

ZHENKE WU, PhD
zhenkewu@umich.edu
1415 Washington Heights
4626 SPH-I (inside Suite 4600)
Ann Arbor, MI 48109-2029
Mobile: 410-336-9652
Work: 734-764-7067
ORCID: 0000-0001-7582-669X
zhenkewu.com

EDUCATION

- 2014 **Johns Hopkins University, Bloomberg School of Public Health (JHSPH)**, Baltimore, MD, USA
Ph.D. in Biostatistics
Thesis: *Statistical Methods for Individualized Health: Etiology, Diagnosis, and Intervention Evaluation*
Advisors: Scott Zeger and Constantine Frangakis
- 2009 **Fudan University**, Shanghai, China
B.Sc. in Mathematics. First Class Honors

PROFESSIONAL EXPERIENCE

- 2023 - present **Associate Professor** (with tenure); **Assistant Professor** (2016 - 2023)
Department of Biostatistics, University of Michigan (UMich)
- 2016 - present **Core Faculty Member**
Michigan Institute for Data and AI in Society (MIDAS), UMich
- 2014 - 2016 **Postdoctoral Fellow**
Hopkins individualized Health (*inHealth*), JHU
Department of Biostatistics, JHSPH

RESEARCH FOCUS

My research is motivated by biomedical and public health problems and is centered on the design and application of statistical methods that inform health decisions made by individuals, or precision health. Towards this goal, I focus on three lines of methodological research: a) structured Bayesian latent variable models for clustering and disease subtyping, b) study design and causal methods for evaluating sequential interventions that tailor to individuals' changing circumstances such as in mobile health studies, and c) valid statistical inference using AI/ML predictions/synthesized data. I am committed to developing robust, scalable, and interpretable statistical methods to harness real-world, high-dimensional, dynamic data for individualized health. The methods and software developed so far have supported studies in diverse scientific fields including infectious disease epidemiology, autoimmune diseases, mental health, behavioral health, and cancer. I am also exploring the intersection between trustworthy AI, ethics, and biostatistics.

I am deeply passionate about advancement of modern Bayesian latent variable methods, with a keen focus on developing tools that address pivotal public health challenges faced predominantly by low and middle-income countries (LMIC). My contributions include the development of general methods and the creation of publicly-accessible software tailored for world's most updated pediatric pneumonia etiology estimates across seven sub-Saharan African and Southeast Asian countries (<https://perchresults.org/>). Additionally, in collaboration with demographers, I've pioneered domain-adaptive mortality estimation for deaths occurring outside the civil registration and vital statistics systems using computer-coded verbal autopsy (<https://openava.net/>). Recently, I've been working to advance digital mental health for healthcare workers in Kenya, in collaboration with the Data Science Initiative in Africa (<https://www.datascienceafrica.org/>). This effort draws upon my expertise in interventional and predictive mobile health, honed through pioneering studies in the US (Intern Health Study - world's largest multi-year microrandomized trial, and Caregiver Quality of Life Study). I enjoy embracing and navigating the unique challenges presented within the LMIC contexts and seizing the opportunity therein to shape how statistics can effect meaningful change.

- Statistical** Hierarchical Bayesian models; Latent variable models; Nonparametric Bayes; Bayesian scalable computation; Causal inference; Reinforcement learning.
- Substantive** Precision medicine; Mobile health; Infectious diseases; Electronic health records/claims data; Healthcare policy; Clinical trials; Computational Social Science.

OTHER PROFESSIONAL EXPERIENCE

- 2014-2016 **Co-lead Statistician**, Pneumonia Etiology Research for Child Health (PERCH) funded by Gates Foundation, International Vaccine Access Center (IVAC), JHSPH, *Principal Investigator:* Katherine O'Brien
- 2014 Aug **Visiting Scholar**, Combining Health Information, Computation and Statistics (CHICAS), Lancaster University, Lancaster, England (Host: Peter Diggle)
- 2010-2014 **Research Assistant**, IVAC, JHSPH
- 2008 **Research Scholar**, California NanoSystems Institute, and Department of Mechanical and Aerospace Engineering, University of California, Los Angeles (UCLA)
- 2007-2009 **Research Scholar**, Center for Computational Systems Biology, Fudan University, Shanghai, China

AFFILIATIONS

- 2022-present **Member**, Eisenberg Family Depression Center, UMich
- 2023-present **Member**, Center for Global Health Equity, UMich
- 2023-present **Faculty Affiliate**, Michigan Center for Applied and Interdisciplinary Mathematics (MCAIM), UMich
- 2017-2022 **Faculty Associate**, Quantitative Methodology Program, Survey Research Center, Institute for Social Research (ISR), UMich

- 2018-present **Member**, Institute for Health Policy Innovation (IHPI), UMich
2016-present **Member**, Cancer Epidemiology and Prevention (CEP) research program, Rogel Cancer Center

HONORS AND AWARDS

UNIVERSITY OF MICHIGAN (UMich)

- 2021 Interdepartmental Research Seed Grant, Feb. Michigan Biostat/Stat Research Initiative.
2020 Precision Health Investigator Award, University of Michigan
2019 Winner of Shark Tank for Research Ideas in Data Science and Statistics (STRIDES), Feb 1. Michigan Biostat/Stat Research Retreat.
2018 Chair's Faculty Citizenship Award
2017 Travel Award for ENAR Junior Investigator Workshop, International Biometric Society. Washington, DC.

