Erin M. Schliep

Contact Information

Associate Professor of Statistics
Department of Statistics
North Carolina State University
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Research Interests

Multivariate Statistics, Environmental and Ecological Statistics, Spatial Statistics, Bayesian Statistics, Sports Statistics

Education

Colorado State University, Fort Collins, Colorado

Ph.D., Statistics — Summer 2013
M.S., Statistics — Summer 2009

Gustavus Adolphus College, Saint Peter, Minnesota

B.A., Mathematics & Accounting — May 2006

Professional Experience

North Carolina State University, Raleigh, North Carolina

Associate Professor of Statistics — August 2022 - present
Graduate Faculty Member — August 2022 - present

University of Missouri, Columbia, Missouri

Associate Professor of Statistics — September 2021 - August 2022
Assistant Professor of Statistics — September 2015 - August 2021
Director of Sports Statistics Program — August 2019 - August 2022
Doctoral Faculty Member — April 2017 - August 2022
Graduate Faculty Member — September 2015 - August 2022
Faculty Scholars Program — August 2016 - May 2017

National Institute of Statistical Science, Washington, DC

Research Fellow — January 2020 - present
Provide statistical methodology and support for the development of a new socioeconomic indicator for education research.

Duke University, Durham, North Carolina

Research Associate — August 2022 - present
Postdoctoral Fellow, Department of Statistical Science — September 2013 - August 2015
Develop new statistical models and methodology within the field of spatial and spatiotemporal statistics with applications in environmental sciences.

Environmental Protection Agency, Research Triangle, North Carolina

Student Contractor — September 2013 - August 2015
Provide statistical modeling and prediction of daily air quality across the United States using both monitoring station data and aerosol optical depth data obtained from satellites.

Research Network for Statistical Methods for Atmospheric and Oceanic Sciences (STATMOS)

Postdoctoral Researcher September 2013 - August 2015

Colorado State University, Fort Collins, Colorado

Graduate Research Assistant, Department of Biology May 2012 - August 2013
Develop statistical models to estimate the prevalence and transmission rates of infectious disease in cattle under the direction of Dr. Colleen Webb.

Statistical Consultant, Franklin A. Graybill Statistical Laboratory August 2011 - May 2012

NC State Building Future Faculty Program, Raleigh, North Carolina

Program Participant March 2012
Selected to attend a two day workshop for doctoral students interested in pursuing academic careers and committed to promoting diversity in higher education.

National Center for Atmospheric Research, Boulder, Colorado

Graduate Student Visitor May 2008 - August 2008
Develop a statistical hierarchical model to compare extreme precipitation generated by various regional climate models.

Mayo Clinic, Division of Biomedical Statistics and Informatics, Rochester, Minnesota

Health Science Research Intern May 2005 - August 2005
Data analyst for the Rochester Epidemiology Project gaining programming experience with SAS and S-plus. Construct cause-specific mortality rate data sets for Olmsted County, MN.

Honors and Awards

Early Investigator Award, ASA Section on Statistics and the Environment, 2021

Best Paper in *Journal of Agricultural, Biological, and Environmental Statistics* (JABES) by an International Biometric Society (IBS) Member, 2018

Robert May Early Career Researcher Prize Shortlist, 2018, British Ecology Society Journal *Methods in Ecology and Evolution*

Winemiller Excellence Award in recognition of outstanding examples of data-based analytics, University of Missouri, 2017

Faculty International Travel Award, University of Missouri, 2016

College of Natural Sciences Graduate Student Excellence in Teaching Award, Colorado State University, 2012

Environmental Science Communication Fellow, Colorado State University, 2011

Duane C. Boes Excellence in Teaching Award, Colorado State University, 2011

Elmer E. Remmenga Scholarship in Applied Statistics, Colorado State University, 2009

Student Awards

Matthew Shisler - Best Poster at the Spatial Statistics conference in Boulder, CO, 2024.

Joshua North - Honorable Mention for Best Paper in *Journal of Agricultural, Biological, and Environmental Statistics* in 2022.

Peyton Sumpter - Outstanding Discovery Fellow Award, University of Missouri, 2021.

Grants

National Science Foundation $2,500,000
RTG: Modeling and Uncertainty Quantification for Life Science. August 2024 - July 2029.
Role: Co-PI.

US Department of Commerce $21,500
Estimation of US Atlantic Red Snapper Abundance. September 2024 - August 2025.

Role: Co-PI. Lead PI: J. Buckel $1,700,000 (total).

Minnesota Aquatic Invasive Species Research Center $20,258
Zebra mussel impacts on fish mercury concentrations. January 2024 - December 2025.
Role: PI (NCSU, 100%). Lead PI: G. Hansen, University of Minnesota, $101,639 (total).

