# Bingxin Zhao

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## Education

Ph.D. Biostatistics, University of North Carolina at Chapel Hill, 2020.5

M.S. Biostatistics, University of Florida, 2016.5

B.Hist. History & B.Econ. Mathematical Statistics, Xiamen University, 2014.6

## Employment

Associate Professor, Department of Statistics and Data Science, The Wharton School, University of Pennsylvania, Philadelphia, PA, 2026 - present.

Associate Professor, Department of Medicine, Division of Translational Medicine and Human Research, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 2026 - present. (Secondary appointment)

Other UPenn Affiliations:

- Penn Center for Eye-Brain Health (PennEBH, Co-founding Director)
- Wharton Neuroscience Initiative (WiN)
- Graduate Group in Genomics and Computational Biology (GCB)
- Penn Neurodegeneration Genomics Center (PNGC)
- Leonard Davis Institute of Health Economics (Penn LDI)
- Center for Artificial Intelligence and Data Science for Integrated Diagnostics (AI2D)
- Penn Institute for Biomedical Informatics (IBI)
- Institute for Translational Medicine and Therapeutics (ITMAT)
- Population Aging Research Center (PARC)
- Center for Statistics in Big Data (CSBD)
- Graduate Group in Applied Mathematics and Computational Science (AMCS)
- Bioengineering Graduate Group (BE Graduate Group)

Adjunct Professor of Statistics, Purdue University, West Lafayette, IN, 2022 - present.

Assistant Professor, Department of Statistics and Data Science, The Wharton School, University of Pennsylvania, Philadelphia, PA, 2022 - 2026.

Assistant Professor, Department of Medicine, Division of Translational Medicine and Human Research, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 2025 - 2026. (Secondary appointment)

Assistant Professor of Statistics (tenure-track), Purdue University, West Lafayette, IN, 2020 - 2022.

Research Intern, 23andme Inc., Mountain View, CA, 2019.5 - 2019.8.

Biometrics Intern, Biogen Inc., Cambridge, MA, 2018.5 - 2018.8.

# Honors and Awards

Second Place, GNPC Proteomics Data Challenge. *2026*
· Global Neurodegeneration Proteomics Consortium; modeling protein dynamics over time in the largest disease-specific proteomics dataset assembled to date (over 300 million protein measurements). Link

Finalist, Alzheimer's Insights Agentic AI Prize, Alzheimer's Disease Data Initiative. *2026*
· Top 5 of nearly 200 teams in a global competition, backed by Bill Gates and a coalition of partners, for agentic AI solutions in Alzheimer's disease and related dementias research ($1 million first prize). Link

Runner-up, Inaugural UK Biobank Scientific Impact Award. *2025*
· Selected as one of the top three submissions (one overall winner and two runners-up) for the inaugural UK Biobank Scientific Impact Awards, and invited to present at the internationally attended UK Biobank Scientific Conference, based on the strength of the research's scientific impact. Link

IMS Tweedie New Researcher Award. *2025*
· Awarded to one new researcher (within 5 years of PhD) each year to present the "Tweedie New Researcher Invited Lecture" at the IMS New Researchers Conference. Link

ICSA Outstanding Young Researcher Award. *2024*
· Awarded to up to three young researchers (within 6 years of PhD) each year in recognition of the outstanding research in statistical theory, methodology, and/or applications. Link

Outstanding Alumni Award, Department of Biostatistics, University of Florida. *2024*

Dean's Distinguished Dissertation Award, The Graduate School, UNC-CH. *2022*
· The highest honor for graduate scholarship at UNC-Chapel Hill; four awarded each year across all fields. Link

Kupper Dissertation Publication Award, Department of Biostatistics, UNC-CH. *2022*
· Annual award for the best dissertation-based paper published in a leading biostatistics journal. Link

ENAR Distinguished Student Paper Award. *2020*

Outstanding Graduate Student, Department of Biostatistics, University of Florida. *2016*

# Publications

Names in bold denote Bingxin Zhao. Items are numbered continuously across categories.

## *Statistical papers (under major revision and published)*

1. Buxin Su, Jiaoyang Huang, Jin Jin, **Bingxin Zhao** (2025). On self-training of summary data with genetic applications. *arXiv:2503.12155*. **[2026 NESS Student Research Award, New England Statistics Symposium]**

2. Xiaojing Sun, **Bingxin Zhao**, Fei Xue (2025). Generalized heterogeneous functional model with applications to large-scale mobile health data. *arXiv:2501.01135*. **[2024 ASA Student Paper Competition Honorable Mention, Mental Health Statistics Section] [2025 ICSA Jiann-Ping Hsu Pharmaceutical and Regulatory Sciences Student Paper Award]**

3. Buxin Su, Qiang Sun, Xiaochen Yang, **Bingxin Zhao** (2024). The exact risks of reference panel-based regularized estimators. *arXiv:2203.12003*. (alphabetical order) **[2024 ASA Student Paper Competition Award, Statistical Learning and Data Science Section]**

4. Yujue Li, Fei Xue, Bingxuan Li, Yilin Yang, Zirui Fan, Juan Shu, Xiyao Wang, Jinjie Lin, Carlos Copana, **Bingxin Zhao** (2026). Analyzing cross-trait genetic architecture with the BIGA cloud computing platform. ***Journal of the American Statistical Association***, 121 (554). Website

5. Fei Xue, **Bingxin Zhao** (2025). High-dimensional statistical inference for linkage disequilibrium score regression and its cross-ancestry extensions. ***Annals of Statistics***, 53 (5), 1913–1937. (alphabetical order)

6. **Bingxin Zhao**, Shurong Zheng, Hongtu Zhu (2024). On block-wise and reference panel-based estimators for genetic data prediction in high dimensions. ***Annals of Statistics***, 52 (3), 948–965.

7. **Bingxin Zhao**, Xiaochen Yang, Hongtu Zhu (2024). Estimating trans-ancestry genetic correlation with unbalanced data resources. ***Journal of the American Statistical Association***, 119 (546), 839–850.

8. **Bingxin Zhao**, Fei Zou, Hongtu Zhu (2023). Cross-trait prediction accuracy of high-dimensional ridge-type estimators in genome-wide association studies. ***Biometrics***, 79 (2), 841–853.

9. **Bingxin Zhao**, Hongtu Zhu (2022). On genetic correlation estimation with summary statistics from genome-wide association studies. ***Journal of the American Statistical Association***, 117 (537), 1–11. **[2020 ENAR Distinguished Student Paper Award]**

10. **Bingxin Zhao**, Fei Zou (2022). On polygenic risk scores for complex polygenic trait prediction. ***Biometrics***, 78 (2), 499–511.

11. Huaihou Chen, **Bingxin Zhao**, Eric Porges, Ronald Cohen, Natalie Ebner (2016). Edgewise and subgraph-level tests for brain networks. ***Statistics in Medicine***, 35 (27), 4994–5008.

### *Scientific journals: as first, senior, or co-senior author*

12. Juan Shu, Yuxin Guo, Julio Chirinos, Zirui Fan, Yilin Yang, Yujue Li, Xiaochen Yang, Cameron Beeche, Buxin Su, Iris Horng, Rong Zheng, Peristera Paschou, Li-San Wang, Joan M. O'Brien, Ruben Gur, Jinjie Lin, Walter Witschey, Daniel J. Rader, Anthony Rosenzweig, **Bingxin Zhao** (2025). Contextualizing molecular and structural aging across human organs. *medRxiv 25328375*.

13. Chong Wu, Zichen Zhang, Xiaochen Yang, **Bingxin Zhao** (2023). Large-scale imputation models for multi-ancestry proteome-wide association analysis. *bioRxiv 561120*. Website

14. Buxin Su, Natalie Collina, Garrett Wen, Didong Li, Kyunghyun Cho, Jianqing Fan, **Bingxin Zhao**, Weijie Su (2026). Self-rankings as a predictor of scientific impact beyond peer review. ***Nature Computational Science***, 6 (9), 939–944. (Co-senior author) **[Highlighted by Nature Index. Link] [Highlighted by Penn Today. Link] [Highlighted by Daily Pennsylvanian. Link] [Highlighted by Wharton AI & Analytics Insight. Link] [Featured by Nature Computational Science News & Views. Link]**

15. **Bingxin Zhao** (2026). Engineering AI co-scientists for statistical genetics applications. ***Nature Genetics***, 58 (2), 236–239.

