

ZHAO REN

Department of Statistics \diamond 1812 Wesley W. Posvar Hall \diamond Pittsburgh, PA, 15260, USA
412-648-9382 \diamond zren@pitt.edu

PROFESSIONAL EXPERIENCE

Associate Professor, Department of Statistics, University of Pittsburgh 2020/9-Present
Assistant Professor, Department of Statistics, University of Pittsburgh 2014/9-2020/8

EDUCATION

Yale University, New Haven, CT, USA 2014
Ph.D. in Statistics (Advisor: Prof. Harrison Zhou)
University of Pennsylvania, Philadelphia, PA, USA 2009
M.A. in Mathematics (Ph.D. Program)
Nanjing University, Nanjing, China 2007
B.S. in Mathematics

RESEARCH INTERESTS

- High Dimensional Statistical Inference,
- Robust Statistics,
- Graphical Models,
- Nonparametric Function Estimation,
- Covariance/Precision Matrix Estimation,
- Applications in Statistical Genomics and Protein Structure Modeling.

PUBLICATIONS

1. **Model-Free Inference for Characterizing Protein Mutations through a Coevolutionary Lens*** (with Fan Yang, Wen Zhou, Kejue Jia and Robert Jernigan) (*Student first authorship) *Accepted, Annals of Applied Statistics* 2026
2. **Mini-batch Estimation for Deep Cox Models: Statistical Foundations and Practical Guidance** (with Lang Zeng, Weijing Tang and Ying Ding) *Accepted, Journal of the American Statistical Association* 2026
3. **Distributed Robust Estimation and Inference with Contaminated Data*** (with Wenxin Zhou and Peiliang Zhang) (*Student first authorship) *Electronic Journal of Statistics* 2026, **20**:261-323
4. **Nonparametric Quantile Regression with ReLU-Activated Recurrent Neural Networks** (with Hang Yu, Lyumin Wu and Wen-xin Zhou) *Accepted, Advances in Neural Information Processing Systems (NeurIPS)* 2025
5. **Adaptive Fisher's Method using Weakly Geometric Grid for Combining p-values with Application to COVID-19 Surveillance*** (with Yusi Fang and George Tseng) (*Student first authorship, ASA SIE Early Career Award) *Accepted, Journal of the Royal Statistical Society: Series C* 2025

6. **Robust Distance Correlation for Variable Screening*** (with Fan Yang, Tianzhou Ma and Hongjie Ke) (*Student first authorship) *STAT* 2025, **14**(3):e70094
7. **Gaussian Differentially Private Robust Mean Estimation and Inference** (with Myeonghun Yu and Wenxin Zhou) *Bernoulli* 2024, **30**(4):3059-3088
8. **Outcome-Guided Disease Subtyping by Generative Model and Weighted Joint Likelihood in Transcriptomic Applications** (with Yujia Li, Peng Liu, Wenjia Wang, Wei Zong, Yusi Fang, Lu Tang, Juan C. Celedón and George Tseng) *Annals of Applied Statistics* 2024, **18**(3):1947-1964
9. **Adaptive Minimax Density Estimation on \mathbb{R}^d for Huber's Contamination Model*** (with Peiliang Zhang) (*Student first authorship) *Information and Inference: A Journal of the IMA* 2023, **12**(4):3042-3066
10. **Transcriptomic Congruence Analysis for Evaluating Model Organisms** (with Wei Zong, Tanbin Rahman, Li Zhu, Xiangrui Zeng, Yingjin Zhang, Jian Zou, Song Liu, Jingyi Li, Etienne Sibille, Adrian Lee, Steffi Oesterreich, Tianzhou Ma and George Tseng) *Proceedings of the National Academy of Sciences (PNAS)* 2023, **120**(6):e2202584120
11. **High-Dimension to High-Dimension Screening for Detecting Genome-Wide Epigenetic and Noncoding RNA Regulators of Gene Expression** (with Hongjie Ke, Shuo Chen, Jianfei Qi, George Tseng, Zhenyao Ye and Tianzhou Ma) *Bioinformatics* 2022, **38**(17):4078-4087
12. **Covariance-engaged Classification of Sets via Linear Programming** (with Sungkyu Jung and Xingye Qiao) *Statistica Sinica* 2022, **32**(3):1515-1540
13. **Inference of Large Modified Poisson-type Graphical Models: Application to RNA-seq Data in Childhood Atopic Asthma Studies*** (with Rong Zhang, Juan Celedón and Wei Chen) (*Student first authorship) *Annals of Applied Statistics* 2021, **15**(2):831-855
14. **Large Scale Multiple Inference on Collective Dependence with Applications to Protein Function** (with Robert Jernigan, Kejue Jia and Wen Zhou) *Annals of Applied Statistics* 2021, **15**(2):902-924
15. **Latent Dynamic Factor Analysis of High-Dimensional Neural Recordings** (with Heejong Bong, Zongge Liu, Matthew A. Smith, Valerie Ventura and Robert E. Kass) *Advances in Neural Information Processing Systems (NeurIPS)* 2020, **33**
16. **Minimax Estimation of Large Precision Matrices with Bandable Cholesky Factor*** (with Yu Liu) (*Student first authorship) *Annals of Statistics* 2020, **48**(4):2428-2454
17. **Variable Screening with Multiple Studies*** (with Tianzhou Ma and George Tseng) (*Student first authorship) *Statistica Sinica* 2020 **30**(2):925-953
18. **Tuning-Free Heterogeneous Inference in Massive Networks** (with Yongjian Kang, Yingying Fan and Jinchi Lv) *Journal of the American Statistical Association* 2019 **114**(528):1908-1925
19. **User-Friendly Covariance Estimation for Heavy-Tailed Distributions** (with Yuan Ke, Stanislav Minsker, Qiang Sun and Wenxin Zhou) *Statistical Science* 2019, **34**(3):454-471
20. **SILGGM: An Extensive R Package for Efficient Statistical Inference in Large-scale Gene Networks*** (with Rong Zhang and Wei Chen) (*Student first authorship) *PLOS Computational Biology* 2018, **14**(8):e1006369
21. **Robust Covariance and Scatter Matrix Estimation under Huber's Contamination Model** (with Mengjie Chen and Chao Gao) *Annals of Statistics* 2018, **46**(5):1932-1960
22. **Sparse CCA via Precision Adjusted Iterative Thresholding** (with Mengjie Chen, Chao Gao and Harrison H. Zhou) *Proceedings of the Seventh International Congress of Chinese Mathe-*

