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CONTACT INFORMATION
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Department of Statistics
Texas A&M University
College Station, TX 77843

EXPERIENCE

Texas A&M University, College Station, Texas
Assistant Professor, 2022 - *Present*

- Department of Statistics

Cornell University, Ithaca, New York
Postdoctoral Associate, 2020 - 2022

- Principal Investigator: David Matteson (Department of Statistics and Data Science)

EDUCATION

University of Missouri, Columbia, Missouri
Ph.D., Statistics July 2020

- NSF Graduate Research Fellow, 2016 - 2020
- Dissertation Title: *Alternative Learning Strategies for Spatio-Temporal Processes of Complex Animal Behavior*
- Advisor: Christopher K. Wikle

M.A., Statistics Dec 2018

Colorado State University, Fort Collins, Colorado
B.S., Statistics and Wildlife Biology, December 2014

- *Magna Cum Laude* with Honors

PUBLICATIONS

Schafer, T.L.J. and Matteson, D.S. (2024). Locally Adaptive Shrinkage Priors for Trends and Breaks in Count Time Series. *Technometrics*

Wu, H., **Schafer, T.L.J.**, and Matteson, D.S. (2024). Adaptive Bayesian Changepoint Analysis and Local Outlier Scoring. *Journal of Business and Economic Statistics*

Wu, H., **Schafer, T.L.J.**, Ryan, S., and Matteson, D.S. (2024). Drift vs Shift: Decoupling Trends and Changepoint Analysis. *Technometrics*

VonBank, J.A., Cunningham, S.A., **Schafer, T.L.J.**, Weegman, M.D., Link, P.T., Wikle, C.K., Kraai, K.J., Collins, D.P., and Ballard, B.M. 2023. Joint use of location and acceleration data to quantify habitat use transitions in arctic-nesting geese. *Scientific Reports*.

Davidow, M., **Schafer, T.L.J.**, Merow, C., Che-Castaldo, J.P., Duker, M., Feng, E., and Matteson, D.S. 2023. Clustering future scenarios based on predicted range maps. Methods for Ecology and Evolution.

Owolabi, O.O., **Schafer, T.L.J.**, Smits, G.E., Sengupta, S., Ryan, S., Wang, L., Matteson, D.S., Sherman, M.G., and Sunter, D.A. 2023. Role of variable renewable energy penetration on electricity price and its volatility across independent system operators in the United States. *Data Science in Science*.

Cunningham, S.A., **Schafer, T.L.J.**, Wikle, C.K., Ballard, B.M., VonBank, J.A., Bearhop, S., Hilton, G.M., Walsh, A.J., Griffin, L., Fox, A.D., and Weegman, M.D. 2022. Quantifying the influence of behavioral contributions to reproductive attempts in geese of contrasting migration strategy. *Oecologia*.

Feng, M.E., Owolabi, O.O., **Schafer, T.L.J.**, Sengupta, S., Wang, L., Matteson, D.S., Che-Castaldo, J.P., and Sunter, D.A. (2022). Analysis of animal-related electric outages using species distribution models and community science data. Environmental Research: Ecology.

Schindler, A.R., Cunningham, S.A., **Schafer, T.L.J.**, Sinnot, E.A., Clements, S.J., DiDonato, F.M., Mosloff, A.R., Walters, C., Shipley, A.A., Weegman, M.D., and Zhao, Q. 2022. Joint analysis of structured survey and citizen science data improves precision of bird population trends and the extent of improvement depends on life history strategy. *Scientific Reports*

Schafer, T.L.J., Wikle, C.K., and Hooten M.B. 2022. Bayesian inverse reinforcement learning for collective movement. *Annals of Applied Statistics*

Che-Castaldo, J.P., Cousin, R., Daryanto, S., Deng, G., Feng, M.E., Gupta, R.K., Hong, D., McGranaghan, R.M., Owolabi, O.O., Qu, T., Ren, W., **Schafer, T.L.J.**, Sharma, A., Shen, C., Sherman, M.G., Sunter, D.A., Wang, L., and Matteson, D.S. 2021. Critical Risk Indicators (CRIs) for the electric power grid: A survey and discussion of interconnected effects. *Environment Systems and Decisions*.

