ALEXANDER DOMBOWSKY

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APPOINTMENTS

Gladstone Institutes San Francisco, CA, USA
Bioinformatics Fellow *Aug. 2025 - Present*
- Advisor: Barbara Engelhardt

EDUCATION

Duke University Durham, NC, USA
Doctor of Philosophy – Statistical Science *Aug. 2020 - May 2025*
- Advisors: David B. Dunson and Amy H. Herring
- Dissertation: *Bayesian Inference for Discrete Structures*

McGill University Montreal, QC, Canada
Master of Science – Mathematics and Statistics *Sept. 2019 - July 2020*
- Advisor: Russell Steele
- Thesis: *Assessing the Quality of Posterior Samples from No-U-Turn Hamiltonian Monte Carlo*

McGill University Montreal, QC, Canada
Bachelor of Science – Mathematics *Sept. 2015 - May 2019*

PUBLICATIONS

Dombowsky, A., Dunson, D. B., Madut, D. B., Rubach, M. P., & Herring, A. H. (2025). Bayesian Learning of Clinically Meaningful Sepsis Phenotypes in Northern Tanzania. *The Annals of Applied Statistics*. [Publication] [Preprint].

Dombowsky, A. & Dunson, D. B. (2025). Product Centered Dirichlet Processes for Bayesian Multiview Clustering. *Journal of the Royal Statistical Society, Series B*. [Publication] [Preprint].

Dombowsky, A., & Dunson, D. B. (2025). Bayesian Clustering via Fusing of Localized Densities. *Journal of the American Statistical Association: Theory and Methods*. [Publication] [Preprint].

SUBMITTED PAPERS

Dombowsky, A. & Dunson, D. B. (2025). Learning Discrete Bayesian Networks with Hierarchical Dirichlet Shrinkage. [Preprint].

Madut, D. B., **Dombowsky, A.** [& 16 others]. (2025) Derivation of Clinical Sepsis Subtypes in Northern Tanzania Using Bayesian Probabilistic Clustering of Clinical Data.

PAPERS IN PREPARATION

Meng, J., **Dombowsky, A.**, & Dunson, D. B. (2025+). Kernel Robust Bayesian Clustering in High Dimensions.

INVITED TALKS

International Society of Bayesian Analysis (ISBA) 2024 World Meeting Venice, Italy
- "Recent Advances in Bayesian Clustering for Complex Data" *July 2024*

CONTRIBUTED TALKS

14th International Conference on Bayesian Nonparametrics Los Angeles, CA, USA

- "Hierarchical Directed Dirichlet Networks for Discrete Graphical Modeling"   *June 2025*

Joint Statistical Meetings (JSM) 2024   Portland, OR, USA
- "Product Centered Dirichlet Processes for Dependent Clustering"   *Aug. 2024*

Bayesian Young Statisticians Meeting (BAYSM) 2023   Online
- "Bayesian Clustering via Fusing of Localized Densities"   *Nov. 2023*

Advances in Interdisciplinary Statistics and Combinatorics (AISC) 2022   Greensboro, NC, USA
- "Bayesian Multi-Study Clustering of Sepsis Patients"   *Oct. 2022*

POSTER PRESENTATIONS

Duke StatSci Research Alumni Symposium   Durham, NC, USA
- "Hierarchical Directed Dirichlet Networks for Discrete Graphical Modeling"   *Oct. 2024*

Bayesian Young Statisticians Meeting (BAYSM) 2024   Venice, Italy
- "Bayesian Learning of Clinically Meaningful Sepsis Phenotypes in Northern Tanzania" *June 2024*

International Society of Bayesian Analysis (ISBA) 2022 World Meeting   Montreal, QC, Canada
- "Bayesian Multi-Study Clustering of Sepsis Patients"   *June 2022*

HONORS AND AWARDS

Myra and William Waldo Boone Fellowship for Canadian Graduate Students   *2023/24 and 2024/25*

ASA-SBSS Student Paper Competition   *Aug. 2024*

ISBA World Meeting Travel Award   *2022, 2024*

BAYSM 2023 Best Long Talk Award   *Nov. 2023*

RESEARCH PROJECTS

Sepsis Characterization in Kilimanjaro (SICK) Study   *Aug. 2021 - Present*
- Led development of statistical methodology for deriving clinical patient clusters
- Contributed to integration of clinical and RNAseq clusterings

Merck & Co., Inc., BARDS Academic Collaboration   *Sept. 2023 - Aug. 2025*
- Led creation of Bayesian multiview clustering methods

ONR Grant N00014-21-1-2510-P00001 (Awarded, Dunson PI)   *Feb. - April 2024*
- Wrote objectives, project schedule & milestones, and management approach
- Proposed and implemented multiple novel statistical methods

TEACHING EXPERIENCE

Teaching Assistant at Duke University   *Jan. 2021 - Dec. 2024*
- STA 490/690: Analysis of Time-to-Event Data (Instructor: Yue Jiang)
  - Held office hours; graded homeworks, projects, and exams
- STA 831: Probability & Statistical Models (Instructor: Mike West)
  - Held office hours; graded exams
- STA 470S: Introduction to Statistical Consulting (Instructor: Edwin Iversen)
  - Held weekly progress updates with students; graded written reports
- STA 360: Bayesian Methods and Modern Statistics (Instructor: Simon Mak)
  - Held office hours; prepared and graded exams; organized homework graders; advised final projects

Teaching Assistant at McGill University   *Sept. 2019 - Dec. 2019*
- MATH 203: Principles of Statistics 1 (Instructors: Abbas Khalili and David Wolfson)
  – Held office hours; organized homework graders; gave weekly lab lecture; graded exams

PROFESSIONAL SERVICES AND ACTIVITIES

Reviewer: Journal of the American Statistical Association (JASA), Electronic Journal of Statistics (EJS), Biometrika

Member: ISBA, j-ISBA, the ASA (Biometrics & SBSS), and the IBS (ENAR)

Organizer: 2023-2025 PRIME and ACES Reading Groups
- PRIME group: Bayesian methods for modeling environmental exposures (15 members)
  – Hosted meetings; obtained speakers; led discussion
- ACES group: novel MCMC methods, collaboration with Mathematics department (24 members)
  – Hosted meetings; obtained speakers; organized schedule

Session chair: BAYSM 2024–"Bayesian Methods for Environmental and Health Data"