

# Rui Wang

PHD STUDENT · UW BIOSTATISTICS

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## Education

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### University of Washington

PHD STUDENT IN BIOSTATISTICS

Seattle, WA, USA

2022.9 - present

### Peking University

MS IN EPIDEMIOLOGY AND HEALTH STATISTICS

Beijing, China

2020.9 - 2022.7

### Peking University

BS IN ECONOMICS

Beijing, China

2016.9 - 2020.7

### Peking University

BS IN MEDICINE

Beijing, China

2015.9 - 2020.7

## Publications and working papers

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### STATISTICAL THEORY & METHODOLOGY

1. Deng, Y., Chen, F., Li, Y., Qian, K., **Wang, R.**, Zhou, X.-H. (2021). A powerful test for the maximum treatment effect in thorough QT/QTc studies. *Statistics in Medicine*. 40(8), 1947-1959.
2. Deng, Y., **Wang, R.**(2025+) Adjusted Nelson–Aalen Estimators by Inverse Treatment Probability Weighting With an Estimated Propensity Score. *Statistics in Medicine*, 44: e70085. <https://doi.org/10.1002/sim.70085>

### COLLABORATIONS & APPLICATIONS

1. **Wang, R.**, Wang, J., Hu, T., Zhou, X.-H.(2022). Population-Level Effectiveness of COVID-19 Vaccination Program in the United States: Causal Analysis Based on Structural Nested Mean Model. *Vaccines*.
2. Barforoshi, S., Manubolu, V. S., **Wang, R.**, McClelland, R. L., Budoff, M. J. (2024). Incremental value of ABI and CAC beyond traditional risk markers in long-term prediction of cardiovascular disease incidence in participants with diabetes and impaired fasting glucose: Multi-Ethnic Study of Atherosclerosis. *Atherosclerosis*, 117186.
3. Ichikawa, K., **Wang, R.**, McClelland, R. L., Manubolu, V. S., Susarla, S., Lee, D., Pourafkari, L., Fazlalizadeh, H., Aldana-Bitar, J., Robin, R.;Kinninger, A., Roy, S.K., Post, W.S., Budoff, M. J. (2024) The prognostic value of thoracic aortic calcification comparison with coronary artery calcification. *Heart*.
4. Joshi, M.A., Manubolu, V. S., Kinninger, A, **Wang, R.**, McClelland, R. L., Roy, R. K., Budoff, M. J.(2025) Sex Differences in Aortic Arch Calcification with Zero Coronary Artery Calcium. *Heart, Lung and Circulation*.
5. **Wang, R.**, Heagerty, P., Chan, KCG., Suri, P. (2025+) Estimating controlled direct treatment effects on pain intensity using structural mean models: a general approach for pain randomized controlled trials. Accepted at *Pain Reports*.<https://doi.org/10.1101/2025.04.09.25325306>

### SUBMITTED & PREPRINTS

Deng, Y., **Wang, R.**, Zhan, X.(2025+) Randomized interventional effects for semicompeting risks, with application to allogeneic stem cell transplantation study.<https://arxiv.org/abs/2412.06114>

**Wang, R.**, Zhao, Y., Dukes, O., Zhang, B.(2025+) Nested Instrumental Variables Analysis: Switcher Average Treatment Effect, Identification, Efficient Estimation and Generalizability. <https://arxiv.org/abs/2405.07102>

**Wang, R.**, Chan, KCG., Ye, T.(2025+) GMM with Many Weak Moment Conditions and Nuisance Parameters: General Theory and Applications to Causal Inference.

Wang, Z., Sourial, N., **Wang, R.**, Bergman, H., Liu, X., Vedel, I.(2025+) Neo-Familist Values and Health-Seeking Behaviours Among Older Adults in Rural China: Evidence from China Longitudinal Aging Social Survey (CLASS).

## IN PREPARATION

Manubolu, V.S, **Wang, R.**, McClelland, R. L., Ichikawa, K., Erbay, M. I., Golub, I., Verghese, D., Kinninger, A., Bitar, J. A., Mao, S. S., Roy, S. K., Gottesman, R. F., Budoff, M. J. (2025+) Thoracic Aortic and Aortic Arch Calcification as Predictors of Stroke and All-cause Mortality: Findings from Multi- Ethnic Study of Atherosclerosis

**Wang, R.**, Chan, KCG., Gao, F.(2025+) Identification and estimation of treatment effects under time-heterogeneous hidden Markov model with instrumental variable

**Wang, R.**, Osom, A., Zhang, B.(2025+) Generalized projection tests for function-valued parameters with applications to testing structural causal assumptions

## Awards, Fellowships, & Grants

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2016-2018 **Merit Student**, Peking University

## Presentations

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### INVITED TALKS

April 2025. *Nested Instrumental Variables Design: Switcher Average Treatment Effect, Identification, Efficient Estimation and Generalizability*. North Carolina State University.

April 2024. *Nested Instrumental Variables Design: Switcher Average Treatment Effect, Identification, Efficient Estimation and Generalizability*. Invited talk: Econometrics Workshop, Peking University

## CONTRIBUTED PRESENTATIONS

August 2025. *GMM with Many Weak Moment Conditions and Nuisance Parameters: General Theory and Applications to Causal Inference*.The 2025 joint statistical meeting, Nashville, TN, USA

March 2025. *GMM with Many Weak Moment Conditions and Nuisance Parameters: General Theory and Applications to Causal Inference*.ENAR 2025, New Orleans, LA, USA

August 2024. *Nested Instrumental Variables Design: Switcher Average Treatment Effect, Identification, Efficient Estimation and Generalizability*.The 2024 joint statistical meeting, Portland, OR, USA

May 2024. *Nested Instrumental Variables Design: Switcher Average Treatment Effect, Identification, Efficient Estimation and Generalizability*.The 2024 American Causal Inference Conference, Seattle, WA, USA

## Teaching Experience

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Fall 2023 **Categorical Data Analysis in Epidemiology**, Teaching Assistant, University of Washington

Spring 2022 **Probability and Statistics**, Teaching Assistant, Peking University

Spring 2021 **Probability and Statistics**, Teaching Assistant, Peking University

Spring 2019 **Special Topics in China Economic Research**, Teaching Assistant, Peking University

Fall 2018 **Intermediate Macroeconomics**, Teaching Assistant, Peking University

Spring 2018 **Economics Field Research**, Teaching Assistant, Peking University

## Service

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- 2024-now **Referee**, Journal of the American Statistical Association (2), Biostatistics (2), Vaccine (1), Journal of Statistical Planning and Inference (1)
- 2024-2025 **Admission committee**, Department of Biostatistics, University of Washington
- 2024-2026 **Organizing committee**, Causal inference reading group, University of Washington
- 2024-2025 **Organizing committee**, Student invited seminar, University of Washington.

## Mentorship

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- 2025 spring **Mentor**, UW Directed Reading Program. Topic: Introduction to causal inference. Mentee: Nicktab Ayaba.
- 2025 fall **Mentor**, UW Directed Reading Program. Topic: Introduction to causal inference. Mentee: Eric Leonen.