16. Zirui Fan and **Bingxin Zhao** (2026). Multi-organ imaging genetics: towards an integrated view of brain, body and brain diseases. ***Nature Reviews Neurology***, 1–20. Link

17. Jin Jin, Bingxuan Li, Xiyao Wang, Xiaochen Yang, Yujue Li, Ruofan Wang, Chenglong Ye, Juan Shu, Zirui Fan, Fei Xue, Tian Ge, Marylyn D. Ritchie, Bogdan Pasaniuc, Genevieve Wojcik, **Bingxin Zhao** (2026). PennPRS: a centralized cloud computing platform for efficient polygenic risk score training in precision medicine. ***Nature Methods***, accepted. *medRxiv 25321875*. Website **[2025 ASHG Reviewers' Choice Award (top 10%)]**

18. Juan Shu, Rong Zheng, Julio Chirinos, Carlos Copana, Bingxuan Li, Zirui Fan, Xiaochen Yang, Yilin Yang, Xiyao Wang, Yujue Li, Bowei Xi, Tengfei Li, Hongtu Zhu, **Bingxin Zhao** (2026). Inferring multi-organ genetic connections using imaging and clinical data through Mendelian randomization. ***Nature Biomedical Engineering***, 10 (9), 1915–1930. **[2023 ASHG Reviewers' Choice Award (top 10%)]**

19. Zirui Fan, Julio Chirinos, Xiaochen Yang, Juan Shu, Yujue Li, Joan M. O'Brien, Walter Witschey, Daniel J. Rader, Ruben Gur, **Bingxin Zhao** (2026). The landscape of plasma proteomic links to human organ imaging. ***Nature Communications***, 17, 8565. **[Featured by Editors' Highlights in Translational and clinical research (the 50 best papers recently published in this area)]**

20. Zirui Fan, Yilin Yang, Yuxin Guo, Yujue Li, Juan Shu, Xiaochen Yang, Bingxuan Li, Jinjie Lin, Qianwen Wang, Carolyn Gibson, Peristera Paschou, Tengfei Li, Philip Gehrman, Hongtu Zhu, **Bingxin Zhao** (2026). Multi-organ imaging and genetics show the impact of sleep patterns on the human brain and body. ***Communications Medicine***, 6, 435.

21. Yijun Fan, Jie Chen, Zirui Fan, Julio Chirinos, Jason L. Stein, Patrick F. Sullivan, Rujin Wang, Ajay Nadig, David Y. Zhang, Shuai Huang, Zhiwen Jiang, Peter Yi Guan, Xinjie Qian, Ting Li, Haoyue Li, Zehui Sun, Marylyn D. Ritchie, Joan O'Brien, Walter Witschey, Daniel J. Rader, Tengfei Li, Hongtu Zhu, **Bingxin Zhao** (2026). Mapping rare protein-coding variants on multi-organ imaging traits. ***Nature Communications***, 17, 739. **[2024 ASHG Reviewers' Choice Award (top 10%)]**

22. **Bingxin Zhao**, Yujue Li, Zirui Fan, Zhenyi Wu, Juan Shu, Xiaochen Yang, Yilin Yang, Xifeng Wang, Bingxuan Li, Xiyao Wang, Carlos Copana, Yue Yang, Jinjie Lin, Yun Li, Jason L Stein, Joan M O'Brien, Tengfei Li, Hongtu Zhu (2024). Eye-brain connections revealed by multimodal retinal and brain imaging genetics. ***Nature Communications***, 15, 6064.

23. **Bingxin Zhao**, Tengfei Li, Zirui Fan, Yue Yang, Juan Shu, Xiaochen Yang, Xifeng Wang, Tianyou Luo, Jiarui Tang, Di Xiong, Zhenyi Wu, Bingxuan Li, Jie Chen, Yue Shan, Chalmer Tomlinson, Ziliang Zhu, Yun Li, Jason L. Stein, Hongtu Zhu (2023). Heart-brain connections: phenotypic and genetic insights from magnetic resonance images. ***Science***, 380 (6648), eabn6598. **[Featured by a Perspective article in Science. Link] [Research highlight at Nature Reviews Cardiology. Link] [Selected as one of the top 10 research findings by the Chief Scientist of UK Biobank from the first decade of the UK Biobank Imaging Project. Link] [Interviewed by UK Biobank. Link] [Inaugural UK Biobank Scientific Impact Award. Link]**

24. Hongtu Zhu, Tengfei Li, **Bingxin Zhao** (2023). Statistical learning methods for neuroimaging data analysis with applications. ***Annual Review of Biomedical Data Science***, 6 (1), 73–104.

25. **Bingxin Zhao**, Tengfei Li, Yujue Li, Zirui Fan, Di Xiong, Xifeng Wang, Mufeng Gao, Hongtu Zhu (2023). An atlas of trait associations with resting-state and task-evoked human brain functional architectures in the UK Biobank. ***Imaging Neuroscience***, 1, 1–23.

26. **Bingxin Zhao**, Tengfei Li, Stephen M. Smith, Di Xiong, Xifeng Wang, Yue Yang, Tianyou Luo, Ziliang Zhu, Yue Shan, Nana Matoba, Quan Sun, Yuchen Yang, Mads E. Hauberg, Jaroslav Bendl, John F. Fullard, Panagiotis Roussos, Weili Lin, Yun Li, Jason L. Stein, Hongtu Zhu (2022). Common variants contribute to intrinsic human brain functional networks. ***Nature Genetics***, 54 (4), 508–517.

27. **Bingxin Zhao**, Tengfei Li, Yue Yang, Xifeng Wang, Tianyou Luo, Yue Shan, Ziliang Zhu, Di Xiong, Mads E. Hauberg, Jaroslav Bendl, John F. Fullard, Panagiotis Roussos, Yun Li, Jason L. Stein, Hongtu Zhu (2021). Common genetic variation influencing human white matter microstructure. ***Science***, 372 (6548), eabf3736. **[Featured by a Perspective article in Science. Link]**

28. **Bingxin Zhao**, Yue Shan, Yue Yang, Zhaolong Yu, Tengfei Li, Xifeng Wang, Tianyou Luo, Ziliang Zhu, Patrick Sullivan, Hongyu Zhao, Yun Li, Hongtu Zhu (2021). Transcriptome-wide association analysis of brain structures yields insights into pleiotropy with complex neuropsychiatric traits. ***Nature Communications***, 12, 2878.

29. **Bingxin Zhao**, Jingwen Zhang, Joseph G. Ibrahim, Tianyou Luo, Rebecca C. Santelli, Yun Li, Tengfei Li, Yue Shan, Ziliang Zhu, Fan Zhou, Huiling Liao, Thomas E. Nichols, Hongtu Zhu (2021). Large-scale GWAS reveals genetic architecture of brain white matter microstructure and genetic overlap with cognitive and mental health traits (n=17,706). ***Molecular Psychiatry***, 26 (8), 3943–3955.

30. **Bingxin Zhao**, Tianyou Luo, Tengfei Li, Yun Li, Jingwen Zhang, Yue Shan, Xifeng Wang, Liuqing Yang, Fan Zhou, Ziliang Zhu, Hongtu Zhu (2019). Genome-wide association analysis of 19,629 individuals identifies variants influencing regional brain volumes and refines their genetic co-architecture with cognitive and mental health traits. ***Nature Genetics***, 51 (11), 1637–1644. **[Cover Feature]**

31. **Bingxin Zhao**, Joseph G. Ibrahim, Yun Li, Tengfei Li, Yue Wang, Yue Shan, Ziliang Zhu, Fan Zhou, Jingwen Zhang, Chao Huang, Huiling Liao, Liuqing Yang, Paul M. Thompson, Hongtu Zhu (2019). Heritability of regional brain volumes in large-scale neuroimaging and genetic studies. ***Cerebral Cortex***, 29 (7), 2904–2914.

