Updated: November 2026

CURRICULUM VITAE

Jingshu Wang

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CURRENT EMPLOYMENT

Assistant Professor, 2019-present
Department of Statistics, University of Chicago

EDUCATION

2016	**Ph.D.**, Statistics, Stanford University Advisor: Art B. Owen Thesis: Factor analysis for high-dimensional data
2011	**B.Sc.**, Mathematics and Applied Mathematics, Peking University, China

WORK EXPERIENCE

2016-2019	Postdoctoral Fellow in Statistics (Mentor: Nancy R. Zhang) The Wharton School, University of Pennsylvania
2013	Summer Graduate Intern Quantitative Marketing, Google

GRANTS AND AWARDS

2026	Causal Inference in Genetics: Integrative Methods for Mendelian Randomization and Single-Cell CRISPR Screening, Maximizing Investigators' Research Award (MIRA), NIGMS R35GM162500, 2026-2030. Role: PI. Total cost: $2,050,000
2025	Virtual Cell Challenge — 3rd Place of 1,265 teams, Arc Institute
2023	New Challenges in Statistical Genetics: Mendelian Randomization, Integrated Omics and General Methodology,

	NSF CAREER Award, DMS-2238656, 2023-2028. Role: PI. Total cost: $448,820
2021	Statistical Learning and Inference for Aingle-cell RNA Sequencing, NSF DMS-2113646, 2021-2024. Role: PI. Total cost: $230,000
2018	ICSA 2018 Conference Young Researcher Award
2016	SFASA Student Travel Award for 2016 Joint Statistical Meeting
2015	Stanford Statistics Department Teaching Assistant Award

PROFESSIONAL SERVICE

2016-present	Referee for *Journal of the American Statistical Association, Biometrika,* *Annals of Applied Statistics, Annals of Statistics,* *Statistics and Probability Letters, Statistica Sinica, Biometrics,* *Journal of Computational and Graphical Statistics, Statistics and Computing,* *Journal of Machine Learning Research, Biostatistics,* *Genetics, Bioinformatics, PLoS Medicine, Nature Communications,* *Nature Machine Learning Intelligence, Nature Biomedical Engineering,* *PLoS Genetics, Genome Biology, PLoS Computational Biology,* *iScience, Bernoulli, Nature Biotechnology*
2022	Guest Editor for PLoS Genetics
2023	Topic Editor for Frontiers in Genetics- Statistical Genetics and Methodology: Statistical and Computational Methods for Single-Cell Sequencing Analysis
2026	Program Committee member, STATGEN 2027, Denver, Colorado
2026	Sponsorship Committee chair, STAI-X 2027, Chicago

PUBLICATIONS

([#]: student under my supervision, [*]: corresponding or co-corresponding author)

Peer-reviewed Journal Articles

1. Lin Gui[#], Tiantian Mao, **Jingshu Wang**[*], and Ruodu Wang (alphabetical order), 2025. Validity and Power of Heavy-Tailed Combination Tests under Asymptotic Dependence. *Annals of Statistics*, accepted.

2. Soumyabrata Kundu[#], Peng Ding, **Jingshu Wang**, Xinran Li. Sensitivity Analysis for the Test-Negative Design. *Journal of the American Statistical Association*, accepted.

3. Dongyue Xie[#], Lin Gui[#] and **Jingshu Wang**[*], 2026. Statistical Inference for Cell Type Deconvolution. *Journal of the Royal Statistical Society, Series B*, 88(4), 1449-1468. (ICSA Applied Statistics Symposium Student Paper Award, 2023)

4. Samuel J. Resnick, Seema Qamar, Jenny Sheng, Lei Haley Huang, Jonathon Nixon-Abell, Schuyler Melore, Chyi Wei Chung, Xuecong Li, **Jingshu Wang**, Nancy Zhang, Neil A. Shneider, Clemens F. Kaminski, Francesco Simone Ruggeri, Gabriele S. Kaminski Schierle, Peter St George-Hyslop, Alejandro Chavez, 2025. Multiplex neurodegeneration proteotoxicity platform reveals DNAJB6 promotes non-toxic FUS condensate gelation and inhibits neurotoxicity. *Nature Communications*, 16(1).