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

Schafer, T.L.J., Wikle, C.K., Ballard, B.M., VonBank, J.A., and Weegman, M.D. 2020. Bayesian Markov model with Pòlya-Gamma sampling for estimating individual behavior transition probabilities from accelerometer classifications. *Journal of Agricultural, Biological and Environmental Statistics*. **25**: 365-382.

Schafer, T.L.J. and Wikle, C.K. 2019. Alternative learning strategies for collective animal movement. In *JSM Proceedings*, Statistical Computing Section. Alexandria, VA: American Statistical Association.

Schafer, T.L.J., Breck, S.W., Baruch-Mordo, S., Lewis, D.L., Wilson, K.R., Mao, J.S., and Day, T.L. 2018. American black bear den-site selection and characteristics in an urban environment. *Ursus*, **29**: 25-31.

Book Reviews

Schafer, T.L.J. 2023. Statistics for Ecologists: A Frequentist and Bayesian Treatment of Modern Regression Models By John Fieberg (Ed.). 2022. Self-published online. pp. 526. $0.00 online: (`https://fw8051statistics4ecologists.netlify.app/`). *Journal of Wildlife Management*, **87**: e22464.

Grants/Funding

Sandia National Labs ($270,000), PI; funding 2023
"Machine Learning For Data-Driven Closure Models In Earth Systems"

National Park Service ($112,000), PI; funding 2023
"Generate a quantitative assessment of the implications of, and alternatives to, fully opening Johns Hopkins Inlet to cruise ship visitation"

Oral Presentations

Reinforcement Learning and Step Selection Analysis for Animal Movement Data.

- (Invited) Envibayes Workshop, Fort Collins, Colorado. September, 2023.
- (Invited) WNAR, Anchorage, Alaska. June, 2023.
- (Invited) Joint Statistical Meetings, Washington, D.C. August, 2022.

Trend Filtering with Adaptive Bayesian Changepoint Analysis for Count Time Series.

- (Invited) Department of Mathematics & Statistics, South Dakota State University. November, 2023.
- (Invited) University of Missouri 60th Anniversary Conference, Columbia, Missouri. October, 2023.
- (Invited) Joint Statistical Meetings, Toronto, Ontario, Canada. August, 2023.
- (Invited) SRCOS, Waco, Texas. June, 2023.
- (Invited) Conference on Advances in Time Series Analysis, Chicago, Illinois. May, 2023.
- (Invited) Department of Statistics, University of California Santa Cruz. February, 2023.
- (Invited) Entomological Society of America Annual Meeting, Vancouver, British Columbia, Canada. November, 2022.
- (Invited) Department of Statistics, Kansas State University. November, 2022.
- (Invited) Institute of Mathematical Statistics Annual Meeting, London, U.K. June, 2022.

Bayesian Inverse Reinforcement Learning for Collective Animal Movement.

- (Invited) School of Mathematics and Statistics, San Diego State University. February, 2022.
- (Invited) Department of Statistics and Applied Probability, University of California Santa Barbara. February, 2022.
- (Invited) Department of Statistics, Pennsylvania State University. January, 2022.
- (Invited) Department of Statistics, Florida State University. January, 2022.
- (Invited) Department of Statistics, University of Kentucky. January, 2022.
- (Invited) School of Mathematics and Statistics, University of Melbourne. December, 2022.
- (Invited) Department of Mathematical Sciences, University of Arkansas. December, 2022.
- (Invited) Department of Statistics, Texas A&M University. December, 2022.
- (Invited) Department of Mathematical Sciences, Montana State University. December, 2022.

Inverse reinforcement learning for animal movement data.

- (Invited) The Wildlife Society Annual Conference, Spokane, Washington. November, 2022.
- Women in Statistics and Data Science, Virtual. October, 2021.

Continuous shrinkage priors with dependence. Joint Statistical Meetings, Virtual. July, 2021.

Inverse reinforcement learning for agent-based models.

- (Invited) The Wildlife Society Annual Conference, Lexington, Kentucky. November, 2023.
- (Invited) SAMSI Pros and Cons of ABMs for Epidemic Modeling, Virtual. June, 2021.
- (Invited) Joint Statistical Meetings, Virtual. August, 2020.

Inverse reinforcement learning for animal behavior from environmental cues. (Invited) ENAR 2020 Spring Meeting, Virtual. March, 2020.