### *Scientific journals: as contributing author*

32. Cameron A Beeche, Hamed Tavolinejad, Zhirui Li, Zirui Fan, **Bingxin Zhao**, Heng Wei, Leonard Steger, Rakesh Sharma, Luke Ni, Saif Zaman, Jeffrey Duda, James Gee, Anurag Verma, Hersh Sagreiya, Scott M Damrauer, Michael Levin, Daniel Rader, Ari Goldberg, Julio A Chirinos, Walter R Witschey, Penn Medicine Biobank (2026). Aortic Geometric Atlas: Centile-Based Reference Charts and Pathological Signatures Across the Adult Lifespan. *medRxiv 26356450*.

33. Jakob Woerner, Thomas M. Westbrook, Jaehyun Joo, Manu Shivakumar, Rasika Venkatesh, Tess Cherlin, Sang-Hyuk Jung, Seokho Jeong, Damian Maseda, Michelle McKeague, Shwetank, Matei Ionita, Joost Wagenaar, Sarah A. Abramowitz, Anurag Verma, **Bingxin Zhao**, Seunggeun Lee, Scott Damrauer, Michael G. Levin, Su Chin Heo, Thomas P. Cappola, Daniel J. Rader, Sharlene Day, Rajat Deo, Joel M. Gelfand, Ravi Ramessur, Marie A. Guerraty, Shefali Setia Verma, Bogdan Pasaniuc, Marylyn D. Ritchie, Sokratis A. Apostolidis, Allison R. Greenplate, E. John Wherry, Penn Medicine Biobank, Yonghyun Nam, Dokyoon Kim (2026). Large-scale evaluation of proteomic and polygenic risk scores reveals complementary contributions to incident disease prediction. *medRxiv 25331242*. ***Nature Genetics***, accepted in principle.

34. Junlin Shen, Yuan Ji, Jilian Fu, Nana Liu, **Bingxin Zhao**, Jingliang Cheng, Meiyun Wang, Long Jiang Zhang, Zuojun Geng, Guang-Bin Cui, Yongqiang Yu, Weihua Liao, Hui Zhang, Bo Gao, Xiaojun Xu, Tong Han, Zhenwei Yao, Quan Zhang, Wen Qin, Feng Liu, Meng Liang, Sijia Wang, Jie Tang, Jiayuan Xu, Caihong Wang, Zhaoxiang Ye, Peng Zhang, Wei Li, Wei Wei, Dapeng Shi, Peilin Lv, Zhihan Yan, Feng Chen, Jing Zhang, Wen Shen, Yanwei Miao, Dawei Wang, Jia-Hong Gao, Yunjun Yang, Junfang Xian, Xiaochu Zhang, Xi-Nian Zuo, Mulin Jun Li, Shijun Qiu, Wenzhen Zhu, Kai Xu, Bing Zhang, Chunshui Yu (2026). Cross-ancestry and sex-stratified genome-wide association analyses of brain white matter principal components. *Research Square rs-6018863*. ***Nature Communications***, accepted in principle.

35. Meiyan Huang, Xiaoling Zhang, Xiumei Chen, Xinyue Zhang, **Bingxin Zhao**, Chao Huang, Ting Tian, Chuang Li, Qianjin Feng, Wenliang Pan (2026). A phenome-wide association and Mendelian randomization study for suicide attempt within UK Biobank. ***Molecular Psychiatry***, 31 (2), 1051–1060.

36. Wanheng Zhang, Xiao Zhang, Chuan Qiu, Zichen Zhang, Kuan-Jui Su, Zhe Luo, Minghui Liu, **Bingxin Zhao**, Lang Wu, Qing Tian, Hui Shen, Chong Wu, Hong-Wen Deng (2026). An atlas of genetic effects on the monocyte methylome across European and African populations. ***Genome Medicine***, 18.

37. Cameron A. Beeche, Joonghyun Kim, Hamed Tavolinejad, **Bingxin Zhao**, Jessie Dong, Rakesh Sharma, Jeffrey T. Duda, James Gee, Farouk Dako, Anurag Verma, Colleen Morse, Bojian Hou, Li Shen, Hersh Sagreiya, Christos Davatzikos, Scott M. Damrauer, Rohan Shad, Marylyn D. Ritchie, Daniel Rader, Qi Long, Eric Eaton, Gengwei Zhang, Tianlong Chen, Charles E. Kahn Jr., Julio A. Chirinos, Walter R. Witschey, Penn Medicine Biobank (2026). Generalizable CT vision-language modeling for population health and disease risk. ***npj Digital Medicine***, published online, doi:10.1038/s41746-026-03257-2.

38. Shuai Liu, Jingjing Zhu, Hua Zhong, Dan Zhou, Quan Long, Zichen Zhang, Xiaochen Yang, Qing Wu, Chao Cheng, **Bingxin Zhao**, Chong Wu, Youping Deng, Lang Wu (2026). Investigating causal associations among inflammatory proteins, blood metabolites, and Alzheimer's disease risk. ***BMC Psychiatry***, 26, 491.

39. Cameron Beeche, **Bingxin Zhao**, Hamed Tavolinejad, Bianca Pourmussa, Joonghyun Kim, Jeffrey Duda, James Gee, Walter Witschey, Julio Chirinos (2025). Early Vascular Aging Determined by Three-Dimensional Aortic Geometry: genetic determinants and clinical consequences. ***Circulation***, 152 (11), 748–761.

40. Jingxuan Bao, Junhao Wen, Changgee Chang, Shizhuo Mu, Jiong Chen, Manu Shivakumar, Yuhan Cui, Guray Erus, Zhijian Yang, Shu Yang, Zixuan Wen, Yize Zhao, Dokyoon Kim, Duy Duong-Tran, Andrew Saykin, **Bingxin Zhao**, Christos Davatzikos, Qi Long, Li Shen (2025). A genetically informed brain atlas for enhancing brain imaging genomics. ***Nature Communications***, 16, 3524.

41. Yukang Jiang, **Bingxin Zhao**, Xiaopu Wang, Borui Tang, Huiyang Peng, Zidan Luo, Yue Shen, Zheng Wang, Zhiwen Jiang, Jie Wang, Jieping Ye, Xueqin Wang, Hongtu Zhu (2025). UKB-MDRMF: A multi-disease risk & multimorbidity framework based on UK Biobank data. ***Nature Communications***, 16, 3767.

42. Haonan Feng, Lang Wu, **Bingxin Zhao**, Chad Huff, Jianjun Zhang, Jia Wu, Lifeng Lin, Peng Wei, Chong Wu (2025). Benchmarking DNA foundation models for genomic and genetic tasks. ***Nature Communications***, 16, 10780.

43. Zhiwen Jiang, Patrick F. Sullivan, Tengfei Li, **Bingxin Zhao**, Xifeng Wang, Tianyou Luo, Shuai Huang, Peter Y. Guan, Jie Chen, Yue Yang, Jason L. Stein, Yun Li, Dajiang Liu, Lei Sun, Hongtu Zhu (2025). The X chromosome's influences on the human brain. ***Science Advances***, 11 (4), eadq5360.

44. Cameron Beeche, Hamed Tavolinejad, **Bingxin Zhao**, Patrick Segers, Jeffrey Duda, James Gee, Walter Witschey, Julio Chirinos (2025). Geometric Aging of the Thoracic Aorta: Insights from 2 Large Cohorts. ***Hypertension***, 82 (11), 1866–1877.

