

# Adway S. Wadekar

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## EDUCATION

2021–25 Bachelor of Science in Mathematics and Statistical Science, Duke University.

Minor in Economics.

*Graduate-level coursework:* Coalescent Theory (planned), Stochastic Models (planned), Bayesian Statistics (planned), Time Series and Dynamic Models (planned), High-dimensional Probability, Real Analysis, Algebraic Structures, Numerical Analysis, Probabilistic Machine Learning, Quant. Meth. for Biomedical Data.

## RESEARCH INTERESTS

Biostatistics & bioinformatics, statistical genetics, genetic epidemiology.

Survey statistics and differential privacy, missing data, record linkage, synthetic data generation.

High-dimensional probability, random graphs, metric geometry, concentration of measure, and applications.

Applications of statistics to the social sciences, including political polarization and social epidemiology.

## RESEARCH EXPERIENCE

2024– Research Assistant, Department of Mathematics, Duke University

*Advisor:* Prof. Nicholas Cook

Studied properties of random simplicial complexes towards detecting geometric structure. Funded through the mathematics department's PRUV Fellowship.

2024– Research Assistant, Department of Biostatistics and Bioinformatics, Duke University

*Advisor:* Prof. Jichun Xie

Applied statistical knockoff methodology on whole-genome sequencing and GWAS data to detect causal variants associated with lung diseases.

2022– Research Assistant, Department of Statistical Science, Duke University

*Advisor:* Prof. Jerry Reiter

Developed a technique to incorporate complex survey design into estimates of population-level accuracy for machine learning classifiers trained and evaluated on survey data. Summer 2022 research funded by a Duke Huang Fellowship. Studying Bayesian prediction intervals for differentially-private verification of parameters.

## PUBLICATIONS

2024 A.S. Wadekar and J.P. Reiter. “Estimating Binary Outcome Classifiers Using Survey Data,” *Epidemiology* (forthcoming). arXiv: [2311.00596](https://arxiv.org/abs/2311.00596)

- 2020 A.S. Wadekar. "A Psychosocial Approach to Predicting Substance Use Disorder (SUD) Among Adolescents." In *Proceedings of IEEE/ACM Intl. Conference on Social Networks Analysis and Mining*, 819-826. doi: [10.1109/ASONAM49781.2020.9381378](https://doi.org/10.1109/ASONAM49781.2020.9381378)
- 2020 A.S. Wadekar. "Understanding Opioid Use Disorder Using Tree-based Classifiers." *Drug and Alcohol Dependence*, 208, 107839. doi:[10.1016/j.drugalcdep.2020.107839](https://doi.org/10.1016/j.drugalcdep.2020.107839)

## PRESENTATIONS

- May 2023 "Truth or consequences? A principled path to evaluating classifiers using survey data," Symposium on Data Science and Statistics, St. Louis, Missouri.
- Jan. 2023 "Using weights to improve the reliability of classification metrics with complex survey data," Dept. of Statistical Science, Duke University.
- July 2019 "Predicting Opioid Use Disorder Using a Random Forest," IEEE 43rd Computer Software and Applications Conference, Milwaukee, Wisconsin.
- Mar. 2018 "Grade-level Participation in the Advanced Placement Curriculum," IEEE Integrated STEM Education Conference, Princeton, New Jersey.

## AWARDS, HONORS, AND RESEARCH SUPPORT

- 2024 Semifinalist (7 semifinalists, 3 awardees out of 1700+ undergraduates) for [Faculty Scholars Award](#), Duke University.
- 2024 Program for Research for Undergraduates (PRUV) Fellowship, Dept. of Mathematics, Duke University (\$3,500).
- 2023, 2024 Deans' Summer Research Fellowship, Duke University (declined, \$3000).
- 2023 Finalist submission for [Fischer-Zernin Award for Local Journalism](#), Duke University.
- 2023 Finalist submission for [Melcher Award for Excellence in Student Journalism](#), Duke University.
- 2023 Conference Grant, Office of Undergraduate Research Support, Duke University (\$500).
- 2022 Huang Research Fellowship, Initiative for Science and Society, Duke University (\$6,000).
- 2021 Scholar Award, Regeneron Science Talent Search.
- 2019 Certificate of Honorable Mention (administered by the American Statistical Association), Intel International Science and Engineering Fair.

## TEACHING EXPERIENCE

- 2024 Undergraduate teaching assistant, Dept. of Statistical Science, Duke University.
- 2021– Undergraduate teaching assistant for DECISION 618 (Data Analytics for Business), Fuqua School of Business, Duke University.
- 2022 Help room teaching assistant for introductory calculus classes, Dept. of Mathematics, Duke University.
- 2022– Grader for MATH 230 (Probability) and MATH 122 (Introductory Calculus II), Dept. of Mathematics, Duke University.

## **SERVICE**

### **Academic Journal Referee**

*Journal of the American Medical Informatics Association, Drug and Alcohol Dependence.*

### **Service to the University**

Student application reviewer for Huang Fellows Program, Initiative for Science and Society, Duke University.  
Blue Devil Buddies peer mentor, Duke University.

## **PROFESSIONAL EMPLOYMENT**

2021–	Creative Intern, Duke Men’s Basketball
2021–24	News Editor (2023-24), University News Editor (2022-23) and Staff Reporter (2021-22), Duke Chronicle
2019–20	Photographer-in-Residence, Town of Westborough, Massachusetts.

Updated May 2024