rate estimates based on extrapolation*, NIH Director's New Innovator Award (DP2).
Total Award: $2.33M. Role: PI.

2018-2020 *Developing innovate analytics to estimate age-and cause-specific child mortality for low- and middle-income countries*, NIH/NICHD R21.
Total Award: $437, 200. Role: PI, Multi-PI with Li Liu (Johns Hopkins).

2017-2019 *ATD: Collaborative Research: Algorithms and Data for High-Frequency, Real-Time Anomaly Detection*, NSF-DMS. Total Award: $200,000. Role: PI, Multi-PI with Rumi Chunara (NYU).

2017-2022 *Verbal autopsy reboot: Estimating cause of death in the developing world,*
NIH/NICHD R01. Total Award: $2.4M. Role: Co-Investigator.

2017-2018 *BD2K: Big Data to Knowledge Supplement to Population Research Training*, NIH.
Total Award: $90,000. Role: Co-Investigator.

2016-2018 *Compact Bayesian models for massive social graphs*, NSF-MMS.
Total Award: $150,000. Role: PI.

2015-2020 *Estimating vital rates in the developing world: A Bayesian process modeling approach*, NIH/NICHD K01 Award. Total Award: $610,515. Role: PI.

2014-2015 *Probabilistic cause of death assignment*, CSDE. Total Award: $17,000. Role: PI. Co-PI: Sam Clark

2013-2015 *Patient-level predictive models using massive medical data*, Foundation for the NIH (OMOP). Total award: $103,000. Role: PI.

2012-2015 *Using social media networks to identify deviant behavior*, Army Research Office. Total award: $300,000. Role: PI. Co-PIs: Hedwig Lee (UW Sociology), Ali Shojaie (UW Biostatistics).

2013-2014 *Measuring attitudes towards gun control after mass shootings using Twitter*, CSDE Seed grant. Total Award: $17,000. Role: Co-PI. Co-PIs: Hedwig Lee (UW Sociology), Ali Shojaie (UW Biostatistics).

2012-2013 *Bridging Social Media and Public Health: Using Twitter to Explore Social Determinants of Obesity*, UW School of Public Health Emerging Challenges Grant. Total award: $40,000. Role: Co-PI. PI: Ali Shojaie (UW Biostatistics). Co-PI: Hedwig Lee (UW Sociology).

2012-2013 *Online dynamic models and model averaging via dynamic data augmentation*,
Google Faculty Research Award. Total award: $42,615. Role: PI.

2012-2013 *Detecting stigma in social networks*, Center for Statistics and the Social Sciences Seed Grant. Total award: $24,959. Role: Co-PI. PI: Hedwig Lee (UW Soc).

Honors and Awards

Fellow, American Statistical Association (2023)

NIH Director's New Innovator Award (2019)

Joint Statistical Meetings paper award from the Section on Bayesian Statistical Science (2018)

Joint Statistical Meetings paper award from the Section on Bayesian Statistical Science (2016)

Poster award from International Conference on Computational Social Science (2016)

Poster award from the International Symposium on Business and Industrial Statistics / Conference of the ASA Section on Statistical Learning and Data Mining (2014)

ASA Statistical Learning & Data Mining Paper Award (2014)

Winner of INFORMS Data Mining Best Student Paper Competition for paper "An Interpretable Stroke Prediction Model using Rules and Bayesian Analysis." (2013)

U.S. Army Young Investigators Program (YIP) award (2012)

Young academic award, CRiSM workshop on Model Uncertainty, Warwick, U.K. (2010)

Student paper award, Statistical Learning and Data Mining Section, ASA (2010)

Columbia Applied Statistics Center summer research grant (2010)

NSF travel award, International Society for Bayesian Analysis World Meetings (2010)

Howard Levene Teaching Award, Dept. of Statistics, Columbia University (2009)

JSM Poster Award, Survey Research Methods Section, ASA (2009)

Columbia Population Research Center Seed Grant (2009)

Laha Award, Institute of Mathematical Statistics (2008)

