Michael R. Schwob

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PROFESSIONAL EXPERIENCE

Virginia Tech (VT) **Blacksburg, VA**
Assistant Professor, Department of Statistics *2025 -*

EDUCATION

University of Texas at Austin (UT) **Austin, TX**
Ph.D. in Statistics (GPA: 4.00) *2021 - 2025*
Dissertation: *Bayesian Hierarchical Models for Dependent Ecological Data*

University of Nevada, Las Vegas (UNLV) - Honors College **Las Vegas, NV**
B.S. in Mathematics (GPA: 3.96) *2016 - 2021*
Thesis: *Addressing the Ecological Fallacy with Lagrangian Inference*

FELLOWSHIPS

- **National Science Foundation Graduate Research Fellowship** (2021-2026)
- **Dean's Prestigious Fellowship - University of Texas at Austin** (2021-2026)

BOOKS

- **MR Schwob**, Y Duan, B Cantoni, B Flores-López, SG Walker. (2025). Exercises in Statistical Reasoning, *Chapman & Hall/CRC*.

PUBLICATIONS

- **MR Schwob**, MB Hooten, NM Calzada, TH Keitt. (2025+). "Spatial hyperspheric models for compositional data," *in review at Annals of Applied Statistics*.
- **MR Schwob**, MB Hooten, V Narasimhan. (2024). "Composite dyadic models for spatio-temporal data," *Biometrics*. 2024 ASA ENVR Student Paper Competition - Honorable Mention.
- MB Hooten, **MR Schwob**, DS Johnson, JS Ivan. (2024). "Geostatistical capture-recapture models," *Spatial Statistics*.
- **MR Schwob**, MB Hooten, T McDevitt-Galles. (2023). "Dynamic population models with temporal preferential sampling to infer phenology," *Journal of Agricultural, Biological, and Environmental Statistics*. 2023 ISBA EnviBayes Student Paper Competition - Winner.
- MB Hooten, **MR Schwob**, DS Johnson, JS Ivan. (2023). "Multistage hierarchical capture-recapture models," *Environmetrics*.
- **MR Schwob**, P Shiue, R Venkat. (2021). "Novel theorems and algorithms relating to the Collatz conjecture," *International Journal of Mathematics and Mathematical Sciences*.
- R Venkat, **MR Schwob**. (2021). "Novel sequences of palindromic primes in various bases," *International Journal of Advanced Research in Computer Science*.
- MB Hooten, C Wikle, **MR Schwob**. (2020). "Statistical implementations of agent-based demographic models," *International Statistical Review*.
- **MR Schwob**, A Dempsey, F Zhan, J Zhan, A Mehmood. (2020). "Robust multimodal heartbeat

detection using hybrid neural networks," *IEEE Access*.
- **MR Schwob**, J Zhan, A Dempsey. (2019). "Modeling cell communication with time-dependent signaling hypergraphs," *IEEE/ACM Transactions on Computational Biology and Bioinformatics*.
- A Hart, B Smith, S Smith, E Sales, J Hernandez-Camargo, Y Mayor Garcia, F Zhan, L Griswold, B Dunkelberger, **MR Schwob**, S Chaudhry, J Zhan, L Gewali, P Oh. (2019). "Resolving intravoxel white matter structures in the human brain using regularized regression and clustering," *Journal of Big Data*.

PRESENTATIONS

Italics denotes the presenting author.

