

BORA JIN  
Department of Biostatistics, Johns Hopkins University, Baltimore, MD 21218  
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<https://jinbora0720.github.io/>

## RESEARCH INTERESTS

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Environmental health, Spatial statistics, Hierarchical models, Latent factor models, Bayesian methods, Causal inference

## EDUCATION AND TRAINING

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PRESENT    **Johns Hopkins University**  
Postdoctoral fellow in the department of Biostatistics  
Advisor: Abhirup Datta

2023        **Duke University**  
Ph.D. in Statistics  
Advisors: Amy H. Herring, David Dunson

2017        **Korea University**  
M.A. in Statistics

2015        **Korea University**  
B.A. in Statistics

## PUBLICATIONS

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### JOURNAL ARTICLES

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1. **Jin, B.**, Dunson, D., Rager, J.E., Reif, D., Engel, S.M., Herring, A.H. (2023). Bayesian matrix completion for hypothesis testing. *Journal of the Royal Statistical Science: Series C*, 72(2):254–270. [DOI](#).

### UNDER REVIEW

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1. **Jin, B.**, Peruzzi, M., Dunson, D. “Bag of DAGs: Inferring directional dependence in spatiotemporal processes”. *In review* (2023). [arXiv](#).
2. **Jin, B.**, Herring, A.H., Dunson, D. “Spatial predictions on physically constrained domains: Applications to Arctic sea salinity data”. *In review* (2023). [arXiv](#).

### WORKING PAPERS

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1. **Jin, B.** and David Dunson “A unified Bayesian approach to overcome spatial confounding”. *In preparation* (2023).
2. **Jin, B.**, Matuk, J., Herring, A.H., and Hoffman, K. “Effects of PFAS on North Carolina thyroid cancer clusters”. *In preparation* (2023).
3. **Jin, B.**, Kampe, J., Tikhonov, G., Dunson, D., and Ovaskainen, O. “Joint species distribution modeling with ecological networks”. *In preparation* (2023).
4. Kampe, J., **Jin, B.**, and Dunson, D. “Prediction of insect-plant interaction networks in an Arctic community”. *In preparation* (2023).

#### MASTER’S THESIS

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1. **Jin, B.** (2017). “Bayesian inference to multiple equations in a SUR framework”. [Korea University Library](#).

#### STATISTICAL CONSULTING EXPERIENCE

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|-----------------|--|
| Jun – Aug, 2016 | Client: Korean Environment Ministry, Prediction of carbon emissions from industrial complex areas under different afforestation practices. |
| Mar – Aug, 2016 | Client: College of Nursing at Chungnam National University, Clustering of cancer patients’ symptoms.                                       |
| Oct – Mar, 2015 | Client: MezzoMedia, Development of a Korean morphological analyser for emotionality of language in online platforms.                       |

#### TEACHING EXPERIENCE

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| Jan – Apr, 2023 | Teaching Assistant for Special Topics: Latent Process Modeling (STA790-1, Spring 2023), Department of Statistical Science, Duke University               |
| Aug – Dec, 2022 | Course Organizer for Introduction to Data Science and Statistical Thinking (STA199, Fall 2022), Department of Statistical Science, Duke University       |
| May – Jun, 2022 | Instructor of Record for Introduction to Data Science and Statistical Thinking (STA199, Summer 2022), Department of Statistical Science, Duke University |
| Aug – Dec, 2021 | Teaching Assistant for Case Studies in the Practice of Statistics (STA440, Fall 2021), Department of Statistical Science, Duke University                |
| Apr 28, 2021    | Guest Lecturer for Spatial Statistics (STAT141, Spring 2021), Department of Statistics, Harvard University   |

- Jan – May, 2021    Teaching Assistant for Theory and Methods of Statistical Learning and Inference (STA432, Spring 2021), Department of Statistical Science, Duke University
- Jan – May, 2019    Teaching Assistant for Statistics (STA250, Spring 2019), Department of Statistical Science, Duke University
- Sep – Dec, 2015    Teaching Assistant for Introduction to Probability Theory (STAT201, Fall 2015) and Topics in Mathematical Statistics (STAT412, Fall 2015), Department of Statistics, Korea University

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**MENTORING EXPERIENCE**

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- May, 2021          Graduate Mentor for Introduction to Undergraduate Research in Statistical Science Workshop, Department of Statistical Science, Duke University
- Jan, 2013          Undergraduate Mentor for Gifted and Talented Middle School Students from Low-Income Groups, Samsung Dream Class, South Korea

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**WORK EXPERIENCE**

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- Jan – Jul, 2018    Intern, Division of Budget and Finance, International Atomic Energy Agency, Vienna, Austria
- Feb – Aug, 2017    Intern, Basel/Rotterdam/Stockholm Conventions, United Nations Environment, Geneva, Switzerland
- Jun – Jul, 2014    Intern, Banking and Finance, Market Surveillance Department, Korea Exchange, Seoul, South Korea

