YUHUA ZHANG

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EDUCATION

University of Michigan, Ann Arbor, Michigan 2019.9 - 2023.8
Ph.D. in Biostatistics
Supervised by Dr. Walter Dempsey & Dr. Sebastian Zöllner

University of Michigan, Ann Arbor, Michigan 2017.9 - 2019.4
M.S. in Biostatistics

Shanghai Jiao Tong University, Shanghai, China 2013.9 - 2017.6
B.S. in Biological Science

EXPERIENCE

Harvard University, Boston, Massachusetts 2023.9 - Present
Postdoctoral Researcher
Supervised by Dr. Jukka-Pekka Onnela

University of Michigan, Ann Arbor, Michigan 2018.9 – 2023.8
Graduate Student Research Assistant

Yale University, New Haven, Connecticut 2016.9 – 2017.5
Undergraduate Student Research Assistant

RESEARCH INTERESTS

Network Data Analysis, Causal Inference with Network Interference, Bayesian Nonparametric Methods, Community Detection, Latent Class Models

PUBLICATIONS AND PREPRINTS

Theory and Statistical Methodology

Yuhua Zhang, JP Onnela, Shuo Sun, Ruoyu Wang. "Identification and estimation of heterogeneous interference effects under Unknown network." *ArXiv preprint*, (2025). Available at XX.

Yuhua Zhang, Kori S. Zachrison, Renee Y. Hsia, JP Onnela. "Community detection through recursive partitioning in a Bayesian framework." *ArXiv preprint*, (2025). Available at arXiv.

Yuhua Zhang, and Walter Dempsey. "Node-level community detection within edge exchangeable models for interaction processes." *Journal of the American Statistical Association* 120.550 (2025): 764-778.

Yuhua Zhang, and Walter Dempsey. "CataBEEM: integrating latent interaction categories in node-wise community detection models for network data." *International Conference on Machine Learning*. PMLR, 2023.

Yuhua Zhang, Corbin Quick, Ketian Yu, Alvaro Barbeira, GTEx Consortium, Francesca Luca, Roger Pique-Regi, Hae Kyung Im, and Xiaoquan Wen. "PTWAS: investigating tissue-relevant causal molecular mechanisms of complex traits using probabilistic TWAS analysis." *Genome biology* 21, no. 1 (2020): 232.

Interdisciplinary Application

Karadakic, René, David C. Chan, Bruce E. Landon, Nancy L. Keating, Christopher Manz, Jukka-Pekka Onnela, Thomas C. Tsai, **Yuhua Zhang**, and Michael L. Barnett. "Subspecialization of surgical specialties in the US." *JAMA Health Forum.* Vol. 6. No. 9. American Medical Association, (2025).

Ryan, Kelly A., Anastasia K. Yocum, **Yuhua Zhang**, Peisong Han, David F. Marshall, Paul T. Costa, Sarah H. Sperry, Takakuni Suzuki, Melvin G. McInnis, and Sebastian Zöllner. "Predictive evidence for the impact of personality styles on depression and functioning in two bipolar disorder cohorts." *Journal of Affective Disorders* 380 (2025): 746-755.

Ryan, Kelly A., Peisong Han, **Yuhua Zhang**, David F. Marshall, Anastasia K. Yocum, Melvin G. McInnis, and Sebastian Zöllner. "Stability of personality traits in bipolar disorder: findings from a longitudinal cohort." *Journal of Affective Disorders* 283 (2021): 1-10.

Hu, Yiming, Qiongshi Lu, Wei Liu, **Yuhua Zhang**, Mo Li, and Hongyu Zhao. "Joint modeling of genetically correlated diseases and functional annotations increases accuracy of polygenic risk prediction." *PLoS genetics* 13, no. 6 (2017): e1006836.

SELECTED MANUSCRIPTS IN PREPARATION

Yuhua Zhang, Walter Dempsey. "Conformal link prediction in edge exchangeable model." *Manuscript Available Upon Request*, (2025+).

Yuhua Zhang, Michael L. Barnett, JP Onnela. "Bayesian hierarchical community detection method of network data." *Manuscript Available Upon Request* (2025+).

Kori S Zachrison, **Yuhua Zhang**, Renee Hsia, Lee Schwamm, Mathew Reeves, Carlos A. Camargo, Vicki Fung, Margaret Samuels-Kalow, Jukka-Pekka Onnela. "Changes in stroke care regionalization in California associated with evolving evidence for endovascular thrombectomy", *Manuscript in preparation*, (2025+).

FUNDING EXPERIENCE

NIH K99/R00 Pathway to Independence Award *Submitted Oct 2025; under review*
Title: Quantifying Network Effects of Reperfusion Interventions in Stroke Systems of Care
Role: PD/PI

TEACHING INTERESTS

Undergraduate
- Probability & Statistics (core course for stats/biostats majors)
- Regression & ANOVA (linear models with R/Python labs)
- Introduction to Data Science (data preprocessing, EDA, visualization, reproducibility)

Graduate
- Bayesian Inference (conjugate priors, MCMC, hierarchical models; hands-on experience with Stan)
- Statistical Learning (regularization, trees/boosting, cross-validation, neural networks; applied projects)
- Advanced Elective: Theory and Application of Network Analysis (network models, community detection, network-assisted inference; case studies)

PRESENTATIONS

1. Joint Statistical Meeting, August 2025. "Causal inference with the presence of latent interference network" (Oral)
2. Joint Statistical Meeting, August 2024. "Identification of subspecialty among phycisians – community detection in Medicare claim data" (Oral)
3. Western North American Region Spring Meeting, March 2024. "Conformal link prediction" (Oral)

4. Eastern North American Region Spring Meeting, March 2023. "Community detection within edge exchangeable models for interaction processes" (Oral)

ENGAGEMENTS & SERVICES

Department of Biostatistics, University of Michigan, Ann Arbor

- Departmental Search Committee member 2021.10 - 2022.4
- Co-founder and member of the Student Research Conflict Committee 2020.8 - 2021.4
- Departmental DEI Committee member 2019.1 - 2020.6

COMPUTING SKILLS

Computing language: Python, R, SQL