YANG CHEN

CONTACT INFORMATION

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- Website: https://yangchenfunstatistics.github.io/yangchen.github.io//
- Space Weather Prediction Webpage: spaceweatherlab.org
- Google Scholar: https://scholar.google.com/citations?hl=en&user=ycbIaucAAAAJ
- ORCID: https://orcid.org/0000-0002-9516-8134
- Research Gate: https://www.researchgate.net/profile/Yang-Chen-202

EDUCATION

Ph. D. in Statistics — May 2017
Harvard University

B. Sc. in Mathematics — Jul. 2011
University of Science and Technology of China

EMPLOYMENT

Associate Professor of Statistics, with Tenure — July 2025 - now
Assistant Professor of Statistics — September 2017 - June 2025
Research Assistant Professor of MIDAS — September 2017 - June 2025
University of Michigan, Ann Arbor

RESEARCH INTERESTS

- Bayesian modeling and computation
- Hidden Markov models and general finite mixture models
- Applied statistics in astronomy, space sciences
- Spatial-temporal data analysis
- Uncertainty quantification

PUBLICATIONS AND MANUSCRIPTS

PhD student and postdoctoral coauthors are underlined. Undergraduate coauthors are underlined and marked with *.

A. Journal and Conference Articles

A.1. Statistical Methodology and Machine Learning

[A1] Z. Tian, K. Jin, **Y. Chen**, T. Lee, *Risk-guided Estimation-aware Acceptance for Learning with Synthetic Data*, NeurIPS, 2026, [Conference].

[A2] J. Li, J. Cai, **Y. Chen**, D. Xia, *Online Tensor Learning: Computational and Statistical Trade-offs, Adaptivity and Optimal Regret* (2026), Annals of Statistics, [DOI].

[A3] J. Li, **Y. Chen**, *Local Interaction Autoregressive Model for High Dimension Time Series Data*, Statistica Sinica (2026), [Preprint].

[A4] H. Sun, Z. Shang, **Y. Chen**, *Matrix Autoregressive Model with Vector Time Series Covariates for Spatio-Temporal Data*, Statistica Sinica (2026), DOI: 10.5705/ss.202025.0029, [Preprint].

[A5] H. Sun, **Y. Chen**, *Conformalized Tensor Completion with Riemannian Optimization*, Journal of Computational and Graphical Statistics (2026) 35.6, 594-605, [DOI].

[A6] V. Verma, S. Stoev, **Y. Chen**, *On the Optimal Prediction of Extreme Events: Applications to Heavy-tailed Time Series and Solar Flare Forecasting*, Journal of Time Series Analysis, 47.1 (2026): 25-42, [DOI].

[A7] **Y. Chen**, C.-D. Fuh, C.-L. Kao, *Determine the Number of States in Hidden Markov Models via Marginal Likelihood*, Journal of Machine Learning Research, 2025, 26(58):1-59, [Article].

[A8] D. Iong, M. McAnear, Y. Qu*, S. Zou, G. Toth, **Y. Chen** (2024), *Sparse Variational Contaminated Noise Gaussian Process Regression for Forecasting Geomagnetic Perturbations*, Data Science in Science, Volume 3, Issue 1, [DOI].

[A9] D. Iong, Q. Zhao, **Y. Chen** (2024), *A Latent Mixture Model for Heterogeneous Causal Mechanisms in Mendelian Randomization*, Annals of Applied Statistics, Vol. 18, No. 2, 966-990, [DOI].

[A10] H. Sun, W. Manchester, M. Jin, Y. Liu, **Y. Chen** (2023), *Tensor Gaussian Process with Contraction for Multi-Channel Imaging Analysis*, Proceedings of the 40th International Conference on Machine Learning (ICML), PMLR 202:32913-32935, [Proceedings].

[A11] D. E. Jones, R. N. Trangucci, **Y. Chen**, *Quantifying Observed Prior Impact* (2022), Bayesian Analysis, 17(3), 737-764, [DOI].

[A12] H. Sun, Z. Hua, J. Ren, S. Zou, Y. Sun, **Y. Chen**, *Matrix Completion Methods for the Total Electron Content Video Reconstruction*, Annals of Applied Statistics (2022), Vol. 16, No. 3, 1333-1358, [DOI].

[A13] Q. Li, **Y. Chen**, and Y. Kim, *Compression by and for Deep Boltzmann Machines*, IEEE Transactions on Communications 68, no. 12 (2020): 7498-7510, [Article].

[A14] Q. Li, and **Y. Chen**, *Rate distortion via deep learning*, IEEE Transactions on Communications 68, no. 1 (2019): 456-465, [Article].

[A15] Q. Zhao, **Y. Chen**, J. Wang, D. S. Small, *Powerful Genome-wide Design and Robust Statistical Inference in Two-sample Summary-data Mendelian Randomization*, International Journal of Epidemiology, Volume 48, Issue 5, October 2019, Pages 1478-1492, [DOI].

[A16] S. Yang, **Y. Chen**, E. Bernton, J. S. Liu, *On Parallelizable Markov Chain Monte Carlo Algorithms with Waste-recycling*. Statistics and Computing 28.5 (2018): 1073-1081, [DOI].

[A17] **Y. Chen**, K. Shen, S. Shan, S. C. Kou, *Analyzing Single-Molecule Protein Transportation Experiments via Hierarchical Hidden Markov Models*, Journal of the American Statistical Association 111.515 (2016): 951-966, [DOI].

A.2. Astrostatistics and Astronomical Instrument Calibration

[A18] M. Bonamente, **Y. Chen**, D. Zimmerman, *Maximum-likelihood Regression with Systematic Errors for Astronomy and the Physical Sciences: I. Methodology and Goodness-of-fit Statistic of Poisson Data*, The Astrophysical Journal 980.1 (2025): 139, [DOI].

[A19] H. Tak, **Y. Chen**, V. Kashyap, K. Mandel, X.-L. Meng, A. Siemiginowska, D. van Dyk (2024), *Statistical Maxims for Sound Astronomical Data Analysis*, The Astrophysical Journal Supplement Series, Volume 275 (2), [DOI].

[A20] H. Marshall, **Y. Chen**, J. Drake, M. Guainazzi, V. L. Kashyap, X.-L. Meng, P. Plucinsky, P. Ratzlaff, D. van Dyk, X. Wang, *Concordance: In-flight Calibration of X-ray Telescopes without Absolute References*, The Astronomical Journal (2021), [DOI].

[A21] A. Farahi, **Y. Chen**. *TATTER: A Hypothesis Testing Tool for Multi-dimensional Data*, Astronomy and Computing 34 (2021): 100445, [DOI].

[A22] A. Farahi, D. Nagai, and **Y. Chen**. *PoPE: A Population-based Approach to Model the Spatial Structure of Astronomical Systems*, The Astronomical Journal 161, no. 1 (2020): 30, [DOI].

[A23] **Y. Chen**, X.-L. Meng, X. Wang, D. A. van Dyk, H. L. Marshall, V. L. Kashyap, *Calibration Concordance for Astronomical Instruments via Multiplicative Shrinkage*, Journal of the American Statistical Association (2019), 114 (527), 1018-1037, [DOI].

A.3. Solar and Space Weather Science

[A24] Y. Yu, **Y. Chen**, L. Zhao, K. Whitman, W. Manchester, and T. Gombosi. *A multi-source dataset for solar energetic particle forecasting*, Scientific Data (2026), [Article].

[A25] Y. Yu, **Y. Chen**, L. Zhao, K. Whitman, W. Manchester, T. Gombosi, *Realtime forecasting of solar energetic particle event and proton flux using multi-source solar observations and multi-task deep learning*, Nature - Scientific Reports, 2026, [Article].

[A26] H. Chen, G. Toth, **Y. Chen**, S. Zou, X. Huan, *Improving Geomagnetic Perturbation Forecasts in the Southern Hemisphere via Kernel-Based Encoding of Mirror Symmetry*, Journal of Geophysical Research - Machine Learning and Computation (2026), [DOI].

[A27] M. Smirnova, S. Zou, G. Kwon, H. Liu, **Y. Chen**, *Calibration and Fusion of GOLD-Inferred TEC Data with Ground-based TEC*, Space Weather (2026), Volume 24, Issue 6, e2026SW004978, [DOI].

[A28] Y. Yu, **Y. Chen**, L. Zhao, K. Whitman, W. Manchester, T. Gombosi, *Solar Energetic Particle Forecasting with Multi-Task Deep Learning: SEPNet*, Journal of Geophysical Research - Machine Learning and Computation (2026), 3.3: e2026JH001247, [Preprint].