45. Hua Zhong, Jingjing Zhu, Shuai Liu, Dan Zhou, Quan Long, Chong Wu, **Bingxin Zhao**, Chao Cheng, Yaohua Yang, Qing Wu, Yong Wu, Changwei Li, Zhaoming Wang, Jianyong Wu, Xingyi Guo, Degui Zhi, Youping Deng, Lang Wu (2025). Linking DNA methylation in brain regions to Alzheimer's disease risk: a Mendelian randomization study. ***Human Molecular Genetics***, 34 (12), 1026–1033.

46. Cameron Beeche, Marie-Joe Dib, **Bingxin Zhao**, Joe David Azzo, Hamed Tavolinejad, Hannah Maynard, Jeffrey Thomas Duda, James Gee, Oday Salman, Walter R. Witschey, Julio Chirinos (2025). Thoracic aortic three-dimensional geometry. ***Pulse***, 13 (1), 72–79.

47. Shefali S. Verma, Harini V. Gudiseva, Venkata R.M. Chavali, Rebecca J. Salowe, Yuki Bradford, Lindsay Guare, Anastasia Lucas, David W. Collins, Vrathasha Vrathasha, Rohini M. Nair, Sonika Rathi, **Bingxin Zhao**, Jie He, Roy Lee, Selam Zenebe-Gete, Anita S. Bowman, Caitlin P. McHugh, Michael C. Zody, Maxwell Pistilli, Naira Khachatryan, Ebenezer Daniel, Windell Murphy, Jeffrey Henderer, Regeneron Genetics Center, Tyler G. Kinzy, Sudha K. Iyengar, Neal S. Peachey, VA Million Veteran Program, Kent D. Taylor, Xiuqing Guo, Yii-Der Ida Chen, Linda Zangwill, Christopher Girkin, Radha Ayyagari, Jeffrey Liebmann, Chimd M. Chuka-Okosa, Susan E. Williams, Stephen Akafo, Donald L. Budenz, Olusola O. Olawoye, Michele Ramsay, Adeyinka Ashaye, Onoja M. Akpa, Tin Aung, Janey L. Wiggs, Ahmara G. Ross, Qi N. Cui, Victoria Addis, Amanda Lehman, Eydie Miller-Ellis, Prithvi S. Sankar, Scott M. Williams, Gui-shuang Ying, Jessica Cooke Bailey, Jerome I. Rotter, Robert Weinreb, Chiea Chuen Khor, Michael A. Hauser, Marylyn D. Ritchie, Joan M. O'Brien (2024). A multi-cohort genome-wide association study in African ancestry individuals reveals risk loci for primary open-angle glaucoma. ***Cell***, 187 (2), 464–480.

48. Junhao Wen, Ye Ella Tian, Ioanna Skampardoni, Zhijian Yang, Yuhan Cui, Filippos Anagnostakis, Elizabeth Mamourian, **Bingxin Zhao**, Arthur W Toga, Andrew Zalesky, Christos Davatzikos (2024). The genetic architecture of biological age in nine human organ systems. ***Nature Aging***, 4 (9), 1290–1307.

49. Junhao Wen, **Bingxin Zhao**, Zhijian Yang, Guray Erus, Ioanna Skampardoni, Elizabeth Mamourian, Yuhan Cui, Gyujoon Hwang, Jingxuan Bao, Aleix Boquet-Pujadas, Zhen Zhou, Yogasudha Veturi, Marylyn D Ritchie, Haochang Shou, Paul M Thompson, Li Shen, Arthur W Toga, Christos Davatzikos (2024). The genetic architecture of multimodal human brain age. ***Nature Communications***, 15, 2604.

50. Shiying Wang, Ting Li, **Bingxin Zhao**, Wei Dai, Yisha Yao, Cai Li, Tengfei Li, Hongtu Zhu, Heping Zhang (2024). Identification and validation of supervariants reveal novel loci associated with human white matter microstructure. ***Genome Research***, 34 (1), 20–33.

51. Jie Chen, Tengfei Li, **Bingxin Zhao**, Hui Chen, Changzheng Yuan, Gwenn A. Gardern, Guorong Wu, Hongtu Zhu (2024). The interaction effects of age, APOE and common environmental risk factors on human brain structure. ***Cerebral Cortex***, 34 (1), bhad472.

52. Qianwen Wang, Katie L Stone, Zhengan Lu, Shanshan Tian, Yongbo Zheng, **Bingxin Zhao**, Yanping Bao, Le Shi, Lin Lu (2024). Associations between longitudinal changes in sleep stages and risk of cognitive decline in older men. ***Sleep***, 47 (10), zsae125.

53. Esther Annan, Jesús Treviño, **Bingxin Zhao**, Alfonso J. Rodriguez-Morales, Ubydul Haque (2023). Direct and indirect effects of age on dengue severity: the mediating role of secondary infection. ***PLOS Neglected Tropical Diseases***, 17 (8), e0011537.

54. Zhenyao Ye, Chen Mo, Song Liu, Si Gao, Li Feng, Boao Zhao, Travis Canida, Yu-Chia Wu, Kathryn S Hatch, Yizhou Ma, Braxton D. Mitchell, L.Elliot Hong, Peter Kochunov, Chixiang Chen, **Bingxin Zhao**, Shuo Chen, Tianzhou Ma (2023). Deciphering the causal relationship between blood pressure and regional white matter integrity: a two-sample Mendelian randomization study. ***Journal of Neuroscience Research***, 101 (9), 1471–1483.

55. Bo Dong, Latifur Khan, Madison Smith, Jesus Trevino, **Bingxin Zhao**, Gabriel L. Hamer, Alex Lemus, Aracely Angulo Molina, Jailos Lubinda, Ubydul Haque (2022). Spatio-temporal dynamics of three diseases caused by Aedes-borne arboviruses in Mexico. ***Communications Medicine***, 2, 134.

56. Esther Annan, Jinghui Guo, Aracely Angulo-Molina, Wan Fairos Wan Yaacob, Nasrin Aghamohammadi, Timothy Guetterman, Sare ̇Ilknur Yava¸soglu, Kevin Bardosh, Nazri Che Dom, **Bingxin Zhao**, Uriel A. Lopez-Lemus, Latif Khan, Ubydul Haque (2022). Community acceptability of dengue fever surveillance using unmanned aerial vehicles: A cross-sectional study in Malaysia, Mexico, and Turkey. ***Travel Medicine and Infectious Disease***, 49, 102360.

57. Selam Mihreteab, Jailos Lubinda, **Bingxin Zhao**, Alfonso J. Rodriguez-Morales, Ajlina Karamehic-Muratovic, Aman Goitom, Muhammad Yousaf Shad, Ubydul Haque (2020). Retrospective data analyses of social and environmental determinants of malaria control for elimination prospects in Eritrea. ***Parasites & Vectors***, 13, 126.

58. Thipruethai Phanitchat, **Bingxin Zhao**, Ubydul Haque, Chamsai Pientong, Tipaya Ekalaksananan, Sirinart Aromseree, Kesorn Thaewnongiew, Benedicte Fustec, Michael J. Bangs, Neal Alexander, Hans J. Overgaard (2019). Spatial and temporal patterns of dengue incidence in northeastern Thailand 2006-2016. ***BMC Infectious Diseases***, 19, 743.

59. Ubydul Haque, Paula F. da Silva, Graziella Devoli, Jurgen Pilz, **Bingxin Zhao**, Asmaa Khaloua, Wahyu Wilopo, Peter Andersen, Ping Lu, Juneseok Lee, Taro Yamamoto, David Keellings, Jian-Hong Wu, Gregory E. Glass (2019). The human cost of global warming: Deadly landslides and their triggers (1995-2014). ***Science of the Total Environment***, 682 (10), 673–684.

60. Xuan Bi, Long Feng, Shiying Wang, Zijie Lin, Tengfei Li, **Bingxin Zhao**, Hongtu Zhu, Heping Zhang (2019). Common genetic variants influence human cortical brain regions and risk of schizophrenia. ***Genetic Epidemiology***, 43 (5), 548–558.