Office of Naval Research $30,312
Process based data fusion for Marine mammal science. June 2023 - September 2025.
Role: PI (NCSU, 100%). Lead PI: R. Schick, Duke University, $780,313 (total).

National Oceanic & Atmospheric Administration (NOAA) $47,965
Towards Enhanced Understanding of North Atlantic Right Whale Distribution Across Their Entire Habitat Range. January 2023 - December 2024.
Role: PI (NCSU, 100%). Lead PI: R. Schick, Duke University.

USGS Climate Adaptation Science Centers $396,729
Putting the sampling design to work: enhancing monitoring programs for improved management and inference of ecological responses to changes in climate. October 2022 - September 2025.
Role: PI (100%).

National Science Foundation-EF $58,711
Collaborative Proposal: MSB-FRA: A macrosystems ecology framework for continental-scale prediction and understanding of lakes (grant extension). October 2021 - September 2022.
Role: PI (MU, 100%).

USGS Climate Adaptation Science Centers $94,594
Fish habitat restoration to promote adaptation: resilience of sport fish in lakes of the Upper Midwest. August 2020 - December 2022.
Role: PI (MU, 100%). Lead PI: G. Hansen, University of Minnesota, $495,955 (total).

National Institute of Statistical Science $120,878
Development of a New Socioeconomic Indicator for Education Research to Replace % of Students Eligible for Free/Reduced Price Lunch (grant extension). March 2021 - December 2021.
Role: PI (50%).

National Institute of Statistical Science $84,978
Development of a New Socioeconomic Indicator for Education Research to Replace % of Students Eligible for Free/Reduced Price Lunch. January 2020 - December 2020.
Role: PI (100%).

National Science Foundation-EF $256,646
Collaborative Proposal: MSB-FRA: A macrosystems ecology framework for continental-scale prediction and understanding of lakes. October 2016 - September 2021.
Role: PI (MU, 100%). Lead PI: P.A. Soranno, Michigan State University, $4,249,947 (total).

Research Board, University of Missouri $19,500
Spatiotemporal modeling of threshold exceedences. August 1, 2016 - July 31, 2018.
Role: PI (100%).

Books

Gelfand, A.E. & **E.M. Schliep** (2018). *Bayesian Inference and Computing for Spatial Point Patterns. NSF-CBMS Regional Conference Series in Probability and Statistics*, 10, i-125. Institute of Mathematical Statistics and the American Statistical Association.

Publications in Refereed Journals

*denotes student or postdoc under my advisement

Schliep, E.M., A.E. Gelfand, C.W. Clark, C.M. Mayo, B. McKenna, S.E. Parks, T.M. Yack, R.S. Schick. (To Appear) Assessing marine mammal abundance: a novel data fusion. *Annals of Applied Statistics*.

Custer, C.A., J.S. North, **E.M. Schliep**, H.K. Masui, M.R. Verhoeven, G.J.A. Hansen, T. Wagner. (To Appear) Predicting fish responses to climate change using a joint species, spatially dependent physiologically guided abundance model. *Ecology*.

North, J.S.*., **E.M. Schliep**, G.J.A. Hansen, H. Kundel, C.A. Custer, P. McLaughlin, T. Wagner (2023). Accounting for spatio-temporal sampling variation in joint species distribution models. *Journal of Applied Ecology*, 61(1), 186-201.

North, J.S.*., C.K. Wikle, **E.M. Schliep** (2023). A Bayesian Approach for Spatio-Temporal Data-Driven Dynamic Equation Discovery. *Bayesian Analysis*, 1(1), 1-30.

North, J.S.*., C.K. Wikle, **E.M. Schliep** (2023). A Review of Data-Driven Discovery for Dynamic Systems. *International Statistical Review*, 91(3), 464-492.

Schliep, E.M., C.K. Wikle, R. Daw* (2023). Correcting for informative sampling in spatial covariance estimation and kriging predictions. *Journal of Geographical Systems*, 25(4), 587-613.

Wagner, T., **E.M. Schliep**, J.S. North*, H. Kundel, C.A. Custer, J.K. Ruzich, G.J.A. Hansen (2023). Predicting climate change impacts on poikilotherms using physiologically guided species abundance models. *Proceedings of the National Academy of Sciences of the United States of America*.120(15), e2214199120.

North, J.S.*., C.K. Wikle, **E.M. Schliep** (2022). A Bayesian Approach for Data-Driven Dynamic Equation Discovery. *Journal of Agricultural, Biological, and Environmental Statistics*. 27(4), 728-747.