[A29] H. Chen, G. Toth, **Y. Chen**, S. Zou, X. Huan, *GeoDGP: Global Probabilistic Geomagnetic Perturbation Forecasting using Deep Gaussian Process*, Space Weather (2025) 23, no. 6: e2024SW004301. [DOI].

[A30] H. Chen, Z. Huang, N. Sachdeva, W. Manchester, B. van der Holst, A. Jivani, S. Zou, **Y. Chen**, X. Huan, G. Toth, *Decent Estimate of CME Arrival Time from a Data-assimilated Ensemble in the Alfvén Wave Solar atmosphere Model (DECADE-AWSoM)*, Space Weather 23.1 (2025): e2024SW004165, [DOI].

[A31] **Y. Chen**, W. Manchester, M. Jin, A. Pevtsov (2024), *Solar Imaging Data Analytics: A Selective Overview of Challenges and Opportunities*, Statistics and Data Science in Imaging, Volume 1, Issue 1, [DOI].

[A32] B. Viet Do, **Y. Chen**, L. Nguyen, W. Manchester (2024), *Uncovering Heterogeneity of Solar Flare Mechanism with Mixture Models*, Frontiers in Astronomy and Space Sciences 11, 1229092, [DOI].

[A33] Z. Wang, S. Zou, H. Sun, **Y. Chen** (2023), *Forecast Global Ionospheric TEC: Apply Modified U-Net on VISTA TEC Dataset*, Space Weather 21.8: e2023SW003494, [DOI].

[A34] A. Jivani, N. Sachdeva, Z. Huang, **Y. Chen**, B. van der Holst, W. Manchester, D. Iong, H. Chen, S. Zou, X. Huan, G. Toth (2023), *Global Sensitivity Analysis and Uncertainty Quantification for Background Solar Wind using the Alfven Wave Solar Atmosphere Model*, Space Weather 21.1: e2022SW003262, [DOI].

[A35] H. Sun, **Y. Chen**, S. Zou, J. Ren, Y. Chang, Z. Wang, A. Coster (2023), *Complete Global Total Electron Content (TEC) Map Dataset based on a Video Imputation Algorithm*, Scientific Data - Nature, Number 10:236, [DOI].

Associated dataset: *VISTA TEC database [Data set]*, University of Michigan - Deep Blue Data, [Data].

[A36] K. Whitman et al., *Review of Solar Energetic Particle Models*, Advances in Space Research 72, no. 12 (2023): 5161-5242, [DOI].

[A37] M. Aktukmak, Z. Sun, M. Bobra, T. I. Gombosi, W. Manchester, **Y. Chen**, A. O. Hero, *Incorporating Polar Field Data for Improved Solar Flare Prediction*, Frontiers in Astronomy and Space Sciences, Sec. Stellar and Solar Physics, Volume 9 - 2022, [DOI].

[A38] Z. Sun, M. Bobra, X. Wang, Y. Wang, H. Sun, T. Gombosi, **Y. Chen**, A. Hero, *Predicting Solar Flares using CNN and LSTM on Two Solar Cycles of Active Region Data*, The Astrophysical Journal 931.2 (2022): 163, [DOI].

[A39] S. Kasapis, L. Zhao, **Y. Chen**, X. Wang, M. Bobra, T. I. Gombosi, *Interpretable Machine Learning to Forecast SEP Events for Solar Cycle 23*, Space Weather 20.2 (2022), [DOI].

[A40] D. Iong, **Y. Chen**, G. Toth, S. Zou, T. Pulkkinen, J. Ren, E. Camporeale, T. Gombosi, *New Findings From Explainable SYM-H Forecasting Using Gradient Boosting Machines*, Space Weather (2022), 20(8), p.e2021SW002928, [DOI].

[A41] S. Zou, J. Ren, Z. Wang, H. Sun, **Y. Chen**, *Impact of Storm-Enhanced Density (SED) on Ion Upflow Fluxes During Geomagnetic Storm*, Frontiers in Astronomy and Space Sciences 8 (2021): 746429, [DOI].

[A42] H. Sun, W. B. Manchester IV, **Y. Chen**, *Improved and Interpretable Solar Flare Predictions with Spatial & Topological Features of the Polarity-Inversion-Line Masked Magnetograms*, Space Weather 19.12 (2021): e2021SW002837, [Preprint].

[A43] J. Ren, J. Lu*, S. Zou, N. Giertych, **Y. Chen**, R. H. Varney, *Statistical Study of Ion Upflow and Downflow Observed by the Poker Flat Incoherent Scatter Radar (PFISR)*, Journal of Geophysical Research: Space Physics 125, no. 10 (2020): e2020JA028179, [DOI].

[A44] Z. Jiao, H. Sun, X. Wang, W. Manchester, T. Gombosi, A. Hero, **Y. Chen**, *Solar Flare Intensity Prediction with Machine Learning Models*, Space Weather (2020), [DOI].

[A45] X. Wang, **Y. Chen**, G. Toth, W. B. Manchester, T. I. Gombosi, A. O. Hero, Z. Jiao, H. Sun, M. Jin, Y. Liu, *Predicting Solar Flares with Machine Learning: Investigating Solar Cycle Dependence*, The Astrophysical Journal, 2019, 895(1), 3, [DOI].

[A46] **Y. Chen**, W.B. Manchester, A.O. Hero, G. Toth, B. DuFumier, T. Zhou, X. Wang, H. Zhu, Z. Sun, and T.I. Gombosi, *Identifying Solar Flare Precursors Using Time Series of SDO/HMI Images and SHARP Parameters*, Space Weather 17.10 (2019): 1404-1426, [DOI].

A.4. Biomedical, Environmental, and Interdisciplinary Applications

[A47] Y. Liu, Y. Song, W. Weaver, K. Shedden, **Y. Chen**, S. Smith, K. Zhu, *Dominance of plasticity in wind-pollinated trees' flowering time response to temperature*, Ecology, 2026, [Preprint].

[A48] R. Trangucci, **Y. Chen**, J. Zelner (2023), *Modeling Racial/Ethnic Differences in COVID-19 Incidence with Covariates Subject to Nonrandom Missingness*, Annals of Applied Statistics, Vol. 17, No. 4, 2723-2758, [DOI].

[A49] W. Mei, Z. Jiang, **Y. Chen**, L. Chen, A. Sancar, and Y. Jiang, *Genome-wide Circadian Rhythm Detection Methods: Systematic Evaluations and Practical Guidelines*, Briefings in Bioinformatics 22, no. 3 (2021): bbaa135, [DOI].

[A50] W. Ma, Z. Wang, Y. Zhang, N. Magee, **Y. Chen**, C. Zang, *BARTweb: a Web Server for Transcription Factor Association Analysis*, NAR genomics and bioinformatics 3.2 (2021): lqab022, [Preprint].

[A51] K. Choi, **Y. Chen**, D. A. Skelly, G. A. Churchill, *Bayesian Model Selection Reveals Biological Origins of Zero Inflation in Single-cell Transcriptomics*, Genome Biology 21, 183 (2020), [DOI].

[A52] H. Bavli, **Y. Chen**, *Shrinkage Estimation in the Adjudication of Civil Damage Claims*, Review of Law & Economics (2017), 13 (2), [DOI].

B. Book Chapters

[B1] F. Seeger, A. Little, **Y. Chen**, T. Woolf, H. Cheng and J. Mitchell, *Feature Design for Protein Interface Hotspots using KFC2 and Rosetta*, In Research in Data Science (2019, pp. 177-197). Springer, Cham, [DOI].

C. Discussions and Editorials

[C1] **Y. Chen**, *Discussion on "Poisson-FOCuS: An Efficient Online Method for Detecting Count Bursts with Application to Gamma Ray Burst Detection" by Ward, Dilillo, Eckley, and Fearnhead*, Journal of the American Statistical Association, 2024, 120(549), 26-30. [DOI].

[C2] **Y. Chen**, S. Maloney, E. Camporeale, X. Huang, Z. Zhou (2023), *Editorial: Machine Learning and Statistical Methods for Solar Flare Predictions* (editorial note for a research topic organized by the authors), Frontiers in Astronomy and Space Sciences, Sec. Stellar and Solar Physics, Volume 10 - 2023, [DOI].

[C3] R. Trangucci, D. Hansen, **Y. Chen**, Contributed Discussion on *On a Class of Objective Priors from Scoring Rules (with Discussion)*, Bayesian Analysis (2020), [DOI].