Outstanding Student Paper (Methodology), Intl. Indian Statistical Assn. (2008)

Phi Beta Kappa, Duke University (2005)

Magna Cum Laude, Duke University (2005)

Regional Scholar, Coca-Cola Scholars Program (2001-2005)

Invited Conference Presentations

"A statistical framework for identifying latent geometry in latent space network models," International Conference on Advances in Interdisciplinary Statistics and Combinatorics (Plenary), 2021

"Geometry in latent network models," JSM 2020

"Estimating spillovers with imprecisely estimated network data," Keynote address at the 2019 Minghui Yu Memorial Conference, Columbia University

"Robust decisions with modeled estimators," JSM Denver 2019

"Policy decisions with sparse data and machine learning models," Population Association of American, Austin 2019

"Estimating features of a network using a sample," American Economic Association Annual Meetings, Atlanta 2019

Introductory overview lecture, social networks, JSM Vancouver 2018

"Continuous time interaction data," JSM Vancouver 2018

"Estimating features of a network using a sample," Population Association of America, Denver 2018.

"Estimating features of a network using a sample," Peer effects workshop, Université Laval 2018.

"Big data research in development," NIH Population Division BD2K Workshop, Bethesda 2018.

"Estimating features of a network using a sample," Russel Sage Foundation Workshop on Computational Social Science, Palo Alto 2017.

"Probabilistic cause of death assessment," JSM, Chicago. 2016

"Multiresolution network models," Newton Institute, Cambridge, UK, 2016

"Exchangeable network regressions," ISBA World Conference, Sardinia. 2016

"Standard errors in exchangeable network regressions," Statistical Learning and Data Science Meetings, Chapel Hill, NC. 2016

"Estimating the reach of mass incarceration," American Sociological Association Annual Meetings, Chicago 2015.

"Accessing hard-to-reach groups with the network scale-up method," American Sociological Association Annual Meetings, Chicago 2015.

"Interpretable features in continuous-time network data," Joint Statistical Meetings, Seattle 2015.

"Interpretable feature creation in electronic healthcare records," ENAR, Miami 2015.

"Challenges and Insights with unsolicited relational data," Population Association of America, Boston 2014.

"Statistical models for unsolicited network data," ASA ISBIS & SLDM Conference, Durham, NC 2014.

"Latent space models for multiview network data," SAMSI 2013.

"Using Twitter for Demographic Research," Population Association of America, New Orleans 2013.

"Estimation in partially observed network data," ASA SLDM Conference, Ann Arbor, MI 2013.

Panel discussion. "Big data in the social sciences," Population Association of America, New Orleans 2013.

"Online Dynamic Model Averaging," ASA SLDM Conference, Houston, TX 2012.

"Post-Stratification and Network Sampling," Joint Statistical Meetings, Miami 2011.

Discussant, "Analysis and Inference for Complex Networks," Joint Statistical Meetings, Miami 2011.

"Estimating latent demographic profiles using Aggregated Relational Data," International Chinese Statistical Association Meetings 2011.

"Latent structure models for social networks using Aggregated Relational Data," New England Statistics Symposium 2011.

"Latent structure models for social networks using Aggregated Relational Data," Invited poster, Joint Statistical Meetings, Vancouver 2010.

"How many people do you know?: Efficiently estimating personal network size," Laha Award Presentation, 7*th* World Congress in Probability and Statistics, 2008.

"Efficient estimation of personal network size," Annual Methodology Conference, American Sociological Association, 2008.

"Bayesian modeling for a Generalized Social Relations Model," American Psychological Association Conference on Dyadic Data 2007.

"Markov Chain Monte-Carlo estimation of the p* Method for social networks," Annual Methodology Conference, American Sociological Association, 2006.