Mirzaee, A., R.G. McGarvey, F.X. Aguilar, **E.M. Schliep** (2022). Impact of increased biopower generation on US forests. *Environment, Development and Sustainability*. doi:10.1007/s10668-022-02235-4.

Cebrián, A.C., J. Asín, A.E. Gelfand, **E.M. Schliep**, J. Castillo-Mateo, M. A. Beamonte, J. Abaurrea (2021). Spatio-temporal Analysis of the Extent of an Extreme Heat Event. *Stochastic Environmental Research and Risk Assessment*, doi:10.1007/s00477-021-02157-z.

Schliep, E.M., A.E. Gelfand, J. Abaurrea, J. Asín, M. A. Beamonte, A.C. Cebrián. (2021) Long-term spatial modeling for characteristics of extreme heat events. *Journal of the Royal Statistical Society, Series A (Statistics in Society)*, 184(3), 1070-1092.

Schliep, E.M., T.L.J. Schafer*, M. Hawkey. (2021) Distributed lag models to identify the cumulative effects of training and recovery in athletes using multivariate ordinal wellness data. *Journal of Quantitative Analysis of Sports*, 17(3), 241-254.

Bailey, S.*, G.P. Elliot, **E.M. Schliep**. (2021) Seasonal temperature-moisture interactions limit seedling establishment at upper treeline in the Southern Rockies. *Ecosphere*, 12(6), e03568.

North, J.S.*, **E.M. Schliep**, C.K. Wikle. (2021) On the spatial and temporal shift in the archetypal seasonal temperature cycle as driven by annual and semi-annual harmonics. *Environmetrics*, 32(6), e2665.

Schliep, E.M., S.M. Collins, S. Rojas Salazar*, N.R. Lottig, E.M. Stanley (2020). Data fusion model to identify environmental drivers and improve estimation of total nitrogen in lakes. *The Annals of Applied Statistics*, 14(4), 1651-1675.

Soranno, P.A., K.S. Cheruvelil, B. Liu, Q. Wang, P.N. Tan, J. Zhou, K.B.S. King, I.M. McCullough, J. Stachelek, M. Bartley, C.T. Filstrup, E.M. Hanks, J.F. Lapierre, N.R. Lottig, **E.M. Schliep**, T. Wagner, K.E. Webster. (2020). Ecological prediction at macroscales using big data: Does sampling design matter? *Ecological Applications*, 30(6), e02123.

Wagner, T., G.J.A. Hansen, **E.M. Schliep**, B.J. Bethke, A.E. Honsey, P.C. Jacobson, B.C. Kline, S.L. White. (2020). Improved understanding and prediction of freshwater fish communities through the use of joint species distribution models. *Canadian Journal of Fisheries and Aquatic Sciences*, 77(9), 1540-1551.

Bartley, M.L., E.M. Hanks, **E.M. Schliep**, P.A. Soranno, T. Wagner (2019). Identifying and characterizing extrapolation in multivariate response data. *PLOS ONE*, 14(12).

Schliep, E.M. & A.E. Gelfand (2019). Velocities for spatio-temporal point patterns. *Spatial Statistics*, 29, 204-225.

Wagner, T., N.R. Lottig, M.L. Bartley, E.M. Hanks, **E.M. Schliep**, N.B. Wikle, K.B.S. King, I. McCullough, J Stachelek, K.S. Cheruvelil, C.T. Filstrup, J.F. Lapierre, B. Liu, N. Smith, P.A. Soranno, P.N. Tan, Q. Wang, K. Webster, J. Zhou (2019). Increasing accuracy of lake nutrient predictions in thousands of lakes by leveraging water clarity data. *Limnology and Oceanography Letters*, 5(2), 228-235.

Stanley, E.H., S. Rojas Salazar*, **E.M. Schliep**, N.R. Lottig, C.T. Filstrup, S.M. Collins (2019). Comparison of total nitrogen data from direct and Kjeldahl-based approaches in integrated datasets. *Limnology and Oceanography: Methods*, 17, 639-649.

Ramseyer Winter, Virginia, A.M. Landor, M. Teti, K. Morris, **E.M. Schliep**, D. Pevenhouse-Pfeiffer, E. Pekarek (2019) Is body appreciation a mechanism of depression and anxiety? An investigation of the 3-Dimensional Body Appreciation Mapping (3D-BAM) intervention. *Mental Health & Prevention*, 14, 200158.

Schliep, E.M. (2018). "Comments on: Process modeling for slope and aspect with application to elevation data maps" by Wang et al. *TEST*, 27(4), 778-782.

Schliep, E.M., A.E. Gelfand, J.S. Clark, R. Kays (2018). Joint Temporal Point Pattern Models for Proximate Species Occurrence in a Fixed Area Using Camera Trap Data. *Journal of Agricultural, Biological, and Environmental Statistics*, 23(3), 334-357.