61. Jailos Lubinda, Jesus A. Trevino C., Mallory Rose Walsh, Adrian J. Moore, Ahmad Ali Hanafi-Bojd, Seval Akgun, **Bingxin Zhao**, Alassane S. Barro, Mst Marium Begum, Hera Jamal, Aracely Angulo-Molina, Ubydul Haque (2019). Environmental suitability for *Aedes aegypti* and *Aedes albopictus* and the spatial distribution pattern of major arboviral infections in Mexico. ***Parasite Epidemiology and Control***, 6, e00116.

62. Huaihou Chen, **Bingxin Zhao**, Guanqun Cao, Eric Porges, Andrew O'Shea, Adam Woods, Ronald Cohen (2016). Statistical approaches for the study of cognitive and brain aging. ***Frontiers in Aging Neuroscience***, 8, 176.

## *Manuscripts under review, preprints, and working papers*

63. Xiaojing Sun, Huayu Tang, Buxin Su, Mateo Matijasevick, Chong Wu, Fei Xue, **Bingxin Zhao** (2026). Statistical Proof as a Window into Human-AI Collaboration: Practical Insights and a Community Agenda. *arXiv:2606.23666*.

64. Zichen Zhang, Wanheng Zhang, Xiaochen Yang, Yujue Li, Jinjie Lin, Chong Wu, **Bingxin Zhao** (2026). TigerAI: An AI-powered genetic evidence platform to support clinical development. *bioRxiv 748046*. Website

65. Wanheng Zhang, Jie Xu, Zichen Zhang, Minghui Liu, Ryan Sun, Bissan Al-Lazikani, Xiling Shen, Scott Kopetz, Lang Wu, **Bingxin Zhao**, Chong Wu (2026). Biological rationales from language models enable leakage-resistant forecasts of target-indication success. *bioRxiv 754137*.

66. Lina Chihoub, Corinde E. Wiers, Joel Gelernter, **Bingxin Zhao**, Christal N. Davis, Henry R. Kranzler (2025). Phenome-wide analysis of genetically imputed neuroimaging phenotypes reveals associations with psychiatric traits in a multi-ancestry cohort. *medRxiv 25342202*.

67. Xiaochen Yang, Bingxuan Li, Zirui Fan, Dezheng Ding, Juan Shu, Marylyn D. Ritchie, Gideon Nave, Michael L. Platt, Tengfei Li, Hongtu Zhu, **Bingxin Zhao** (2024). Multi-organ imaging-derived polygenic indexes for brain and body health. *medRxiv 23288769*. **[2023 ASHG Reviewers' Choice Award (top 10%)] [2024 ASA Student Paper Competition Award, Section on Statistics in Genomics and Genetics]**

68. Shushan Wu, **Bingxin Zhao**, Zhiwen Jiang, Akemi Hara, Zehui Sun, Xiaoqi Li, Zhaoyang Zhang, Xiaoyu Qi, Isaac Pan, Yuqi Cheng, Yukang Jiang, Borui Tang, Shuai Huang, Shan Gao, Shucheng Liu, Shilin Yu, Yuhao Zhou, Peter Guan, Mingcheng Hu, Yuyang Deng, Yun Li, Jason Stein, Patrick F Sullivan, Tengfei Li, Hongtu Zhu (2026). A connection-level genetic atlas of human cortical functional connectivity at rest and during a task. *medRxiv 26366764*.

69. Alec Reinhardt, Zhiwen Jiang, Tengfei Li, Borui Tang, Xinjie Qian, Shuai Huang, Joseph G. Ibrahim, Yun Li, **Bingxin Zhao**, Patrick Sullivan, Jason Stein, Hongtu Zhu (2026). A spatially resolved genomic–molecular atlas of human white-matter microstructure. *medRxiv 26357381*.

70. Aude Benigne B Ikuzwe Sindikubwabo, Yijun Fan, Yan Zhu, Lannawill Caruth, Rebecca Salowe, **Bingxin Zhao**, Joan O'Brien, Shefali Setia-Verma (2026). Rare coding variant associations with primary open-angle glaucoma in African ancestry: a multi-cohort exome-wide meta-analysis. *medRxiv 26347141*.

71. Jiawen Chen, Zichen Zhang, Bingxuan Li, Quan Sun, Yiyan Zhang, Edric Tam, Jinjie Lin, Didong Li, Yun Li, **Bingxin Zhao** (2026). Positioning manuscripts in the scientific landscape with agentic AI. *arXiv:2609.13760*. Website

72. Haoxuan Fu, Jiaoyang Huang, Zirui Fan, **Bingxin Zhao** (2024). Uncertainty of high-dimensional genetic data prediction with polygenic risk scores. *arXiv:2412.20611*.

73. Yue Yu, Andrew Lakkis, **Bingxin Zhao**, Jin Jin (2024). Bayesian Mendelian randomization analysis for latent exposures leveraging GWAS summary statistics for traits co-regulated by the exposures. *medRxiv 24317939*.

74. **Bingxin Zhao**, Tengfei Li, Stephen M. Smith, Di Xiong, Yue Yang, Xifeng Wang, Tianyou Luo, Ziliang Zhu, Yue Shan, Zhenyi Wu, Zirui Fan, Heping Zhang, Yun Li, Jason L. Stein, Hongtu Zhu (2023). Genetic influences on the intrinsic and extrinsic functional organizations of the cerebral cortex. *medRxiv 21261187*.

75. **Bingxin Zhao**, Tengfei Li, Xiaochen Yang, Juan Shu, Xifeng Wang, Tianyou Luo, Yue Yang, Zhenyi Wu, Zirui Fan, Zhiwen Jiang, Jie Chen, Yue Shan, Jiarui Tang, Di Xiong, Ziliang Zhu, Mufeng Gao, Wyliena Guan, Chalmer E. Tomlinson, Qunxi Dong, Yun Li, Jason L. Stein, Yalin Wang, Hongtu Zhu (2022). Genetic influences on the shape of brain ventricular and subcortical structures. *medRxiv 22279691*.

76. Jinjie Lin, **Bingxin Zhao** (2021). Born to be managers? Genetic links between risk-taking and the likelihood of holding managerial positions. *SSRN 3830040*.

## *Conference papers*

77. Jieyi Wang, Bingxuan Li, Nanyi Jiang, Desong Meng, Zirui Fan, Yuxin Guo, Jiayu Liu, Kunlun Zhu, Xiusi Chen, Pan Lu, **Bingxin Zhao** (2026). BioInsight: Multi-Agent Orchestration for Interactive Biomedical Knowledge Discovery. *arXiv:2606.20997*.

78. Jisen Li, Bingxuan Li, Nanyi Jiang, Xuying Ning, Heng Wang, Xiyao Wang, Yifan Shen, Yuqing Jian, Xiaoxia Wu, Ben Athiwaratkun, Pan Lu, Jiaxuan You, **Bingxin Zhao** (2026). Multi-Turn Agentic Scientific Literature Search via Workflow Induction. *arXiv:2607.00597*.

79. Buxin Su, Bingxuan Li, Cheng Qian, Yiwei Wang, Jin Jin, **Bingxin Zhao** (2026). Supervised Fine-tuning with Synthetic Rationale Data Hurts Real-World Disease Prediction. *arXiv:2606.10279*.

80. Tianqi Shang, Weiqing He, Charles Zheng, Lingyao Li, Li Shen, **Bingxin Zhao** (2026). DynamiCare: A Dynamic Multi-Agent Framework for Interactive and Open-Ended Medical Decision-Making. ***AMIA Joint Summits on Translational Science Proceedings***, 2026, 408–417. *arXiv:2507.02616*. Dataset

81. Tengfei Li, Xifeng Wang, Tianyou Luo, Yue Yang, **Bingxin Zhao**, Liuqing Yang, Ziliang Zhu, Hongtu Zhu (2019). Adolescent fluid intelligence prediction from regional brain volumes and cortical curvatures using BlockPC-XGBoost. *In Proceedings of the First Challenge in Adolescent Brain Cognitive Development Neurocognitive Prediction (ABCD-NP), held in conjunction with MICCAI 2019*, Lecture Notes in Computer Science, 11791, 167–175.

