Adway S. Wadekar

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EDUCATION

Ph.D. in Statistics, University of Michigan, Ann Arbor, expected 2030.
  Affiliated with the Genome Science Training Program.

B.S. in Mathematics (with distinction) and Statistical Science (with high distinction), Duke University, 2025.
  Minor in Economics.
  Advisors: Prof. Ezra Miller (mathematics) and Prof. Jerry Reiter (statistical science).

RESEARCH INTERESTS

Missing data, differential privacy, causal inference, survey methodology.

Statistical & population genetics, ancestral recombination graphs, multi-omic data.

High-dimensional probability, concentration of measure, networks, trees.

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

RESEARCH EXPERIENCE

2024–25   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.

2023–25   Research Assistant, Department of Mathematics, Duke University
          Advisor: Prof. Ezra Miller

          Completed a mathematics department's PRUV Research Fellowship, studying random geometric graphs in hyperbolic space. Now studying algebraic and geometric statistics towards graduation with distinction.

2024–25   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.

2022–25   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. Developed a sensitivity analysis visualization framework.

PUBLICATIONS

Journal Articles

2024   Wadekar, A.S. and Reiter, J.P. "Evaluating Binary Outcome Classifiers Estimated From Survey Data," *Epidemiology*, 35(6), pp. 805-812. doi: 10.1097/EDE.0000000000001776

2020   Wadekar, A.S. "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

2020   Wadekar, A.S. "Understanding Opioid Use Disorder Using Tree-based Classifiers." *Drug and Alcohol Dependence*, 208, 107839. doi:10.1016/j.drugalcdep.2020.107839

Manuscripts Under Review

2025   Wadekar, A.S. and Reiter, J.P. "Assessing Decision-Making Confidence in the Presence of Data Uncertainty," under review at *Statistics and Public Policy*. arXiv:2504.17043.

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

2025   Genome Science Training Program Fellowship (unanimously awarded in biostatistics department; declined for affiliate status in statistics department), University of Michigan.

2025   Honorable Mention, National Science Foundation Graduate Research Fellowship.

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

Duke University

TA for STA 602L, Bayesian Statistics (master's level), Spring 2025.

TA for STA 432, Theory and Methods of Statistical Learning and Inference, Fall 2024

TA for DECISION 618, Data Analytics for Business (Fuqua School of Business), Fall 2021-23.

Grader for MATH 340, Adv. Introduction to Probability, Spring 2025.

Grader for MATH 230, Probability, Fall 2022, 24.

Grader for MATH 112L, Spring 2022, 23.

Help room TA for MATH 122L, Introductory Calculus II, Spring 2022.

SERVICE

Academic Journal Referee

Journal of the American Medical Informatics Association, Drug and Alcohol Dependence (x2).

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 POSITIONS

2021–25	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, VCF/BCFtools, etc.).

Updated July 2025