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ZEYI WANG

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EDUCATION

2020 **Johns Hopkins University**
Ph.D. in Biostatistics
Thesis title: *Statistical Analysis of Functional Connectivity in Brain Imaging: Measurement Reliability and Clinical Applications*
Advisor: Brian Caffo

2015 **Nankai University**
B.S. in Statistics

PROFESSIONAL EXPERIENCE

2020–present **Postdoctoral Scholar**
Division of Biostatistics, School of Public Health, University of California, Berkeley
Supervisors: Mark van der Laan and Maya Petersen

2016–2020 **Graduate Research Assistant**
Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health
Supervisor: Brian Caffo

2017–2020 **Graduate Research Assistant**
The Language Neuromodulation Lab, Johns Hopkins School of Medicine
Supervisor: Kyrana Tsapkini

PUBLICATIONS (* indicates equal contributions)

PEER-REVIEWED JOURNAL ARTICLES

1. **Wang Z**, Ficek BN, Webster KT, Herrmann O, Frangakis CE, Desmond JE, Onyike CU, Caffo B, Hillis AE, Tsapkini K. (2022). Specificity in Generalization Effects of Transcranial Direct Current Stimulation Over the Left Inferior Frontal Gyrus in Primary Progressive Aphasia. *Neuromodulation: Technology at the Neural Interface*. [Link].

2. **Wang Z**, Sair H, Crainiceanu C, Lindquist M, Landman BA, Resnick S, Vogelstein JT, and Caffo B. (2021). On statistical tests of functional connectome fingerprinting. *Canadian Journal of Statistics*, 49(1): 63-88. [Link].

   Featured in Stats & Data Science Views.

3. Bridgeford EW, Wang S, **Wang Z**, Xu T, Craddock C, Dey J, Kiar G, Gray-Roncal W, Colantuoni C, Douville C, Noble S, Priebe CE, Caffo B, Milham M, Zuo X, Consortium for Reliability and Reproducibility, Vogelstein JT. (2021). Eliminating accidental deviations to minimize generalization error and maximize replicability: applications in connectomics and genomics. *PLoS Computational Biology*, 17(9), e1009279. [Link].

4. Tao Y, Ficek B, **Wang Z**, Rapp B, and Tsapkini K. (2021). Selective functional network changes following tDCS-augmented language treatment in primary progressive aphasia. *Frontiers in Aging Neuroscience*, 13:681043. [Link].

5. Caffo B, **Wang Z**, Faria A, Zipunnikov V, and Miller M. (2021). Compositional data: an application to brain volumetric visualization. *Wiley StatsRef: Statistics Reference Online*, 1-21. [Link].

6. de Aguiar V, Zhao Y, Faria A, Ficek B, Webster KT, Wendt H, **Wang Z**, Hillis A, Onyike C, Frangakis C, Caffo B, and Tsapkini K. (2020). Brain volumes as predictors of tDCS effects in primary progressive aphasia. *Brain and Language*, 200: 104707. [Link].

7. Harris AD, **Wang Z**, Ficek B, Webster K, Edden RA, and Tsapkini K. (2019). Reductions in GABA following a tDCS-language intervention for primary progressive aphasia. *Neurobiology of Aging*, 79: 75-82. [Link].

8. Caffo B, Zhao Y, Eloyan A, **Wang Z**, Mejia A, and Lindquist M. (2018). A survey of statistics in the neurological sciences with a focus on human neuroimaging. *Wiley StatsRef: Statistics Reference Online*, 1-47. [Link].

9. **Wang Z***, Ficek BN*, Zhao Y, Webster KT, Desmond JE, Hillis AE, Frangakis C, Faria AV, Caffo B, and Tsapkini K. (2018). The effect of tDCS on functional connectivity in primary progressive aphasia. *NeuroImage: Clinical*, 19: 703-715. [Link].

PREPRINT

1. **Wang Z**, van der Laan L, Petersen M, Gerds T, Kvist K, and van der Laan M. (2023). Targeted maximum likelihood based estimation for longitudinal mediation analysis. *arXiv*:2304.04904. [Link].

2. van der Laan M, **Wang Z**, and van der Laan L. (2021). Higher order targeted maximum likelihood estimation. *arXiv*:2101.06290. [Link].

   Featured in the blog of Young Statisticians Europe (YSE).

3. Peristeri E, **Wang Z**, Herrmann O, Caffo B, Frangakis C, Tsapkini K. (2020). Transcranial direct current stimulation over the left inferior frontal gyrus improves sentence comprehension. *medRxiv*:2020-09. [Link].

UNDER REVIEW

1. van der Laan M, **Wang Z**, and van der Laan L. (2023). Higher order targeted maximum likelihood estimation. Submitted to *International Journal of Biostatistics* for review.

2. **Wang Z**, van der Laan L, Petersen M, Gerds T, Kvist K, and van der Laan M. (2023). Targeted maximum likelihood based estimation for longitudinal mediation analysis. Submitted to *Journal of Causal Inference* for review.

3. Nance N*, Mertens A*, Gerds T, **Wang Z**, Torp-Pedersen CT, van der Laan M, Kvist K, Lange T, Zareini B, and Petersen M. (2023). Applying the causal roadmap to longitudinal national Danish registry data: a case study of second-line diabetes medication and dementia. Submitted to *Statistics in Medicine* for review.

4. **Wang Z**, Bridgeford EW, Vogelstein JT, and Caffo B. (2023). Statistical analysis of data repeatability measures. Submitted to *International Statistical Review* for review.