Departmental Seminars

2021: San Diego State University (Statistics), University of Melbourne (Data Science), UC Irvine (Statistics)

2020: Bocconi University (Statistics), Cornell University (Statistics & Econometrics), Johns Hopkins University (Biostatistics), UC-Davis (Statistics), University of Chicago (Statistics), Brown University (Biostatistics), CANSSI-Ontario Data Science Applied Research and Education Seminar (ARES), Duke University (Duke Global Health Research Institute), World Bank (Poverty global practice)

2019: University of Michigan (Biostatistics), Duke University (Duke Network Analysis Center), Harvard University (Statistics), University of Texas at Austin (Statistics)

2018: Duke University (Duke Population Research Institute (DUPRI))

2017: Princeton University (Quantitative Social Science), Columbia University (Statistics), Boston University (Statistics), Johns Hopkins University (Hopkins Population Center), Johns Hopkins University (Biostatistics), University of Illinois at Urbana-Champaign (Statistics), Rice University (Statistics), University of Virginia (Statistics),

2016: UCLA (California Center for Population Research), UC-Irvine (Statistics), Lancaster University (Mathematics & Statistics), University of Chicago Booth School (Econometrics and Statistics), University of Michigan (Biostatistics), North Carolina State University (Statistics), New York University (Center for Data Science), University of Pennsylvania (Statistics)

2015: Rice University (Statistics), University of Minnesota (Statistics), Colorado State University (Statistics)

2014: Yale University (Biostatistics), Group Health Research

2013: Brigham Young University (Statistics), University of Washington (Biostatistics), Duke University Population Research Center, 2013 Duke University Network Analysis Center, 2013

2012: Stanford University (Statistics), University of Toronto (Statistics)

2011: RAND Corporation Johns Hopkins University (Biostatistics), University of California at Irvine (Statistics), Carnegie-Mellon University (Statistics), New York University (Stern School of Business), Cornell University (Statistics), Duke University (Statistics), University of Chicago (Booth School of Business), University of Notre Dame (Applied Mathematics)

Contributed Presentations

"Interpretable models for unsolicited network data," JSM, Boston 2014.

"Community coevolution in unsolicited network data," ISBA World Meetings, Cancun, Mexico 2014.

"Spatio-Temporal Models for Point Pattern Data with Network-Dependent Sampling," Joint Statistical Meetings, Montreal 2013.

"Combining link prediction with network sampling," Joint Statistical Meetings, San Diego 2012.

"Dynamic model averaging for binary classification," Joint Statistical Meetings, Miami 2011.

"Dynamic model averaging and dynamic logistic regression," Joint Statistical Meetings-Vancouver, 2010.

"Extracting network features through indirectly observed network data," Statistical Modeling and Inference for Networks Conference, SuSTaIn, University of Bristol 2010 (awarded travel support from conference committee).

"Latent structure models for social networks using Aggregated Relational Data," 2010 ISBA World Meetings, Benidorm, Spain (awarded travel support from conference committee).

"Dynamic model averaging and dynamic logistic regression," Joint Statistical Meetings-Washington, D.C. 2009.

"Latent structure models for social networks using Aggregated Relational Data," Statistical Methods for the Analysis of Network Data Meetings, University College Dublin 2009 (awarded travel support from conference committee).

"How many people do you know?: Efficiently estimating personal network size," International Chinese Statistics Association Conference 2008.

"Estimating network size using conventional surveys," International Indian Statistics Association Conference 2008.

"Estimating social network size," Joint Statistical Meetings-Salt Lake City 2007.

"On the distribution of personal network size," New England Statistics Symposium 2007.

"Race and friendship in middle childhood: Analysis using the p* Method for social networks," Thesis Presentation for Graduation with Distinction, Duke University 2005 (supervised by Jerry Reiter).

Poster Presentations

"Latent covariance models with marginal priors," ISBA 2016.

"Probabilistic cause of death estimation," Population Association of America 2016.

"The network scale-up method for population size estimation," Population Association of America 2014.

"Interpretability in Predictive Modeling with the Bayesian List Machine," OMOP Symposium 2013.

"Interpretability in Predictive Modeling with the Bayesian List Machine," AAAI Late Breaking 2013.