D. Preprints and Working Papers

[D1] Y. Yu, **Y. Chen**, L. Zhao, K. Whitman, W. Manchester, T. Gombosi, *Real-Time 24-hour Ahead Forecasting of Solar Energetic Particle Events with SEPNET-PRISM-R*, arXiv preprint arXiv:2610.28292 (2026).

[D2] Y. Yu, S. Zou, T. Pulkknen, **Y. Chen** (2026), *Stable Multivariate Functional Time Series Prediction for Major Geomagnetic Indices*, [Preprint].

[D3] Z. Qin, **Y. Chen**, *Structured Adaptive Tensor Learning for Streaming and Dynamic Data*, [Preprint].

[D4] S. Kasapis et al., *Review of Machine Learning Models for Solar Energetic Particle Prediction*, [Preprint].

[D5] J. Shang, J. Li, **Y. Chen**, *Uncertainty Quantification for Noisy Low-tubal-rank Tensor Completion*, [Preprint].

[D6] K. Hu, K. Jin, V. Verma, W. Liu, W. Manchester, L. Zhao, T. Gombosi, **Y. Chen**, *Data Quality Issues in Flare Prediction using Machine Learning Models*, [Preprint].

[D7] Y. Song, K. Zhu, **Y. Chen**, A. Stefanski, R. Bermudez, R. A. Montgomery, P. B. Reich, *Warming makes boreal species grow earlier but not always taller*, [Preprint].

[D8] Y. Ke, X. Huang, O. Coddington, **Y. Chen**, *Matrix Factorization-Based Solar Spectral Irradiance Missing Data Imputation with Uncertainty Quantification*, [Preprint].

Associated dataset: *The Synthetic SSI Data Interpolated Based on CMIP6 SSI Data [Data set]*, University of Michigan - Deep Blue Data, [Data].

[D9] X. Li*, **Y. Chen**, X. Meng, D. van Dyk, M. Bonamente, V. Kashyap, *Making high-order asymptotics practical: correcting goodness-of-fit test for astronomical count data*, [Preprint].

[D10] N. Du, **Y. Chen**, Y. Qian, *BayesFit: Enhancing Experimental Fitting Accuracy with Bayesian Methods for Undersampled Data*, [Preprint].

[D11] J. Li, J. Shang, **Y. Chen**, *Fourier Low-rank and Sparse Tensor for Efficient Tensor Completion* (2025), [Preprint].

[D12] R. Trangucci, J. Contreras, J. Zelner, **Y. Chen**, *Bayesian Methods for Cumulative Exposure to Extensive Environmental Health Hazards: A Bayesian Inverse Perspective*, [Preprint].

[D13] R. Trangucci, **Y. Chen**, J. Zelner, *Identified Vaccine Efficacy for Binary Post-infection Outcomes under Misclassification without Monotonicity*, [Preprint].

[D14] **Y. Chen**, R. Gong, M. Xie, *Geometric Conditions for the Discrepant Posterior Phenomenon and Connections to Simpson's Paradox*, [Preprint].

[D15] H. Sun, W. Manchester, Z. Jiao, X. Wang, **Y. Chen** (2019), *Interpreting LSTM Prediction on Solar Flare Eruption with Time-series Clustering*, arXiv:1912.12360, [Preprint].

[D16] W. Liu, I. Ibenaz, **Y. Chen**, A. Agrawal, *Transitory Sustainability Effects of Behavioral Changes: Short-Term Benefits of COVID-19 Lockdowns Reversed Over Time, Resulting in More Wildfires in the Amazon*, [Preprint].

[D17] M. Aguirre, W. Sun, **Y. Chen**, J. Jin, *Automatic Identification of Driving Maneuver Patterns Using a Robust Hidden Semi-Markov Model*, [Preprint].

E. Other Research Manuscripts

[E1] J. Zhao, **Y. Chen**, L. Qi, *Statistical energy landscapes governing screw dislocation glide and strength in refractory complex concentrated alloys*, 2026.

[E2] Q. Hu, X. Chen, Q. Yue, S. Kato, **Y. Chen**, X. Huang, *Penetrating Clouds: A Spatial-spectral Deep Learning Model Framework to Retrieve Temperature and Humidity Profiles below Clouds.*

[E3] M. Jin, H. Sun, M. Jin, W. Manchester, **Y. Chen**, Y. Liu, *A Curated Combined SDO/AIA and HMI Data Set for Flare Prediction Studies using Machine Learning Methods.*

[E4] S. Das, **Y. Chen**, H. Marshall, V. Kashyap, D. van Dyk, *Extended Bayesian Estimation for In-flight Calibration of Space-based Instruments.*

[E5] V. Verma, **Y. Chen**, S. Stoev, *Correcting Magnetogram Projection Effects Using Bayesian Composite Quantile Regression.*

[E6] W. Liu, X. Liang, **Y. Chen**, A. Agrawal, *Consensus-Guided Integration of Prediction and Explanation in Small-Sample, High-Dimensional Social Science Data.*

GRANTS AND RESEARCH SUPPORT

A. External Funding

Research Grants and Awards

[A1] **JPL**, Award 80NM0018D0004.
Maximize spatial and vertical information in joint sounder and imager observations using ensemble machine-learning approach for Planetary Boundary Layer (PBL) and Extreme Events. **Period:** December 15, 2025–September 27, 2026.
Role: Co-I; U-M PI: Xianglei Huang. **U-M award amount:** $40,000.

[A2] **Strategic University Research Partnerships Program (SURP)**.
Maximize spatial and vertical information in joint sounder and imager observations using ensemble machine-learning approach for Planetary Boundary Layer (PBL) and Extreme Events. **Period:** October 21, 2024–September 28, 2025.
Role: Co-I; PI: Qing Yue. **U-M award amount:** $39,400.

[A3] **NSF AGS**, Award 2419187.
Collaborative Research: Evolution of the Global TEC during Solar Flares. **Period:** August 1, 2024–July 31, 2027.
Role: Co-I; PI: Zihan Wang. **U-M award amount:** $258,009.

[A4] **NASA ROSES Heliophysics Space Weather Centers of Excellence Program**, Award 80NSSC23M0192.
Space Weather Operational Readiness Development (SWORD) Center. **Period:** January 2024–July 2028.
Role: Co-I; PI: Thomas Berger. **U-M award amount:** $3,499,990.

[A5] **NASA ROSES Heliophysics Space Weather Centers of Excellence Program**, Award 80NSSC23M0191.
CLEAR: Center for All-Clear SEP Forecast. **Period:** January 2024–July 2028.
Role: Co-I; lead on machine learning. PI: Lulu Zhao. **U-M award amount:** $9,290,762.

[A6] **NSF DMREF**, Award 2323765.
Collaborative Research: DMREF: AI-enabled Automated Design of Ultrastrong and Ultraelastic Metallic Alloys.
Period: October 1, 2023–September 30, 2027.
Role: Co-PI; PI: Liang Qi. **U-M award amount:** $966,053.

[A7] **NSF DMS**, Award 2113397.
DMS-EPSRC Collaborative Research: Advancing Statistical Foundations and Frontiers for and from Emerging Astronomical Data Challenges. **Period:** July 1, 2021–June 30, 2024.
Role: PI. **Total award amount:** $160,000.
PIs at other institutions: Xiao-Li Meng (lead PI), Thomas Lee, and David van Dyk.

[A8] **NSF PHY**, Award 2027555.
SWQU: NextGen Space Weather Modeling Framework Using Data, Physics and Uncertainty Quantification. **Period:** September 1, 2020–August 30, 2024.
Role: Co-PI; lead on data assimilation. PI: Gabor Toth. **Total award amount:** $2,860,000.

[A9] **NASA ROSES18 DRIVE Science Center Phase 1**, Award 80NSSC20K0600.
Solar Storms and Terrestrial Impacts Center (SOLSTICE). **Period:** December 20, 2019–December 19, 2021.
Role: Co-PI; lead on machine learning. PI: Tamas Gombosi. **Total award amount:** $1,200,000.

[A10] **Jayne Koskinas Ted Giovanis Foundation for Health and Policy**, Data Science Innovation Lab: Mathematical Challenges of Single Cell Dynamics.
Inferring lineage program regulating transcription factors for neuronal cell type identity from multi-modal single cell transcriptome and epigenome data. **Period:** July 24, 2018–July 23, 2019.
Role: Co-PI. **Total award amount:** $6,000.
Other co-PIs: Eran A. Mukamel, Chongzhi Zang, Max Qian, and K. B. Choi.