maticians (Editors: Lizhen Ji, Lo Yang and Shing-Tung Yau) International Press of Boston, 2019, Volume II:481-534

23. **Variable Selection for a Categorical Varying-Coefficient Model with Identifications for Determinants of Body Mass Index** (with Jiti Gao, Bin Peng and Xiaohui Zhang) *Annals of Applied Statistics* 2017, **11**(2):1117-1145
24. **A General Decision Theory for Huber's ϵ -Contamination Model** (with Mengjie Chen and Chao Gao) *Electronic Journal of Statistics* 2016, **10**(2):3752-3774
25. **Estimating Structured High-Dimensional Covariance and Precision Matrices: Optimal Rates and Adaptive Estimation** (with T. Tony Cai and Harrison H. Zhou) *Electronic Journal of Statistics with Discussions and Rejoinder* 2016, **10**(1):1-89
26. **Asymptotically Normal Estimation of Covariate-Adjusted Gaussian Graphical Model** (with Mengjie Chen, Hongyu Zhao and Harrison H. Zhou) *Journal of the American Statistical Association* 2016, **111**(513):394-406
27. **FastGGM: An Efficient Algorithm for the Inference of Gaussian Graphical Model in Biological Networks** (with Ting Wang, Ying Ding, Zhou Fang, Zhe Sun, Matthew MacDonald, Robert Sweet, Jieru Wang and Wei Chen) *PLOS Computational Biology* 2016, **12**(2):e1004755
28. **Minimax Estimation in Sparse Canonical Correlation Analysis** (with Chao Gao, Zongming Ma and Harrison H. Zhou) *Annals of Statistics* 2015, **43**(5):2168-2197
29. **Asymptotic Normality and Optimalities in Estimation of Large Gaussian Graphical Model** (with Tingni Sun, Cun-Hui Zhang and Harrison H. Zhou) *Annals of Statistics* 2015, **43**(3):991-1026
30. **Optimal Rates of Convergence for Estimating Toeplitz Covariance Matrices** (with T. Tony Cai and Harrison H. Zhou) *Probability Theory and Related Fields* 2013, **156**(1-2):101-143
31. **Discussion: Latent Variable Graphical Model Selection via Convex Optimization** (with Harrison H. Zhou) *Annals of Statistics* 2012 **40**(4):1989-1996

Collaborative Papers

32. **Transcriptome-Wide and Differential Expression Network Analyses of Childhood Asthma in Nasal Epithelium*** (with Erick Forno, Rong Zhang, Yale Jiang, Qi Yan, Yueh-Ying Han, Nadia Boutaoui, Franziska Rosser, Daniel Weeks, Edna Acosta-Perez, Angel Colon-Semidey, Maria Alvarez, Glorisa Canino, Wei Chen and Juan Celedón) (*Student first authorship) *The Journal of Allergy and Clinical Immunology* 2020, **146**(3):671-675

Under Revision or Review

33. **Modeling and Prediction of Mutation Fitness on Protein Functionality with Structural Information using High-Dimensional Potts Model** (with Bingying Dai, Yinan Lin, Wen Zhou and Kejue Jia) *Major Revision, Annals of Applied Statistics*
34. **Sparse Heteroskedastic PCA in High Dimensions*** (with Rui Kang and Peiliang Zhang) (*Student first authorship) *Submitted*
35. **Simultaneous Inference in Multiple Matrix-Variate Graphs for High-Dimensional Neural Recordings** (with Zongge Liu, Heejong Bong, Matthew Smith and Robert Kass) *Submitted*
36. **Pairwise Difference Estimation of High Dimensional Partially Linear Model** (with Fang Han and Yuxin Zhu) *Manuscript*

