# Andrew J. Deas

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## **Research Interests**

- ♦ Machine learning and artificial intelligence
- ♦ Probability methods and Bayesian statistics for advanced modeling and inference
- ◊ Computational statistics for large-scale data analysis
- Simulation modeling with agent-based frameworks to explore population health risks
- Developing innovative, data-driven solutions to real-world problems

## Education

Current	$\diamond$	<b>Doctorate of Philosophy</b> , <i>Mathematics</i> (University of Tennessee)
		GPA: 3.9
2017	$\diamond$	Masters of Science, Mathematics (Ohio University)
		GPA: 3.97
2015	$\diamond$	Bachelor of Science, Mathematics (Ohio University)
		Cumulative GPA: 3.5
		Mathematics GPA: 3.9

## **Work Experience**

$\diamond$	Postdoctoral Research Associate, Oak Ridge National Laboratory
$\diamond$	Summer Intern (GRO), Oak Ridge National Laboratory
$\diamond$	Graduate Research Assistant, University of Tennessee
$\diamond$	Mathematics Tutor, Mathnasium
$\diamond$	Teaching Assistant, University of Tennessee
$\diamond$	Teaching Assistant, Ohio University
$\diamond$	Mathematics Tutor, Ohio University

#### **Research Publications**

- A.J. Deas, H. Fernando, H.A. Hanson, A.J. Kapadia, J. Trafton, A. Spannaus, V. Maroulas, "Identifying Spatiotemporal Patterns in Opioid Vulnerability: Investigating the Links Between Disability, Prescription Opioids and Opioid-Related Mortality." *BMC Public Health*, 2025. https://doi.org/ 10.1186/s12889-025-23044-0
- 2 A.J. Deas, A. Spannaus, D.D. Maguire, J. Trafton, A.J. Kapadia, V. Maroulas, "Investigating the importance of social vulnerability in opioid-related mortality across the United States." In peer review at *Scientific Reports*, 2025. https://arxiv.org/abs/2412.15218.

## Awards

2022: Summer Fellowship – University of Tennessee Department of Mathematics

<sup>2024:</sup> Travel Award – University of Tennessee Graduate Student Senate

## Presentations

- 1. County-Level Characteristics Associated with Opioid-Related Mortality. Oak Ridge AI Expo, April 2025.
- 2. Investigating the Relationship Between County-Level Characteristics and Opioid-Related Mortality. SIAM-SEAS Conference, March 2025.
- 3. Identifying Spatiotemporal Patterns of Opioid Risk and Vulnerability: Insights from Social Factors. AGU24, December 2024. (*iPoster*)
- 4. Investigating National Opioid Vulnerability Through Socioeconomic Factors. Oak Ridge Summer Intern Final Symposium, August 2024. (*Poster*)
- 5. **Records: A Point Processes Approach.** University of Tennessee Department of Mathematics Probability Seminar, September 2022.
- 6. Extreme Values of Independent Stochastic Processes. University of Tennessee Department of Mathematics Probability Seminar, April 2021.

## **Programming Skills**

Languages: Python, Java, LaTex, C, C++, R, Matlab Libraries: Numpy, Scipy, Scikit-learn, PyTorch, Pandas, GeoPandas, Matplotlib

## **Memberships**

- ◊ AMS
- ♦ AGU