Nathan B Wikle

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Education

Ph.D. Statistics, Pennsylvania State University, 2021.

  Dissertation: *Mechanistic models for spatial and spatio-temporal data.*

  Advisor: Ephraim Hanks.

B.S. Mathematics, Truman State University, 2016.

  Minors: Computer Science, Statistics, and Mathematical Biology.

  Honors: *Summa cum laude*, Departmental Honors in Mathematics.

Academic Employment

Postdoctoral Scholar, University of Texas at Austin, August 2021 – present.

  Supervisor: Corwin Zigler.

Publications

Journal Articles

Wikle, N.B., Hanks, E.M., Henneman, L.R.F., and Zigler, C.M. (*Accepted*) A mechanistic model of annual sulfate concentrations in the United States. *Journal of the American Statistical Association*. arXiv: https://arxiv.org/abs/2010.04253

Wikle, N.B., Tran, T.N., Hanks, E.M., Boni, M.F. [and 12 others]. (*Accepted*) SARS-CoV-2 epidemic after social and economic reopening in three US states reveals shifts in age structure and clinical characteristics. *Science Advances*. medRxiv: https://doi.org/10.1101/2020.11.17.20232918

Tran, T.N., **Wikle, N.B.**, Hanks, E.M., Boni, M.F. [and 11 others]. (2021) Optimal SARS-CoV-2 vaccine allocation using real-time seroprevalence estimates in Rhode Island and Massachusetts. *BMC Medicine*, **19** (162). https://doi.org/10.1186/s12916-021-02038-w

Wagner, T., Lottig, N.R. [and 16 others, including **Wikle, N.B.**]. (2020) Increasing accuracy of lake nutrient predictions in thousands of lakes by leveraging water clarity data. *Limnology and Oceanography Letters*. **5**(2), 228–235. https://doi.org/10.1002/lol2.10134

Wikle, N.B., Hanks, E.M., and Hughes, D.P. (2019) A dynamic individual-based model for high-resolution ant interactions. *Journal of Agricultural, Biological, and Environmental Statistics*. **24**(4), 589–609. https://doi.org/10.1007/s13253-019-00363-5

Preprints and Papers Under Review

Wikle, N.B., Tran, T.N., Hanks, E.M., Boni, M.F. [and 12 others]. (2021+) A negative binomial process model of the 2020–2021 COVID-19 epidemic in Rhode Island. *In Preparation*.

Tran, T.N., **Wikle, N.B.**, Hanks, E.M., Boni, M.F. [and 10 others]. (2021+). SARS-CoV-2 attack rate and population immunity in southern New England, March 2020 – May 2021. *In Review*. medRxiv: `https://doi.org/10.1101/2021.12.06.21267375`

Presentations

Invited Talks

"Constructing mechanistic spatial models from Ornstein-Uhlenbeck processes," CMStatistics, London. December 2021.

Contributed Talks

"A Negative Binomial Process Model of the 2020–2021 COVID-19 Epidemic in Rhode Island," Joint Statistical Meetings, Seattle, WA. August 2021.

"Mechanistic Models for Spatial Data from Ornstein-Uhlenbeck Processes," Joint Statistical Meetings, Philadelphia, PA. August 2020.

"Bayesian Selection of Tuning Parameters," Joint Statistical Meetings, Denver, CO. July 2019.

"A Dynamic Individual-Based Model of Ant Interaction Events," Joint Statistical Meetings, Vancouver. July 2018.

Posters

"A Dynamic Individual-Based Model of Ant Interaction Events"

- Rao Prize Conference, Pennsylvania State University, University Park, PA. May 2019.
- Statistics for the Environment (ENVR) Workshop, Asheville, NC. October 2018.

Awards/Honors

J. Keith Ord Scholarship for Research in Spatial and Environmental Statistics, Pennsylvania State University, 2020.

JSM Student Paper Award: Honorable Mention, Section on Statistics in the Environment, 2020.

NSF Graduate Research Fellowship: Honorable Mention, National Science Foundation, 2018.

Robert W. and Ann M. Emery Endowed Scholarship, Pennsylvania State University, 2017.

Paul Berg and Daniel J. Larson Distinguished Graduate Fellowship, Pennsylvania State University, 2016.

Teaching Experience

Pennsylvania State University

Stochastic Modeling, Spring 2021.

Experimental Methods for Engineering and the Sciences, Spring 2019.

Last updated: January 8, 2022
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