

# Heejun Shin

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INTERESTS	Causal Inference, Bayesian Nonparametric Models, Environmental Statistics	
EMPLOYMENT	<b>Postdoctoral Research Fellow</b> , Harvard University Mentor: Professor Francesca Dominici	2024–present
EDUCATION	<b>Ph.D.</b> in Statistics, University of Florida Thesis: Causal Inference with Bayesian Modeling for Challenging Environmental Health Problems Advisor: Professor Joseph Antonelli <b>B.S.</b> in Applied Statistics, Konkuk University Ranked first in class	2024    2019
PUBLICATIONS & PREPRINTS	<p>[3] <b>Shin, H.</b>, 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. <i>Under Revision, Journal of the American Statistical Association</i> [Link]</p> <ul style="list-style-type: none"><li>• Winning paper of the 2025 ASA Epidemiology Section Norman Breslow Prize.</li><li>• Winning paper of the 2025 ASA HPSS Section Student Paper Competition. (Declined)</li></ul> <p>[2] <b>Shin, H.</b>, Linero, A., Audirac, M., Irene, K., Braun, D., and Antonelli, J. (2025). Treatment effect heterogeneity and importance measures for multivariate continuous treatments. <i>In press, Annals of Applied Statistics</i> [arXiv]</p> <ul style="list-style-type: none"><li>• Winning paper of the 2024 ASA Biometrics Section Early Career Paper Awards.</li><li>• Honorable mention paper of the 2024 ASA ENVR Section Student Paper Competition. (Declined)</li></ul> <p>[1] <b>Shin, H.</b> and Antonelli, J. (2023). Improved inference for doubly robust estimators of heterogeneous treatment effects. <i>Biometrics</i>, 79(4): 3140–3152. [Journal][arXiv]</p> <ul style="list-style-type: none"><li>• Winning paper of the 2022 ENAR John Van Ryzin Award.</li></ul>	
HONORS & AWARDS	<p><b>IMS New Researcher Travel Award</b>, Institute of Mathematical Statistics 2025</p> <p><b>The Norman Breslow Prize</b> for the top paper among the winning papers of the Early Career Paper Awards, American Statistical Association Statistics in Epidemiology Section 2025</p> <p><b>Early Career Paper Award</b>, American Statistical Association Biometrics Section 2024</p> <p><b>Kenneth and Janet Keene Endowed Dissertation Fellowship</b>, College of Liberal Arts and Sciences, University of Florida 2024</p> <p><b>Mark CK Yang Student Research Award</b>, UF Joint Statistics and Biostatistics Workshop 2023</p> <p><b>Boyd Harshburger Travel Award</b> funded by National Science Foundation, The Southern Regional Council on Statistics 2022</p> <p><b>The John Van Ryzin Award</b> for the top paper among the winning papers of the Distinguished Student Paper Awards, International Biometric Society Eastern North American Region 2022</p> <p><b>College of Liberal Arts and Sciences Graduate Student Travel Award</b>, University of Florida</p> <ul style="list-style-type: none"><li>- Joint Statistical Meetings 2023</li><li>- Eastern North American Region Spring Meeting, Joint Statistical Meetings 2022</li></ul> <p><b>The President’s Award</b> for an outstanding undergraduate student, Korean Statistical Society 2019</p>	
INVITED PRESENTATIONS	<p>Seminar talk. “A Spatial Interference Approach to Account for Mobility in Air Pollution Studies with Multivariate Continuous Treatments” <i>London School of Hygiene &amp; Tropical Medicine</i>. Virtual 2025.</p> <p>Seminar talk. “Treatment effect heterogeneity and importance measures for multivariate continuous treatments” <i>Konkuk University</i>. Seoul, Korea 2024.</p> <p>Seminar talk. “Improved inference for doubly robust estimators of heterogeneous treatment effects” <i>WebENAR</i>. Virtual 2024.</p>	

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

**Dr. Joseph Antonelli**  
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Clarence James Gamble Professor of Biostatistics,  
Population, and Data Science  
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