Hannah Waddel **November 18, 2024**

CONTACT

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EDUCATION

Emory University, Atlanta, Georgia 2025

- Ph.D. Biostatistics
- Advisors: Dr. Max Lau, Dr. Lance Waller
- Dissertation Title: "Phylodynamic inference incorporating pathogen diversity and outbreak data"

Emory University, Atlanta, Georgia 2021

- M.S. Biostatistics

University of Utah, Salt Lake City, Utah 2018

- B.S. Mathematics, *Summa Cum Laude*

EMPLOYMENT

- **Biostatistics Intern** Summer 2023
  Sanofi Vaccines Division, Swiftwater, Pennsylvania
  - Re-analyzed phase II vaccine clinical trial data from over 7,000 patients across 6 trials to assess the impact of the protocols' inclusion criteria and follow-up times
  - Completed trainings in international clinical research standards and good clinical practice
- **Biostatistics Collaboration Core** 2019-Present
  Department of Biostatistics and Bioinformatics, Emory University
  - Primary statistical collaborator providing support for medical and public health researchers at Emory University
  - Participated in close consultation and collaboration with researchers from the schools of medicine and public health on design and implementation of studies at all stages of research
  - Statistical collaboration on 17 collaborative research projects resulting in coauthorship on 6 manuscripts (2 published, 1 revised and resubmitted, 3 submitted and under review)
- **Actuarial Intern** Summer 2016
  Willis Towers Watson, Denver, Colorado
  - Used proprietary software and programming language to calculate expected yearly payments to companies' pension plans
  - Completed project recommending more accurate pension mortality assumptions to an international company with over 14,000 employees in their pension plan

PUBLICATIONS

Articles

1. Sadan, O., **Waddel, H. B.**, Moore, R., Feng, C., Mei, Y., Pearce, D., Kraft, J., Pimentel, C., Mathew, S., Akbik, F., Ameli, P., Taylor, A., Danyluk, L., Martin, K. S., Garner, K., Kolenda, J., Pujari, A., Asbury, W., Jaja, B. N. R., Macdonald, R. L., Cawley, C. M., Barrow, D. L., & Samuels, O. (2022). Does intrathecal nicardipine for cerebral vasospasm following subarachnoid hemorrhage correlate with reduced delayed cerebral ischemia? A retrospective propensity score–based analysis. *Journal of Neurosurgery*, 136(1), 115-124. PubMed Link
2. Akbik, F., **Waddel, H. B.**, Jaja, B. N. R., Macdonald, R. L., Moore, R., Samuels, O. B., & Sadan, O. (2021). Nicardipine Prolonged Release Implants for Prevention of Delayed Cerebral Ischemia after Aneurysmal Subarachnoid Hemorrhage: A Meta-Analysis. *Journal of Stroke and Cerebrovascular Diseases*, 30(10), 106020. PubMed Link
3. Nadel, B. B., Lopez, D., Montoya, D. J., Ma, F., **Waddel, H. B.**, Khan, M. M., Mangul, S., & Pellegrini, M. (2021). The Gene Expression Deconvolution Interactive Tool (GEDIT): accurate cell type quantification from gene expression data. *GigaScience*, 10(2) PubMed Link

Preprints

1. Moubadder, L., Bliss, M., Maliniak, M., **Waddel, H. B.**, Switchenko, J., Chang, H., Kramer, M., & McCullough, L. (2024). Increasing access, equitability, and rigor in the assessment of Neighborhood Mortgage Discrimination. Preprint available at Research Square

Conference Participation

- **Waddel, H. B.**, Koelle, K., Lau, M. S. Y., "Scalable and robust mechanistic integration of epidemiological and genomic data for phylodynamic inference", Oral Presentation, *Epidemics9*, Bologna, Italy, 2023
- **Waddel, H.B.**, Adler, F.A., "The Community Ecology of the Music Canon", Poster, *National Conference on Undergraduate Research*, Edmond OK, USA, 2018
- **Waddel, H.B.**, Adler, F.A., "The Community Ecology of the Music Canon", Poster, Utah Conference on Undergraduate Research, Cedar City UT, USA, 2018

