Xiaoru Dong

2004 Mowry Rd · Gainesville, FL 32610 · (217) 778-5683 · xdong1@ufl.edu

EDUCATION

University of Florida
PhD in Biostatistics
Advisor: Rhonda Bacher

Dec 2023 (Expected)
Major GPA 3.63/4.00

University of Illinois at Urbana-Champaign
Bachelor of Science in Statistics

Dec 2018
Major GPA 3.89/4.00

EXPERIENCE

Graduate Research Assistant Aug 2019-Present
- > Collaborate with interdisciplinary teams at University of Florida College of Medicine to investigate molecular mechanisms underlying diseases. Contribute to study design, data analysis, and journal publication.
- > Analyze scRNA-seq and bulk RNA-seq data using R packages (e.g. Seurat and DESeq2), discerning disease-associated factors and biomarkers.
- > Develop novel computational methods for scRNA-seq data analysis, such as the creation of innovative algorithms for data-driven scRNA-seq trajectory evaluation aimed at identifying the most accurate trajectory.
- > Apply machine learning methods, such as random forest and lasso, to analyze high-dimensional omics datasets, such as genomic, epigenomic, cytokine, and immunophenotyping data.

Graduate Teaching Assistant Aug 2019-April 2023
- > Designed and executed innovative course materials, including developing homework assignments and creating Canvas pages, resulting in significant improvements in student learning outcomes.
- > Mentored and supported over 20 students per class, fostering increased engagement and higher performance levels.
- > Hosted weekly office hours, providing valuable coding guidance in R and SAS and clarifying key concepts for students.
- > Delivered comprehensive grading and constructive feedback, leading to measurable improvements in student work and overall course outcomes.

PUBLICATIONS & PREPRINTS

Key: † indicates co-first authors; * indicates corresponding authors.

Shapiro, M. R. †, **Dong, X**. †, Perry, D. J. †, McNichols, J. M., Thirawatananond, P., Posgai, A. L., Peters, L., Motwani, K., Musca, R. S., Muir, A., Concannon, P., Jacobsen, L. M., Mathews, C. E., Wasserfall, C. H., Haller, M. J., Schatz, D. A., Atkinson, M. A., Brusko, M. A., Bacher, R. L. *, & Brusko, T. M*. (2023). Human immune phenotyping reveals accelerated aging in type 1 diabetes (p. 2023.02.24.529902). *bioRxiv*. https://doi.org/10.1101/2023.02.24.529902

Dong, X., & Bacher, R. (2023). Analysis of Single-Cell RNA-seq Data. In B. Fridley & X. Wang (Eds.), *Statistical Genomics* (Vol. 2629, pp. 95–114). Springer US. https://doi.org/10.1007/978-1-0716-2986-4_6

Dong, X., & Bacher, R. (2022). Data-driven assessment of dimension reduction quality for single-cell omics data. *Patterns*, *3*(3), 100465. https://doi.org/10.1016/j.patter.2022.100465

Darden, D. B., **Dong, X.,** Brusko, M. A., Kelly, L., Fenner, B., Rincon, J. C., Dirain, M. L., Ungaro, R., Nacionales, D. C., Gauthier, M., Kladde, M., Brusko, T. M., Bihorac, A., Moore, F. A., Loftus, T., Bacher, R., Moldawer, L. L., Mohr, A. M., & Efron, P. A.* (2021). A Novel Single Cell RNA-seq Analysis of Non-Myeloid Circulating Cells in Late Sepsis. *Frontiers in Immunology, 12*, 696536. https://doi.org/10.3389/fimmu.2021.696536

Ross, J. J., Wasserfall, C. H., Bacher, R., Perry, D. J., McGrail, K., Posgai, A. L., **Dong, X.,** Muir, A., Li, X., Campbell-Thompson, M., Brusko, T. M., Schatz, D. A., Haller, M. J., & Atkinson, M. A. (2021). Exocrine Pancreatic Enzymes Are a Serological Biomarker for Type 1 Diabetes Staging and Pancreas Size. *Diabetes, 70*(4), 944–954. https://doi.org/10.2337/db20-0995

PRESENTATIONS

Dong, X & Bacher, R (2023). "Data-driven Evaluation of Trajectories in Single-Cell RNA-Sequencing Data", Poster at ENAR, Nashville, March 19, 2023

Dong, X & Xie, J (2018). "Analyzing Inclusion Criteria of 7000 Cochrane Systematic Reviews", Poster at Undergraduate Research Symposium, University of Illinois at Urbana-Champaign, Illinois, April 19, 2018

Dong, X, Zhou, T & Huang, M (2018). "Distortions in Scientific Literature - A Replication Analysis of Greenberg's Citation Network of 302 Alzheimer's Science Research Papers", Poster at Undergraduate Research Symposium, University of Illinois at Urbana-Champaign, Illinois, April 19, 2018

HONORS & AWARDS

Student Competition Award, American Statistical Association Florida Chapter	March 2023
Certificate in Data Science	Nov 2018
Successful Participant Award, Mathematical Contest in Modeling	Jan 2016

SKILLS

> **Programming Languages:** Proficient in R/Rstudio for data analysis, with additional knowledge of SAS and Python programming languages.
> **RNA-seq analysis:** Experienced in analyzing scRNA-seq and bulk RNA-seq data using tools such as Seurat, DESeq2, and edgeR.
> **Consulting:** Skilled in consulting with researchers from diverse backgrounds, providing guidance and support for data analysis and interpretation.
> **Communication:** Fluent in English and Chinese languages, with strong written and verbal communication skills.