# Joshua S. North

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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

## PREPRINT

**North, J. S.**, Risser, M. D., & Breidt, F. J. (2023). "A flexible class of priors for conducting posterior inference on structured orthonormal matrices". *arXiv*. https://doi.org/10.48550/arXiv.2307.13627

**North, J. S.**, Wikle, C. K., & Schliep, E. M. (2022). "A review of data-driven discovery for dynamic systems". *arXiv*. 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*. https://doi.org/10.48550/arXiv.2209.02750

## 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*.

## PUBLICATIONS

Wagner, T., Schliep, E. M., **North, J. 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 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

## 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 structured orthonormal matrices*, Joint Statistics Meeting 2023: Toronto, Canada; August 8, 2023.

*A flexible prior for structured 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

American Statistical Association (ASA) member (2017 - present)

American Geophysical Union (AGU) member (2023 - present)

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

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