SOFTWARE

- **AFg**: Adaptive Fisher’s Method that Leverages Weakly Geometric Grid to Adaptively Search for a Suitable Truncation Point
- **RobustDC**: A Huber-type Robust Distance Correlation Measure (called ”RDC”) for Sure Screening
- **rPCor**: A Robust High-dimension to High-dimension Variable Screening Method for Detecting Genome-wide Epigenetic Regulators of Gene Expression
- **ModPGMinference**: Edge-wise and Global Statistics Inference for Modified Poisson-type Graphical Models
- **HGSL**: Estimation of High-dimensional Multi-response Regression with Heterogeneous Noises under Heterogeneous Group Square-root Lasso Penalty
- **FastGGM**: A Fast Algorithm for Inference of Gaussian Graphical Model
- **SILGGM**: Statistical Inference of Large-Scale Gaussian Graphical Model in Gene Networks

TEACHING AND ADVISING

University of Pittsburgh

- STAT 1000 Applied Statistical Methods, Fall 2016
- STAT 1151 Introduction to Probability, Fall 2014
- STAT 1152 Introduction to Mathematical Statistics, Spring 2018
- STAT 1631/2630 Intermediate Probability, Fall 2017, 2018
- STAT 1632/2640 Intermediate Mathematical Statistics, Spring 2020
- STAT 2631 Theory of Statistics I, Spring 2020, 2021, Fall 2021, 2022, 2025
- STAT 2641 Asymptotic Methods in Statistics, Spring 2016, 2017, 2023, 2024, 2025, 2026, Fall 2018, 2020
- STAT 2691 Nonparametric Theory, Spring 2015, Fall 2017, 2019, 2022
- STAT 2711 Probability Theory I, Fall 2024
- STAT 3694 Introduction to High-Dimensional Statistics, Fall 2015, Spring 2019, 2021, 2024

Short Course/Workshop Lecturer

- Lecture Series on Probability Limit Theorems for Ph.D. Students in Quantitative Empirical Methods Fields, Department of Political Science, Yale University Summer 2012, 2013

Tutor

- Yale Residential College Math and Science Program for Math and Science Courses 2012-2014

Doctoral Students

- Yu Liu: “Minimax Estimation of Large Precision Matrices with Bandable Cholesky Factors” (recipient of Andrew Mellon Predoctoral Fellowships) 2018. Initial position: Model Risk Spec (VP) at BNY Mellon.
- Tianzhou Ma (*joint with George Tseng*): “Differential Expression and Feature Selection in the Analysis of Multiple Omics Studies” 2018. Initial position: Tenure-track Assistant Professor of Biostatistics at the University of Maryland

- Xiaonan Zhu (*joint with Satish Iyengar*): “High-Dimensional Bias-Corrected Inference, with Applications to fMRI Studies” 2019. Initial position: Senior Statistician, Department of Epidemiology at the University of Pittsburgh
- Rong Zhang: “High-Dimensional Inference of Modified Poisson-Type Graphical Models and Robust Sparse CCA, with Applications to Large-Scale Omics Data” (recipient of Andrew Mellon Predoctoral Fellowships; recipient of 2019 ENAR RAB Poster Competition Award, 2019 Student of the Year, ASA Pittsburgh Chapter) 2020. Initial position: Biostatistics Manager at Amgen.
- Peiliang Zhang: “Robust Estimation and Inference under Huber’s Contamination Model” (recipient of Andrew Mellon Predoctoral Fellowships; 2021 Student of the Year, ASA Pittsburgh Chapter) 2022. Initial position: Quantitative Analytics at Freddie Mac.
- Yusi Fang (*joint with George Tseng*): “Methods for Combining Frequent or Sparse Signals in Omics Applications” (ASA SIE Early Career Award; 2023 Student of the Year, ASA Pittsburgh Chapter) 2023. Initial position: FDA Mathematical Statistician
- Rui Kang: “Sparse Heteroskedastic PCA in High Dimensions” (recipient of Andrew Mellon Predoctoral Fellowships; 2024 Student of the Year, Best Poster Award, ASA Pittsburgh Chapter) 2024. Initial position: Senior Scientist of Biostatistics at Merck
- Fan Yang: “Model-free Inference for Characterizing Protein Mutations through a Co-evolutionary Lens” 2025. Initial position: Postdoctoral Fellow at Fred Hutchinson Cancer Center (Mentor: Jessica Li)
- Jiaxuan Duan (*joint with Chris McKennan*): “Recovering Latent Factors in Data with Strong and Weak Signals: From Theory to Practice” Aug 2026 expected.
- Shubha Banerjee: “Heteroskedastic PCA and Gaussian Graphical Models under Differential Privacy” (selected as one of four nominees for the 2025 Google PhD Fellowship from the University of Pittsburgh; recipient of Andrew Mellon Predoctoral Fellowships) In progress.

