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# Youjin Lee

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## EDUCATION

**Johns Hopkins School of Public Health** 09/2014 - 01/2019
Ph.D. in Biostatistics (Primary Advisor : Elizabeth L. Ogburn)

**Seoul National University**, South Korea 03/2010 - 08/2014
B.S. with honors in Statistics (Graduated summa cum laude)

## PROFESSIONAL EXPERIENCE

Manning Assistant Professor 07/2021 -
Department of Biostatistics, Brown University

Postdoctoral Fellow 08/2019 - 06/2021
Center for Causal Inference (CCI), University of Pennsylvania

Postdoctoral Fellow 02/2019 - 07/2019
Johns Hopkins School of Public Health

## PUBLICATIONS

**Articles in peer-reviewed journals:** *equal contribution

1. Yorlets, R. R., **Lee, Y.**, & Gantenberg, J. R. (2023). Calculating risk and prevalence ratios and differences in R: developing intuition with a hands-on tutorial and code. *Annals of Epidemiology, 86*, 104-109.
2. Koo, T., **Lee, Y.**, Small, D.S., & Guo, Z. (2023). RobustIV and controlfunctionIV: Causal Inference for Linear and Nonlinear Models with Invalid Instrumental Variables. *Observational Studies 9*(4), 97-120.
3. **Lee, Y.**, Buchanan, A.L., Ogburn, E.L., Friedman, S.R., Halloran, M.E., Katenka, N.V., Wu, J., & Nikolopoulos, G. (2023). Finding influential subjects in a network using a causal framework. *Accepted for publication at Biometrics*.
4. Buchanan, A.L., Katenka, N., **Lee, Y.**, Wu, J., Pantavou, K., Friedman, S.R., Halloran, M.E., Marshall, B.D.L,; Forastiere, L., Nikolopoulos, G.K. (2023) Methods for Assessing Spillover in Network-Based Studies of HIV/AIDS Prevention among People Who Use Drugs. *Pathogens, 12*, 326.
5. Chang, T. H., Nguyen, T. Q., **Lee, Y.**, Jackson, J. W., & Stuart, E. A. (2022). Flexible propensity score estimation strategies for clustered data in observational studies. *Statistics in Medicine, 41*(25), 5016-5032.

6. Zhao, A.*, **Lee, Y.***, Small, D. S., & Karmakar, B. (2022). Evidence factors from multiple, possibly invalid, instrumental variables. *The Annals of Statistics, 50*(3), 1266-1296.
7. **Lee, Y.**, & Schaubel, D. E. (2022). Facility profiling under competing risks using multivariate prognostic scores: Application to kidneytransplant centers. *Statistical Methods in Medical Research, 31*(3), 563-575.
8. **Lee, Y.**, Kennedy, E.H., & Mitra, N. (2021). Doubly Robust Nonparametric Instrumental Variable Estimators for Survival Outcomes. *To appear at Biostatistics*.
9. **Lee, Y.**, Nguyen, T. Q., & Stuart, E. A. (2021). Partially pooled propensity score models for average treatment effect estimation with multilevel data. *Journal of the Royal Statistical Society: Series A (Statistics in Society).*
10. Kang, H*., **Lee, Y.***, Cai, T. T., & Small, D. S. (2022). Two robust tools for inference about causal effects with invalid instruments. *Biometrics, 78*(1), 24-34.
11. **Lee, Y.**, & Ogburn, E. L. (2021). Network dependence can lead to spurious associations and invalid inference. *Journal of the American Statistical Association, 116*(535), 1060-1074.
12. Ogburn, E. L., Shpitser, I., & **Lee, Y.** (2020). Causal inference, social networks and chain graphs. *Journal of the Royal Statistical Society: Series A (Statistics in Society), 183*(4), 1659-1676.
13. **Lee, Y.** & Ogburn, E.L. (2020). Testing for Network and Spatial Autocorrelation. In *International Conference on Network Science* (pp. 91-104). Springer, Cham.
14. **Lee, Y.**, Shen, C., Priebe, C. E., & Vogelstein, J. T. (2019). Network dependence testing via diffusion maps and distance-based correlations. *Biometrika*, 106(4), 857-873.
15. **Lee, Y.**, Wang, M. C., Grantz, K. L., & Sundaram, R. (2019). Joint modelling of competing risks and current status data: an application to a spontaneous labour study. *Journal of the Royal Statistical Society: Series C (Applied Statistics), 68*(4), 1167-1182.