[A11] **NSF DMS**, Award 1811083.
Collaborative Research: Highly Principled Data Science for Multi-Domain Astronomical Measurements and Analysis. **Period:** July 15, 2018–June 30, 2021.
Role: PI. **U-M award amount:** $79,996.
PIs at other institutions: Xiao-Li Meng (lead PI), Thomas Lee, and David van Dyk.

Research Computing Credits

[A12] **Google Cloud Platform research credits**. **Period:** March 25, 2019–March 24, 2020.
Role: PI. **Support:** $6,000 in research computing credits.

B. Internal Funding: University of Michigan

Research and Teaching Grants

[B1] **Academic Innovation Fund (AIF) Award**.
Bridging Educational Gaps with Course-Adapted AI Tutors: A Causal Study in Statistics and Data Science Instruction. **Date:** June 30, 2026.
Role: PI. **Award amount:** $7,000.

[B2] **Center for Research on Learning and Teaching (CRLT)**, Investigating GenAI Teaching & Learning Mini-Grants Program. **Date:** May 4, 2026.
Role: PI. **Award amount:** $1,500.

[B3] **Michigan Institute for Data Science (MIDAS)**, Propelling Original Data Science (PODS) Award.
Sustainability outcomes of restrictions on human actions: COVID-19 mobility changes, forest fires and air pollution across land regimes. **Period:** July 30, 2022–July 29, 2023.
Role: Co-I; PIs: Arun Agrawal and Ines Ibanez. **Award amount:** $35,000.

[B4] **Michigan Institute for Data Science (MIDAS)**, Propelling Original Data Science (PODS) Award.
Data Science Approach Towards a Socio-ecological Framework for the Investigation of Continental Urban

Stream Water Quality Pattern. **Period:** June 10, 2021–June 9, 2022.
Role: Co-I; PI: Runzi Wang. **Award amount:** $70,000.

[B5] **Graham Sustainability Institute, University of Michigan**, Catalyst Grant Award.
Urban water quality management towards a sustainable framework - the investigation of fine-scale urban form effects on stream water quality. **Period:** June 1, 2021–January 31, 2022.
Role: Co-I; PI: Runzi Wang. **Award amount:** $10,000.

[B6] **MCubed, University of Michigan**.
Personalized Diagnosis for Disease Etiology Studies and Cognitive Assessment. **Period:** September 1, 2018–December 31, 2020.
Role: PI; other PIs: Zhenke Wu and Gongjun Xu. **Award amount:** $60,000.

Fellowships and Faculty Support

[B7] **LSA-LEAD Fellow**. **Period:** Academic Year 2026–2027. **Award amount:** $8,500.

[B8] **Provost Early Tenure Track Faculty Research Support Initiative**. **Date:** March 22, 2023. **Award amount:** $3,000.

TEACHING EXPERIENCE

A. University Courses

Department of Statistics, University of Michigan, Ann Arbor, MI

- **STATS/DATASCI 451: Bayesian Methods**.
  Level: Undergraduate. **Class size:** 35–100.
  Terms taught: Winter 2026; Fall & Winter 2025; Fall & Winter 2024; Winter 2023; Fall & Winter 2019.
- **STATS 551: Bayesian Modeling and Computation**.
  Level: Master's. **Class size:** 80.
  Terms taught: Winter 2020; Winter 2019; Winter 2018.
- **STATS 605: Advanced Topics in Modeling and Data Analysis**.
  Level: Ph.D. **Class size:** 19.
  Terms taught: Fall 2023.
- **STATS 700: Bayesian Modeling and Computation**.
  Level: Ph.D. **Class size:** 13.
  Terms taught: Fall 2017.

B. Short Courses, Workshops, and Summer Programs

Michigan Institute for Data Science (MIDAS), University of Michigan, Ann Arbor, MI

- **Tutorial on Bayesian Statistics**.
  Offerings: MIDAS Data Science Summer Academies, June 2024; Schmidt AI in Science Bootcamp, September 2023.
- **Applied Statistics for Environmental Scientists**.
  Dates: August 2023; November 2022.

Department of Biostatistics, University of Michigan, Ann Arbor, MI

- **Big Data Summer Institute**.
  Topics taught: Missing Data (2023); Bayesian Computation (2019); Bayesian Models (2018).

C. Teaching Development

- **Inclusive STEM Teaching Project's Online Course**. Completed November 2024.

PRESENTATIONS

A. Keynote Addresses

1. **June 2026** — MIDAS UQ Incubator workshop, Ann Arbor, MI.
2. **February 2020** — Michigan Student Symposium for Interdisciplinary Statistical Sciences, Ann Arbor, MI.

B. Invited Conference and Workshop Talks

1. **November 2026** — SIAM Conference on Mathematics of Data Science (MDS 2026), Salt Lake City, UT.
2. **August 2026** — Invited Session at the Joint Statistical Meetings, Boston, MA.
3. **June 2026** — 2026 ICSA Applied Statistics Symposium, Arlington, Virginia.
4. **June 2026** — The 9th International Workshop in Sequential Methodologies, American University, Washington, DC.
5. **June 2026** — The Statistical Methods in Imaging (SMI) Conference, Ann Arbor, MI.
6. **May 2026** — STAMPS Workshop on Trustworthy Statistical Inference for the Physical Sciences, Pittsburgh, PA.
7. **October 2025** — Machine Learning, Data Mining, and Data Assimilation in Geospace (LMAG25), APL/JHU.
8. **September 2025** — ISU-NISS Conference on AI and Statistics, Ames, Iowa.
9. **September 2025** — Fast and Curious II: MCMC in Action, Toronto, Canada.
10. **August 2025** — Invited Session at the Joint Statistical Meetings, Nashville, TN.
11. **April 2025** — AI/ML in Heliophysics, National Solar Observatory (NSO).
12. **November 2024** — European Space Weather Week, Coimbra, Portugal.
13. **October 2024** — International Day of Women in Statistics and Data Science (IDWSDS).
14. **August 2024** — Invited Session at the Joint Statistical Meetings, Portland, OR.
15. **August 2024** — 26th International Conference on Computational Statistics (COMPSTAT 2024), University of Giessen.
16. **July 2024** — "Bayesian Methods for Astrophysics Discovery Based on Big Data," 2024 World Meeting of the International Society for Bayesian Analysis (ISBA), Venice, Italy.
17. **June 2024** — AOGS (Asia Oceania Geosciences Society) 2024, 21st Annual Meeting, Gangwon-do, Korea.
18. **June 2024** — 2024 WNAR/IMS/Graybill Annual Meeting, Fort Collins, CO.
19. **May 2024** — Midwest Machine Learning Symposium (MMLS 2024), Minneapolis, MN.
20. **November 2023** — "Astrostatistics in Canada & Beyond" BIRS workshop, Banff Centre, Banff, AB, Canada.
21. **October 2023** — 2023 INFORMS Annual Meeting, Phoenix, AZ.
22. **October 2023** — Data, Analysis, and Software in Heliophysics (DASH) Conference, JHU/APL, Laurel, MD.

23. **August 2023** — AOGS (Asia Oceania Geosciences Society) 2023, 20th Annual Meeting, Virtual.
24. **July 2023** — 64th ISI World Statistics Congress, Ottawa, Canada.
25. **June 2023** — Statistical Challenges in Modern Astronomy VIII, Penn State University, State College, PA.
26. **April 2023** — AI in Science and Engineering Symposium, University of Michigan, Ann Arbor.
27. **November 2022** — U-M Annual Data Science and AI Summit, Ann Arbor, MI.
28. **August 2022** — 2022 Triennial Earth-Sun Summit, Seattle, WA.
29. **July 2022** — The Big Data Summer Institute's Concluding Symposium, Ann Arbor, Michigan.
30. **April 2022** — Space Weather Workshop 2022, "Collaboration: Advancing the Space Weather Enterprise", Virtual.
31. **October 2021** — INFORMS Annual Meeting, Virtual.
32. **June 2021** — Virtual 238th Meeting of the American Astronomical Society (AAS 238), "(Special Session) Unaccounted Uncertainties: The Role of Systematics in Astrophysics".
33. **December 2020** — Special Session "Machine Learning in Space Weather", the American Geophysical Union (AGU) Fall Meeting, Virtual.
34. **September 2020** — Workshop on machine Learning, data Mining and data Assimilation in Geospace (LMAG2020), Virtual.
35. **August 2020** — SDO/STEREO ML Science Meeting, Virtual.
36. **July 2019** — 2019 ICSA China Conference, Tianjin, China.
37. **June 2019** — 3rd International Conference on Econometrics and Statistics (EcoSta 2019), National Chung Hsing University, Taiwan.
38. **June 2019** — ICSA 2019 Applied Statistics Symposium, Raleigh, NC.
39. **April 2019** — Special Session by WiSDM (Women in the Science of Data and Mathematics) AWM (Association for Women in Mathematics) Symposium, Rice University.
40. **December 2018** — CFE-CMStatistics 2018, Pisa, Italy.
41. **November 2018** — Computational Statistics and Molecular Simulation: A Practical Cross-Fertilization, CMO-BIRS, Oaxaca, Mexico.
42. **August 2018** — Advances in Finite Mixture Models, Guilin, China.
43. **July 2018** — 2018 Big Data Summer Institute (BDSI 2018) Symposium, University of Michigan, Ann Arbor, MI.
44. **December 2017** — 2017 Data Science Research Forum, Michigan Institute for Data Science, University of Michigan, Ann Arbor, MI.
45. **June 2017** — AAS 230 (230th Meeting of the American Astronomical Society): Special Session "Topics in AstroStatistics", Austin, TX.