### *Invited editorials*

82. Dehan Kong, **Bingxin Zhao** (2025). Introduction to special issue on machine learning in biomedical sciences. ***Statistics in Biosciences***, 17, 1–2.

83. Chao Huang, Rongjie Liu, **Bingxin Zhao**, Linglong Kong (2023). Modern statistical learning strategies in imaging genetics, volume II. ***Frontiers in Neuroscience***, 17, 1337411.

84. Chao Huang, Rongjie Liu, **Bingxin Zhao**, Linglong Kong (2022). Modern statistical learning strategies in imaging genetics. ***Frontiers in Neuroscience***, 16, 957304.

## Public-Facing Platforms for the Research Community

My group builds, hosts, and maintains free, publicly accessible cloud computing and agentic AI platforms. They let researchers worldwide run advanced statistical genetics and AI analyses through a web browser, without local computing infrastructure or specialized programming, helping reduce disparities in access to computational resources.

**BIGA** (`https://bigagwas.org/`) *2023–present*
· Cloud computing platform for cross-trait genetic architecture analysis of GWAS summary statistics, with curated resources including multi-organ imaging traits. Described in *Journal of the American Statistical Association* (2026).

**PennPRS** (`https://pennprs.org/`) *2025–present*
· Cloud computing platform for training polygenic risk score models online from GWAS summary statistics for precision medicine. Described in *Nature Methods* (2026); 2025 ASHG Reviewers' Choice Award.

**TigerAI** (`https://tigerai.bio/`) *2026–present*
· AI-powered genetic evidence platform that supports target and drug prioritization in clinical development.

**PASS** (`https://ratemypaper.ai/`) *2026–present*
· Agentic AI platform that helps researchers position manuscripts within the scientific landscape. Described in arXiv:2609.13760 (2026).

## Invited Talks and Presentations

79 presentations since 2018, most by invitation, to audiences in statistics and biostatistics, mathematics, informatics, data science, genetics, and medicine.

Emory University, Atlanta, GA, USA (Biostatistics, Scheduled) *2027*

Neurodegenerative Disease Grand Rounds, Perelman School of Medicine, Philadelphia, PA, USA (Scheduled) *2027*

Johns Hopkins University, Baltimore, MD, USA (Biostatistics, Scheduled) *Apr 2027*

Columbia University, New York, NY, USA (Online Genomics Seminar, Scheduled) *Apr 2027*

Global Institute for Artificial Intelligence and Business Analytics, Fox School of Business, Temple University, Philadelphia, PA, USA (Scheduled) *Apr 2027*

ENAR 2027 Educational Program Short Courses, Boston, MA, USA (Scheduled) *Mar 2027*

TOPMed Omics Analysis Working Group Meetings, Boston, MA, USA (Scheduled) *Feb 2027*

Stats Up AI Alliance Webinar (Scheduled) *Dec 2026*

TRAIL AI Research Studio, Columbia University Mailman School of Public Health, New York, NY, USA *Nov 2026*

OHDSI Natural Language Processing Working Group, New Haven, CT, USA *Nov 2026*

University of Florida, Gainesville, FL, USA (Biostatistics) *May 2026*

University of Maryland, College Park, MD, USA (Statistics) *May 2026*

Mississippi State University, Starkville, MS, USA (Mathematics and Statistics) *May 2026*

University of Kentucky Annual AI Symposium, Lexington, KY, USA *Apr 2026*

AD Data Initiative Alzheimer's Insights Summit 3, Copenhagen, Denmark *Mar 2026*

AD Data Initiative Alzheimer's Insights Summit 2, San Diego, CA, USA *Dec 2025*

UK Biobank Scientific Conference 2025, London, UK *Dec 2025*

SUNY Binghamton University, Binghamton, NY, USA (Mathematics and Statistics) *Nov 2025*

Rutgers University, Piscataway, NJ, USA (Statistics) *Oct 2025*

NERDS 2025 Workshop, Boston, MA, USA *Oct 2025*

Genomics and Computational Biology Chalk Talk, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA *Oct 2025*

Columbia University, New York, NY, USA (Biostatistics) *Sep 2025*

BIRS Workshop for Foundation Models and their Biomedical Applications, Banff, Canada *Aug 2025*

**Tweedie New Researcher Invited Lecture**, IMS New Researchers Conference 2025, Nashville, TN, USA *Aug 2025*

Tianjin Medical University General Hospital, Tianjin, China (Radiology) *May 2025*

Population Aging Research Center (PARC) Aging Retreat 2025 *May 2025*

The Canadian Statistical Sciences Institute and University of Toronto, Toronto, Canada (CANSSI Ontario Statistics Seminar) *Apr 2025*

Indiana University School of Medicine, Indianapolis, IN, USA (Biostatistics and Health Data Science) *Mar 2025*

University of Pittsburgh, Pittsburgh, PA, USA (Biostatistics and Health Data Science) *Mar 2025*

Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA (Biomedical Data Science Seminar) *Feb 2025*

American Heart Association's Scientific Sessions 2024, Chicago, IL, USA *Nov 2024*

UNC Biostatistics 75th Anniversary Conference and Celebration, Chapel Hill, NC, USA *Nov 2024*

IMSI Workshop for Challenges in Neuroimaging Data Analysis, University of Chicago, Chicago, IL, USA *Aug 2024*

ICSA Applied Statistics Symposium 2024, Nashville, TN, USA *Jun 2024*

WNAR 2024 Meeting, Fort Collins, CO, USA *Jun 2024*

Statistical Methods in Imaging Conference 2024, Indianapolis, IN, USA *May 2024*

STATGEN 2024 Conference, Pittsburgh, PA, USA *May 2024*

Johns Hopkins University, Baltimore, MD, USA (Statistical Genetics Working Group) *Apr 2024*

Yale University, New Haven, CT, USA (Statistics and Data Science) *Apr 2024*

University of California Riverside, Riverside, CA, USA (Statistics) *Mar 2024*

Frankel Cardiovascular Center, University of Michigan, Ann Arbor, MI, USA (Frontiers in Cardiovascular Sciences Seminar Series) *Jan 2024*

Consortium for Vision and Oculomics in Psychiatry, University of Rochester Medical Center, Rochester, NY, USA *Nov 2023*

Ferenc Jolesz Seminar in Radiology, Brigham and Women's Hospital, Boston MA, USA *Nov 2023*

ITMAT 18th Annual International Symposium, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA *Oct 2023*

Eye as a Window to the Brain Webinar, Optica Applications of Visual Science Technical Group, University of Manchester, Manchester, England *Aug 2023*

The EcoSta 2023 Conference, Waseda University, Tokyo, Japan *Aug 2023*

London School of Economics and Political Science, London, UK (Joint Econometrics and Statistics Seminar) *Jun 2023*

ICSA Applied Statistics Symposium 2023, Ann Arbor, MI, USA *Jun 2023*

East China Normal University, Shanghai, China (Statistics) *Mar 2023*

Columbia University, New York, NY, USA (Online Genomics Seminar) *Jan 2023*

The 15th International Conference of the ERCIM Working Group on Computational and Methodological Statistics, King's College London, United Kingdom *Dec 2022*

The Hong Kong Polytechnic University, Hong Kong (Applied Mathematics) *Dec 2022*

The 2022 International Symposium on Modern Data Science: Application, Practice, and Theory, Yale University, New Haven, CT, USA *Nov 2022*

Michigan State University, East Lansing, MI, USA (Statistics and Probability) *Oct 2022*

Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA (DBEI Research Integration Focus Series) *Oct 2022*

The Academy of Mathematics and Systems Science (AMSS) of the Chinese Academy of Sciences (CAS), Beijing, China *Oct 2022*