Schliep, E.M., A.E. Gelfand, R.M. Mitchell, M.A. Lammens, J.A. Silander (2018). Assessing the joint behavior of species traits as filtered by environment. *Methods in Ecology and Evolution*, 9(3), 716-727.

Schliep, E.M., N.K. Lany, P.L. Zarnetske, R.N. Schaeffer, C.M. Orians, D.A. Orwig, E.L. Preisser (2018) Joint species distribution modeling for spatio-temporal occurrence and ordinal abundance data. *Global Ecology and Biogeography*, 27(1), 142-155.

Schliep, E.M., A.E. Gelfand, D.M. Holland (2018). Alternating Gaussian Process Modulated Renewal Processes for Modeling Threshold Exceedances and Durations. *Stochastic Environmental Research and Risk Assessment*, 32(2), 401-417.

Wagner, Tyler & **E.M. Schliep** (2018). Combining nutrient, productivity, and landscape-based regressions improves predictions of lake nutrients and provides insight into nutrient coupling at macroscales. *Limnology and Oceanography*, 63(6), 2372-2383.

Lany, N.K., P.L. Zarnetske, **E.M. Schliep**, R.N. Schaeffer, C.M. Orians, D.A. Orwig, E.L. Preisser (2018). Asymmetric biotic interactions and abiotic niche differences revealed by a dynamic joint species distribution model. *Ecology*, 99(5), 1018-1023.

Schliep, E.M., A.E. Gelfand, J.S. Clark, B.J. Tomasek (2017). Biomass prediction using a density-dependent diameter distribution model. *The Annals of Applied Statistics*, 11(1), 340-361.

Taylor-Rodríguez, D., K. Kaufeld, **E.M. Schliep**, J.S. Clark, A.E. Gelfand (2017). Joint species distribution modeling; dimension reduction using Dirichlet processes. *Bayesian Analysis*, 12(4), 939-967.

Gelfand, A.E. & **E.M. Schliep** (2016). Spatial statistics and Gaussian processes: A Beautiful Marriage. *Spatial Statistics*, 18, 86-104.

Schliep, E.M., A.E. Gelfand, D.M. Holland (2015). Autoregressive spatially-varying coefficient models for predicting daily $PM_{2.5}$ using VIIRS satellite AOT. *Advances in Statistical Climatology, Meteorology, and Oceanography*, 1, 59-74.

Rundel, C., **E.M. Schliep**, A.E. Gelfand, D.M. Holland (2015). A Data Fusion Approach for Space-time Analysis of Speciated $PM_{2.5}$. *Environmetrics*, 26(8), 515-525.

Schliep, E.M., A.E. Gelfand, J.S. Clark, K. Zhu (2015). Modeling change in forest biomass across the eastern US. *Environmental and Ecological Statistics*, 23(1), 23-41.

Schliep, E.M., A.E. Gelfand, J.S. Clark (2015). Stochastic Modeling for Velocity of Climate Change. *Journal of Agricultural, Biological, and Environmental Statistics*, 20(3), 323-342.

Schliep, E.M. & J.A. Hoeting (2015). Data augmentation and parameter expansion for independent or spatially correlated ordinal data. *Computational Statistics & Data Analysis*, 90, 1-14.

Hanks, E.M., **E.M. Schliep**, M.B. Hooten, J.A. Hoeting (2015). Restricted spatial regression in practice: geostatistical models, confounding, and robustness under model misspecification. *Environmetrics*, 26(4), 243-254.

Schliep, E.M., T.Q. Dong, A.E. Gelfand, F. Li (2014). Modeling individual tree growth by fusing diameter tape and increment core data. *Environmetrics*, 25(8), 610-620.

Schliep, E.M. & J.A. Hoeting (2013). Multilevel Latent Gaussian Process Model for Mixed Discrete and Continuous Multivariate Response Data. *Journal of Agricultural, Biological, and Environmental Statistics*, 18(4), 492-513.

Merrill, S.C., S.M. Walter, F.B. Peairs, **E.M. Schliep** (2013). The distribution of European corn borer (Lepidoptera: crambidae) moths in pivot-irrigated corn. *Journal of Economic Entomology*, 106(5), 2084-2092.

Schliep, E.M., D. Cooley, S.R. Sain, J.A. Hoeting (2010). A Comparison Study of Extreme Precipitation from Six Different Regional Climate Models via Spatial Hierarchical Modeling. *Extremes*, 13(2), 219-239.