- *M Lofton*, M Bell, C Clark, E Felker-Quinn, T O'Donnell, M Schwob, Q Thomas. "Effects of antecedent vs. short-term nitrogen deposition on tree growth," Critical Loads of Atmospheric Deposition Meeting, National Park Service, October 2025.
- *MR Schwob*, J Van Ee, MB Hooten, NM Calzada. "GWAS + Landscape Genomics: A Unified Framework for Improved Learning," *BromeCast 2025 Annual Meeting*, Fort Collins, CO, March 2025.
- *MR Schwob*, MB Hooten, V Narasimhan. "Composite dyadic models for spatio-temporal data," *Joint Statistical Meetings*, Portland, OR, August 2024.
- *MB Hooten*, C Wikle, MR Schwob. "Statistical implementations of demographic agent-based models," *The Wildlife Society's 30th Annual Conference*, Louisville, KY, November, 2023.
- *MR Schwob*, MB Hooten, and T McDevitt-Galles. "Dynamic population models with temporal preferential sampling to infer phenology," *EnviBayes Workshop on Complex Environmental Data*, Fort Collins, CO, August 2023.
- *MR Schwob*, MB Hooten, V Narasimhan. "Spatio-temporal mechanism discovery with composite likelihoods," *Spatial Statistics 2023: Climate and the Environment*, University of Colorado, Boulder, July 2023.
- *MB Hooten*, MR Schwob, D Johnson, J Ivan. "Geostatistical capture-recapture models," *Spatial Statistics 2023: Climate and the Environment*, University of Colorado, Boulder, July 2023.
- *MB Hooten*, MR Schwob, D Johnson, J Ivan. "Geostatistical capture-recapture models," *International Indian Statistical Association (IISA) Conference*, Colorado School of Mines, June 2023.
- *MB Hooten*, MR Schwob, D Johnson, J Ivan. "Geostatistical capture-recapture models," *Conference on Applied Statistics in Agriculture and Natural Resources*, Purdue University, May 2023.
- *MR Schwob*, M Hooten, and T McDevitt-Galles. "Mechanistic modeling for population dynamics with temporal preferential sampling," *Joint Statistical Meetings*, District of Columbia, August 2022.
- *MB Hooten*, MR Schwob, DS Johnson, JS Ivan. "Recursive computing strategies inspire new model specifications," *Conference on Applied Statistics in Agriculture and Natural Resources*, Utah State University, May 2022.
- *MB Hooten*, C Wikle, MR Schwob. "Statistical implementations of demographic agent-based models," *Joint Statistical Meetings*, Philadelphia, PA, August 2020.
- *MR Schwob*, A Dempsey, F Zhan, J Zhan, A Mehmood. "Robust multimodal heartbeat detection using hybrid neural networks," *Autonomy Technology Research – AFRL Presentations*, Dayton, OH, August 2019.
- *MR Schwob*, J Zhan. "Mapping neural pathways using statistical theory," *Honors & Research Symposium*, Las Vegas, NV, November 2018.
- *MR Schwob*, S Chaudhry, J Zhan, L Gewali, P Oh. "Resolving intravoxel white matter with Bayesian statistics," *American Statistical Association's Nevada Annual Research Symposium*, Las Vegas, NV, October 2018.

TEACHING EXPERIENCE

- VT STAT 4714 - Probability and Statistics for Electrical Engineers
- UT SDS 315 - Statistical Thinking
- NSF Workshop on Bayesian Inference for Ecologists, Colorado State University, June 2023.
- NSF Workshop on Bayesian Inference for Ecologists, Colorado State University, June 2022.

AWARDS

- **Bartroff Family Award for Research Excellence** - UT (2025)
- **ENVR Student Paper Competition (Honorable Mention)** - ASA (2024)
- **EnviBayes Student Paper Competition (Winner)** - ISBA (2023)
- **Keller Award** - UT (2023)
- **Professional Development Award** - UT (2023, 2024)
- **Goldwater Scholar** - The Barry Goldwater Scholarship Foundation (2019-2020, 2020-2021)
- **Best Honors Thesis** - UNLV (2021)
- **Outstanding Graduate** - UNLV (2021)
- **Sam Lieberman Regents' Award** - Nevada System of Higher Education (2021)
- **Lance and Elena Calvert Award** - UNLV Libraries (2021)
- **Congressional Award** - United States Congress (2018)
- **Undergraduate Researcher of the Year** - UNLV (2019)
- **Sophomore of the Year** - UNLV (2018)
- **Excellence Scholarship** - UNLV (2016-2021)
- **Governor Guinn Millennium Scholarship** - Nevada State's Treasurer Office (2016-2021)
- **Bhatnagar Mathematics Award** - UNLV (2020-2021)
- **Chris McNamee Memorial Scholarship** - UNLV (2020-2021)
- **Sands Sustainability Scholarship** - UNLV (2020-2021)
- **Frank A DiCicco Endowed Scholarship** - UNLV (2019-2020)
- **Brenda and Russell L. Frank Honors Scholarship** - UNLV (2019-2020)

SERVICE

Refereed manuscripts for the following journals:

- *The Annals of Applied Statistics*, Institute of Mathematical Statistics.
- *Biometrics*, Wiley-Blackwell Publishing Ltd.
- *Environmetrics*, John Wiley and Sons Ltd.
- *Environmental Monitoring & Assessment*, Springer.

Reviewed for the following panels:

- *NSF - RISE Division (2025)*