Doctoral Dissertation as a Committee Member

- **Statistics:** Brian McGill (2017, Chair: Satish Iyengar), Brian Rooks (2018, Chair: Sungkyu Jung), Byungwon Kim (2018, Chair: Sungkyu Jung), Bowen Yi (2018, Chair: Satish Iyengar), Brian Lynch (2018, Chair: Kehui Chen), Xing Gao (2020, Chair: Sungkyu Jung), Wei Peng (2021, Chair: Lucas Mentch), Haeun Moon (2022, Chair: Kehui Chen), Weiqiong Huang (2026, Chair: Chris McKennan), Manuel Garcia Acosta (2026, Chair: Chris McKennan), Zhexuan Li (Dec 2026 expected, Chair: Satish Iyengar), Hyunjae Lee (2027 expected, Chair: Linxi Liu)
- **Biostatistics:** Zhigang Huo (2017, Chair: George Tseng, Initial position: Tenure-track Assistant Professor of Biostatistics at the University of Florida), Xiaotian Gao (2020, Chair: Abdus Wahed, Initial position: Tenure-track Assistant Professor of Biostatistics at the University of Illinois at Urbana-Champaign), Molin Yue (2025, Chair: Wei Chen), Xuelin Gu (2025, Chair: Gong Tang), Lang Zeng (2026, Chair: Ying Ding)
- **CMU, Statistics and Data Science:** Zongge Liu (2020, Chair: Robert Kass), Beomjo Park (2023, Chairs: Siva Balakrishnan and Larry Wasserman)
- **Mathematics:** Xiaojuan Sun (2020, Chair: Hao Xu)
- **Computer Science:** Zhipeng Luo (2020, Chair: Milos Hauskrecht, Initial position: Postdoc at Department of Industrial Engineering and Management Sciences, Northwestern University)
- **School of Medicine:** Kyla Williams (2021, Chair: Cecilia Lo)

Master Thesis as a Committee Member

- **Statistics:** Yiding Liu (2021, Chair: Chris McKennan), Jordan Beck (2026, Chair: Chris McKennan)

GRANTS

- **(PI)** National Institutes of Health, NIGMS R01GM157600, *An Effective Statistical Inference Framework to Develop Innovative Compensations for Protein Mutations*, 2024/9-2027/8. (total: \$610,871)
- **(Co-I)** Patient-Centered Outcomes Research Institute (PCORI), TBA (PI: Wahed), *Pragmatic Comparative Effectiveness using Sequential Multiple Assignment Randomized Trials*, 2023/3-2026/2.
- **(Co-I)** National Institutes of Health, NLM R01LM014142 (PI: Tseng), *Disease Subtyping Guided by Clinical Phenotype for Precision Medicine*, 2023/2-2026/11.
- **(PI)** National Science Foundation, DMS – 2113568, *New Frontiers of Robust Statistics in the Era of Big Data*, 2021/7-2025/6. (total: \$235,948)
- **(Co-PI → Subcontract PI)** National Institutes of Health, NIGMS R01GM144961/National Science Foundation DMS 2054324, *Statistical Methods for Higher Order Dependences to Understand Protein Functions*, 2021/9-2024/8. (sub only: \$191,232, contact PI: Zhou)
*Co-PI when the grant was reviewed and recommended for an award through the NIH R01 mechanism; changed to subcontract-PI afterwards, due to NIH's requirement of accepting only one PI on this type of NIH/NSF jointly sponsored grants.
- **(Senior Personnel)** National Science Foundation, IIP-2052662, *IUCRC Phase I: University of Pittsburgh: Center for Materials Data Science for Reliability and Degradation (MDS-Rely)*, 2021/7-2026/6.
- **(Co-I)** National Institutes of Health, NIMH R01MH121451 (PI: Diler) *From Manic Symptoms to Bipolar Disorder: Neural-behavioral Markers Using Two Analytic Models*, 2020/3-2025/1.
- **(Co-I)** National Institutes of Health, NIMH R01MH111600 (PI: Ladouceur and Diler) *Positive Valence Systems and Manic Symptom Trajectories in Adolescent Depression*, 2019/12-2023/10.
- **(PI)** Central Research Development Fund (CRDF), University of Pittsburgh, *New Frontiers of Robust Statistics for Contamination Models in High-dimensional Data Analysis*, 2019/7-2021/6. (direct: \$15,823)
- **(PI)** National Science Foundation, DMS – 1812030, *New Methods and Theory of Statistical Inference for Non-Gaussian Graphical Models*, 2018/7-2021/6. (total: \$129,999)
- **(Co-I)** National Institutes of Health, NLM R21LM012752 (PI: Tseng), *Congruence of Mouse Model to Human in Transcriptomic Response*, 2018/9-2020/8.
- **(PI)** CTSI Biomedical Modeling Pilot Award, National Center for Advancing Translational Sciences (NCATS) - UL1TR001857, *Novel Statistical Learning of Oncogenic Networks*, 2017/3-2017/9 (direct: \$25,000)

