Toryn L. J. Schafer

CONTACT INFORMATION	tschafer@tamu.edu Blocker 435 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., 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.

WORKS IN PROGRESS
Available upon request

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. Role of variable renewable energy penetration on electricity price and its volatility across independent system operators in the United States. *Under Revision at Data Science in Science*.

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. 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. *Under Revision at Scientific Reports*

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. Joint use of location and acceleration data to quantify habitat use transitions in arctic-nesting geese. *Under Revision at Scientific Reports*.

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. Quantifying the influence of behavioral contributions to reproductive attempts in geese of contrasting migration strategy. *Under Revision Oecologia*

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

Feng, M.E., **Schafer, T.L.J.**, Che-Castaldo, C., Sherman, M.G., Matteson, D.S., and Che-Castaldo, J.P. Novel biodiversity indicators based on finance metrics.

ORAL PRESENTATIONS

Reinforcement Learning and Step Selection Analysis for Animal Movement Data. (Invited) Joint Statistical Meetings, Washington, D.C. August, 2022.

Trend Filtering with Adaptive Bayesian Changepoint Analysis for Count Time Series.
- (Invited) Entomological Society of America Annual Meeting, Vancouver, British Columbia, Canada. November, 2022.
- (Invited) Institute of Mathematical Statistics Annual Meeting, London, U.K. June, 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) 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. 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	NSF Graduate Research Fellowship	2016
	Benjamin A. Gilman International Scholarship	2013
GRANTS	Colorado Chapter of The Wildlife Society Travel Grant	Oct 2014
	Wayne Sandfort Student Travel Grant, Central Mountains and Plains Section of The Wildlife Society	Oct 2014

TEACHING EXPERIENCE	**Professor**

Texas A&M University, Statistics Dept., College Station, TX.
  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	Lead Organizer, Knowledge Discovery and Data Mining (KDD) 2021 Workshop

Data-Driven Exploration of Interconnected Risks in Complex Human-Natural Systems	Aug 2021

Assistant Editor, Data Science in Science

Graduate Student Mentorship

  Georgia Smits, Cornell University

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	Journal of the Royal Statistical Society Series C
	PNAS
	Ecology
	Methods in Ecology and Evolution
	Society for Petroleum Engineering Journal
	Ursus

PROFESSIONAL
MEMBERSHIPS

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