Heejun Shin

current as of March 2025

CONTACT

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INTERESTS

Causal Inference, Bayesian Nonparametric Models, Environmental Statistics

EMPLOYMENT

Postdoctoral Research Fellow, Harvard University 2024–present
Mentor: Professor Francesca Dominici

EDUCATION

Ph.D. in Statistics, University of Florida 2024
Thesis: Causal Inference with Bayesian Modeling for Challenging Environmental Health Problems
Advisior: Professor Joseph Antonelli

B.S. in Applied Statistics, Konkuk University 2019
Ranked first in class

PUBLICATIONS & PREPRINTS

[3] **Shin, H.**, Linero, A., Audirac, M., Irene, K., Braun, D., and Antonelli, J. (2024+). Treatment effect heterogeneity and importance measures for multivariate continuous treatments. arXiv:2404.09126. *Under Revision, Annals of Applied Statistics* [Link]

- *Winning paper of the 2024 ASA Biometrics Section Early Career Paper Awards.*
- *Honorable mention paper of the 2024 ASA ENVR Section Student Paper Competition. (Declinded)*

[2] **Shin, H.**, Braun, D., Irene, K., and Antonelli, J. (2023+). A spatial interference approach to account for mobility in air pollution studies with multivariate continuous treatments. arXiv:2305.14194. *Under Revision, Journal of the American Statistical Association* [Link]

- *Winning paper of the 2025 ASA Epidemiology Section Norman Breslow Prize.*
- *Winning paper of the 2025 ASA HPSS Section Student Paper Competition. (Declinded)*

[1] **Shin, H.** and Antonelli, J. (2023). Improved inference for doubly robust estimators of heterogeneous treatment effects. *Biometrics*, 79(4): 3140–3152. [Journal][arXiv]

- *Winning paper of the 2022 ENAR John Van Ryzin Award.*

HONORS & AWARDS

IMS New Researcher Travel Award, Institute of Mathematical Statistics 2025
The Norman Breslow Prize for the top paper among the winning papers of the Early Career Paper Awards, American Statistical Association Statistics in Epidemiology Section 2025
Early Career Paper Award, American Statistical Association Biometrics Section 2024
Kenneth and Janet Keene Endowed Dissertation Fellowship, College of Liberal Arts and Sciences, University of Florida 2024
Mark CK Yang Student Research Award, UF Joint Statistics and Biostatistics Workshop 2023
Boyd Harshburger Travel Award funded by National Science Foundation, The Southern Regional Council on Statistics 2022
The John Van Ryzin Award for the top paper among the winning papers of the Distinguished Student Paper Awards, International Biometric Society Eastern North American Region 2022
College of Liberal Arts and Sciences Graduate Student Travel Award, University of Florida
- Joint Statistical Meetings 2023
- Eastern North American Region Spring Meeting, Joint Statistical Meetings 2022

The President's Award for an outstanding undergraduate student, Korean Statistical Society 2019

INVITED PRESENTATIONS

Seminar talk. "A Spatial Interference Approach to Account for Mobility in Air Pollution Studies with Multivariate Continuous Treatments" *London School of Hygiene & Tropical Medicine*. Virtual 2025.

Seminar talk. "Treatment effect heterogeneity and importance measures for multivariate continuous treatments" *Konkuk University*. Seoul, Korea 2024.

Seminar talk. "Improved inference for doubly robust estimators of heterogeneous treatment effects" *WebENAR*. Virtual 2024.

Seminar talk. "Identifying Interactions between Covariates and Continuous Exposures via Targeted Smoothing" *UFSTAT Student Seminar Series*. Gainesville, FL. 2023.

CONTRIBUTED PRESENTATIONS

Contributed talk (as the Norman Breslow Prize winner). "A spatial interference approach to account for mobility in air pollution studies" *Joint Statistical Meetings*. Nashville, TN. 2025.

Contributed talk (as an Early Career Paper Award recipient). "Treatment effect heterogeneity and importance measures for multivariate continuous treatments" *Joint Statistical Meetings*. Portland, OR. 2024.

Contributed talk. "A spatial interference approach to account for mobility in air pollution studies with multivariate continuous treatments" *Bayesian Young Statisticians Meeting*. Virtual. 2023.

Contributed talk. "A spatial interference approach to account for mobility in air pollution studies with multivariate continuous treatments" *UF Joint Statistics and Biostatistics Workshop*. Gainesville, FL. 2023.

Contributed talk. "A spatial interference approach to account for mobility in air pollution studies with multivariate continuous treatments" *Joint Statistical Meetings*. Toronto, Canada. 2023.

Contributed poster. "Causal Effects of Continuous Exposures in the Presence of Spatial Interference: the Effects of Air Pollution on Public Health." *American Causal Inference Conference*. Austin, TX. 2023.

Contributed poster. "Improved inference for doubly robust estimators of heterogeneous treatment effects." *The Southern Regional Council on Statistics Summer Research Conference*. Jekyll Island, GA. 2022.

Contributed talk. "Improved inference for doubly robust estimators of heterogeneous treatment effects." *Joint Statistical Meetings*. Washington, D.C. 2022.

Contributed talk (as the John Van Ryzin Award winner). "High-dimensional and nonparametric Bayesian methodology for treatment effect heterogeneity." *Eastern North American Region Spring Meeting*. Houston, TX. 2022.

TEACHING EXPERIENCE

Guest Lecturer, Harvard University — 2024
BST228 - Applied Bayesian Analysis

Instructor, University of Florida — 2023
STA3024 - Introduction to Statistics II

Teaching Assistant, University of Florida — 2019–2023

STA3024 - Introduction to Statistics II	STA4322 - Introduction to Statistical Theory
STA4241 - Statistical Learning	STA4502 - Nonparametric Statistical Methods
STA4321 - Introduction to Probability	STA6166 - Statistical Methods in Research

MENTORING EXPERIENCE

Harvard University

Suhwan Bong, Ph.D. Student, Harvard University — 2025–present
Salome Kakhaia, visiting Ph.D. student, Utrecht University — 2025–present

SOFTWARE

SepBART: An R package for estimating heterogeneous treatment effects of multivariate continuous exposures (https://github.com/hshin111/SepBART)

SERVICE

Organizer, *UFSTAT Student Seminar Series*, Department of Statistics, University of Florida — 2022-2023
Journal Referee, *PeerJ: life and environment*

REFERENCES

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Clarence James Gamble Professor of Biostatistics, Population, and Data Science
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