5. Zixuan Wu[#], Ethan Lewis[#], Qingyuan Zhao, **Jingshu Wang**[*], 2025. Causal Mediation Analysis for Time-varying Heritable Risk Factors with Mendelian Randomization. *Nature Communications*, 16(1).

6. Lin Gui[#], Yuchao Jiang, **Jingshu Wang**[*], 2025. Aggregating Dependent Signals with Heavy-Tailed Combination Tests. *Biometrika*, 112(4). (IMS Hannan Graduate Student Travel Award, 2025)

7. Jin-hong Du[#], Tianyu Chen[#], Ming Gao[#], **Jingshu Wang**[*], 2024. Joint Trajectory Inference for Single-cell Genomics Using Deep Learning with a Mixture Prior. *Proceedings of the National Academy of Sciences*, 121(37).

8. Bowei Kang[#], Yalan Yang, Kaining Hu, Xiangbin Ruan, Yi-Lin Liu[#], Pinky Lee, Jasper Lee, **Jingshu Wang**[*], Xiaochang Zhang, 2023. Infernape uncovers cell type-specific and spatially resolved alternative polyadenylation in the brain. *Genome Research* 33:1-14.

9. **Jingshu Wang**[*], Lin Gui[#], Weijie Su, Chiara Sabatti and Art B. Owen, 2022. Detecting multiple replicating signals using adaptive filtering procedures, *The Annals of Statistics* 50(4), 1890-1909.

10. Qingyuan Zhao, **Jingshu Wang**, Zhen Miao, Nancy R Zhang, Sean Hennessy, Dylan S Small and Daniel J Rader, 2021. A Mendelian randomization study of the role of lipoprotein subfractions in coronary artery disease. *Elife*, 10, e58361.

11. **Jingshu Wang**[*], Qingyuan Zhao, Jack Bowden, Gibran Hemani, George Davey Smith, Dylan S. Small and Nancy R. Zhang, 2021. Causal Inference for Heritable Phenotypic Risk Factors Using Heterogeneous Genetic Instruments, *PLoS Genetics*, 17(6), e1009575.

12. Xiangbin Ruan, Bowei Kang[#], Cai Qi, Wenhe Lin, **Jingshu Wang**[*], Xiaochang Zhang, 2021. Progenitor cell diversity in the developing mouse neocortex. *Proceedings of the National Academy of Sciences*, 118(10).

13. Bowei Kang[#], Eroma Abeysinghe, Divyansh Agarwal, Quanli Wang, Sudhakar Pamidighantam, Mo Huang, Nancy R Zhang, **Jingshu Wang**[*], 2020. Online Single-cell RNA-seq Data Denoising with Transfer Learning. *PEARC'20: Practice and Experience in Advanced Research Computing*, 469472.

14. Divyansh Agarwal, **Jingshu Wang**, and Nancy R. Zhang, 2020. Data Denoising and Post-Denoising Corrections in Single Cell RNA Sequencing. *Statistical Science*, 35(1): 112-128.

15. Qingyuan Zhao, **Jingshu Wang**, Jack Bowden, Dylan S. Small, 2020. Statistical inference in two-sample summary-data Mendelian randomization using robust adjusted profile score. *The Annals of Statistics*, 48(3), 1742-1769.

16. Zilu Zhou, Chengzhong Ye, **Jingshu Wang**, and Nancy R. Zhang, 2020. Surface protein imputation from single cell transcriptomes by deep neural networks. *Nature Communications*, 11(1): 1-10.

17. **Jingshu Wang**, Divyansh Agarwal, Mo Huang, Gang Hu, Zilu Zhou, and Nancy R. Zhang, 2019. Data denoising with transfer learning in single-cell transcriptomics. *Nature Methods*, 16, 875-878.