Alternative learning strategies for collective animal movement. Joint Statistical Meetings, Denver, Colorado. August 2019

Estimating behavioral transition probabilities of greater white-fronted geese using non-homogenous Markov models. Joint Statistical Meetings, Vancouver, British Colubmia. July, 2018.

Black Bear Den Characteristics and Site Selection Near Urban Aspen, Colorado. The Wildlife Society Annual Conference, Pittsburgh, Pennsylvania. October, 2014.

- Awarded best undergraduate contributed paper.

Poster Presentations

Trend Filtering with Adaptive Bayesian Changepoint Analysis for Count Time Series.

- ASA Section for Statistics in the Environment Workshop. October, 2022.
- IMS New Researchers' Conference, Washington D.C. August, 2022.

Non-linear forecasting with echo state networks. Ecological Forecasting Initiative, Washington D.C. May, 2019.

Estimating environmental effects on behavioral transitions of geese.

- Missouri Natural Resources Conference, Osage Beach, Missouri. February, 2019.
- Statistics and the Environment section of the American Statistical Association biennial workshop, Asheville, North Carolina. October, 2018

Awards

ConocoPhillips Data Science Faculty Fellow 2023, 2024

NSF Graduate Research Fellowship 2016

Benjamin A. Gilman International Scholarship 2013

Teaching Experience

Professor

Texas A&M University, Statistics Dept., College Station, TX.

Computing Tools for Data Science (STAT 624) - Spring 2024
Statistical Computing (STAT 404) - Spring 2023, Fall 2023
Statistical Methods (STAT 303) - Fall 2022

Graduate Instructor

University of Missouri, Statistics Dept., Columbia, MO. 2015-2017

Introductory Statistical Reasoning (STAT 1200)
Introduction to Probability and Statistics I (STAT 2500)
Introduction to Probability and Statistics II (STAT 3500)

Teaching Assistant

Colorado State University, Biology Dept., Fort Collins, CO. 2011

Biology of Organisms Lab (LIFE 103)

Professional Activities

Treasurer, ASA Section for Statistics and the Environment 2024-*current*

Associate Editor, Data Science in Science

Lead Organizer, Knowledge Discovery and Data Mining (KDD) 2021 Workshop
Data-Driven Exploration of Interconnected Risks in Complex Human-Natural Systems Aug 2021

Instructor, High school STAT Camp, 2023
Member, Early Career Women in Statistics Mutual Mentoring 2020-*Current*
Member, Ecological Forecasting Initiative Student Working Group 2019-*Current*
- R-Shiny Working Group Leader Jun - Nov 2020

Twitter Outreach, Code-RLadies 2019-2020
Organizer and Mentor, ASA Datafest Mid-MO 2017-2020
Mentor, Sports Statistics Initiative 2019-2020
Graduate Student Leader, Space-Time Reading Group 2018-2019
Vice President, Statistics Graduate Student Association 2015-2017

Referee

PRX Life
The American Statistician
Journal of the Royal Statistical Society Series A
Ecology and Evolution
PLOS ONE
Frontiers in Applied Mathematics and Statistics
Spatial Statistics
Biometrics
Journal of Agricultural, Biological and Environmental Statistics
Journal of the Royal Statistical Society Series C
PNAS
Ecology
Methods in Ecology and Evolution
Society for Petroleum Engineering Journal
Ursus
Biology Letters

Mentoring Experience

Graduate Students (Current)

Elizabeth Chun (TAMU, MS-Statistics), Proj. Advisor
Dave Pearce (TAMU, MS-Wildlife Bio), Com. Member
Nilson Chapagain (TAMU, PhD-Statistics), Com. Member
Vincenzo Donofrio (TAMU, MS,PhD-Astronomy), Com. Member
Pooja Sandeep Joshi (TAMU, PhD-Math), Com. Member
Valerie Espinosa (TAMU, MS-Statistics), Proj. Advisor
Benjamin Hoose (TAMU, PhD-Wildlife Bio), Com. Member
Georgia Smits (Cornell University, PhD-Statistics), Proj. Advisor

Graduate Students (Graduated)

Madeleine Barham (TAMU, MS-Wildlife Bio), Com. Member 2023

Professional Memberships	American Statistical Association Association for Computing Machinery The Wildlife Society American Geophysical Union