Bingkai Wang, PhD

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Education

Ph.D. in Biostatistics, Johns Hopkins University, Sep. 2016 – Mar. 2021
Advisors: Michael Rosenblum and Brian Caffo.
Thesis: Statistical Methods for Analyzing Randomized Trials and Brain Imaging data

B.S. in Mathematics, Fudan University, Sep. 2012 – May. 2016
Advisor: Shuqin Zhang.

Professional Experiences

Postdoctoral Researcher, Statistics and Data Science Department of the Wharton School, University of Pennsylvania, April 2021 – present.

Summer Internship, Statistical Methodology & Consulting Group, Novartis, 2018.

Honors and Awards

Election to membership of the Phi Beta Kappa Society (honor for excellence in scholarship), 2021.

Best student paper runner up, ASA Biopharmaceutical Section, 2021.

Margaret Merrell Award (awarded to one doctoral student per year for outstanding research), Johns Hopkins University Department of Biostatistics, 2021.

Distinguished student paper award, ENAR International Biometric Society, 2021.

Student paper award, the Statistical Meeting in Imaging, 2020.

Center of Excellence in Regulatory Science and Innovation (CERSI) Scholarship, U.S. Food and Drug Administration and Johns Hopkins University, 2017-2021.

National Scholarship (the highest honor for undergraduate students in China), 2014-2016

Publications

Peer-reviewed Journal Articles

1. **Bingkai Wang**, Ryoko Susukida, Ramin Mojtabai, Masoumeh Amin-Esmaeili, and Michael Rosenblum. Model-Robust Inference for Clinical Trials that Improve Precision by Stratified

Randomization and Adjustment for Additional Baseline Variables. *Journal of American Statistical Association: Theory and Methods.* https://doi.org/10.1080/01621459.2021.1981338.

2. Zhao Yi, Brian Caffo, **Bingkai Wang**, R. Li Chiang-shan, and Xi Luo. A Whole-Brain Regression Method to Identify Individual and Group Variations in Functional Connectivity. *Brain and Behavior* (2021). https://doi.org/10.1002/brb3.1942.

3. **Bingkai Wang**, Xi Luo, Yi Zhao, Brian Caffo. Semiparametric Partial Common Principal Component Analysis for Covariance Matrices. *Biometrics* (2020). https://doi.org/10.1111/biom.13369.

4. Canto, M.I., Trindade, A.J., Abrams, J., Rosenblum, M., Dumot, J., Corbett, F.S., Diehl, D., Chak, A., Khara, H., McKinley, M. Shin, E.J., Waxman, I., Infantolino, A., Tofani, C., Samarasena, J., Chang, K., **Wang, B**., Goldblum, J., Voltaggio, L., Montgomery, E., Lightdale, C.J., Shaheen, N.J. Multifocal Cryoballoon Ablation for Eradication of Barrett's Esophagus-Related Neoplasia: A Prospective Multicenter Clinical Trial. *American Journal of Gastroenterology* (2020). doi: 10.14309/ajg.0000000000000822.

5. Yi Zhao, **Bingkai Wang**, Stewart Mostofsky, Brian Caffo, Xi Luo, Covariate Assisted Principal regression for covariance matrix outcomes, *Biostatistics* (2019). https://doi.org/10.1093/biostatistics/kxz057.

6. **Bingkai Wang,** Elizabeth L. Ogburn, and Michael Rosenblum. Analysis of covariance in randomized trials: More precision and valid confidence intervals, without model assumptions. *Biometrics* (2019). https://doi.org/10.1111/biom.13062.

7. Paniz Charkhchi, **Bingkai Wang**, Brian Caffo and David M. Yousem. Bias in Neuroradiology Peer Review: Impact of a "Ding" on "Dinging" Others. *American Journal of Neuroradiology* (2018). https://doi.org/10.3174/ajnr.A5908.

Manuscripts

8. **Bingkai Wang**, Michael O. Harhay, Dylan S. Small, Tim P. Morris, and Fan Li. "On the robustness and precision of mixed-model analysis of covariance in cluster-randomized trials" https://arxiv.org/abs/2112.00832.

9. **Bingkai Wang**, and Yu Du. "Robustly leveraging the post-randomization information to improve precision in the analyses of randomized clinical trials." https://arxiv.org/abs/2110.09645.

10. **Bingkai Wang**, Brian S. Caffo, Xi Luo, Chin-Fu Liu, Andreia V. Faria, Michael I. Miller, and Yi Zhao. "Regularized regression on compositional tree with application to MRI analysis." https://arxiv.org/abs/2104.07113.

11. Yi Zhao, **Bingkai Wang**, Chin-Fu Liu, Andreia V. Faria, Michael I. Miller, Brian S. Caffo, and Xi Luo. "Identifying brain hierarchical structures associated with Alzheimer's disease using a regularized regression method with tree predictors." https://arxiv.org/abs/2104.00454.

Invited Commentary

1. **Bingkai Wang**, Ryoko Susukida, Ramin Mojtabai, Masoumeh Amin-Esmaeili, Michael Rosenblum. Comment: Inference after covariate-adaptive randomisation: aspects of methodology and theory. Statistical Theory and Related Fields (2021). https://doi.org/10.1080/24754269.2021.1905591

2. Michael Rosenblum, **Bingkai Wang**. The Critical Role of Statistical Analyses in Maximizing Power Gains from Covariate-Adaptive Trial Designs. *JAMA Network Open* (2019). doi:10.1001/jamanetworkopen.2019.0789.

Invited talks

Model-Robust Inference for Clinical Trials that Improve Precision by Stratified Randomization and Covariate adjustment.

- *ICSA Applied Statistics Symposium,* September 2021
- *Novartis Statistics Seminar,* September 2021
- *JSM,* August 2021
- *Johns Hopkins University Biostatistics Departmental Seminar,* September 2020
- *ENAR,* March 2020

Semiparametric Partial Common Principal Component Analysis for Covariance Matrices.

- *Statistical Meeting in Imaging,* May 2020.

Professional Service

Reviewer

- *Journal of the American Statistical Association*
- *The International Journal of Biostatistics*
- *Biostatistics*
- *Statistics in Medicine*
- *Biometrics*
- *Journal of the Royal Statistical Society: Series C*

Teaching

- *Lead teaching assistant, Statistical Methods in Public Health, 2020*
- *Teaching assistant, Statistical Methods in Public Health, 2018-2020*
- *Teaching assistant and guest lecturer, Advanced Data Science I-II, 2018*
- *Teaching assistant and guest lecturer, Statistical Theory I-IV, 2017-2018*