PRESENTATIONS

Invited Conference Talks

(Invited Speaker unless otherwise noted)

- *Conference on Statistical Learning and Data Science: Inference and Intelligence (SLDS 2026 of ASA), New York City, Nov 2026*
- *International Symposium on Nonparametric Statistics (ISNPS), Thessaloniki, Greece, June 2026*

- *Joint Meeting of the Taipei International Statistical Symposium and the 13th ICSA International Conference, Taipei, Taiwan, Dec 2025*
- *The 8th International Conference on Econometrics and Statistics (EcoSta), Tokyo, Japan, Aug 2025*
- *The 9th Conference of Data Science, Statistics & Visualisation (DSSV), Kruger National Park, South Africa, July 2025*
- *Complex Data Analysis Workshop, Southwestern University of Finance and Economics, China, June 2025*
- *The First Macau International Conference on Business Intelligence and Analytics, Macau, Dec 2024*
- *Keystone State Statistics Symposium, Pittsburgh, Oct 2024*
- *International Conference on Robust Statistics (ICORS), Fairfax, Aug 2024*
- *The 7th International Conference on Econometrics and Statistics (EcoSta), Beijing, China, July 2024*
- *Hangzhou International Conference on Frontiers of Data Science, Hangzhou, China, July 2024*
- *International Symposium on Nonparametric Statistics (ISNPS), Braga, Portugal, June 2024*
- *Meeting in Mathematical Statistics at CIRM, Luminy, Marseille, France, Dec 2023*
- *The 6th International Conference on Econometrics and Statistics (EcoSta), Tokyo, Japan, Aug 2023*
- *Joint Conference on Statistics and Data Science (JCSDS), Peking University, China, July 2023*
- *Summer Research Camp, Australian National University, RSFAS, College of Business and Economics, Australia, Dec 2022*
- *Stevanovich Conference, University of Chicago, Oct 2022*
- *CSDA & EcoSta Workshop on Statistical Data Science (SDS 2022), Bologna, Italy, Aug 2022*
- *2022 ICSA Canada Conference, Banff, July 2022*
- *2022 ICSA China Conference, Xi'an, China, July 2022*
- *The 5th International Conference on Econometrics and Statistics (EcoSta), Kyoto, Japan, June 2022*
- *ENAR 2022 Spring Meeting, Houston, Mar 2022*
- *11th Conference of the Asian Regional Section of the International Association for Statistical Computing, Kyoto, Japan, Feb 2022*
- *14th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK, Dec 2021*
- *2021 WNAR/IMS/KISS/JR Annual Meeting, Virtual, June 2021*
- *13th International Conference of the ERCIM WG on Computational and Methodological Statistics, Virtual, Dec 2020*
- *11th ICSA International Conference, Zhejiang University, China, Dec 2019*
- *62nd ISI World Statistics Congress, Kuala Lumpur, Malaysia, Aug 2019*

- *Workshop on Frontiers of Data Science, Southwestern University of Finance and Economics, China, July 2019*
- *IMS-China International Conference on Statistics and Probability, Dalian, China, July 2019*
- *2019 ICSA China Conference, Tianjin, China, July 2019*
- *2019 Hangzhou International Conference on Frontiers of Data Science, Hangzhou, China, May 2019*
- *Symposium: “Statistics and Data Science: Beyond Big, Corrupted or Missing Data”, Halicioglu Data Science Institute (HDSI), University of California, San Diego, Jan 2019*
- *11th International Conference of the ERCIM WG on Computational and Methodological Statistics, University of Pisa, Italy, Dec 2018*
- *ICSA Applied Statistics Symposium, New Brunswick, June 2018*
- *Meeting the Statistical Challenges in High Dimensional Data and Complex Networks, Institute for Mathematical Sciences, Singapore, Feb 2018*
- *Topic-contributed Speaker, Joint Statistical Meetings, Baltimore, Aug 2017*
- *New Researchers Workshop on Statistics, Southwestern University of Finance and Economics, China, July 2017*
- *IMS-China International Conference on Statistics and Probability, Nanning, China, June 2017*
- *ICSA Applied Statistics Symposium, Chicago, June 2017*
- *10th ICSA International Conference, Shanghai Jiao Tong University, China, Dec 2016*
- *Topic-contributed Speaker, Joint Statistical Meetings, Chicago, Aug 2016*
- *ICSA Conference on Data Science, Dali, China, July 2016*
- *4th Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS-APRM), Hong Kong, June 2016*
- *Conference on Statistical Learning and Data Science, Chapel Hill, June 2016*
- *8th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2015), University of London, UK, Dec 2015*
- *60th ISI World Statistics Congress, Rio de Janeiro, Brazil, July 2015*
- *New Researchers Conference on High-Dimensional Statistics in the Age of Big Data, Peking University, China, June 2015*
- *10th International Conference on “Frontiers of Statistics”, Beijing, China, June 2015*
- *ICSA Applied Statistics Symposium, Fort Collins, June 2015*
- *Invited Participant, AIM Workshop: Inference in High-Dimensional Regression, American Institute of Mathematics, Palo Alto, Jan 2015*
- *Contributed Speaker, ICSA Applied Statistics Symposium, Portland, June 2014*
- *Contributed Speaker, Joint Statistical Meetings, Montreal, Aug 2013*
- *New England Statistics Symposium, University of Connecticut, April 2013*
- *ICSA Applied Statistics Symposium, Boston, June 2012*
- *Poster, Conference on Statistical Learning and Data Mining, University of Michigan, June 2012*