Honors and Awards

- **First Place, Senior PhD Student Presentation Day** 2023
  Emory University Department of Biostatistics
- **Scholarship** 2022
  Summer Institute in Statistics and Modeling in Infectious Disease, U. of Washington
- **Gibson Senior Award** 2018
  Department of Mathematics, University of Utah
- **Emeritus Librarian Scholarship** 2017
  J. Willard Marriott Library, University of Utah
- **Pi Mu Epsilon Mathematics Honor Society** 2017
  Department of Mathematics, University of Utah
- **National Merit Scholarship** 2013

Grants and Fellowships

- **Laney Graduate Fellowship** 2018
  Laney Graduate School, Emory University
- **Independent Research Experience Undergraduate Grant ($1,000)** 2018
  Department of Mathematics and Department of Biology, University of Utah
  Title: "The Community Ecology of the Music Canon"
- **Independent Research Experience Undergraduate Grant ($2,000)** 2017
  Department of Mathematics and Department of Biology, University of Utah
  Title: "The Community Ecology of the Music Canon"
- **ORCA Undergraduate Student Mentoring Grant ($1,500)** 2016
  Office of Research and Creative Activities, Brigham Young University
  Title: "Transcription Factor Interactions in Developing Hair Cells"
- **ORCA Undergraduate Student Mentoring Grant ($1,500)** 2015
  Office of Research and Creative Activities, Brigham Young University
  Title: "Sensory Integration in Zebrafish Larvae"

Teaching

Instructor

- Co-Instructor, Intro to Epidemiology and Biostatistics (HGC 707) Fall 2022
- SPSS Short Course (Part of HGC 740C) Summer 2022, 2023, 2024
- Statistical Methods I Lab (BIOS 500L) Fall 2020

Teaching Assistant

- Statistical Practice I (BIOS 580) Fall 2022, Fall 2023
- Biostatistical Methods II (BIOS 591P) Spring 2020-Spring 2024
  - Developed R software and recitation lesson plans to teach students linear and logistic regression methods

- Statistical Methods I Lab (BIOS 500L) Fall 2019

Guest Lectures

- "Clean Code to Deal with Dirty Data", BIOS 580 (Statistical Practice I), 2024
- "Introduction to the Command Line and the HPC Cluster", EPI 790R (Doctoral Seminar in Epidemiologic Practice), 2024

Service

- **Reviewer** 2023
  Journal of the Royal Society Interface
- **Graduate Student Network executive committee** 2020-Present
  National Institute of Statistical Sciences (NISS)
  - Founding member of the NISS Graduate Student Network with a mission to support the graduate students at NISS-affiliated academic departments throughout their graduate programs and in their early career
  - Planned and hosted quarterly events to support GSN's mission including webinars, career fairs, panels, and networking socials
- **National Institute of Statistical Sciences (NISS) Graduate Student Research Conference** 2021-2024
  Conference organizing committee
- **Archival Volunteer** 2021-2023
  Computer Museum of America
  - Organizing and describing documentation and other textual materials which relate to the museum's hardware and software collections
- **Student Council Representative** 2019-2022
  Department of Biostatistics and Bioinformatics, Emory University
- **COVID-19 Geospatial support** 2020
  Georgia Department of Public Health

Technical Skills

- **Programming and Software**: Advanced Proficiency in R, RShiny, R package development, and Rcpp; SAS. Intermediate Proficiency in Python; C++; Bash/Unix; SQL; and ArcGIS Software
- **Statistics**: Generalized linear models; spatial statistics; causal inference and observational studies via propensity score modeling and instrumental variables; survival analysis; meta-analysis; Bayesian hierarchical modeling; infectious disease modelling; time series analysis; probability theory; fitting Bayesian models via Markov Chain Monte Carlo using JAGS (Just Another Gibbs Sampler), or INLA (Integrated Nested Laplace Approximation)

Affiliations

- **American Statistical Association (ASA)**
- **International Biometric Society (IBS)**, Eastern North American Region (ENAR)
- **Association for Computing Machinery (ACM)**

Other

- **Society of Actuaries Exam P (Probability)** 2016