Joshua S. North

Earth and Environmental Sciences
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EDUCATION

University of Missouri Columbia, Columbia, Missouri. (July, 2022)

Ph.D., Statistics
Advisors: Dr. Christopher K. Wikle and Dr. Erin M. Schliep

University of Missouri Columbia, Columbia, Missouri. (May, 2019)

M.A., Statistics

University of Colorado Boulder, Boulder, Colorado. (May, 2017)

B.S., Applied Mathematics
B.A., Ecology and Evolutionary Biology
Minor, Statistics

PROFESSIONAL EXPERIENCE

Lawrence Berkeley National Laboratory, Berkeley, California. (August 2022 - Present)

CASCADE Postdoctoral Fellow
Advisor: Dr. Mark D. Risser

PUBLICATIONS

Wagner, T., Schliep, E. M., **North, Joshua S.**, Kundel, H., Custer, C. A., Ruzich, J. K., & Hansen, G. J. A. (2023). "Predicting climate change impacts on poikilotherms using physiologically guided species abundance models". *Proceedings of the National Academy of Sciences*, *120*(15), 1–8. https://doi.org/10.1073/pnas.2214199120

North, J. S., Wikle, C. K., & Schliep, E. M. (2022). "A review of data-driven discovery for dynamic systems". *ArXiv*, (1), 1–38. https://doi.org/10.48550/ARXIV.2210.10663

North, J. S., Wikle, C. K., & Schliep, E. M. (2022). "A bayesian approach for spatio-temporal data-driven dynamic equation discovery". *ArXiv*, (1), 1–41. https://doi.org/10.48550/ARXIV.2209.02750

North, J. S., Wikle, C. K., & Schliep, E. M. (2022). "A Bayesian approach for data-driven dynamic equation discovery". *Journal of Agricultural, Biological, and Environmental Statistics*, *1*(1), 1–28. https://doi.org/10.1007/s13253-022-00514-1

North, J. S., Stanley, Z., Kleiber, W., Deierling, W., Gilleland, E., & Steiner, M. (2020). "A statistical approach to fast nowcasting of lightning potential fields". *Advances in Statistical Climatology, Meteorology, and Oceanography*, *2*(6), 79–90. https://doi.org/https://doi.org/10.5194/ascmo-6-79-2020

North, J. S., Schliep, E. M., & Wikle, C. K. (2020). "On the spatial and temporal shift in the archetypal seasonal temperature cycle as driven by annual and semi-annual harmonics". *Environmetrics*, 1–16. https://doi.org/10.1002/env.2665

PUBLICATIONS UNDER REVIEW

North, J. S., Schliep, E. M., Hansen, G. J. A., Kundel, H., Custer, C. A., McLaughlin, P., & Wagner, T. (2022). "Accounting for spatio-temporal sampling variation in joint species distribution models". *In Review.*

TEACHING

University of Missouri Columbia, Columbia, Missouri.

Course Development

STAT 4330/7330 - Methods in Sports Analytics I

STAT 4340/7340 - Methods in Sports Analytics II

Graduate Teaching Assistant

STAT 4340/7340 - Methods in Sports Analytics II (S20, S21, S22)

STAT 4330/7330 - Methods in Sports Analytics I (F20, F21)

STAT 3500 - Introduction to Probability and Statistics II (F18)

STAT 2500 - Introduction to Probability and Statistics I (F17, S18)

University of Colorado Boulder, Boulder, Colorado.

Undergraduate Teaching Assistant

APPM 3570 - Applied Probability (S16)

APPM 1235 - Pre-Calculus for Engineers (F15)

PRESENTATIONS

A flexible prior for orthonormal matrices, Spatial Statistics 2023 - Climate and the Environment: University of Colorado Boulder; July 21, 2023.

A flexible class of priors for conducting posterior inference on structured orthonormal matrices, Climate Extremes Workshop: Clemson University; May 16, 2023 (Poster).

A flexible class of priors for conducting posterior inference on structured orthonormal matrices, Machine Learning and Analytics Group: Lawrence Berkeley National Laboratory; May 11, 2023.

A Bayesian Approach for Spatio-Temporal Data-Driven Dynamic Equation Discovery, ENVR 2022 Workshop: Environmental and Ecological Statistical Research and Applications with Societal Impacts, Provo, UT; October 6, 2022 (Poster).

A Bayesian Approach for Data-Driven Dynamic Equation Discovery, Joint Statistical Meeting, Washington D.C.; August 10, 2022.

A Bayesian Approach to Data-Driven Discovery of Nonlinear Dynamic Equations, Lawrence Berkeley National Laboratory, Berkeley, CA (Virtual); January 21, 2022.

A Bayesian Approach to Data-Driven Discovery of Nonlinear Dynamic Equations, Sandia National Laboratory, Albuquerque, NM (Virtual); December 14, 2021.

Data-Driven Approach to Nonlinear Dynamic Equation Discovery, Joint Statistical Meeting; Virtual, August 9, 2021.

On the Spatial and Temporal Shift in the Archetypal Seasonal Temperature Cycle as Driven by Annual and Semi-Annual Harmonics, Joint Statistical Meeting; Virtual, August 4, 2020. (Invited)

Accuracy of Radial Support Vector Classifiers; Effect of Imbalanced Training Sets on Varying Minority Class Prevalence, University of Colorado Boulder, Boulder, Colorado; May 1, 2017. (Poster)

Creating Reproducible Research, University of Colorado Boulder, Boulder, Colorado; March 21, 2017.

AWARDS

ENVR Student Paper competition - Honorable Mention (2022)

MEMBERSHIP/SERVICE

Instructor and VIP Consultant for University of Missouri DataFest (2018-2022)

American Statistical Association (ASA) member

University of Missouri Statistics Graduate Student Association Vice-President (2017-2018)

University of Missouri Statistics Graduate Student Association Treasurer (2018-2019)

COMPUTER SKILLS

Statistical/Mathematical: R, Julia, Python, C++

Applications: LaTeX, GitHub, RShiny, Excel