18. Qingyuan Zhao, Yang Chen, **Jingshu Wang**, and Dylan S. Small, 2019. Powerful genome-wide design and robust statistical inference in two-sample summary-data Mendelian randomization. *International Journal of Epidemiology*, 48(5),1478-1492.

19. Qingyuan Zhao, **Jingshu Wang**, Jack Bowden, Dylan S. Small, 2019. Two-sample Instrumental Variable Analyses Using Heterogeneous Samples. *Statistical Science*, 34(2), 317-333.

20. **Jingshu Wang**[*] and Art B. Owen, 2019. Admissibility in Partial Conjunction Testing. *Journal of the American Statistical Association* 114, 158-168

21. **Jingshu Wang**, Mo Huang, Eduardo Torre, Hannah Dueck, Sydney Shaffer, John Murray, Arjun Raj, Mingyao Li and Nancy R. Zhang, 2018. Gene Expression Distribution Deconvolution in Single Cell RNA Sequencing. *Proceedings of National Academy of Sciences* 115(28), E6437-E6446

22. Mo Huang, **Jingshu Wang**, Eduardo Torre, Hannah Dueck, Sydney Shaffer, Roberto Bonasio, John Murray, Arjun Raj, Mingyao Li and Nancy R. Zhang, 2018. Gene Expression Recovery For Single Cell RNA Sequencing. *Nature Methods* 15, 539-542

23. **Jingshu Wang**, Qingyuan Zhao, Trevor Hastie and Art B. Owen, 2017. Confounder Adjustment in Multiple Hypotheses Testing. *Annals of Statistics* 45, 1863-1894

24. Art B. Owen and **Jingshu Wang**, 2016. Bi-cross-validation for Factor Analysis. *Statistical Science* 31, 119-139

Published book chapters

25. **Jingshu Wang**[*] and Tianyu Chen[#], 2022. Deep Learning Methods for Single-Cell Omics Data, in *Handbook of Statistical Bioinformatics II*, ed. Henry Horng-Shing Lu, Bernhard Schlkopf, Martin T. Wells and Hongyu Zhao.

Technical Reports

26. Qiyuan Liu[#], Qirui Zhang, Yilong Chen[#], Jin-Hong Du, Siming Zhao, **Jingshu Wang**[*] (2026). Transcriptional perturbation effects remain structured beyond the leading global trend. *bioRXiv*.

27. Zixuan Wu[#], Yunqi Yang, Aabesh Bhattacharyya[#], Matthew Stephens, **Jingshu Wang**[*], 2025. Improving estimation efficiencies for family-based GWAS by integrating large external data. *medRXiv*.

28. Qiyuan Liu[#], Qirui Zhang, Jin-hong Du, Siming Zhao, **Jingshu Wang**[*], 2025. Effects of Distance Metrics and Scaling on the Perturbation Discrimination Score. *ArXiv*. (Top-3 Oral Presentation, ICLR 2026 Workshop on Generative AI in Genomics)

29. Zixuan Wu[#] and **Jingshu Wang**[*], 2024. Validity and Interpretation of Two-sample Mendelian Randomization for Binary Traits. *bioRxiv*.

PRESENTATION

Short courses and tutorials

(2024) ASA-SSGG Short Course Series: An Introduction to Mendelian Randomization

(2019) ISMB/ECCB 2019 Basel, Swiss (Tutorial: Recent Advances in Statistical Methods and Computational Algorithms for Single-Cell Omics Analysis)

Invited Seminars and Conference Presentations

(2026) Departmental Statistics Colloquium, Michigan State University

(2026) Statistics and Data Science Seminar, University of Illinois Chicago

(2026) 2026 ICSA China Conference, Shenzhen, China

(2026) Department of Statistics and Data Science Seminar, The Chinese University of Hong Kong

(2026) International Symposium on Nonparametric Statistics (ISNPS 2026), Thessaloniki, Greece

(2026) Department of Statistics Seminar, University of Washington

(2026) Department of Statistics and Finance Seminar, School of Management, University of Science and Technology of China