U.S. DOE 2018. Disturbance and Vegetation Dynamics in Earth System Models; Workshop Report, DOE/SC-0196. Office of Biological and Environmental Research, U.S. Department of Energy Office of Science. (Contributing author). `https://tes.science.energy.gov/files/vegetationdynamics.pdf`

Publications under revision or review

*denotes student or postdoc under my advisement

Collins, K.M.*, **E.M. Schliep**, C.K. Wikle, T. Wagner. Model-based decomposition reveals spatially varying temporal shifts in seasonal streamflow profiles across north temperate US Rivers. Under review.

Soranno, P.A., P.J. Hanly, K.E. Webster, T. Wagner, A. McDonald, A. Shuvo, **E.M. Schliep**, K.L. Reinl, I.M. McCullough, P.N. Tan, N.R. Lottig, K.S. Cheruvelil. Climate causes abrupt shifts in productivity in thousands of lakes with low human impact. Under review

Kang, B.*, **E.M. Schliep**, A.E. Gelfand, T.M. Yack, C.W. Clark, R.S. Schick. Analyzing whale calling through Hawkes process modeling. Under review.

Williams, B., **E.M. Schliep**, B.K. Fosdick. R. Elmore. Expected Points Above Average: A Novel Player Metric Based on Bayesian Hierarchical Modeling using NBA Data. Under review.

Rojas Salazar, S.*, **E.M. Schliep**, C.K. Wikle. E.H. Stanley, S. R. Carpenter, N.R. Lottig. A Bayesian Hidden Semi-Markov Model with Covariate-Dependent State Duration Parameters for High-Frequency Environmental Data. Under revision.

Invited and contributed talks

Analyzing whale calling through Hawkes process modeling. Hunter College Applied Probability and Statistics Seminar Series (virtual). October 2024.

Spatial data fusion: A case study in abundance estimation of marine mammals. North Carolina Chapter of the American Statistical Society (virtual). October 2024.

Data fusion modeling to improve abundance estimates of marine mammals. American Fisheries Society. Honolulu, HI. September 2024.

Spatio-temporal model to quantify seasonal changes in streamflow across the north temperate US. The Joint Statistical Meeting. Portland, OR. August 2024.

Analyzing whale calls through spatio-temporal exciting processes. Western North American Regional meeting of The International Biometrics Society. Fort Collins, CO. June 2024.

Data fusion model for estimating North Atlantic right whale abundance. North Atlantic Right Whale Workshop, Halifax, Nova Scotia (remote). October 2023.

Fusion of degraded spatial point pattern data from multiple monitoring strategies. Spatial Statistics 2023: Climate and the Environment. University of Colorado, Boulder. July 2023.

Correcting for informative sampling in spatial covariance estimation and kriging. Brigham Young University. March 2023.

Composite likelihoods for spatial kriging under informative sampling. Virginia Tech, VA. February 2023.

Accounting for spatio-temporal sampling variation in joint species distribution models. Wake Forest University, Winston-Salem, NC. October 2022.

Spatial kriging in the presence of informative sampling designs. The Joint Statistical Meeting. Washington, DC. August 2022.

Spatial prediction and model inference under informative sampling. North Carolina State University, Raleigh, NC (virtual). January 2022.

Studying the cumulative effects of training and recovery in athletes using distributed lag models. University of Virginia, Sports Analytics and Statistics Laboratory, Charlottesville, VA (virtual). November 2021.

The impacts of sampling design on model inference and spatial prediction. University of Illinois, Urbana-Champagne, IL (virtual). October 2021.

The impacts of preferential sampling in estimating the abundance and recruitment of multiple species of sport fish. The Joint Statistical Meeting (virtual). August 2021.

Messy, multivariate, and multi-source data - A Bayesian hierarchical model for speciated lake nitrogen. Colorado State University, Fort Collins, CO (virtual). April 2021.

Bayesian hierarchical modeling and data fusion for multivariate speciated nitrogen in lakes. Environmental Statistics Section of the Statistical Society of Australia (virtual). October 2020.

The scope of statistical methods in ecology: a case study in sports. The Joint Statistical Meeting (virtual). August 2020.

Joint temporal point pattern models for proximate species occurrence in a fixed area using camera trap data. International Biometrics Conference (virtual). July 2020.

Technological advancements in data collection in sports provide ripe area for statistical research. University of Missouri Student Chapter Meeting of the Association for Women in Mathematics. Columbia, MO (virtual). April 2020.

Data in Motion: How Sports Analytics Is Changing the Game. Mizzou Founders Day. Springfield, MO. February 2020.

Spatio-temporal model to predict extreme heat events at unobserved locations. The Joint Statistical Meeting. Denver, CO. July 2019.

New Inference for Spatio-Temporal Point Processes. 11th International Workshop on Bayesian Inference in Stochastic Processes. Madrid, Spain. June 2019.