- Poster, *Conference “Borrowing Strength Theory Powering Applications”, in Honor of Larry Brown’s 70th Birthday, University of Pennsylvania, Dec 2010*

Invited Departmental Seminars

- University of Minnesota at Twin Cities, School of Statistics, *Sep 2025*
- Peking University, School of Mathematical Sciences, *May 2025*
- University of Maryland, Baltimore County, Department of Mathematics and Statistics, *Apr 2025*
- New York University, Department of Biostatistics, *Nov 2024*
- Southwest Jiaotong University, School of Computing and Artificial Intelligence, *Dec 2023*
- Hong Kong University of Science and Technology, Department of Mathematics, *Nov 2023*
- One World Mathematics of Information, Data and Signals (1W-MINDS) Seminar, *Nov 2023*
- Renmin University of China, Institute of Statistics and Big Data, *Sep 2023*
- University of Pittsburgh, Department of Economics, *Apr 2023*
- McGill University, Department of Mathematics and Statistics, *Mar 2023*
- Southern University of Science and Technology, Department of Statistics and Data Science, *Mar 2023*
- University of Iowa, Department of Statistics and Actuarial Science, *Nov 2022*
- University of Pittsburgh, Department of Biostatistics, *Oct 2022*
- Southwestern University of Finance and Economics, School of Statistics, *Mar 2021*
- Rutgers University, Department of Statistics, *Nov 2020*
- Temple University, Department of Statistical Science, Fox School of Business and Management, *Mar 2020*
- Indiana University at Bloomington, Department of Statistics, *Mar 2020*
- University of Illinois at Chicago, Department of Mathematics, Statistics, and Computer Science *Jan 2020*
- Zhejiang University, Center of Mathematical Sciences, *May 2019*
- University of Georgia, Department of Statistics, *Apr 2019*
- University of Akron, Department of Statistics, *Nov 2018*
- University of Toronto, Department of Statistical Sciences, *Sep 2018*
- Renmin University of China, School of Statistics, *Aug 2018*
- Colorado State University, Department of Statistics, *Oct 2017*
- Temple University, Department of Statistical Science, Fox School of Business and Management, *Sep 2017*
- University of Wisconsin at Madison, Department of Statistics, *Oct 2016*
- Carnegie Mellon University, Department of Statistics, *Oct 2016*
- Penn State University, Department of Statistics, *Sep 2016*
- New York University, Department of Information, Operations, and Management Sciences, Stern School of Business, *May 2015*

- University of Pittsburgh, Department of Biostatistics, *Oct 2014*
- University of the Witwatersrand, School of Statistics & Actuarial Science, *June 2014*
- University of Cambridge, Department of Pure Mathematics and Mathematical Statistics, *Feb 2014*
- University of Pittsburgh, Department of Statistics, *Feb 2014*
- Rice University, Department of Statistics, *Feb 2014*
- University of Southern California, Department of Data Sciences and Operations, *Feb 2014*
- University of Cincinnati, Lindner College of Business, *Feb 2014*
- University of Kentucky, Department of Statistics, *Feb 2014*

OTHER RESEARCH EXPERIENCE

Machine Learning Group, Microsoft Research, Redmond, WA, USA Summer 2011

- Topic: On Nondecomposable Empirical Risk Minimization: Toward a Theoretical Foundation of Information Retrieval
- Mentor: Dr. Dengyong (Denny) Zhou

HONORS AND AWARDS

- **ENAR Team Science Award in Biostatistics** (Team: Wei Chen, Zhao Ren, Juan Celedón, Erick Forno, Kathryn Torok), International Biometric Society 2025
- **AMS-Simons Travel Grant**, American Mathematical Society 2018-2020
- **CTSI Biomedical Modeling Pilot Award (PI)**, The Clinical and Translational Science Institute (stemming from an institutional award made by the National Center for Advancing Translational Sciences (NCATS)), University of Pittsburgh 2016
- **Hewlett International Grant**, University of Pittsburgh 2015, 2019
- **Francis J. Anscombe Award for Outstanding Academic Performance**, Yale University 2014
- **University Dissertation Fellowship**, Yale University 2013-2014
- **Laha/Travel Award**, Institute of Mathematical Statistics 2013
- **IBM Best Student Research Award**, New England Statistical Symposium 2013
- **Best Poster Award** Conference “Borrowing Strength Theory Powering Applications”, in Honor of Larry Brown’s 70th Birthday 2010
- **Benjamin Franklin Scholarship**, University of Pennsylvania 2007-2009
- **Outstanding Graduate of Nanjing University**, Nanjing University 2007
- **Yukang Zhou Scholarship**, Nanjing University 2006
- **First Prize, Renmin Scholarship**(given to top 3% students), Nanjing University 2004-2006

