

# Adway S. Wadekar

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## EDUCATION

B.S. in Mathematics and Statistical Science, Duke University, 2025.

Minor in Economics.

*Relevant coursework:* Algebraic and Geometric Statistics (IS), Coalescent Theory (G), Stochastic Models (G), Bayesian Statistics (G), High-dimensional Probability (G), Real Analysis I (G), Algebraic Structures I (G), Numerical Analysis (G), Probabilistic Machine Learning (G), Quantitative Methods for Biomedical Studies (G), Statistical Inference, Intermediate Micro and Macroeconomics, Social Media and Political Polarization.

(G): Graduate-level; (IS): Independent study.

## RESEARCH INTERESTS

Survey statistics, differential privacy, and missing data.

Biostatistics & bioinformatics, statistical & population genetics, multi-omics data.

High-dimensional probability, random graphs, concentration of measure, and algebraic statistics.

Applications of statistics to the social sciences, including sociology and data/computational journalism.

## SELECTED RESEARCH EXPERIENCE

- 2024– Research Assistant, Department of Biomedical Informatics, Harvard Medical School  
*Advisor:* Prof. Chirag Patel  
Developed methods to translate estimators for polygenic risk scores to exposomic and proteomic data. Supported through the Harvard Summer Institute in Biomedical Informatics.
- 2024– Research Assistant, Department of Mathematics, Duke University  
*Advisors:* Prof. Nicholas Cook and Prof. Ezra Miller  
Completed a mathematics department's PRUV Research Fellowship, studying random geometric graphs in hyperbolic space (Prof. Cook). Now studying Bayesian formulations in algebraic and geometric statistics towards graduation with distinction (Prof. Miller).
- 2024– Research Assistant, Department of Biostatistics and Bioinformatics, Duke University  
*Advisor:* Prof. Jichun Xie  
Applying and developing statistical knockoff methodology for genome-wide association studies to detect common causal variants of 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 supported by a Duke Huang Fellowship. Currently studying decision-theoretic frameworks for evaluating missingness types in data towards graduation with distinction in statistical science.

## PUBLICATIONS

- 2024 A.S. Wadekar and J.P. Reiter. "Evaluating Binary Outcome Classifiers Estimated From Survey Data," *Epidemiology*, 35(6), pp. 805-812. doi: [10.1097/EDE.0000000000001776](https://doi.org/10.1097/EDE.0000000000001776)
- 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 (peer-reviewed fast abstract).
- Mar. 2018 "Grade-level Participation in the Advanced Placement Curriculum," IEEE Integrated STEM Education Conference, Princeton, New Jersey.

## AWARDS, HONORS, AND RESEARCH SUPPORT

- 2024 Nominee for Churchill Scholarship (2 endorsed each year), Duke University.
- 2024 Fifth Place for [Breaking News Story of the Year](#), Associated College Press.
- 2024 Semifinalist (7 semifinalists, 3 awardees out of 1700+ undergraduates) for [Faculty Scholars Award](#), Duke University.
- 2024 Summer Institute in Biomedical Informatics (SIBMI) Research Fellowship, Harvard University (\$4,500).
- 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

- 2025 Teaching assistant for STA 602 (Graduate Bayesian Statistics; Instructor: Prof. David Dunson), Dept. of Statistical Science, Duke University.

- 2024 Undergraduate teaching assistant for STA 432 (Mathematical Statistics; Instructor: Prof. Filippo Ascolani), 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.*

### University Service

At-Large Member for Senior Class Gift Committee, Duke University.

Trinity Ambassador for the Department of Statistical Science, Duke University.

Student application reviewer for Huang Fellows Program, Initiative for Science and Society, Duke University.

Blue Devil Buddies peer mentor, Duke University.

## OTHER 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.

## SOFTWARE

Proficient in R, Python, assorted bioinformatics tools (PLINK, samtools, etc.).

Updated January 2025