Data in Motion: How Sports Analytics Is Changing the Game. University of Missouri, College of Arts & Sciences – Beyond Campus.

- Saint Louis, MO. April 2019.
- Kansas City, MO. March 2019.

Directional gradients and velocities for spatio-temporal point patterns. Kansas State University. Manhattan, KS. February 2019.

Velocities for spatio-temporal processes. Pennsylvania State University, State College, PA. November 2018.

Lake nitrogen modeling and the importance of collaborative research. ENVR Workshop,

Asheville, NC. October 2018.

Spatio-temporal deep learning and point process models for ecological and environmental processes. Truman State University, Kirksville, MO. September 2018.

Velocities for point patterns.

- The Joint Statistical Meeting, Vancouver, BC. August 2018.
- Annual Conference of the International Environmetrics Society, Guanajuato, Mexico. July 2018

Methods and data for regional and continental scale prediction. Disturbance and Vegetation Dynamics in Earth System Models Workshop sponsored by Department of Energy's Office of Biological and Environmental Research, Climate and Environmental Sciences Division, Gaithersburg, MD. March 2018.

Joint point pattern modeling for species co-occurrence using camera trap data.

- Annual Conference of The International Environmetrics Society/GRASPA 2017, Bergamo, Italy. July 2017.
- The Joint Statistical Meeting, Baltimore, MD. August 2017.

Biomass prediction using density-dependent diameter distribution models.

- Hanover Forest Science Seminar Series, Department of Forestry, Michigan State University, East Lansing, MI. March 2017.
- Department of Statistics and Actuarial Sciences, University of Iowa, Iowa City, IA. October 2016.
- Quantitative Psychology, University of Missouri, Columbia, MO. October 2016.
- The Joint Statistical Meeting, Chicago, IL. August 2016.

Alternating nonhomogeneous Poisson processes for modeling threshold exceedances in continuous time. Annual Conference of The International Environmetrics Society. Edinburgh, United Kingdom. July 2016.

Autoregressive Spatially-Varying Coefficient Models for Predicting Daily $PM_{2.5}$ Using VIIRS Satellite AOT. ICSA/Graybill Joint Conference, Fort Collins, CO. June 2015.

Stochastic Modeling for Environmental Velocities. G70: A Celebration of Alan Gelfand's 70th Birthday, Durham, NC. April 2015.

Multilevel Latent Gaussian Process Model for Mixed Discrete and Continuous Multivariate Response Data. ENAR Spring Meeting, Miami, FL. March 2015.

Stochastic Modeling for Environmental Velocities.

- Department of Statistics, University of Missouri, Columbia, MO. January 2015.
- Department of Mathematical and Statistical Sciences, University of Colorado - Denver, Denver, CO. January 2015.
- Department of Mathematical Sciences, Clemson University, Clemson, SC. January 2015.
- Department of Statistics and Probability, University of California - Santa Barbara, Santa Barbara, CA. January 2015.
- Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, IA. December 2014.

Climate-driven Individual Tree Growth Modeling Fusing Two Data Sources. Pan-American Advanced Study Institute on Spatio-Temporal Statistics, Buzios, Rio de Janiero, Brazil. June 2014.

Modeling Prevalence of Bovine Tuberculosis Using Multiple-Phase Testing. Statistical Society of Canada Annual Meeting, Toronto, Canada. May 2014.

Evaluating Wetland Health: Multivariate Multi-level Latent Gaussian Process Model. Front Range Student Ecology Symposium, Fort Collins, CO. February 2012.

Multivariate Ordinal Response Model using Latent Variables.

- Fall Meeting of the Colorado/Wyoming Chapter of the American Statistical Association, Aurora, CO. September 2011.
- Student Organized Activities and Research Seminar, Colorado State University, Fort Collins, CO. September 2011.

Spatial Hierarchical Modeling in Comparing Extreme Precipitation Generated by Regional Climate Models. North American Regional Meeting of the International Environmetrics Society (TIES), Oregon State University, Corvallis, OR. June 2009.

Conference Posters

Schliep, E.M., T.Q. Dong, A.E. Gelfand, F. Li. Modeling individual tree growth by fusing diameter tape and increment core data. Graybill/ENVR Conference, Colorado State University, Fort Collins, CO. September 2014.

Schliep, E. M. & J. A. Hoeting. Parameter-Expanded Data Augmentation Strategies for Ordinal, Spatial Data. Workshop on Spatial Statistics, Colorado State University, Fort Collins, CO. April 2013.

Schliep, E. M. & J. A. Hoeting. Latent Gaussian Process Model for Mixed Multivariate Continuous and Ordinal Data.