PROFESSIONAL SERVICE

Intramural Services

- Dietrich School of Arts and Sciences, Tenure Council Member 2022-2024
- Dietrich School of Arts and Sciences, Nominating Committee 2022-2023

- Dietrich School of Arts and Sciences, ad hoc Tenure Promotion Committee 2021, 2023, 2024, 2025
- Dietrich School of Arts and Sciences, Grad Expo Judges 2021
- Department of Statistics, Undergraduate Curriculum Committee 2023-Present
- Department of Statistics, Graduate Curriculum Committee 2022-Present
- Department of Statistics, Course Coordinator 2017-Present
- Department of Statistics, Qualifying Exam Committee 2017-Present
- Department of Statistics, Graduate Admission Committee 2014-Present
- Department of Statistics, Seminar Committee Chair 2015-2017
- Department of Statistics, Faculty Promotion Reading Committee 2022, 2025
- Department of Statistics, Faculty Third-Year Review Committee 2021
- Department of Statistics, Search Committee for Tenured/Tenure-Stream Faculty Positions 2015, 2018, 2019, 2022, 2023, 2024, 2025
- Department of Biostatistics, Search Committee for Tenure-Stream Faculty Positions 2021
- Department of Statistics, Search Committee for Lecturer Positions 2017, 2018
- Department of Statistics, Search Committee for Visiting Faculty Positions 2020

Referee of Journals

Annals of Statistics; Annals of Applied Statistics; Journal of the American Statistical Association; Journal of the Royal Statistical Society, Series B; Biometrika; Statistical Science; Journal of Econometrics; Econometric Theory; Bernoulli; Electronic Journal of Statistics; IEEE Transactions on Information Theory; Statistica Sinica; Journal of Machine Learning Research; Journal of Business & Economic Statistics; Information and Inference: A Journal of the IMA; Operations Research; Applied and Computational Harmonic Analysis; Journal of Computational and Graphical Statistics; Journal of Multivariate Analysis; Biostatistics; Scandinavian Journal of Statistics; Statistics and Its Interface; Statistics and Computing; Annals of the Institute of Statistical Mathematics; Journal of Nonparametric Statistics; Computational Statistics and Data Analysis; Test; Stat; Science China Mathematics; IEEE International Symposium on Information Theory (ISIT); Annual Computational Learning Theory (COLT); WIREs Computational Statistics; Briefings in Bioinformatics.

Editorial Board, Proposal Panel Member and External Services

- Associate Editor of *Electronic Journal of Statistics*, 2025–current
- Associate Editor of *Journal of Business & Economic Statistics*, 2024–current
- Associate Editor of *Statistica Sinica*, 2022–current
- Editorial board reviewer of *The Journal of Machine Learning Research*, 2020–current
- Webinar Committee of the International Chinese Statistical Association (ICSA), 2026-2028
- Secretary / Treasurer of ASA Section on Statistical Learning and Data Science, 2024–2025
- President (President-Elect) of ASA Pittsburgh Chapter, 2023–2024 (2022–2023)
- Panel Member: National Science Foundation (NSF) Division of Mathematical Sciences
- Reviewer: National Science Foundation (NSF) Division of Social and Economic Sciences
- Reviewer: National Security Agency (NSA) Mathematical Sciences Grants Program
- Panel Member: CTSI Biomedical Modeling Pilots, University of Pittsburgh 2017, 2020
- Doctorate Examination Member, Monash University, 2023

