

	Wake Forest University 127 Manchester Hall Winston-Salem, NC 27109	☎: (803) 944-7265 ✉: <a href="mailto:murphy@wfu.edu">murphy@wfu.edu</a> 🌐: <a href="https://evamurphy100.github.io/">https://evamurphy100.github.io/</a>
CITIZENSHIP	United States	
RESEARCH INTERESTS	Statistical modeling; Spatio-temporal statistics; Latent variable models; Causal inference methods for spatial data; Environmental and epidemiology applications.	
EMPLOYMENT	<b>Wake Forest University</b> , Winston-Salem, N.C. <ul style="list-style-type: none"> <li>Teacher-Scholar Postdoctoral Fellow <span style="float: right;">July 2023 - Present</span></li> </ul> <b>Clemson University</b> , Clemson, S.C. <ul style="list-style-type: none"> <li>Graduate Research Assistant <span style="float: right;">September 2022 - June 2023</span></li> <li>Graduate Teacher of Record <span style="float: right;">August 2018 - June 2022</span></li> </ul>	
EDUCATION	<b>Ph.D. in Mathematical and Statistical Sciences</b> , <b>Clemson University</b> , Clemson, SC <ul style="list-style-type: none"> <li>Advisor: <b>Dr. Whitney Huang</b>, Assistant Professor, School of Mathematical and Statistical Sciences</li> </ul> <b>M.S. in Mathematical Sciences</b> , <b>University of West Florida</b> , Pensacola, FL <ul style="list-style-type: none"> <li>Advisor: Dr. Josaphat Uvah, Professor, University of West Florida</li> </ul> <b>B.S. in Mathematical Sciences</b> , <b>Babes-Bolyai University</b> , Romania	
PUBLICATIONS	<ol style="list-style-type: none"> <li><b>Murphy E.</b>, Kline D. M., Hepler S. A. "The Role of Spatially Varying Loadings in Dynamic Spatial Factor Models for Modeling the Opioid Syndemic." Health Services and Outcomes Research Methodology, Accepted 2025.</li> <li><b>Murphy E.</b>, Kline D. M., McKnight E., Bonny B., Waller, L., Miller, W. C., Hepler S. A. "Integrating data at multiple spatial scales to estimate the local burden of the opioid syndemic." Spat Spatiotemporal Epidemiol. 2025 Jun;53:100720.</li> <li><b>Murphy E.</b>, Huang W. K., Bessac, J., Wang, J., Kotamarthi, R. "Joint modeling of wind speed and wind direction through a conditional approach." Environmetrics, Volume 36, Issue 3, 2025 (Winner of ASA Section on Statistics and the Environment Student Paper Competition).</li> <li><b>Murphy E.</b>, Kline D. M., Egan, K. L., Lancaster, K. E., Waller, L., Miller, W. C., Hepler S. A. "Exploring the Opioid Syndemic in North Carolina: A Novel Approach to Modeling and Identifying Factors." Biostatistics, Volume 26, Issue 1, 2025.</li> <li>Kline, D. M., White, B. N., Lancaster, K. E., Egan, K. L., <b>Murphy, E.</b>, Miller, W. C., Hepler, S. A. "Estimating prevalence of opioid misuse in North Carolina counties from 2016-2021: An integrated abundance model approach." Epidemiology. 2025 May 1;36(3):310-318.</li> </ol>	

MANUSCRIPTS IN  
PREPARATION

1. **Murphy, E.**, Cademartori, C., Kline, D., Hurley, R., Yong, J., Hepler, S., Adams, M.C.B. “Impact of Resource Accessibility Disruptions on Addiction Treatments.”
2. Enderle, M. N., **Murphy, E.**, Murphy, J. , Nwaozuru, U. C., Kline, D. M., and Lancaster, K. E. Willingness to receive long-acting injectable pre-exposure prophylaxis among people who inject drugs in Appalachian Ohio: An application of the information-motivation-behavioral skills model.
3. **Murphy E.**, Huang W.K., Brook Russell “ Modeling Directional Extreme Wind Speeds Using an Extreme Value Regression Approach”.
4. **Murphy E.**, Huang W.K., Ting Fung Ma “ Spatio-temporal modeling of wind speed data”.

DISSERTATION  
SUBMISSION

1. **Murphy E.** “A Framework for Statistical Modeling of Wind Speed and Wind Direction” (2023) [[Dissertation Link](#)]

AWARDS

**Student Award**

- **Outstanding Graduate in Research Award** 2023  
*This award is given by the School of Mathematical and Statistical Sciences, Clemson University.*
- **ASA ENVR Student Paper Award** 2023  
*The award is sponsored by the Section on Statistics and the Environment (ENVR) of the American Statistical Association (ASA). Papers were judged on environmental importance/relevance, statistical modeling/novelty, as well as writing (including organization, clarity, and accessibility).*
- **Dr. Kenyon Fairey Graduate Fellowship**, Clemson University  
September 2022 - May 2023  
*“The fellowship’s purpose is to provide graduate fellowships for doctoral students whose scholarship and/or applied research focuses on resource management, conservation, outdoor education, or health and wellness. Students are selected through a competitive review process managed by the Graduate School.”*
- **Call Me Doctor Dissertation Completion Fellowship**, Clemson University  
August 2022 - August 2023  
*“The Call Me Doctor Fellowship offers a unique opportunity for students from underrepresented and diverse backgrounds to pursue their doctoral studies with financial support, professional development, and mentoring from faculty with interdisciplinary expertise.”*