C. Seminars and Colloquia

1. **October 2026** — ISEP Seminar, Space Radiation Analysis Group, Johnson Space Center, Virtual.
2. **June 2026** — Michigan Institute for Data and AI in Society (MIDAS) postdoc seminar series, Ann Arbor, MI.
3. **April 2026** — Colloquium, Institute for Space Weather Sciences (ISWS), New Jersey Institute of Technology (NJIT), Newark, NJ.
4. **January 2026** — Statistics Colloquium, Michigan State University.
5. **August 2025** — The Aerospace Corporation, Virtual.

6. **August 2025** — NASA SEP ML Collaboration Meeting, Virtual.
7. **April 2025** — Statistics Seminar, Purdue University, West Lafayette, IN.
8. **March 2025** — Statistics Seminar, Oregon State University, Corvallis, OR.
9. **September 2024** — Statistics Seminar, University of Michigan, Ann Arbor, MI.
10. **June 2024** — Seminar, National Solar Observatory (NSO), Boulder, CO.
11. **April 2024** — Electrical and Computer Engineering (ECE) Communications and Signal Processing (CSP) Seminar Series, University of Michigan, Ann Arbor.
12. **March 2024** — Statistics Seminar, Cornell University, Ithaca.
13. **March 2024** — Statistics Colloquium at University of Waterloo, Canada.
14. **February 2024** — Statistics Seminar, Rice University.
15. **February 2024** — Statistics Seminar, University of California, Berkeley.
16. **January 2024** — Statistics Seminar, Duke University.
17. **December 2023** — Statistics Colloquium at University of Washington, Seattle, Virtual.
18. **November 2023** — Statistics Colloquium at Simon Fraser University, Vancouver, Canada.
19. **October 2023** — Physics and Astronomy Seminar at the University of Alabama, Huntsville.
20. **October 2023** — NASA's Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA.
21. **September 2023** — Statistics Colloquium at Michigan State University, East Lansing, MI.
22. **September 2023** — Statistics Colloquium at Auburn University, Virtual.
23. **April 2023** — Ann Arbor Chapter of American Statistical Association, Virtual.
24. **March 2023** — Magnetosphere Online Seminar Series, Virtual.
25. **June 2022** — UDP (Universidad Diego Portales, Santiago, Chile) Seminarios Data Science Year, Virtual.
26. **May 2022** — Statistics Seminar, Department of Statistics, University of Washington, Seattle.
27. **March 2022** — Neyman Statistics Seminar, Department of Statistics, University of California, Berkeley.
28. **October 2021** — Statistical Methods for the Physical Sciences (STAMPS) Webinar at the Carnegie Mellon University, Virtual.
29. **April 2021** — Statistics Seminar, Department of Mathematical Sciences, New Jersey Institute of Technology.
30. **February 2021** — Seminar, Institute for Space Sciences, New Jersey Institute of Technology.
31. **February 2021** — Seminar, Department of Statistics, Ohio State University.
32. **September 2020** — Space Weather Applications of Machine Intelligence (SWAMI) Seminar Series, University of Colorado, Boulder, Virtual.
33. **October 2019** — School of Statistics Seminar, University of Minnesota.
34. **March 2019** — Statistics Seminar, University of Notre Dame.
35. **February 2019** — Statistics Seminar, Duke University.
36. **December 2018** — Massive and heterogeneous data and knowledge (LaHDAK) Seminar, laboratoire de Recherche en Informatique, Universite Paris-Sud, France.
37. **December 2018** — Institut Curie - Paris, France.
38. **November 2018** — Collaborative Research Center Seminar, Georg-August-University Göttingen, Germany.
39. **October 2018** — MIDAS Seminar, University of Michigan, Ann Arbor, MI.
40. **January–February 2017** — *Job talks.* Statistics seminars at the University of Michigan, Ann Arbor; University of California, Berkeley; Columbia University; Rutgers University; University of Virginia; University of Waterloo;

University of Illinois Urbana-Champaign; and University of Illinois Chicago.

D. Panels and Discussion Contributions

1. **August 2026** — *Discussant.* Invited paper session, Joint Statistical Meetings (JSM), Boston, MA.
2. **November 2024** — *Panelist.* Foundations of Biomedical Data Science Seminar Series, panel for past Biomedical Data Science Innovation Lab (BDSIL) participants, Virtual.
3. **August 2024** — JASA Applications & Case Studies Discussion Session, Joint Statistical Meetings, Portland, OR.
4. **May 2022** — *Panelist.* "Perspectives on the evolution of statistics within the data science landscape", 11th annual ASA 2022 UP-STAT Conference in Statistics, SUNY University at Buffalo, Virtual.
5. **August 2021** — *Discussant.* "Statistical and Machine Learning Efforts on Solar Flare Predictions II - Topic Contributed Papers", Joint Statistical Meetings, Virtual.

E. Contributed Talks and Research Meetings

1. **May 2026** — 2026 NSF ECLIPSE (Ecosystem for Collaborative Leadership and Inclusive Innovation Plasma Science and Engineering) Meeting, Ann Arbor, MI.
2. **May 2026** — NASA Space Weather Centers of Excellence Annual Meeting, Boulder, CO.
3. **May 2026** — 2026 EGU (European Geosciences Union) General Assembly, Vienna, Austria.
4. **December 2025** — AGU25 Annual Meeting, New Orleans, LA.
5. **October 2025** — 65th ISI World Statistics Congress 2025, The Hague.
6. **October 2025** — Machine Learning, Data Mining, and Data Assimilation in Geospace (LMAG25).
7. **October 2024** — Joint SCEPTER and CLEAR Meeting, Ann Arbor, MI.
8. **August 2024** — 1st Annual Scientific Understanding through Data Science (SUDS) Conference, Pasadena, CA.
9. **March 2024** — International CHASC Astro-Statistics Collaboration Seminar Series, Cambridge, MA.
10. **February 2024** — NASA SWORD Center Kick-off Meeting, University of Colorado Boulder.
11. **January 2024** — NASA CLEAR Center Kick-off Meeting, University of Michigan, Ann Arbor, MI.
12. **November 2023** — BAYSM 2023, Virtual.
13. **August 2023** — Joint Statistical Meetings (JSM), Ontario, Canada.
14. **June 2023** — CHASC Weekly Seminar Series, Virtual.
15. **April 2023** — IACHEC CalStats Working Group, Virtual.
16. **March 2023** — 2023 SWQU Spring Meeting, Cambridge, MA.
17. **August 2022** — CHASC Workshop, Cambridge, MA.
18. **June 2021** — International Society for Bayesian Analysis (ISBA) World Meeting 2021, Virtual.
19. **May 2021** — SOLSTICE (Solar Storms and Terrestrial Impacts Center) Science Seminar Series, University of Michigan, Ann Arbor.
20. **November 2020** — 4th SWMF Users Meeting, Virtual.
21. **September 2020** — International CHASC AstroStatistics Centre, Topics in Astrostatistics, Harvard University.
22. **December 2019** — American Geophysical Union (AGU) Fall Meeting, San Francisco, CA.
23. **July 2019** — Symposium on Big Data, Human Health, and Statistics, University of Michigan, Ann Arbor, MI.

