Myungsoo Yoo

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jup32@txstate.edu

EDUCATION

University of Missouri, Columbia, MO — Sep 2019 - May 2024
Ph.D. in Statistics
Dissertation Title: Dynamic Spatio-Temporal Models Integrating Physics for Extreme Environmental Processes
Advisor: Dr. Christopher K.Wikle

Sungkyunkwan University, Seoul, Korea — Mar 2017 - Feb 2019
M.S. in Statistics
Advisor: Dr. Chong Sun, Hong

Sungkyunkwan University, Seoul, Korea — Mar 2008 - Feb 2015
B.S. Double major in Library and Information, and Statistics

Professional Appointments

Texas State University — San Marcos, TX
Assistant Professor — Aug 2026 - Present

The University of Texas at Austin — Austin, TX
Postdoctoral Fellow — Jul 2024 - June 2026
Advisor: Dr. Mevin B. Hooten

Los Alamos National Laboratory — Los Alamos, NM
Applied Machine Learning Summer Research Fellowship — May 2023 - Aug 2023

Research Institute of Applied Statistics — Seoul, Korea
Research Assistant — Mar 2017 - Feb 2019

KB Insurance Co., Ltd. — Seoul, Korea
Underwriter and GA Marketer — Dec 2014 - Apr 2016

KB Insurance Co., Ltd. — Seoul, Korea
Intern — Jun 2014 - Aug 2014

Korea Deposit Insurance Corporation — Seoul, Korea
Intern — Jun 2013 - Aug 2013

Korea Trade-Investment Promotion Agency — Hongkong, China
Intern — Jan 2013 - Feb 2013

Honors and Awards

The Retina Research Foundation/Joseph M. and Eula C. Lawrence Travel Grant — 2024
The Association for Research in Vision and Ophthalmology

ASA ENVR Student Paper Award (Winner) — 2023
American Statistical Association, Section on Statistics and the Environment

Professional Presentation Travel Scholarship — 2023
University of Missouri

Academic Excellence Scholarship — 2012,2013
Sungkyunkwan University

Army Achievement Medal — 2012
US Army

Publications

Journal Articles

Yoo, M., Barreto, D.W., Hooten, M.B. (2026+). Making Recursive Bayesian Inference Robust, *submitted*, arXiv preprint: https://arxiv.org/abs/2606.07981.

Yoo, M., Rai, R., Gopalan, G., Wikle, C.K., Guidoboni, G., Siesky, B.A., Vercellin, A.V., Ritzer, L., Keller, J.M., Harris, A. (2026+). Emulating diurnal variation in the retinal vasculature using machine learning and a physiology-based mathematical model, *submitted*

Yoo, M. Hooten, M.B., Ho, B.N., Leach, C.B., Feuka, A.B., Bailey, L.L., (2026+). Stochastic Integro-Differential Models for Animal Trajectories, *submitted*

Yoo, M., Zhang, L., Wikle, C.K., Opitz, T. (2026+). Modeling high and low extremes with a novel dynamic spatio-temporal model, *submitted*, arXiv preprint: https://arxiv.org/abs/2508.01481.

Wikle, C.K., North, J., Gopalan, G., **Yoo, M** (2026). A Statistician's Overview of Physics-Informed Neural Networks for Spatio-Temporal Data, *Journal of the American Statistical Association*, 1–30, https://doi.org/10.1080/01621459.2026.2625420.

Yoo, M., Gopalan, G., Hoffman, M.J., Coulson, S., Han, H.K., Wikle, C.K., Hillebrand, T. (2025). Emulation with uncertainty quantification of regional sea-level change caused by the Antarctic Ice Sheet, *Journal of Geophysical Research: Machine Learning and Computation*, **2**, e2024JH000349, https://doi.org/10.1029/2024JH000349.

Yoo, M. and Wikle, C.K. (2024). A Bayesian spatio-temporal level set dynamic model and application to fire front propagation, *Annals of Applied Statistics*, **18**, 404–423, https://doi.org/10.1214/23-AOAS1794.