**Presentation Competition**

- **Best Talk Award**, SC-ASA Palmetto Symposium April 2022

**Travel Awards**

- Provost’s Fund for Faculty Travel, Wake Forest University October 2024
- Faculty Development Fund for Visiting Professors, Wake Forest University June and October 2024
- Joint Statistical Meeting - Student Paper Award Presentation, ENVR August 2023
- Machine Learning for Climate and Weather Applications, Institute for Mathematical and Statistical Innovations (IMSI) November 2022
- Detection and Attribution of Climate Change, IMSI October 2022
- ENVR 2022 Workshop, Provo, UT October 2022
- Climate Model Evaluation and Uncertainty, IMSI September 2022
- Graduate Student Travel, Clemson University August 2022

## PRESENTATIONS

### Invited Talks

*Integrating data at multiple spatial scales to estimate the local burden of the opioid syndemic.*

- Women in Statistics and Data Science Conference November, 2025
- International Day of Women in Statistics and Data Science, October, 2025

*Understanding the Opioid Syndemic in North Carolina: A Novel Approach to Modeling and Identifying Factors*

- ICHPS 2025 Conference January, 2025
- NESS 2025 June, 2025

*Understanding the Opioid Syndemic using Factor Analysis*

- Wake Forest Biostatistics and Data Science Seminar Series March, 2025

*Spatio-temporal modeling of wind speed data*

- AISC 2024 Conference October, 2024
- ICSA Applied Statistics Symposium June, 2023

*Modeling Directional Extreme Wind Speed Using an Extreme Value Regression Approach*

- Statistical Sciences Colloquium, Wake Forest University September, 2023
- Statmospheric Sciences Seminar, Berkeley National Laboratory, October 11, 2023

*Joint modeling of wind speed and wind direction through a conditional approach*

- Joint Statistical Meeting August, 2023
- 5<sup>th</sup> International Conference on Econometrics and Statistics, (virtual) June 2022
- Math For All Satellite Conference at Clemson University, SC Feb. 2022

### Contributed Talks

*Spatio-temporal modeling of wind speed data*

- SC-ASA Palmetto Symposium, Columbia, SC April 2023

*Joint modeling of wind speed and wind direction through a conditional approach*

- Joint Statistical Meeting, Washington, DC August 2022
- Climate Informatics (virtual) May 2022
- SC-ASA Palmetto Symposium - Best Talk Award, Columbia, SC April 2022

*Statistical framework for studying the spatio-temporal variation of wind speed and wind direction*

- The Graduate Student Network Conference, NISS, (virtual) June 2021

### Contributed Posters

*Spatio-temporal modeling of wind speed data*

- ENVR 2024 Workshop, Boulder, CO October, 2024

*Understanding the Opioid Syndemic in North Carolina: A Novel Approach to Modeling and Identifying Factors*

- SRCOS 2024 Summer Research Conference, Clemson, SC June, 2024

*Joint modeling of wind speed and wind direction through a conditional approach*

- Climate Model Evaluation and Uncertainty, Chicago, IL September 2022
- ENVR Workshop, Provo, UT October, 2022

*Modeling of Wind Speed and Wind Direction*

- The Graduate Student Network Conference, NISS, (virtual) May 2022

**General Audience**

*On the road of modeling wind speed and wind direction*

- Math Club, Clemson University March 2023

*Modeling wind speed and wind direction*

- Clemson Calculus Challenge, Clemson University April, 2023

TEACHING  
EXPERIENCE

**Teacher-Scholar Postdoctoral Fellow**, Wake Forest University

- STA 111: Elementary Probability and Statistics (4 sections over 2 semesters).
- STA 112: Introduction to Data Science and Regression (6 sections over 3 semesters).

**Graduate Teacher of Record**, School of Mathematical and Statistical Sciences, Clemson University

- Business Calculus I (2 sections over 2 semesters).
- Business Calculus II (2 sections over 4 semesters) .
- Pre-Calculus and Introductory Differential Calculus (2 sections over 1 semester).
- Calculus of Single Variable (2 sections over 1 semester).

**Adjunct Instructor of Mathematics**, Piedmont Technical College, Newberry, SC and Midlands Technical College, Columbia, SC

- Probability and Statistics (1 online section over 4 semesters).
- Beginning Algebra (1 section over 2 semesters).
- Intermediate Algebra (1 section 1 semester).
- Algebra, Geometry and Trigonometry (1 section 1 semester).

**Teacher of Mathematics**, Mid-Carolina High School, Newberry, SC

- Subjects taught: Algebra 1, Algebra 2, Geometry, Pre-Calculus, AP Calculus AB.

SERVICE

**Session Chair**

- The Statistical Analyzes for Environmental Monitoring, Contributed Papers Session, Section on Statistics and the Environment, Joint Statistical Meeting, August 2022

**Paper Reviewer for:**

- *Advances in Statistical Climatology, Meteorology and Oceanography*
- *International Journal of Drug Policy*
- *Journal of Urban Health*

- *Journal of Agricultural, Biological and Environmental Statistics*
- *International Journal of Drug Policy*
- *Data Science in Science*
- 11<sup>th</sup> *International Conference on Climate Informatics* - extended abstract review

**Mentor:**

- STRIVE for MORE conference, (virtual) September 2020 and 2021

HARD SKILLS	R, MATLAB, Python, L <sup>A</sup> T <sub>E</sub> X, Unix/Linux Shell Scripting, High Performance Computing (HPC)	
PROFESSIONAL MEMBERSHIP	American Statistical Association (ASA)	Since August. 2018
	ENVR Section. ASA	Since August 2018
	Institute of Mathematical Statistics (IMS)	Since October 2022