24. **March 2019** — 3rd SWMF (Space Weather Modeling Framework) Users Meeting, University of Michigan, Ann Arbor, MI.
25. **February 2019** — Earth, Climate and Coffee, Climate and Space Sciences and Engineering, University of Michigan.
26. **July 2017** — Women in Data Science and Mathematics Research Collaboration Workshop (WiSDM), ICERM, Brown University, Providence, RI.
27. **August 2016** — The Joint Statistical Meetings, Chicago, IL.
28. **August 2015** — The Joint Statistical Meetings, Seattle, WA.
29. **April 2015** — The New England Statistics Symposium, University of Connecticut, Storrs, CT.
30. **April 2014** — Olin College, Needham, MA.

F. Presentations Delivered by Collaborators

1. **November 2026** – 2026 INFORMS Annual Meeting, San Francisco, CA. *Presented by Jiuqian Shang.*
2. **October 2024** — 2024 INFORMS Annual Meeting, Seattle, WA. *Presented by Victor Verma.*

HONORS AND AWARDS

- **IMS Thelma and Marvin Zelen Emerging Women Leaders in Data Science Award**, 2026.
- **Inaugural Michael Woodroofe Award**, Caucus for Women in Statistics and Data Science, 2024.
- **Elected Fellow of the International Statistical Institute (ISI)**, 2024.
- **IBM Student Paper Award**, New England Statistics Symposium (NESS), 2015.
- **Certificate of Distinction in Teaching Awards**, Harvard University, 2014, 2013.
- **Guo Moruo Scholarship (Summa Cum Laude)**, University of Science and Technology of China, 2011.
- **Microsoft Young Scholarship**, Microsoft Research Asia, 2010.
- **National Scholarship for Undergraduates**, Ministry of Education of China, 2009.

PROFESSIONAL SERVICE

A. Editorial Service

Associate Editorships

- *ASA Discoveries*, 2026–2028.
- *Statistical Science*, 2023–2025; 2026–2028.
- *Journal of the American Statistical Association (JASA) Review*, 2023–2025; 2026–2028.
- *The New England Journal of Statistics in Data Science (NEJSDS)*, Engineering Sciences Section, 2021–present.
- *The American Statistician*, 2023–2025.

Guest Editorships

- Special issue of *Statistics and Data Science in Imaging (SDSI)*, 2026–2027.
- *Frontiers in Astronomy and Space Sciences*: special-issue guest editor, 2025; guest editor, 2022–2023.

B. Professional Society Leadership and Committee Service

- **ASA Astrostatistics Interest Group (AIG)**: Chair, 2026; Chair-Elect, 2025; Program Chair, 2022; Program Chair-Elect, 2021; Secretary, 2018–2020.
- **Gertrude M. Cox Scholarship Committee**: Chair, 2025–2026; committee service, 2024.
- **ASA Committee on Women in Statistics (CoWiS)**: Committee Member, 2022–2024; 2025–2027.
- **ASA Statistics in Imaging Section**: Council of Sections Representative, 2027–2029 *(forthcoming term)*.
- **Student Paper Competition Committee**, Statistical Learning and Data Science/Nonparametric Statistics (SLDS) 2020, March 2020.

C. Scientific Advisory and Community Service

- **Science Working Group Member**, next generation Ground-based Solar Observing Network (ngGONG), 2026–2028.
- **Invited Participant**, Heliolab Ops 2026 Missing Manual Technical Meeting, Southwest Research Institute (SwRI), Boulder, Colorado, November 2026.
- **External Advisory Service**, NJIT ISWS External Advisory Board and NASA MIRO Center External Advisory Committee, 2024.

D. Conference, Workshop, and Seminar Organization

- **Scientific Program Committee**, 2027 ICSA Applied Statistics Symposium, University of Pittsburgh, June 13–16, 2027.
- **Committee Member**, PhyStat 2027, Stanford University, May 24, 2027.
- **Co-organizer**, invited paper session "Deep Space: Deep Learning in Astronomy", Joint Statistical Meetings (JSM), Boston, MA, August 1–6, 2026.
- **Scientific Program Committee**, Statistical Methods in Imaging (SMI) Conference, Ann Arbor, MI, June 1–3, 2026.
- **Organizer**, invited paper session "Recent Advances in Matrix and Tensor Time Series Models", CFE-CMStatistics 2025, Birkbeck, University of London, December 13–15, 2025.
- **Organizing Committee**, "SABID 2025: Workshop on Solar & Stellar Astronomy Big Data", 25th IEEE International Conference on Data Mining (ICDM), Washington, DC, November 12–15, 2025.
- **Machine Learning in Heliophysics (ML-Helio)**: Scientific Organizing Committee, 2022–2025; Organizing Committee, Madrid, Spain, September 22–26, 2025.
- **Co-organizer**, Online Monte Carlo Seminar, 2024–2025.
- **Organizer**, lightning talk session "Data-driven Approaches as a Revolution for Space Weather Forecasting", ADSA Annual Meeting, Ann Arbor, Michigan, October 29–31, 2024.
- **Session Chair**, "The Promises and Perils of Long Time: Recent advances in astronomical time series", Joint Statistical Meetings, Portland, OR, August 3–9, 2024.
- **Local Organizing Committee**, ICSA 2023 Applied Statistics Symposium, Ann Arbor, MI, June 11–14, 2023; **Organizer and Moderator**, "Panel on Careers in Data Science", June 12, 2023.
- **Organizer and Chair**, "Matrix/Tensor Valued Data Mining Methods and Applications", INFORMS Annual Meeting, Indianapolis, Indiana, October 16–19, 2022.
- **Organizer and Chair**, topic-contributed session "Open Problems in Astrostatistics", Joint Statistical Meetings, August 6–11, 2022.

- **Organizer and Chair**, two companion topic-contributed sessions "Statistical and Machine Learning Efforts on Solar Flare Predictions (I & II)", Joint Statistical Meetings, August 2021.
- **Organizer and Chair**, special invited session "Advances in hidden Markov models: Theory and applications", National Chung Hsing University (NCHU), Taichung, Taiwan, June 26, 2019.
- **Organizer**, Fifth Bayesian, Fiducial, and Frequentist (BFF5) Conference: Foundations of Data Science, University of Michigan, Ann Arbor, MI, May 2018.

E. Reviewing

Funding Agencies

- **NSF Reviewer**, 2026, 2025, 2024, 2023, 2021, 2020, 2019.
- **NASA Reviewer**, 2026, 2024, 2022.

Journal Refereeing

- **Statistics and Data Science**: *Annals of Applied Statistics*; *Biometrics*; *Journal of the American Statistical Association* (Theory & Methods; Applications and Case Studies); *Journal of Machine Learning Research*; *Journal of Statistical Theory and Practice*; *Statistical Analysis and Data Mining*; *Statistics and Data Science in Imaging*; *The American Statistician*.
- **Astronomy, Space Science, and Geoscience**: *Astronomy and Computing*; *Earth, Planets and Space*; *Frontiers Astronomy*; *Front. Astron. Space Sci. – Astrostatistics*; *Journal of Geophysical Research*; *Space Weather*; *The Astrophysical Journal*.
- **Biological and Multidisciplinary Sciences**: *Frontiers in Genetics*; *PLOS ONE*; *Scientific Data* (Nature).

F. Professional Mentoring

- **Mentor**, Flash Mentoring, Caucus for Women in Statistics and Data Science (CWS), 2024.
- **Mentor**, Women in Science, Technology, Engineering, and Mathematics (WISTEM), Harvard University, Cambridge, MA, 2016–2017.

G. University of Michigan Service

Department of Statistics

- **Chair**, Task Force on AI & Teaching, 2026.
- Undergraduate Curriculum Committee, 2021, 2023–2026.
- Ph.D. Admissions Committee, 2021–2022, 2024–2026.
- Graduate Curriculum Committee, 2022, 2024–2025.
- Department Culture Committee, 2025.
- DEI Committee, 2021–2024.
- Seminar Committee: **Chair**, 2022; committee service, 2023.
- Applied Statistics Master's Admissions Committee, 2023.
- Undergraduate Advising, 2021–2023.
- Master's Advising, 2021–2023.
- Faculty Search Committee, 2022.

Department of Climate and Space Sciences and Engineering

- Reappointment committee for research scientist and faculty, 2026.