(2025) Joint Meetings of 2025 Taipei International Statistical Symposium and the 13th ICSA International Conference

(2025) Statistical Genetics Working Group Seminar, Johns Hopkins University

(2025) Department of Statistics Seminar, Rutgers University

(2025) Wharton Statistics and Data Science Seminar, University of Pennsylvania

(2025) BIRS Workshop: Novel Statistical Approaches for Studying Multi-omics Data, Kelowna, Canada

(2025) The 7th Pacific Causal Inference Conference (PCIC 2025), Beijing, China

(2025) STATGEN 2025, Minneapolis, MN

(2025) Conference on Causal Inference: Bridging Theory and Practice, Sanya, China

(2024) IMS International Conference on Statistics and Data Science (ICSDS), Nice, France

(2024) Department of Public Health Sciences seminar, Penn State College of Medicine

(2024) Translational Data Science Center for a Learning Health System (CELEHS) distinguished lecture series, Harvard University

(2024) Joint Statistical Meetings, Portland, OR

(2024) The 2nd Joint Conference on Statistics and Data Science, Kunming, China

(2024) 2024 International Conference on Frontiers of Data Science, Hangzhou, China

(2024) STATGEN 2024: Conference on Statistics in Genomics and Genetics, Pittsburg, PA

(2023) IMSI Workshop on Permutation and causal inference: connections and applications, University of Chicago

(2023) Department of Statistics seminar, University of Michigan, Ann Arbor

(2023) Department of Biostatistics seminar, University of North Carolina at Chapel Hill

(2022) Committee on Quantitative Methods in Social, Behavioral, and Health Sciences Workshop, University of Chicago

(2022) Joint Statistical Meetings, Washington, DC

(2022) ICSA Applied Statistics Symposium, gainesville

(2022) BIRS Workshop: Deep Learning for Genetics, Genomics and Metagenomics: Latest developments and New Directions, Kelowna, Canada

(2022) Young Bioinformatics PI Seminar Series, virtual

(2022) Statistical Bioinformatics Seminar, University of Sydney

(2021) Econometrics and Statistics Colloquium, UChicago Booth School of Business

(2021) IMSI Workshop on Eliciting Structure in Genomics Data, University of Chicago

(2021) Statistics colloquium, Michigan State University

(2021) ICSA Applied Statistics Symposium, virtual

(2021) Department of statistics seminar, The University of Iowa

(2021) Department of Statistics seminar, Hong Kong University

(2021) Department of Biostatistics seminar, Yale University

(2020) Symposium 2020 ICSA, virtual

(2020) International Seminar on Selective Inference, virtual

(2020) ENAR 2020 Spring Meeting, virtual

(2019) Department of Statistics seminar, Northwestern University

(2019) Department of Statistics seminar, University of Pittsburgh

(2019) Biostatistics seminar series, Northwestern University

(2019) Department of Biostatistics seminar, Indiana University

(2019) Joint Statistical Meetings, Denver

(2019) IMS China Meeting, China

(2019) ICSA China Conference, China

(2019) Department of Biostatistics seminar, University of Washington

(2019) Department of Statistics seminar, University of Wisconsin, Madison

(2019) Department of Statistics seminar, University of Chicago

(2019) Department of Statistics seminar, Duke University

(2019) Department of Statistics seminar, Carnegie Mellon University

(2019) Department of Statistics seminar, Columbia University

(2019) Department of Statistics seminar, Florida State University

(2019) Department of Statistics seminar, University of Florida

(2019) Department of Statistics seminar, Purdue University

(2019) Department of Statistics seminar, University of Illinois Urbana-Champaign

(2018) ICSA China Conference on Data Science, China

(2018) 2nd International Conferences on Econometrics and Statistics (EcoSta), China

(2017) Department of Statistics, Tel Aviv Univeristy, Israel

(2016) 10th ICSA International Conference, China

Contributed Conference Presentations and Posters

(2019) CTRG2019, Chicago (Poster)