Vanderbilt University, Nashville, TN, USA (Biostatistics) *Oct 2022*

Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA (Biomedical Data Science Seminar) *Sep 2022*

Joint Statistical Meetings 2022, Washington, D.C., USA *Aug 2022*

WNAR 2022 Meeting *Jun 2022*

Xiamen University, Xiamen, China (Mathematical Sciences) *Apr 2022*

Northeast Normal University, Changchun, China (Mathematics and Statistics) *Mar 2022*

Columbia University, New York, NY, USA (Biostatistics) *Feb 2022*

University of Pennsylvania, Philadelphia, PA, USA (Statistics and Data Science) *Feb 2022*

The 14th International Conference of the ERCIM Working Group on Computational and Methodological Statistics, King's College London, United Kingdom *Dec 2021*

University of Maryland, College Park, MD, USA (BRIGHT) *Dec 2021*

University of Minnesota, Minneapolis, MN, USA (Statistics) *Dec 2021*

Arizona State University, Phoenix, AZ, USA (Mathematical and Natural Sciences) *Apr 2021*

ENAR 2021 Spring Meeting, Baltimore, MD, USA *Mar 2021*

Indiana University-Purdue University Indianapolis, Indianapolis, IN, USA (Mathematical Sciences, Virtual) *Mar 2021*

Purdue University, West Lafayette, IN, USA (Bioinformatics Seminar) *Jan 2021*

Renmin University of China, Beijing, China (Statistics) *Oct 2020*

Joint Statistical Meetings 2020, Philadelphia, PA, USA *Aug 2020*

ENAR 2020 Spring Meeting, Nashville, TN, USA *Mar 2020*

Purdue University, West Lafayette, IN, USA (Statistics) *Feb 2020*

Emory University, Atlanta, GA, USA (Biostatistics) *Feb 2020*

University of Pennsylvania, Philadelphia, PA, USA (Biostatistics) *Feb 2020*

23andMe Research & Product Teams, Mountain View, CA, USA *Jun 2019*

Statistical Society of Canada Annual Meeting, Montreal, Canada *Jun 2018*

# Teaching

## *University of Pennsylvania*

STAT 9800, Introduction to Biomedical Data Science Research (new graduate course) *Fall 2024*
· End-to-end biomedical data science research for students from statistics and interdisciplinary programs: methods, computing, software development, and scientific writing of papers and grant proposals.

OIDD/STAT 4770, Introduction to Python for Data Science (new undergraduate course)
*Spring 2023, Spring 2024*
· The full data science workflow in Python, from data acquisition and cleaning to analysis, visualization, and communication, applied to real-world big data.

WH 2990 & 2991, Wharton Research Scholars Program Seminar (faculty advisor)
*Fall 2024, Spring 2025*
· Year-long thesis mentoring for Aravind Krishnan (Vagelos Program in Life Sciences & Management) on a community health worker model for urban health disparities.

## *Purdue University*

CS/STAT 24200, Introduction to Data Science (required for computer science and data science majors)
*Spring 2022*

STAT 54900, An Introduction to QTL Mapping in Experimental Populations (new graduate course in statistical genetics) *Spring 2021*

# Mentoring

Since joining the faculty in 2020, I have worked with over 50 students, mentoring 4 postdoctoral researchers, 7 PhD students as dissertation chair or co-chair, 3 master's thesis students, and over 30 graduate and undergraduate research assistants, and I have served on 13 PhD and master's thesis committees. Together with students, I have co-authored over 20 papers as senior or co-senior author, in journals including *Nature Reviews Neurology*, *Nature Biomedical Engineering*, *Nature Communications*, and *Journal of the American Statistical Association*. Students have received three ASHG Reviewers' Choice Awards, ASA, NESS, and ICSA student paper awards, and a Truman Scholarship.

### *Postdoctoral Researchers*

Zihang Wang (UPenn Statistics and Data Science)

Jiawen Chen (UPenn Statistics and Data Science)

Zhirui Li (UPenn Statistics and Data Science)

Zichen Zhang (UPenn Statistics and Data Science)

### *Current PhD Students (Dissertation Chair or Co-Chair)*

Zirui Fan (UPenn Statistics and Data Science; Chair)

Yujue Li (Purdue Statistics; Co-chair with Fei Xue)

Buxin Su (UPenn AMCS Program; Chair)

Eddie Yilin Yang (UPenn Statistics and Data Science, Co-chair with Nancy Zhang)

Yuxin Li (UPenn AMCS Program; Chair)

### *Former PhD Students (Dissertation Chair or Co-Chair) and Current Positions*

Xiaochen Yang (Purdue Statistics; Co-chair with Fei Xue; now Software Engineer, Google)

Kai Xia (UNC Biostatistics; Co-chair with Fei Zou; now Associate Professor, UNC Department of Psychiatry)

### *PhD Dissertation Committee Member*

Cameron Beeche (UPenn Bioengineering, advised by Walter Witschey)

Qipeng Zhan (UPenn GCB Program, advised by Li Shen)

Yuxuan Lin (UPenn Statistics and Data Science, advised by Nancy Zhang)

Andrew Lakkis (UPenn Biostatistics, advised by Jin Jin)

Yizhou Zhang (Purdue Statistics, advised by Boran Gao)

Zixuan Wen (UPenn GCB Program, advised by Li Shen)

Kaishu Adonis Mason (UPenn Statistics and Data Science, advised by Nancy Zhang)

Jakob Woerner (UPenn GCB Program, advised by Dokyoon Kim)

Yishan Shen (UPenn AMCS Program, advised by Yong Chen)

Yuxin Guo (Purdue PULSe Program, advised by Peristera Paschou)

Daniel Vo (UPenn GCB Program, advised by Brielin Brown and Michael Gandal)

*Master's Thesis Supervisor*

Jingxuan Bao (UPenn GCB Program)

Qipeng Zhan (UPenn AMCS Program)

Max Dudek (UPenn GCB Program)

*Master's Thesis Committee Member*

Zhiyu Yang (Purdue PULSe Program, advised by Peristera Paschou)

Zhenyi Wu (Purdue Statistics)

*Current Graduate Research Assistants*

Yuxin Guo (Purdue PULSe Program, the Paschou Lab)

Bingxuan Li (UIUC Computer Science)

Cameron Beeche (UPenn Bioengineering, the CorLab)

Jiyao Zhang (UPenn AMCS, the Jin Lab)

Zhijie Duan (Weill Cornell Population Health Sciences)

Xiaojing Sun (Purdue Statistics, the Xue Group)

*Current Undergraduate Researchers*

Shenmin Zhang (UPenn Computer Science)

Lucy Pu (UPenn Bioengineering)

*Former Graduate Research Assistants and Undergraduate Researchers*

Danyang Wang (Graduate student, Purdue Statistics)

Shan Su (Graduate student, Purdue Statistics)

Xieheng Wang (Undergraduate researcher, Tsinghua University)

Chun Wang (Undergraduate researcher, Purdue Mathematics & Data Science)

Dezheng Ding (Graduate student, UPenn Systems Engineering)

Ethan Yu (2023 Penn Undergraduate Research Mentoring Program)

Yixiao Wang (Undergraduate researcher, University of Science and Technology of China)

Zhenyi Wu (Graduate student, Purdue Statistics)

Carlos Copana (Graduate student, Purdue Statistics)

Juan Shu (Graduate student, Purdue Statistics)

Eleftherios Lazarinis (2024 Penn Undergraduate Research Mentoring Program)

Lavanya Neti (Undergraduate researcher, Wharton Statistics & Finance)

Aravind Krishnan (Undergraduate researcher, Vagelos Program in Life Sciences and Management, Wharton Research Scholars Program, 2024 Truman Scholar, Inaugural Sarah Katz Award Recipient)

Yijun Fan (Graduate student, UPenn AMCS Program)

Xiyao Wang (Graduate student, Columbia Computer Science)

Tianqi Shang (Graduate student, UPenn GCB Program, the Shen Lab)