Book or Book Proposal Reviewer

- Chapman & Hall/CRC Press

Conference Committee/Session Organizer or Chair

- Invited Session Organizer on “Nonparametric Models and Inference for Complex Data”, *Conference on Statistical Learning and Data Science: Inference and Intelligence (SLDS 2026 of ASA)*, New York City, Nov 2026
- SLDS Student Paper Award Committee, *JSM, Boston, MA, Aug 2026*
- Organizing Committee Member, *Conference on Statistical Learning and Data Science: Inference and Intelligence (SLDS 2026 of ASA)*, New York City, Nov 2026
- SLDS Student Paper Award Committee, *JSM, Nashville, Tennessee, Aug 2025*
- Invited Session Organizer on “Recent Development on Statistical Inference for Complex Data”, *The 8th International Conference on Econometrics and Statistics (EcoSta)*, Tokyo, Aug 2025
- Invited Session Organizer on “Modern Statistical Analysis For High-Dimensional and Network Data”, *The 9th conference of Data Science, Statistics & Visualisation (DSSV)*, Kruger Park, South Africa, July 2025
- Student Research Award Committee Member, *The 37th New England Statistical Symposium, CT, May 2024*
- SLDS Student Paper Award Committee, *JSM, Portland, Oregon, Aug 2024*
- Invited Session Organizer on “Statistical Inference on Complex Data”, *The 7th International Conference on Econometrics and Statistics (EcoSta)*, Beijing, July 2024
- Scientific Program Committee Member, *The 7th International Conference on Econometrics and Statistics (EcoSta)*, Beijing, July 2024
- Student Poster Award Committee, *ASA Pittsburgh Chapter Spring Banquet, Pittsburgh, Apr 2023*
- Invited Session Organizer on “Advances of High-Dimensional Statistics in Biological and Biomedical Research”, *The 6th International Conference on Econometrics and Statistics (EcoSta)*, Tokyo, Aug 2023
- Invited Session Organizer on “Recent Advances of High-dimensional Inference and Statistical Learning”, *9th International Forum on Statistic, Beijing, July 2023*
- Invited Session Organizer on “Advances in High-Dimensional Data Analysis and Spectral Methods”, *15th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, Dec 2022*
- Scientific Program Committee Member, *15th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, Dec 2022*
- Invited Session Organizer on “Nonasymptotic Statistics and Econometrics” *CSDA & EcoSta Workshop on Statistical Data Science (SDS 2022)*, Bologna, Italy, Aug 2022
- Invited Session Organizer on “Recent Advances of Statistical Modeling in Biomedical Research”, “Recent Advances and Challenges in Statistical Learning”, and “New Techniques in Testing and Estimation for High-Dimensional Data” *The 2022 International Chinese Statistical Association (ICSA) China Conference, Xi’an, China, July 2022*
- Program Committee Member, *The 2022 International Chinese Statistical Association (ICSA) China Conference, Xi’an, China, July 2022*
- SLDS Student Paper Award Committee, *JSM, Washington DC, Aug 2022*
- Outstanding Young Researcher Award Committee, *11th Conference of the Asian Regional Section of the International Association for Statistical Computing (IASC-ARS)*, Kyoto, Feb 2022

- Invited Session Organizer on “Recent Advances in Big Data Learning with Network Structures”, *11th Conference of the Asian Regional Section of the International Association for Statistical Computing (IASC-ARS), Kyoto, Feb 2022*
- Invited Session Organizer on “Advances in Statistical Learning and Inference with Robust Insights”, *14th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, Dec 2021*
- Invited Paper Session Chair on “Modern Robust Statistics on Complex Data”, *62nd ISI World Statistics Congress, Kuala Lumpur, Malaysia, Aug 2019*
- Invited Session Organizer on “Recent Advances of Time Series and Complex Data Analysis”, *2019 IMS-China International Conference on Statistics and Probability, Dalian, China, July 2019*
- IBM Student Paper Committee Member, *The 33rd New England Statistical Symposium, CT, May 2019*
- Program Committee Member, *The 2018 ICSA Applied Statistics Symposium, New Brunswick, NJ, June 2018*
- Invited Paper Session Organizer on “Recent Advances of Statistical Modeling in Biomedical Research”, *The 2018 ICSA Applied Statistics Symposium, New Brunswick, NJ, June 2018*
- Invited Paper Session Organizer on “Recent Advances and Challenges in Big Data Inference”, *The 5th IMS Asia Pacific Rim Meeting, Singapore, June 2018*
- Invited Paper Session Organizer on “Recent Advances and Challenges in High Dimensional Data”, *The 2nd International Conference on Econometrics and Statistics (EcoSta), Hong Kong, June 2018*
- Invited Session Chair on “Foundations of Network Analysis”, *JSM, Baltimore, MD, Aug 2017*
- Invited Paper Session Organizer on “Recent Advances in Big Data Inference with Network Structures”, *61st World Statistics Congress, Marrakech, Morocco, July 2017*
- Invited Session Organizer on “New Methods for Analyzing High Dimensional Data”, *2017 IMS-China International Conference on Statistics and Probability, Nanning, China, June 2017*
- Invited Session Organizer on “Recent Advances in Robust High-Dimensional Estimation and Inference”, *10th ICSA International Conference, Shanghai, China, Dec 2016*
- Invited Session Organizer on “Recent Advances and Challenges of Big Data Inference with Complex Structures”, *JSM, Chicago, IL, Aug 2016*
- Topic-Contributed Session Organizer on “Recent Developments of Graphical Modeling of Data with Complex Structures”, *JSM, Chicago, IL, Aug 2016*
- Invited Session Chair on “Recent Advances on Nonparametric and High-Dimensional Statistics”, *10th International Conference on Frontiers of Statistics, Beijing, China, June 2015*

Volunteer

- NSF Workshop for High-Dimensional Data: Theory, Methodology and Applications, Yale 2012
- International Conference on Statistics and Society, Beijing 2010

PROFESSIONAL MEMBERSHIPS

- Member, Institute of Mathematical Statistics
- Member, American Statistical Association
- Member, International Chinese Statistical Association
- Member, International Statistical Institute