University-wide Service

- **Reviewer**, MIDAS, MICDE, and MMRI, 2026.
- **Faculty Panel**, MIDAS AI in Science Symposium, April 3, 2023.
- **Seminar Committee**, MIDAS, Winter 2020.
- **Program Committee**, 2019 MIDAS Symposium, "Embracing the Challenge: Data Science for the Next Ten Years", University of Michigan, November 13–15, 2019.

MENTORING EXPERIENCE

A. Postdoctoral Fellows

- **Hongfan Chen**, Postdoctoral Researcher in Statistics, 2027–2028 (forthcoming).
  Role: Primary mentor.
- **Yian Yu**, Postdoctoral Researcher in Statistics, 2025–2027.
  Role: Primary mentor.
- **Zhen Qin**, MICDE Postdoctoral Fellow, 2025–2027.
  Role: Joint mentor with Qing Qu.
- **Tsige Atilaw**, Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship, 2024–2026.
  Role: AI mentor. **Science mentor:** Mojtaba Akhavan-Tafti.
- **Yiluan Song**, Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship, 2023–2025.
  Role: AI mentor. **Science mentor:** Kai Zhu.
  First position: Assistant Professor, University of Pittsburgh.
- **Jingyang Li**, Postdoctoral Researcher in Statistics and Mathematics, 2023–2025.
  Role: Primary mentor.
  First position: Assistant Professor, Fudan University.
- **Arya Farahi**, MIDAS Data Science Fellow, 2019–2021.
  Role: Mentor. **Other mentors:** Dragan Huterer and August (Gus) Evrard.
  First position: Assistant Professor of Statistics and Data Science (SDS), University of Texas at Austin.

B. Doctoral Advising: Chair or Co-Chair

Current Students

- **Xiaoyu Qiu**, 2026–present. Joint advising with Liyue Shen.
- **Erica Brown**, 2026–present.
- **Surtai Han**, 2025–present.
- **Kevin Jin**, 2024–present.
- **Soham Das**, 2024–present.
- **Jiuqian Shang**, 2024–present.
- **Yuxuan Ke**, 2023–present.

- **Noah Kochanski**, 2023–present.
- **Victor Verma**, 2022–present. Joint advising with Stilian Stoev.

Completed Dissertations

- **Hongfan Chen**, Ph.D. in Mechanical Engineering, 2026. **Co-chair:** Xun Huan.
  Dissertation: *A Physics-Data Hybrid Approach for Probabilistic Sun-to-Earth Space Weather Forecasting in Data-Sparse Settings.*
- **Hu Sun**, 2020–2024.
  Dissertation: *Statistical Methods for Spatio-Temporal Tensor Data.*
  First position: IMC Trading.
- **Robert N. Trangucci**, 2017–2023. Joint advising with Jon Zelner.
  Dissertation: *Bayesian Methods for Mitigating Sample Selection Bias in Epidemiology.*
  First position: Assistant Professor of Statistics, Oregon State University.
- **Daniel Iong**, 2017–2023.
  Dissertation: *Inference Algorithms for Probabilistic Models with Applications in Epidemiology and Space Weather Forecasting.*
  First position: Researcher, Institute for Defense Analyses (IDA).
- **Bach Viet Do**, 2017–2023. Joint advising with Long Nguyen.
  Dissertation: *Mixture Modeling: Solar Application & Misspecification Behaviors.*
  First position: Research Data Scientist, Ford Motor, Dearborn.
- **Wayne (Yu) Wang**, 2018–2022. Joint advising with Alfred O. Hero.
  Dissertation: *Interpretable and Scalable Graphical Models for Complex Spatio-temporal Processes.*
  First position: Researcher, Google.

C. Master's Research Mentoring

First position after graduation is listed when known.

- **Fangzhou Cao**, 2026.
- **Haoze Wu**, 2026.
- **Lucas Chiang**, 2026.
- **Matthew McAnear**, 2023–2025.
  First position: Ph.D. student, University of Michigan.
- **Ke Hu**, 2024–2025.
  First position: Ph.D. student, University of Illinois Urbana-Champaign.
- **Chia-Yun Li**, 2024–2025.
- **Jiaxing Xu**, 2024–2025.
- **Ashlan Simpson**, 2024–2025.
- **Jiayin Ye**, 2023–2024.
  First position: Ph.D. student, University of Maryland.
- **Xinyu Liang**, 2023–2024. Joint mentoring with Wenman Liu.
- **Yizhou Zhang**, 2023–2024.
  First position: Ph.D. student, Purdue University.

- **Yurui Chang**, 2022–2023.
  First position: Ph.D. student, Penn State University.
- **Qikai Hu**, 2022–2023.
  First position: Ph.D. student, University of Michigan, CLaSP.
- **Ruoyang Liu**, 2022–2023.
- **Xianlin Sun**, 2021–2022.
  First position: Ph.D. student, University of Hong Kong.
- **Hongfan Chen**, 2021–2022.
  First position: Ph.D. student, University of Michigan, Mechanical Engineering.
- **Wei Zhao**, 2021–2022.
  First position: Ph.D. student, North Carolina State University.
- **Zeyuan Li**, 2022.
- **Zhijun Hua**, 2020–2021.
  First position: Ph.D. student, Cornell University.
- **Zhenbang Jiao**, 2019–2020.
  First position: Ph.D. student, The Ohio State University.
- **Hu Sun**, 2019–2020.
  First position: Ph.D. student, University of Michigan, Statistics.
- **Naomi Giertych**, 2018–2019.
  First position: Ph.D. student, North Carolina State University.
- **Tian Zhou**, 2017–2018.
  First position: Research Engineer, Yahoo.

D. BRIDGE Program Mentoring

- **Mallory Wang**, 2023.
- **Noah Kochanski**, 2022–2023.
- **Dylan Glover**, 2021–2022.

E. Undergraduate Mentoring

University of Michigan

- **Shreyas Shrivastava**, 2026.
- **Huaqi Wei**, 2026.
- **Yuezhou Qu**, 2023.
- **Ruipu Li**, 2022–2023. Joint mentoring with Joyce Penner.
- **Nicolas Harder**, 2022–2023. Joint mentoring with Joyce Penner.
- **Brandon Li**. Joint mentoring with Yi Hong.

Other Institutions

- **Dongrun Wu**, University of Science and Technology of China, 2025.

- **Siyuan Tang**, University of Science and Technology of China, 2024.
- **Xiaoli Li**, University of Science and Technology of China, 2023–2024.
- **Xiaofan Xia**, University of Science and Technology of China, 2023.
- **Jiuqian Shang**, University of Science and Technology of China, 2022–2023.
- **Miaoshiqi Liu**, Tsinghua University, 2018.
- **Song Wei**, University of Science and Technology of China, 2018.

F. High School Mentoring

- **Jiajia Sophie Huang**, Huron High School, Ann Arbor, MI, 2025–2026.
  Admitted to Columbia University, 2026.

G. Postdoctoral Committee Service

- **Xin Xie**, Physics; Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship, 2023–2025.
  Role: Committee member.

DOCTORAL DISSERTATION COMMITTEE SERVICE

Current Committee Memberships

1. **An Pho**, Ph.D. student in Statistics. Chair: Long Nguyen (Statistics).
2. **Qikai Hu**, Ph.D. candidate in Climate and Space Sciences and Engineering. Chair: Xianglei Huang (CLaSP).
3. **Pravendra Patel**, Ph.D. candidate in Material Science & Engineering (MSE). Chair: Liang Qi (MSE).
4. **Sahana Rayan**, Ph.D. candidate in Statistics. Chair: Ambuj Tewari (Statistics).
5. **Vivian Cribb**, Ph.D. candidate in Climate and Space Sciences and Engineering. Chair: Tuija Pulkkinen (CLaSP).
6. **Jiatong Liang**, Ph.D. candidate in Statistics. Chair: Jonathan Terhorst (Statistics).
7. **Jie He**, Ph.D. candidate in Environmental Health Sciences (EHS). Chair: Richard Neitzel (EHS).
8. **Hui Yu**, Ph.D. student in College of Pharmacy. Chair: Haojie Zhu (Pharmacy).
9. **Eddie Aljamal**, Ph.D. candidate in Astronomy. Chair: August Evrard (Astronomy).
10. **Jieru Zhang**, Ph.D. candidate in Material Science & Engineering (MSE). Chair: Liang Qi (MSE).
11. **Yiling Huang**, Ph.D. candidate in Statistics. Chair: Snigdha Panigrahi (Statistics).