Fred Zhang (Graduate student, UPenn Statistics and Data Science)

Zhaoqian Xue (Research assistant, UPenn Biostatistics, the Jin Lab)

William Huang (Undergraduate researcher, UPenn Computer Science)

Luka Adzic (2026 Penn Undergraduate Research Mentoring Program)

Kate Li (2026 Penn Undergraduate Research Mentoring Program)

Bole Ying (Undergraduate researcher, UPenn Mathematics)

Haoxuan Fu (Graduate student, UPenn Data Science, co-advised with Jiaoyang Huang)

# Professional Service

## *Editorial Service*

Associate Editor, Applications and Case Studies, *Journal of the American Statistical Association* *2025–present*

Guest Associate Editor, Special Issue on Biomedical Data Science, *Statistical Learning and Data Science* *2026*

Guest Editor, Special Issue on Machine Learning in Biomedical Sciences, *Statistics in Biosciences* *2022–2024*

Guest Associate Editor, Brain Imaging Methods Section, *Frontiers in Neuroscience* *2021–2023*

## *Grant Review Panels*

NIH Neuro Informatics, Computational and Data Analysis (NICD) Study Section *2026, 2027*

Penn Leonard Davis Institute of Health Economics (LDI) Small Grants Pilot Review Panel *2026*

NIH Human Genome Project Reference Program (HGRP), ZRG1 MGG-W (50) R Panel *2025*

NIH/NIMH ZMH1-ERB-P(04) Panel for K99 Applications *2025*

NIH/NIDA Special Emphasis Panel, Avant-Garde (DP1) and Avenir (DP2) Award Programs *2024*

NIH Biodata Management and Analysis (BDMA) Study Section *2023*

The Netherlands Organisation for Scientific Research (NWO/ZonMw) *2023*

## *Award Committees and Abstract Review*

ASA Statistics in Epidemiology Section Early Career Award Committee *2025–2027*

ASHG Annual Meeting Abstract Review (Statistical Genetics and Genetic Epidemiology I: Novel Methods and Approaches) *2024*

ICSA Student Paper Award Competition *2024*

ASA Statistics in Imaging Student Paper Competition *2021–2022*

## *University and Departmental Service*

PhD/Postdoc Coordinating Committee, Wharton Statistics and Data Science *2026*

PhD Coordinating Committee, Wharton Statistics and Data Science *2025*

PhD Admissions Committee, Wharton Statistics and Data Science *2025*

Committee on the Inaugural Penn Statistics-Biostatistics Distinguished Invited Lectureship *2024*

Committee on Departmental Postdoctoral Researcher Recruitment, Wharton Statistics and Data Science *2023*

Seminar Organizer, Wharton Statistics and Data Science Fall Seminars *2022*

External Examiner, Graduate Research Examination, The University of Melbourne *2026*

## *Conference Organization*

Program Committee Member, STAI-X 2027 Workshop, Chicago, IL *2027*

Program Committee Member, STAI-X 2026 Workshop, Boston, MA *2026*

Invited Session Chair, 2025 Joint Statistical Meetings, Nashville, TN *2025*

Topic-Contributed Session Organizer, 2025 Joint Statistical Meetings, Nashville, TN *2025*

Invited Session Organizer, ENAR 2025 Spring Meeting, New Orleans, LA *2025*

Invited Session Organizer, 2024 Joint Statistical Meetings, Portland, OR *2024*

Invited Session Organizer, 2024 ICSA Applied Statistics Symposium, Nashville, TN *2024*

Invited Session Organizer, STATGEN 2024 Conference, Pittsburgh, PA *2024*

Invited Session Organizer, 15th International Conference of the ERCIM Working Group on Computational and Methodological Statistics, King's College London, UK *2022*

Invited Session Organizer, EcoSta 2022 Conference, Ryukoku University, Kyoto, Japan *2022*

Invited Session Chair, ENAR 2021 Spring Meeting, Baltimore, MD *2021*

### *Journal Referee*

*Annals of Applied Statistics*, *Artificial Intelligence in Medicine*, *Bioinformatics*, *Biometrika*, *Brain and Behavior*, *Cell*, *Communications Biology*, *Computational Statistics and Data Analysis*, *F1000Research*, *Frontiers in Genetics*, *Frontiers in Molecular Neuroscience*, *Frontiers in Neuroscience*, *Frontiers in Nutrition*, *Frontiers in Psychiatry*, *Frontiers in Radiology*, *Genome Medicine*, *Journal of Computational and Graphical Statistics*, *Journal of Nonparametric Statistics*, *Journal of the American Statistical Association*, *Nature Communications*, *Nature Genetics*, *Nature Human Behaviour*, *Nature Neuroscience*, *Pacific Symposium on Biocomputing*, *PLOS Genetics*, *Science Advances*, *Statistica Sinica*, and *Statistics in Medicine* *2018–present*

### *Memberships*

Member, American Statistical Association (ASA)

Member, Eastern North American Region of the International Biometric Society (ENAR)

Member, Institute of Mathematical Statistics (IMS)

Member, American Society of Human Genetics (ASHG)

Member, International Chinese Statistical Association (ICSA)

Member, American Association for the Advancement of Science (AAAS)

Full Member, Consortium for Vision and Oculomics in Psychiatry *2023–present*

Mentored Biostatistics Faculty, Spring Retreat of the Advanced Research Institute, Mental Health and Aging Research Network *2023*

## Media Coverage and Outreach

News & Views in *Nature Computational Science* on the self-rankings study. Link *2026*

*Nature Index* highlight of the self-rankings study. Link *2026*

*Nature Communications* Editors' Highlights (Translational and Clinical Research) for the plasma proteomics and organ imaging study. *2026*

*The Daily Pennsylvanian*: "Authors can identify influential AI research by ranking their own work, Wharton study finds". Link *2026*

*Penn Today*: coverage of the self-rankings study. Link *2026*

Wharton AI & Analytics Insights: "Why authors are better at predicting impact than peer review". Link *2026*

*Bioengineer.org*: "Can scientists' self-rankings predict scientific impact beyond peer review?" Link *2026*

Interviewed by UK Biobank: "How keeping the heart healthy could benefit the brain". Link *2025*

UK Biobank News: winners of the inaugural Scientific Impact Awards announced at the UK Biobank Scientific Conference. Link *2025*

*IMS Bulletin*: "Bingxin Zhao receives 2025 IMS Tweedie New Researcher Award". Link *2025*

Penn Neurodegeneration Genomics Center News: "PennPRS: A web tool for polygenic risk scores with summarized genetic data". Link *2025*

*OCT News*: coverage of the eye-brain connections study. Link *2024*

Heart-brain research selected by the UK Biobank Chief Scientist as one of the top 10 findings from the first decade of the UK Biobank Imaging Project. Link *2024*

Interviewed by ScienceAdviser, *Science*'s daily newsletter, on research connecting the heart and mind. Link *2023*

Perspective in *Science* on the heart-brain connections study. Link *2023*

Research Highlight in *Nature Reviews Cardiology*: "Unravelling the genetic heart-brain connection using MRI". Link *2023*

*Alzforum*: "Multi-organ MRI unveils myriad connections between heart and brain". Link *2023*

UNC Gillings School of Global Public Health: "New study reveals strong connection between heart and brain health". Link *2023*

Research Highlight in *Nature Cardiovascular Research*: "Cardiovascular MRI traits are genetically linked to brain pathophysiology". Link *2023*

UNC Gillings School of Global Public Health: "UNC research identifies genetic variations linked to brain activity, mental health". Link *2022*

Perspective in *Science* on the white matter microstructure genetics study. Link *2021*

UNC Gillings School of Global Public Health: "White matter plays a complex role in brain health". Link *2021*

*Genotipia* (in Spanish): "Identifican 151 regiones genómicas asociadas a la microestructura de la sustancia blanca cerebral". Link *2021*

Cover feature, *Nature Genetics*, on the regional brain volume GWAS. *2019*

Last updated: October 2026