**Non peer-reviewed publications:**

1. **Lee, Y.** (2021). Beyond Multiple Linear Regression: Applied Generalized Linear Models and Multilevel Models in R. *The American Statistician*. (Book reviews)

**Submitted papers:** † student mentee

1. **Lee, Y.**, Reese, P.P., & Schaubel, D.E. (2023+). Prognostic score-based methods for estimating center effects based on survival probability: Application to post-kidney transplant survival.
2. Hettinger, G., Roberto, C., **Lee, Y.**, & Mitra, N. (2023+). Estimation of policy-relevant causal effects in the presence of interference with an application to the Philadelphia beverage tax. [arxiv]
3. **Lee, Y.**, Hettinger, G., & Mitra, N. (2023+). Policy effect evaluation under counterfactual neighborhood intervention in the presence of spillover. [arxiv]
4. **Lee, Y.**, †Dong, Z., Katenka, N., Wu, J., Buchanan, A.L. (2023+). Network dependence with multiple clusters: a simulation study across different autocorrelation processes.
5. Yang, J., Bhattacharya, R., **Lee, Y.**, Westling, T (2023+). Statistical and causal robustness for causal null hypothesis tests. [arxiv]

## SOFTWARE

**R package**

- `logisticRR` (author, maintainer) : An `R` package for deriving adjusted relative risks from a logistic regression. [CRAN]
- `netdep` (author, maintainer): An `R` package for testing network dependence and generating network-dependent observations. [CRAN]
- `netchain` (author, maintainer) : An `R` package for estimating probabilities associated with collective counterfactual outcomes under interference. [CRAN]

## ACTIVE RESEARCH GRANT

**Statistical methods**

- *Reliable and robust causal inference approaches for effective connectivity research with fMRI data*
  COBRE Center for Central Nervous System Function, Brown University
  Sponsor: National Institute of General Medical Sciences
  Role: Project Leader, $698,815 08/2022-07/2024

- *Novel approaches to estimating the causal effect of policy interventions in the presence of spillovers*
  Sponsor: National Science Foundation
  Role: co-Principal Investigator (with Nandita Mitra), $360,000 08/2022-07/2025

**Interdisciplinary collaborations**

- *Improving Preschool Outcomes by Addressing Maternal Depression in Head Start*
  Sponsor: National Institute of Child Health & Human Development (PI: Silverstein)
  Role: Co-investigator (15% efforts) 01/2022-12/2024

- *Harambee: Integrated Community-Based HIV/NCD Care & Microfinance Groups in Kenya*
  Sponsor: National Institute of Mental Health (PI: Galarraga)
  Role: Co-investigator (9.25% efforts) 02/2022-04/2024

## PRESENTATIONS

| **Invited seminars/workshops** | *upcoming |
|---|---|
| · Department of Statistics, University of Florida* | 11/2023 |
| · Department of Biostatistics, University of Iowa* | 10/2023 |
| · Department of Statistics, Columbia University | 09/2023 |
| · Institute of Social Sciences, Seoul National University, South Korea | 06/2023 |
| · Journal Club, International Biometric Society | 04/2023 |
| · Korean International Statistical Society Webinar | 04/2023 |
| · Department of Biostatistics, Boston University | 10/2022 |
| · Department of Mathematics and Statistics, University of Massachusetts Amherst | 09/2022 |
| · Korean Summer Session on Causal Inference | 06/2022 |
| · NIDDK workshop, Bethesda, MD | 05/2022 |
| · Statistics and Data Science Seminar, University of Illinois, Chicago | 10/2021 |
| · AMPHBIAN, Brown University | 10/2021 |
| · Online Causal Inference Seminar | 09/2021 |

- Causal Inference using R, R-Ladies Philly 09/2021
- Department of Biostatistics, University of Washington 02/2021
- Department of Data Sciences and Operations, USC Marshall School of Business 01/2021
- Department of Biostatistics, Brown University 01/2021
- Department of Statistics, University of California, Irvine 01/2021
- Department of Biostatistics and Bioinformatics, Emory University 01/2021
- Department of Statistics, Seoul National University, South Korea 11/2020
- Department of Politics, Princeton University 11/2020
- Johns Hopkins causal inference statistical genetics group 03/2020
- Joint Program in Survey Methodology, University of Maryland 10/2019
- RAND Corporation, Statistics Group 02/2019

**Invited scientific meetings** *upcoming

- Joint Statistical Meetings. Portland, Oregon* 08/2024
- CMStatistics. Berlin, Germany* 12/2023
- New England Statistical Society Symposium, Boston 06/2023
- Joint Statistical Meetings. Washington DC 08/2022
- International Chinese Statistical Association (ICSA), University of Florida 06/2022
- CMStatistics. King's College London, UK 12/2021
- New England Statistical Society Symposium, Providence 10/2021
- ENAR. Baltimore, MD (*online*) 03/2021
- CMStatistics. King's College London, UK (*online*) 12/2020
- UPenn DBEI & CCEB Covid-19 Population Journal Club (*online*) 07/2020

**Contributed oral and poster presentations** †Poster

- Joint Statistical Meetings. Philadelphia, PA (*online*) 08/2020
- ENAR. Nashville, TN (*online*) 03/2020
- Joint Statistical Meetings. Vancouver, Canada 08/2018
- †Atlantic Causal Inference Conference. Carnegie Mellon University 05/2018
- ENAR. Atlanta, GA 03/2018
- Joint Statistical Meetings. Baltimore, MD 08/2017
- †Conference on Lifetime Data Science. University of Connecticut 05/2017
- †ENAR. Washington DC 03/2017