- Ten Lectures in Statistical Climatology, Seattle, WA. August 2012.
- The Second Workshop on Bayesian Inference for Latent Gaussian Models with Applications, Trondheim, Norway. May 2012.

Schliep, E. M., D. Cooley, S. R. Sain, J. A. Hoeting. A Comparison Study of Extreme Precipitation from Six Regional Climate Models via Spatial Hierarchical Modeling. Graybill VIII: 6^{th} International Conference on Extreme Value Analysis, Colorado State University, Fort Collins, CO. June 2009.

Professional Service

Editorial Boards

Associate Editor, *Spatial Statistics*	January 2024 - present
Associate Editor, *The Annals of Applied Statistics*	June 2019 - present
Associate Editor, *Journal of Agricultural, Biological, and Ecological Statistics*	January 2019 - March 2024
Guest Subject Matter Editor, *Ecological Applications*	June 2015 - March 2017

Manuscript Refereeing

Bayesian Analysis · Biometrics · Biostatistics · Canadian Journal of Forest Research · Ecological Applications · Ecological Monographs · Ecology · Environmental and Ecological Statistics · Environmetrics · Global Change Biology · International Statistical Review · Journal of Agricultural, Biological, and Ecological Statistics · Journal of the American Statistical Association

· *Journal of Applied Statistics* · *Journal of Geographical Systems* · *Journal of Multivariate Analysis* · *Journal of Official Statistics* · *Journal of the Royal Statistical Society (Series C)* · *Methods in Ecology and Evolution* · *Natural Resources Research* · *Nature Communications* · *PLOS ONE* · *Spatial Statistics* · *Statistics in Medicine* · *The Annals of Applied Statistics*

Book Reviews

Applications of Bayesian Statistics in Environmental and Ecological Studies – With R and Stan. Chapman & Hall/ CRC Press, Taylor & Francis Group.

A Computational Approach to Statistical Learning. Chapman & Hall/ CRC Press, Taylor & Francis Group.

Linear Models for Spatial Data Using R. Chapman & Hall/ CRC Press, Taylor & Francis Group.

Grant Reviews

Natural Sciences and Engineering Research Council of Canada

National Science Foundation

Phd Thesis Reviews

University of Wollongong, Australia

University of Zaragoza, Spain

University of Pretoria, South Africa

University of Wollongong, Australia

Service to Professional Societies

ASA ENVR Student Paper Awards Committee 2019 - 2021

JSM Session Organizer - *Statistical Methods Under Preferential and Informative Sampling* August 2022

JSM Session Chair - *ENVR Student Paper Award Winner* August 2021

Esri/ISI Spatial Thinking Student competition committee 2021

6^{th} Spatial Statistics Conference Scientific Committee July 2023

JSM Session Chair - *Advances in Spatial and Spatio-Temporal Statistics* August 2020

ENAR Program Committee 2019

JSM Program Chair, Section on Statistics and the Environment 2018

JSM Program Chair-Elect, Section on Statistics and the Environment 2017

JSM Session Chair - *Matrix Decomposition, Factor Models, and Applications to Recommender Systems* August 2016

ASA Mid-Missouri Chapter President 2016 - 2018

ASA Mid-Missouri Chapter Secretary August 2015 - December 2015

Committees

University Committees

NCSU College of Science Research Advisory Committee August 2024 - current

NCSU College of Agriculture and Life Sciences Statistical Consultant Search Committee February 2024 - current

MU Intercollegiate Athletics Committee August 2021 - August 2022

MU Office of Research and Economic Development Research Council STEM Review Committee August 2020 - August 2022

Department Committees

NCSU Statistics Tenure-Track Faculty Search Committee (Chair)	2024 - 2025
NCSU Statistics Graduate Admissions Committee	2023 - 2024
NCSU Statistics Seminar Committee	2022 - 2023
MU Statistics PhD Qualifying Exam Committee	2017 - 2022
MU ASA DataFest Organizing Committee	2016 - 2019
MU Department Retreat Organizing Committee	2016 - 2017
MU Department Website Development	2016 - 2022
MU Department Colloquium Organizer	2016 - 2018
MU Department Domestic Graduate Student Recruiting Committee	2016 - 2021
MU Department Recording Secretary	2015-2016