"Predicting power failures with Reactive Point Processes," AAAI Late Breaking 2013.

"Latent structure models for social networks using aggregated relational data," Isaac Newton Institute, Cambridge 2010 (awarded travel support from conference committee).

"Dynamic model averaging and dynamic logistic regression," CRiSM Model Uncertainty Workshop, University of Warwick 2010.

"Latent structure models for social networks using aggregated relational data," Joint Statistical Meetings-Washington, D.C. 2009 (poster award winner).

"Tell me who you know, I'll tell you who you are: using social structure to predict opinions," Joint Statistical Meetings-Washington, D.C. 2009.

Mentoring

Postdoctoral collaborators

Tim Thomas (2017-2019), now at the Berkeley Urban Displacement Project.

Gwen Eadie (2017-2019), now Assistant Professor of Statistics & Astronomy at the University of Toronto.

Tsuyoshi Kunihama (2016-2017), now Assistant Professor in the Department of Economics at Kwansei Gakuin University.

Doctoral students (committee chair, passed dissertation proposal)

Jerry Wei, Steve Wilkes-Reeves (current students, passed candidacy exam)

Shane Lubold, graduating 2022-2023 academic year

Mengjie Pan, Ph.D. (2019), currently at Facebook

Wesley Lee, Ph.D. (2019), currently at Facebook

Zehang (Richard) Li, Ph.D. (2018), currently Assistant Professor at UC-Santa Cruz

Masters and undergraduate students

Houjie Wang, UW statistics master's research advisor, accepted Ph.D. offer at Duke Statistics

Peter Liu, UW statistics undergraduate research advisor, accepted Ph.D. offer at Johns Hopkins Biostatistics

Alina Arseniev-Koehler, UW Sociology undergraduate thesis, now Ph.D. candidate at UCLA Sociology.

Harrison Reeder, Carleton summer undergraduate visitor, now Ph.D. candidate at Harvard Biostatistics

Nadia Ennab, Northwestern Summer Internship Grant Program visitor, currently applying of Ph.D. programs

Dayou Luo, U.W. Master of Statistics student, now Ph.D. candidate in Applied Math at U.W.

Peter Liu, U.W. undergraduate, currently applying for Ph.D. programs

Teaching

Case-based social statistics (undergraduate, UW)

Social networks (graduate, UW)

Categorical data analysis (graduate, UW)

Quantitative methods in sociology (graduate, UW)

Applied statistics and experimental design (graduate, UW)

Introduction to statistics (undergraduate, UW/Columbia/University of Connecticut)

Professional Involvement

Consultant, US Department of State Program to End Modern Slavery, 2020-

Program chair, Business and Economic Statistics Section, Joint Statistical Meetings, 2022

Bayesian Analysis Editor selection committee, ISBA, 2021

Savage Award selection committee, ISBA, 2020

Advisory Panel, NSF-Methods, Measurement, & Statistics Program, 2020-2023

Program committee, PAA, 2020

Chair, Mindel C. Sheps Award Committee, PAA, 2020

Member, Mindel C. Sheps Award Committee, PAA, 2019

Program chair, ISBA section on Bayesian education research and practice, 2019

Invited poster co-organizer (with Genevera Allen), JSM 2016.

Russel Sage Foundation panel on future of Computational Social Science, 2016

Referee service: *AISTATS; American Journal of Sociology; Annals of Statistics; Annals of Applied Statistics; Bayesian Analysis; Biometrika; Computational Statistics and Data Analysis; Demography; Demographic Research; Electronic Journal of Statistics; Field Methods; Journal of the American Statistical Association; Journal of Business and Economic Statistics; Journal of Computational and Graphical Statistics; Machine Learning Journal; National Institute*

for the Humanities; Population Studies; Science, Social Problems; Sociological Methodology; Alfred P. Sloan Foundation; Statistical Analysis and Data Mining; Statistics, Politics, and Policy; Survey Methodology, Statistics in Medicine.