## PROFESSIONAL ACTIVITIES

**Reviewer** : *Journal of the American Statistical Association*, *Journal of Causal Inference*, *Statistics in Medicine*, *Pharmaceutical Statistics*, *Biometrical Journal*, *Epidemiology*, *BJPsychOpen*, *Biometrics*, *American Journal of Epidemiology*, *Biometrika*, *Journal of Computational and Graphical Statistics*, *Stat*, *Journal of the Korean Statistical Society*, *BMC Medical Research Methodology*, *JAMA Network Open*, *Sociological Methods and Research*, *Journal of Machine Learning Research*, *Scientific Reports*, *Biostatistics*, *Health Services and Outcomes Research Methodology*, *Statistics and Its Interface*, *Biostatistics & Epidemiology*

**Grant review**

- NSF grant ad-hoc reviewer 2022

· TBIPHRP panel, Department of Defense Congressionally Directed Medical Research Program 2021

**Editorial Board**

· Associate Editor for Reproducibility for *Journal of the American Statistical Association* 2023-

**Session organizer/chair** *upcoming

· Recent advances in causal inference methodologies, NESS 06/2023
· Advances in causal approaches to public policy evaluations using quasi-experimental designs, ICHPS 01/2023
· Advances in social network analysis for public health solutions, JSM 08/2022
· Causal inference methods for survival and longitudinal data, ENAR 03/2021

**Academic service** Brown School of Public Health

· Departmental Seminar Committee, Department of Biostatistics 2022-
· Faculty Search Committee, Department of Biostatistics 2021-2022
· Admission Committee, Department of Biostatistics 2022
· Diversity and Inclusion Committee, Department of Biostatistics 2021-

**Others**

· Program Chair Elect, Korean International Statistical Society 2023-2024
· ENAR Distinguished Student Paper Award Committee 2023

## AWARDS

**ASA 2020 Outstanding Statistical Application Award** 2020

**The Jane and Steve Dykacz Award** 2018
*For outstanding paper by a Biostatistics student in the area of medical statistics, Department of Biostatistics, Johns Hopkins School of Public Health*

**The Margaret Merrell Award** 2018
*For outstanding research by a Biostatistics doctoral student, Department of Biostatistics, Johns Hopkins School of Public Health*

**Student Paper Awards** Joint Statistical Meetings (JSM) 2017
*ASA Nonparametric Statistics Section*

**Student Poster Award** Conference on Lifetime Data Science 2017

**Louis I. and Thomas D. Dublin Award** 2016
*For the advancement of Epidemiology and Biostatistics supports for students, Department of Biostatistics, Johns Hopkins School of Public Health*

## SCHOLARSHIP

Overseas scholarship, Kwanjeong Educational Foundation 2014-2018

National Science and Engineering Scholarship, Korea Student Aid Foundation 2010-2013
(Full Tuition Scholarship)

## TEACHING

**Classroom Teaching** Brown University

- PHP2610 Causal Inference and missing data — Fall 2022, 2023
- PHP2580 Statistical Inference II — Spring 2024

**Teaching Assistant**

- Public Health Biostatistics (Undergraduate Course) — Fall 2018
- Causal Inference in Medicine and Public Health I — 2017-2018 3rd and 4th terms
- Survival Analysis I-II — 2017-2018 1st and 2nd terms
- Survival Analysis — Summer 2017
- Causal Inference in Medicine and Public Health I — 2016-2017 3rd and 4th terms
- Statistical Reasoning in Public Health II — 2016-2017 2nd term
- Survival Analysis I — 2016-2017 1st term
- Statistical Reasoning in Public Health IV — 2015-2016 4th term
- Statistical Reasoning in Public Health III — 2015-2016 3rd term
- Statistical Reasoning in Public Health I - II — 2015-2016 1st and 2nd terms

**Guest Lecture**

- *Causal interference* — 10/2020
  Class: Causal Inference in Biomedical Research (Instructor: Nandita Mitra and Peter Yang)
- *Causal inference under interference* — 03/2018
  Class: Causal Inference in Medicine and Public Health I (Instructor : Elizabeth Stuart)
- *Introduction to principal stratification and truncation due to death* — 03/2017
  Class: Causal Inference in Medicine and Public Health I (Instructor : Elizabeth Stuart)

## ADVISING AND CO-ADVISING

**Academic advisor**

- Zhejia Dong, Department of Biostatistics — 09/2023-
- Esteban Fernandez, Current PhD student in Biostatistics — 09/2021-
  *Recipient of 2022 NSF Graduate Research Fellowships Program* (co-advised by Dr. Arman Oganisian)
- Chichun Tan, Current PhD student in Biostatistics — 09/2022-
- Victoria Grase, Current ScM student in Biostatistics — 09/2022-
- Nancy Liu, Current ScM student in Biostatistics — 09/2021-05/2022

**Master's thesis advisor**

- Caiwei Xiong, Current ScM student in Biostatistics — 09/2022-
- Kerry Ye, Current ScM student in Biostatistics — 09/2022-
- Shirley Song, Current ScM student in Biostatistics — 09/2022-
- Zhejia Dong, Department of Biostatistics — 09/2021-05/2023

**PhD thesis committee**

- Gary Hettinger, Current PhD student in Biostatistics, UPenn (external committee) — 2021-