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**PROFESSIONAL ACTIVITIES**

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- Jan 18, 2022    Panel, Gender Gap in Higher Education Discussion by Statistical Science Major Union, Duke University, Online

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**EDITORIAL ACTIVITIES**

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- Reviewer    *Biometrics*
- Reviewer    *Journal of the Royal Statistical Society: Series B*
- Reviewer    *Environmental Health Perspectives*

**HONORS AND AWARDS**

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2023	ASA ENVR Student Paper Award
2023	ENAR Distinguished Student Paper Award
2022	ISBA EnviBayes Student Paper Award
2022	ASA ENVR Student Paper Award
2021	ISBA Best Student/Postdoc Contributed Paper Award
2018 – 2020	Study Abroad Scholarship by Korean National Institute for International Education
2016	First Prize in the Graduate Paper Session at the Korean Statistical Society's Annual Conference
2016	Yangcheon Foundation Scholarship for Academic Excellence
2016	So-Mang Presbyterian Church Scholarship for Academic Merit
2015	Second Prize in the Graduate Poster Session at the Korean Statistical Society's Annual Conference
2011 – 2014	Dean's Award for Academic Merit at Korea University
2012	Korean Ministry of Gender Equality and Family Affairs Minister's Honor Award
2011	Seoul National University President's Prize

**PRESENTATIONS**

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**SCIENTIFIC MEETINGS**

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Aug, 2023	"Spatial predictions on physically constrained domains," JSM, Canada
Mar, 2023	"Spatial predictions on physically constrained domains," ENAR 2023 Spring Meeting, United States
Oct, 2022	"Bag of DAGs: Inferring directional dependence in spatiotemporal processes," 13th International Conference on Bayesian Nonparametrics (BNP), Chile
Aug, 2022	"Bag of DAGs: Flexible nonstationary modeling of spatiotemporal dependence," JSM, United States
Jun, 2022	"Scalable Gaussian processes on physically constrained domains," ISBA World Meeting, Canada

- Mar, 2022 “Bag of DAGs: Flexible nonstationary modeling of spatiotemporal dependence,” Monthly meeting at Section on Environmental Sciences of ISBA, Online
- Sep, 2021 “Scalable Gaussian processes on physically constrained domains,” Bayesian Young Statisticians Meeting (BAYSM), Online
- Aug, 2021 “Bag of DAGs: Flexible & scalable modelling of spatiotemporal dependence,” Joint Statistical Meetings (JSM), Online
- Jul, 2021 “Bag of DAGs: Flexible & scalable modelling of spatiotemporal dependence,” World Meeting of the International Society for Bayesian Analysis (ISBA), Online
- Jun, 2021 “Scalable Gaussian processes on physically constrained domains,” The International Environmetrics Society - GRASPA Conference, Online
- Jun, 2021 “Scalable Gaussian processes on physically constrained domains,” Symposium on Data Science and Statistics (SDSS), Online
- Nov, 2016 “Bayesian inference to multiple equations in seemingly unrelated regression framework,” Korean Statistical Society’s Annual Conference, South Korea
- Jun, 2016 “Bayesian inference to multiple equations in seemingly unrelated regression framework,” Korea University - Hokkaido University Joint Conference in Statistics, South Korea
- Nov, 2015 “Bayesian approaches to instrumental variable models with multiple endogenous regressors,” Korean Statistical Society’s Annual Conference, South Korea

#### INVITED SEMINARS

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- Aug, 2023 “Bayesian Matrix Completion for Chemical Activity using ToxCast data,” United States Environmental Protection Agency Seminar Series, Online
- Feb, 2022 “Bayesian Matrix Completion for Chemical Activity using ToxCast data,” Integrated Toxicology & Environmental Health Program Seminar Series, Online

#### REFERENCES

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|----------------|--|
| Amy H. Herring | Sara & Charles Ayres Distinguished Professor of Statistical Science, Global Health, and Biostatistics and Bioinformatics at Duke University<br><a href="mailto:amy.herring@duke.edu">amy.herring@duke.edu</a><br>+1 (919) 684-4210 |
| David Dunson   | Arts and Sciences Distinguished Professor of Statistical Science and Mathematics at Duke University<br><a href="mailto:dunson@duke.edu">dunson@duke.edu</a><br>+1 (919) 684-8025   |

- Jo Eidsvik      Professor of Mathematical Sciences at Norwegian University of Science  
and Technology  
[jo.eidsvik@ntnu.no](mailto:jo.eidsvik@ntnu.no)  
+47 (901) 27-472
- Mine Çetinkaya-Rundel      Professor of the Practice of Statistical Science at Duke University  
[mc301@duke.edu](mailto:mc301@duke.edu)  
Regarding my teaching ability