(2018) ASHG, San Diego (Poster)

(2017) ASHG, Orlando (Poster talk)

(2017) 10th International Conference on Multiple Comparison Procedures, Riverside (Talk)

(2016) Joint Statistical Meeting, Chicago (Talk)

(2015) 9th International Conference on Multiple Comparison Procedures, India (Talk)

(2015) Stanford BioX symposium (Poster)

(2014) 2014 Joint Statistical Meeting, Boston (Talk)

(2014) ICSA-KISS Applied Statistics Symposium, Portland (Talk)

MENTORING

Postdoc

Maria Valdez Cabrera 11/2026 -

Doctoral Students advising

Jooha Oh	anticipated 5/2030
Woohyun Choi	anticipated 5/2028
Qiyuan Liu	anticipated 5/2028
Zixuan Wu	anticipated 12/2027
Ziming Gan	2026 (onto Assistant Professor at USTC)
Lin Gui	2026

Doctoral thesis committee

Jerry Zhu	anticipated 7/2029
Junming Guan	anticipated 7/2028
Yeo Jin Jung	anticipated 7/2027
Bowei Kang	anticipated 5/2027
Jin-hong Du	2025 (onto Assistant Professor at The University of Hong Kong)
Yunqi Yang	2024
Huanlin Zhou	2024
Chih-Hsuan Wu	2024
Joonsuk Kang	2024
Dongyue Xie	2023

Master Students

Lin Gui	2020 (onto Ph.D. student at UChicago in statistics)
Bowei Kang	2020 (onto Ph.D. student at UChicago in biostatistics)
Jinhong Du	2021 (onto Ph.D. student at CMU in statistics)
Ming Gao	2021 (onto Ph.D. student at UChicago in econometrics and statistics)
Xinxin Chen	2021 (onto Ph.D. student at UNC in biostatistics)
Seung-Wan Jin	2022 (onto Ph.D. student at Georgia Tech in machine learning)
Yi-Lin Liu	2022
Yingcheng Luo	2022 (onto Ph.D. student at Tsinghua University in statistics)
Jack Potrykus	2022
Ethan Lewis	2022
Zixuan Wu	2023 (onto Ph.D. student at UChicago in statistics)
Tianyu Chen	2023 (onto Ph.D. student at UT Austin in Statistics & Data Sciences)
Yao Rong	2023
Taewan Kim	2023
Liangzong Ma	2023 (onto Ph.D. student at Harvard in quantitative marketing)
KyongJu Lee	2025 (onto Ph.D. student at the University of Pittsburgh in statistics)
Jiaming Liu	2025 (onto Ph.D. student at UChicago in computational biology)
Yilong Chen	2025 (onto Ph.D. student at Northwestern in statistics)
Jeremy Yang	2026-

Undergraduate Students

Shuhong Liu	2020
Ethan Lewis	2021
Baichen Tan	2023-2024 (onto Ph.D. student at Columbia University in statistics)
Jeremy Yang	2025-2026
Andrew Yang	2025-2026 (onto Ph.D. student at UChicago in statistics)

TEACHING EXPERIENCE

Instructor

University of Chicago

STAT 32950	Multivariate Statistical Analysis: Applications and Techniques
STAT 35510	Statistical Algorithms for Single-Cell Omics and Related Techniques
STAT 24630	Causal Inference Methods and Case Studies
STAT 41530	Topics in Causal Inference
STAT 34700	Generalized Linear Models
STAT 22000	Statistical Methods and Applications

Stanford University

Stats110	Statistical Methods in Engineering and Physical Science (Summer, 2016)

ACADEMIC SERVICE

Department of Statistics

2020-2025	PhD Admissions Committee
2022-	Statistics Colloquium seminar co-chair
2025-	Kruskal Instructor Search Committee

Data Science Institute

2022	Mentor for Rising Stars in Data Science Workshop
2023	Postdoctoral Scholars Program Admission Committee
2023-	Committee on Data Science