Completed Dissertations

2026

1. **Weihao Liu**, Ph.D. in Climate and Space Sciences and Engineering (CLaSP).
   Understanding Energetic Particle Acceleration and Transport from the Solar Corona to Interplanetary Space Through the Eye of Simulation. Chairs: Lulu Zhao and Tamas Gombosi (CLaSP).
2. **Katherine Ahn**, Ph.D. in Statistics.
   Statistical Methods for Interpretable Representation in Complex Data. Chair: Kerby Shedden (Statistics).

3. **Eduardo Ochoa**, Ph.D. in Statistics.
   Statistical Foundations for Microplastic Identification: Efficient Sampling and Distribution-Free Uncertainty Quantification. Chair: Ambuj Tewari (Statistics).

4. **Yilei Zhang**, Ph.D. in Statistics.
   Bayesian generative modeling of latent subpopulations with nonparametric distributions. Chair: Long Nguyen (Statistics).

5. **Jiayuan Dong**, Ph.D. in Mechanical Engineering.
   Efficient Goal-oriented Sequential Bayesian Experimental Design with Applications to Causal and Physical Systems. Chair: Xun Huan (ME).

6. **Aniket Jivani**, Ph.D. in Mechanical Engineering.
   Active Data Collection and Multi-fidelity Methods for Principled Surrogate Model Construction. Chair: Xun Huan (ME).

2025

7. **Yash Patel**, Ph.D. in Statistics.
   Conformally Robust Decision Making. Chair: Ambuj Tewari (Statistics).

8. **Yuan Zhong**, Ph.D. in Biostatistics.
   Integrating Deep Learning and Bayesian Inference in Neuroimaging Analysis. Chair: Jian Kang (Biostatistics).

9. **Jiacheng Liu**, Ph.D. in Industrial and Operations Engineering (IOE), dual degree in Statistics.
   Bayesian Optimization for Personalized Vehicle Safety Design. Chair: Judy Jin (IOE).

10. **Zenan Fu**, Ph.D. in Mathematics.
    Cluster Structures in Mixed Grassmannians. Chair: Sergey Fomin (Mathematics).

11. **Nicholas Kyriacou**, Ph.D. in Physics.
    A Higgs Physics Trilogy: Studying the Production of Multiple Higgs Bosons. Chair: Jianmin Qian (Physics).

2024

12. **Zhichen Wang**, Ph.D. in Physics.
    Observation of $W^{\pm}W^{\mp}Z$, $W^{\pm}ZZ$ and ZZZ Production and Search for Quantum Entanglement in $H \to ZZ^{\star}$ Decays with $\sqrt{s} = 13$ TeV pp Collisions with the ATLAS Detector. Chair: Junjie Zhu (Physics).

13. **Zeyu Sun**, Ph.D. in Electrical Engineering and Computer Sciences (EECS).
    Towards Calibrated, Sharp, and Interpretable Probabilistic Prediction. Chair: Alfred Hero (EECS).

14. **Yijun Li**, Ph.D. in Biostatistics.
    Computational Analysis and Statistical Methods in Spatial Transcriptomics and Neuroimaging. Chairs: Jian Kang (Biostatistics) and Lana Garmire (DCMB).

15. **Zikai Lin**, Ph.D. in Biostatistics.
    Statistical Adjustment of Population Heterogeneity and Generalizability in Neuroscience. Chairs: Jian Kang (Biostatistics) and Yajuan Si (ISR).

16. **Vincenzo Loffredo**, Ph.D. in Statistics.
    Bayesian Perspectives on LongROAD Study: Analyzing Driving Decline and Latent Traits. Chair: Long Nguyen (Statistics).

2023

17. **Prachi Atmassidha**, Ph.D. in Physics.
    First measurements of the Radiation Amplitude Zero effect and of the diboson longitudinal-longitudinal interac-

tions in High p_T region using $W^{\pm}Z$ production with the ATLAS detector. Chair: Junjie Zhu (Physics).

18. **Matthew-Remy Aguirre**, Ph.D. in Industrial and Operations Engineering.
Data Analytics of Human Behaviors with Applications. Chair: Judy Jin (IOE).

19. **Yuqi Zhai**, Ph.D. in Biostatistics.
Improving estimation efficiency by integrating external summary information from heterogeneous populations. Chair: Peisong Han (Biostatistics).

20. **Derek Hanson**, Ph.D. in Statistics.
Mechanistic and Data-Adaptive Bayesian Methods for Scientific Inference. Chair: Jefferey Regier (Statistics).

21. **Elizabeth Chase**, Ph.D. in Biostatistics.
Two Biostatistical Problems. Chair: Jeremy Taylor (Biostatistics).

22. **Zebang Li**, Ph.D. in Statistics, Rutgers, The State University of New Jersey.
Matrix and Tensor Autoregressive Models. Chair: Han Xiao (Rutgers Statistics).

23. **Spiridon Kasapis**, Ph.D. in Naval Architecture and Marine Engineering.
Processing Image Data from Unstructured Environments. Chair: Nickolas Vlahopoulos (NAME).

2022

24. **Brian Swiger**, Ph.D. in Climate and Space Sciences.
Patterns of Electron Flux in the Near-Earth Plasma Sheet: Statistical Learning. Chair: Michael W. Liemohn (CLaSP).

25. **Rayleigh Lei**, Ph.D. in Statistics.
Modeling Simplex Data. Chair: Long Nguyen (Statistics).

26. **Xianing Zheng**, Ph.D. in Human Genetics, dual degree in Statistics.
Single Cell Transcriptomic Analytics: Methods Development, Benchmarking, and Applications in Biological Research. Chair: Jun Li (Human Genetics).

27. **Caleb Ki**, Ph.D. in Statistics.
Statistical Methods in Population Genetics and Viral Phylodynamics. Chairs: Jonathan Terhorst and Edward Ionides (Statistics).

2021

28. **Jiaen Ren**, Ph.D. in Climate and Space Sciences.
Characteristics and Generation Mechanism of Polar Cap Patch: Multi-instrument Observations. Chair: Shasha Zou (CLaSP).

29. **Allison Furgal**, Ph.D. in Biostatistics.
Bayesian Models for Joint Longitudinal and Multi-State Survival Data. Chairs: Ananda Sen and Jeremy Taylor (Biostatistics).

30. **Tian Gu**, Ph.D. in Biostatistics.
Statistical Methods to Incorporate External Summary-level Information into a Current Study. Chairs: Bhramar Mukerjee and Jeremy Taylor (Biostatistics).

31. **Yang Zhang**, Ph.D. in Sociology, dual degree in Statistics.
Three Essays on the Determinants and Consequences of Union Experiences. Chair: Sarah Burgard (Sociology).

2020

32. **April Cho**, Ph.D. in Statistics.
Statistical Analysis of Structured Latent Attribute Models. Chair: Gongjun Xu (Statistics).

33. **Shannon Ang**, Ph.D. in Sociology, dual degree in Statistics.
Three Papers on Social Participation over the Life Course. Chair: Sarah Burgard (Sociology).

34. **Abigail Azari**, Ph.D. in Climate and Space Sciences.
A Data-Driven Understanding of Plasma Transport in Saturn's Magnetic Environment. Chair: Michael Liemohn (CLaSP).

35. **Ryan Dewey**, Ph.D. in Climate and Space Sciences.
Dipolarizations in Mercury's Magnetotail: Characteristics and Consequences in a Miniature Magnetosphere. Chairs: James A. Slavin and Jim M. Raines (CLaSP).

36. **Yumu Liu**, Ph.D. in Statistics.
Aspects in Improving Statistical Procedures for Networks with Node Covariates. Chair: Ji Zhu (Statistics).

37. **Yuan Sun**, Ph.D. in Statistics.
On Rank-Based Inference for Quantile Regression. Chair: Xuming He (Statistics).

2019

38. **Julie Deeke**, Ph.D. in Statistics.
Approaches for Identifying Biases in Single-Cell RNA-Sequencing Data. Chair: Johann Gagnon Bartsch (Statistics).

2018

39. **Hao Liu**, Ph.D. in Physics.
Searches for resonant and non-resonant Higgs boson pair-production in the $b\bar{b}\tau^+\tau^-$ decay channel with 36.1 fb^{-1} pp collision data at $\sqrt{s}$ = 13 TeV with the ATLAS detector. Chair: Bing Zhou (Physics).

40. **Dan Li**, Ph.D. in Pharmaceutical Sciences, dual degree in Statistics.
Optimization and Application of Synthetic High-Density Lipoprotein (sHDL) System in Atherosclerosis and Glioma Therapy. Chair: Anna Schwendeman (Pharmacy).