Yoo, M. and Wikle, C.K. (2023). Using echo state networks to inform physical models for fire front propagation, *Spatial Statistics*, **54**, 100732, https://doi.org/10.1016/j.spasta.2023.100732.

Yoo, M. and Kim, D. (2019). Statistical tests for biosimilarity based on relative distance between follow-on biologics for ordinal endpoints, *Communications for Statistical Applications and Methods*, **27**, 1-14, `https://doi.org/10.29220/CSAM.2020.27.1.001`.

Hong, C. S. and **Yoo, M**. (2019). Quantile confidence region using highest density, *Communications for Statistical Applications and Methods*, **26**, 35-46, https://doi.org/10.29220/CSAM.2019.26.1.035.

Book Chapters

Yoo, M., Zhang, L., Wikle, C.K. (2026). Real-time forecasting of fire front propagation using the level set method and echo state networks, *Environmental Modelling with Contemporary Statistics*, 265–284, Chapman and Hall/CRC.

Wikle, C.K., Zhang, L., **Yoo, M**. (2026+). Deep Bayesian spatio-temporal modeling of wildfires, *Bayesian Deep Learning*, CRC/Routledge, *submitted*.

Presentations

Modeling Animal Trajectories with Discrete Covariates using Stochastic Differential Equations and Neural Networks with Remotely Sensed data
Joint Statistical Meetings, Nashville, TN Aug 2025

Dynamic Spatio-Temporal Model Integrating Physics for Fire Front Propagation
The University of Texas at Austin, Austin, TX Nov 2024

Modeling high and low extremes with a novel dynamic spatio-temporal model
Joint Statistical Meetings, Portland, OR Aug 2024

Emulating diurnal variation in the retinal vasculature using machine learning and a physiology-based mathematical model (poster)
The Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA May 2024

A Bayesian spatio-temporal level set dynamic model and application to wild fire front propagation
Joint Statistical Meetings, Toronto, Canada Aug 2023

Using echo state networks to inform physical models for fire Front propagation
Spatial Statistics conference, Boulder, CO July 2023

A Bayesian spatio-temporal level set dynamic model and application to wild fire front propagation
Joint Statistical Meetings, Washington, DC Aug 2022

Teaching

Elementary Statistics (MATH 2328) — Texas State University, Fall 2026

Guest Lecturer- Statistical Computation and Simulation (STAT 9250) — University of Missouri, Spring 2024, 2026
One day guest lecturer

Teaching Assistant- Introductory Statistical Reasoning (STAT 1200) — University of Missouri, Fall 2020, Spring 2021
Discussion Session

Teaching Assistant- Introduction to R programming — Sungkyunkwan University, Jul 2017, Feb 2018
Three days Summer/Winter Session

Advising

Undergraduate Students
Berkeley N. Ho (with Dr. Mevin B. Hooten) — The university of Texas at Austin, Jul 2024- June 2026

Editorial Activities

Peer Reviewer

Spatial Statistics	2026
Technometrics	2026
Environmetrics	2026
Journal of Geophysical Research: Machine Learning and Computation	2026
Scientific reports	2025
Ecology	2025
Data Science in Science	2025
Journal of the American Statistical Association	2024
The Annals of Applied Statistics	2023
Spatial Statistics	2023

Professional Service

Statistics Graduate Student Association — University of Missouri, Aug 2022 - Aug 2023
Vice President

Professional Memberships

American Statistical Association (ASA) member — 2022 - present

Technical Skills

Languages
R, SAS, Python, LaTeX
Tools
Rcpp, High Performance Computing

References

Dr. Christopher K. Wikle
Curators Distinguished Professor
Department of Statistics at University of Missouri
WikleC@Missouri.edu

Dr. Mevin B. Hooten
Professor
Department of Statistics and Data Sciences at The University of Texas at Austin
mevin.hooten@austin.utexas.edu

Dr. Likun Zhang
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Department of Statistics at University of Missouri
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Dr. Giri Gopalan
Scientist
Statistical Sciences Group at Los Alamos National Laboratory
ggopalan@lanl.gov