Associate Editor, Journal of Computational and Graphical Statistics , 2015-

Associate Editor, Computational Statistics and Data Mining, 2014-2015

Associate Editor, Statistical Analysis and Data Mining, 2013-2015

UNODC experts group, network-based estimates of rare crimes, 2014

UNAIDS reference group, network-based population size estimation, 2010, 2012, 2014

Co-PI on UW Moore/Sloan Data Science Initiative proposal

Co-PI on UW Washington Research Foundation Data Science proposal

Invited coauthor on American Statistical Association whitepaper on intersection between statistics and NSF priorities

NSF/NIH review panels, 2014-2016

Interface Foundation board member, 2012-2015

Organizer (with Cynthia Rudin) and chair, Topic-contributed session, Recent developments in spatial/temporal modeling, JSM 2013

Organizer (with Ali Shojaie) and chair, Topic-contributed session, Advances in methods for social and biological networks, JSM 2013

Organizer (with Ali Shojaie) and chair, Topic-contributed session, The interface between social and biological network data, JSM 2012

Chair, Invited session, Advances in Modeling Nontraditional Network Data, JSM 2011

Chair, Invited session, Latent space models for networks, JSM 2010

Seminar chair, Department of Statistics Student Seminar, Columbia University 2009-2010

Chair, Contributed session, Statistical Learning and Data Mining Section, JSM 2009

Organizing Committee, Minghui Yu Memorial Research Day, Columbia University 2009

New Faculty Recruitment Committee Member, Columbia University 2009

Organizing Committee, Conference on Doctoral Careers in Statistics, Columbia University, April 2008

New Faculty Recruitment Committee Member, Columbia University 2008

Organizing Committee, Mini-Symposium on Statistical Consulting, Columbia University, January 2008

Chair, Invited session "Recent Contributions to Nonparametric Methodologies in Biomedical Research" organized by Tian Zheng, International Chinese Statistical Association Symposium 2006

Professional Societies

Member, American Statistical Association

Member, International Society for Bayesian Analysis

Member, Institute of Mathematical Statistics

Member, American Sociological Association

Departmental service

2011-2012. MS applied exam committee chair (stat).

2012-2013. MS applied exam committee chair (stat); Demography area committee (soc); seminar organizer/chair (statistics); UW math day presenter.

2013-2014. Seminar organizer/chair (statistics).

2014-2015. Data science education (stat); undergraduate data science concentration proposal (stat); methodology prelim (stat).

2015-2016. MS Theory prelim (stat); seminar co-organizer (stat); co-PI on BD2K T32 application (CSDE); Joint stat/CSE search committee (stat).

2016-2017. Data science education (stat), MS Theory prelim (stat), seminar co-organizer (stat).

2017-2018. MS Theory prelim (stat); seminar co-organizer (stat); Data science education (stat); MS admissions (stat); PhD admissions (soc); exec committee (CSSS); 20th anniversary conference committee (CSSS); Faculty Council on Women in Academia; Faculty Senate UW 2050 committee.

2018-2019. PhD admissions (stat); seminar co-organizer (stat); hiring committee (soc); exec committee (CSSS); 20th anniversary conference committee (CSSS).

2019-2020. PhD admissions (stat); Prelim evaluator (stat); executive committee (CSSS); T32 co-PI (CSDE). *Note: on leave 20% during fall and 80% during winter/spring.*

2020-2021. T32 co-PI (CSDE); executive committee (CSSS); PhD admissions (stat); MS admissions (stat); Diversity committee (soc); liaison to the data science undergraduate education initiative (Stat); PhD research prelim examiner (stat); executive committee (CSDE).

2021-2022. Science core PI (CSDE); T32 co-PI (CSDE); MS admissions committee chair (stat); seminar committee chair (CSSS); executive committee (CSSS); DICE (stat), PhD student competitive fellowship mentoring organizer (stat).

2022-2023. Graduate Program Coordinator (stat); seminar committee chair (CSSS); executive committee (CSSS); executive committee (CSDE).