PhD Committees

Kevin Collins (chair)	current
Matthew Shisler (co-chair)	current
Dongjae Son (co-chair)	current
Ryan Li	current
Jenna Abrahamson (Geospatial Analytics)	current
Johnna Brooks (Biomath)	current
Eli Horner (Geospatial Analytics)	current
Owen Smith (Geospatial Analytics)	current
Bethany Wager (Applied Ecology)	current
Rebecca Willison	current
Kasia Dobrzycka	Summer 2023
Sanghyuk Park (Quantitative Psychology)	Spring 2023
Joshua North (co-chair)	Summer 2022
Shirley Rojas Salazar (co-chair)	Summer 2022
Ashkan Mirzaee (Industrial Engineering)	Spring 2022
Paul Parker	Summer 2021
Alan McClure (Food Sciences)	Fall 2020
Toryn Schaefer	Summer 2020
Jaxiun Chen	Fall 2019
Christopher Hassett	Spring 2019
Patrick McDermott	Summer 2018

Masters Committees

Ethan Marburger (Fisheries, Wildlife, and Conservation Biology)	current
Thu Ho (Forestry and Natural Resources)	Fall 2023
Trystan Harpold (Natural Resources)	Summer 2022
Tanner Turley (chair)	Spring 2022
Abigail Bigham (chair)	Spring 2022
Katie Price	Spring 2022
Emily Scully	Spring 2022
Scotty O'Dell	Spring 2022
Joe Connelly (chair)	Spring 2021
Sarah Terrell	Spring 2021
Melissa Lee	Spring 2021
David Reynolds	Spring 2021
Caleb Frerking (chair)	Fall 2020
Clint Ross (chair)	Fall 2020
Tyler Hessler (Fisheries and Wildlife)	Summer 2020
Jordan Stevens (co-chair)	Spring 2020
Sydney Bailey (Geography)	Spring 2020
Alisha Mosloff (Natural Resources)	Spring 2020

Connor Crouch (Forestry)	Summer 2019
Nai-En Tang	Fall 2018
Gunnar Wilhelmy (chair)	Spring 2018
Isaiah Taylor	Fall 2017
Joseph Degreenia (Agricultural Economics)	Summer 2017
Shelby McNeil	Spring 2017
Andrew Orf	Spring 2017
Steve Stehnach	Spring 2017

Undergraduate Advising

Discovery Fellows Program

Peyton Sumpter	Fall 2020 - Spring 2022

Undergraduate Honors Capstone

Matt Kane	Fall 2018
Hannah Snoke	Fall 2018
Jie Lou	Fall 2017

Research Assistants

Jie Lou	Spring 2017

Teaching Experience

North Carolina State University, Raleigh, North Carolina

AssociateProfessor August 2022 - present

Teach courses for the Statistics Department. Responsibilities include lectures, exams, homework assignments, and grades.

- 422 Introduction to Mathematical Statistics II — Spring 2023, Spring 2024
- 433/533 Applied Spatial Statistics — Spring 2023
- 704 Statistical Methods II — Spring 2024

University of Missouri, Columbia, Missouri

Online Teaching Certification Summer 2021

Obtained certification for online teaching.

Assistant Professor September 2015 - August 2021

AssociateProfessor September 2021 - August 2022

Teach courses for the Statistics Department. Responsibilities include lectures, exams, homework assignments, and grades.

- 4002 Topics in Statistics — Spring 2018
- 4085 Problems in Statistics — Spring 2017
- 4330/7330 Methods in Sports Analytics I — Fall 2021
- 4340/7340 Methods in Sports Analytics II — Spring 2022
- 4510/7510 Applied Statistical Models I — Fall 2015, Spring 2018, Fall 2018
- 4610/7610 Applied Spatial Statistics — Spring 2017, Spring 2019, Spring 2021
- 4640/7640 Introduction to Bayesian Data Analysis — Spring 2020, Spring 2022
- 4750/7750 Introduction to Probability Theory — Spring 2016, Fall 2016, Spring 2017
- 8310 Data Analysis I — Fall 2020
- 8330 Data Analysis III — Fall 2017
- 9100 Topics Course: Environmental and Ecological Statistics — Spring 2020

Duke University, Durham, North Carolina

Primary Instructor August 2014 - December 2014

Facilitate advanced seminar on topics at research frontiers in statistical sciences.

Colorado State University, Fort Collins, Colorado

Primary Instructor August 2008 - July 2012
Teach undergraduate level courses for the Statistics Department. Responsibilities include lectures, exams, homework assignments, and grades.

- 301 Introduction to Statistical Methods Fall 2008 - Summer 2011
- 340 Multiple Regression Analysis Spring 2012

Course Development Coordinator May 2010 - August 2010
Enhance curriculum for current undergraduate statistics courses. Develop a course component for analyzing real data.

Graduate Teaching Assistant August 2007 - May 2008
Duties include holding office hours and leading weekly recitations.

Memberships

American Statistical Association (ASA; Member)
ASA Sections: Bayesian Statistical Science, Statistics and the Environment, Statistics in Sports
International Statistical Institute (ISI; Member)
The International Environmetrics Society (TIES; Member)