IN PREPARATION

1. **Wang Z**, Zhang W, and van der Laan M. (2023). Super ensemble learning using the highly adaptive lasso.

2. **Wang Z**, Tippett D, Gallegos J, Onyike CU, Desmond JE, Hillis AE, Frangakis C, Brian C, and Ksapkini K. (2023). Baseline functional connectivity predicts who will benefit from neuromodulation: a preliminary study in primary progressive aphasia.

3. **Wang Z**, Gerds T, Mertens A, and Fong E. (2023+). Emulating causal inference into pharmacoepidemiology: Discretizing registry data for causal inference.

4. **Wang Z**, van der Laan L, Petersen M, Gerds T, Kvist K, and van der Laan M. (2023+). calm: Causal longitudinal mediation in R.

5. Papantoni A, Mogayzel PJ, **Wang Z**, Caffo B, Moran TH, Findling RL, Carnell S. (2023+). Brief parent-report measure of slowness in eating predicts worse weight status in children with cystic fibrosis at a 3-year follow-up.

6. **Wang Z**, Lindquist M, Caffo B, and van der Laan M. (2023+). Targeted ensemble learning for functional mediation analysis.

PROFESSIONAL ACTIVITIES

JOURNAL AND CONFERENCE REVIEWER

2023	Biostatistics Frontiers in Neurology Frontiers in Human Neuroscience Frontiers in Neuroscience Annales de l'Institut Henri Poincaré International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)
2022	American Causal Inference Conference (ACIC) International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)

2021 Scandinavian Journal of Statistics
Annales de l'Institut Henri Poincaré
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)
EXPLORE
Rapid Reviews COVID-19

2020 NeuroImage
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)

2019 International Conference on Machine Learning (ICML)

PROFESSIONAL SERVICE

2023 Review Editor on the Editorial Board of Frontiers in Neuroscience, Frontiers in Human Neuroscience, and Frontiers in Neuroanatomy.

2022 Member of the Scientific Steering Committee of the American Causal Inference Conference (previous Atlantic Causal Inference Conference; ACIC)

PROFESSIONAL MEMBERSHIP

2017–present American Statistical Association (ASA)

2018–present Eastern North American Region (ENAR)

PRESENTATIONS

INVITED TALKS

1. Super ensemble learning using the highly adaptive lasso. *Joint Initiative for Causal Inference Annual Meeting*, Copenhagen, Denmark. September 2023.
2. Predicting individual tDCS effects using unbiased transformations. *Johns Hopkins School of Medicine*, Baltimore, MD. May 2023.
3. Computerized methods integrating machine learning and statistical inference: causal inference in longitudinal data and mediation analysis. *Section of Epidemiology, University of Copenhagen*, Copenhagen, Denmark. April 2022.
4. Adjusting for imaging confounders in causal inference. *Joint meeting with Novo Nordisk, University of Copenhagen, and Peking University*, Copenhagen, Denmark. April 2022.
5. Mediation of GLP-1 effect on cardiovascular outcomes. *Novo Nordisk*, Copenhagen, Denmark. March 2022.

6. Computerized methods integrating machine learning and statistical inference: causal inference in longitudinal data and mediation analysis. *Department of Biostatistics, University of California, Berkeley*, Berkeley, CA. March 2022.

7. Computerized higher-order efficient estimation. *Johns Hopkins University Causal Inference Group Seminar Series*, virtual. October 2021.

8. Longitudinal mediation analysis. *Joint Initiative for Causal Inference Webinar Series*, virtual. April 2021.

CONTRIBUTED TALKS

1. Computerized higher-order efficient estimation. *Joint Statistical Meeting*, virtual. August 2021.

2. Targeted maximum likelihood estimation for longitudinal mediation analysis. *ENAR*, virtual. March 2021.

3. Statistical analysis of data reproducibility measures. *Joint Statistical Meeting*, Denver, CO. August 2019.

4. On statistical tests of functional connectome fingerprinting. *ENAR*, Philadelphia, PA. March 2019.

POSTER

1. A general computerized method for constructing targeted maximum likelihood estimation. *American Causal Inference Conference*, Berkeley, CA. May 2022.

TEACHING EXPERIENCE

GUEST LECTURER

December 2022 PhD course in Targeted Register Analysis. *Graduate School of Health and Medical Sciences at University of Copenhagen*, in-person.

November 2022 PB HLTH 243A Targeted Learning. *School of Public Health, University of California, Berkeley*, virtual.

April 2022 PB HLTH 243B Targeted Learning in Practice. *School of Public Health, University of California, Berkeley*, virtual.

TEACHING ASSISTANT

2019-2020	Statistical Machine Learning (27 graduate students) Professor: Vadim Zipunnikov Teaching Assistant
2019-2020	Statistical Methods in Public Health IV (337 MPH students) Professor: James Tonascia Consulting TA
2019	Statistical Reasoning in Public Health I-II (140 graduate students) Professor: John McGready Teaching Assistant
2018	Practice of Statistical Consulting (9 graduate students) Professors: Jiangxia Wang and Carol Thompson Teaching Assistant
2018	Survival Analysis (19 graduate students) Professor: Xiangrong Kong Teaching Assistant and Lab Lecturer
2017-2018	Advanced Methods in Biostatistics I-IV (PhD core courses, 10 graduate students) Professors: Martin A. Lindquist and Hongkai Ji Teaching Assistant and Lab Lecturer
2016-2017	Essentials of Probability and Statistical Inference I-IV (ScM core courses, 15 graduate students) Professors: Charles Rohde and Mei-Cheng Wang Teaching Assistant and Lab Lecturer