SELECTED AWARDS from DISSERTATION ADVISEES

- 2026 **Distinguished Student Paper Award**, International Biometric Society, Eastern North American Region, Indianapolis, IN. (*Chen X*)
2025 **Gertrude M. Cox Scholarship**, American Statistical Association. (*Loe A*)
2024 **Distinguished Student Paper Award**, International Biometric Society, Eastern North American Region, Baltimore, MD. (*Li M*)
2023 **Institute of Mathematical Statistics Hannan Graduate Student Travel Award** (*Li M*)
2023 **Winner of Research Poster Competition**, International Biometric Society, Eastern North American Region (*Li M*)
2023 **Travel Award** for the 14th International Conference on Health Policy Statistics (ICHPS), Scottsdale, AZ, 2023. (*Shi J*)
2022 **Paper Travel Award**, International Society for Bayesian Analysis (ISBA), Montreal, Canada. (*Yao TH*)
2022 **Junior Research Paper Travel Award**, American Causal Inference Conference (ACIC), Berkeley, CA. (*Shi J*)
2019 **Poster Competition Award**, "Most Likely to Make an Impact in the Field", Annual Data Science Symposium, MIDAS. (*Chen I*)
2018 **Best Speed Oral Presentation**, Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS). (*NeCamp T*)

JOHNS HOPKINS UNIVERSITY

- 2016 New Researcher Conference Travel Award, Institute of Mathematical Statistics. Madison, WI.
2016 NISS Writing Workshop for Junior Researchers. Chicago, IL.
2015 Top Performer (out of 60 teams globally) for [2015 Prostate Cancer DREAM Challenge](#) 1b; As part of *Bmore Dream Team*. [Press Release](#).

- 2015 Scholarship for Summer Institute in Statistics and Modeling in Infectious Diseases. University of Washington, Seattle, WA
- 2015 NSF Big Data Travel award for Drawing Causal Inference from Big Data. National Academy of Sciences, Washington DC
- 2015 Induction into Alpha Chapter of *Delta Omega* Public Health Honor Society
- 2015 Induction into *Phi Beta Kappa* Honor Society
- 2014 First Place: Biostatistics Section of the Delta Omega Poster Competition
- 2012-13 Joseph Zeger Travel Award to ENAR and JSM
- 2012 [June B. Culley Award](#), for outstanding achievement on school-wide oral exam paper
- 2011-14 [Johns Hopkins Sommer Scholar](#)
- 2009-14 Department of Biostatistics Graduate Fellowship

UNIVERSITY OF CALIFORNIA, LOS ANGELES

- 2008 UCLA-China Cross Disciplinary Scholarship in Science and Technology (CSST)

FUDAN UNIVERSITY

- 2009 B.Sc. with First Class Honors
- 2007-09 [Chun-Tsung Scholar](#), Chinese Undergraduate Research Endowment (CURE) Scholarship (3 in 600 Math Undergraduate Students)
- 2008 First Class National Scholarship, Ministry of Education, China (top 0.2%)
- 2007 Excellent Undergraduate Student, Government of Shanghai (top 0.2%)
- 2006-07 First Class People's Scholarship
- 2006 First Class Shi Dai Scholarship

PUBLICATIONS x: first/corresponding/senior author papers; “_”: advisee

Citations: 3,244 ([Google Scholar](#)); h-index: 26; i-10 index: 48

PUBLISHED PEER-REVIEWED ARTICLES

- 1 Li M, Stephenson BJK[†], Wu Z[†] (2025). Tree-Regularized Bayesian Latent Class Analysis for Improving Weakly Separated Dietary Pattern Subtyping in Small-Sized Subpopulations. ([†]: co-senior authors). ► *Annals of Applied Statistics* 19(4): 3003-3022. doi:[10.1214/25-AOAS2067](https://doi.org/10.1214/25-AOAS2067) [[arXiv](#)][[R package](#)][[shinyapp](#)]
- Distinguished Student Paper Award, International Biometric Society, Eastern North American Region, Baltimore, MD (2024) to ML
 - Institute of Mathematical Statistics Hannan Graduate Student Travel Award 2023 to ML
 - Winner of Research Poster Competition, ENAR 2023 to ML
- 2 Chen X, Wu Z*, Shi X, Cho H, Mukherjee B[†] (2025). Generating Synthetic Electronic Health Record (EHR) Data: A Methodological Scoping Review with Benchmarking on Phenotype Data and Open-Source Software. ► *Journal of American Medical Informatics Association*. 32(7):1227–1240. doi:[10.1093/jamia/ocaf082](https://doi.org/10.1093/jamia/ocaf082). [[arXiv](#)][[python package: synthEHRElla](#)] *:corresponding author; [†]:senior author.

- Best Poster at Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS), University of Michigan (to XC)

- 3 Loe A, Murray S, **Wu Z** (2025). Random Forest for Dynamic Risk Prediction of Recurrent Events: A Pseudo-Observation Approach. ► *Biostatistics*. doi: 10.1093/biostatistics/kxaf007. [[arXiv](#)]
- 4 Li M[#], Shi C[#], **Wu Z[†]**, Fryzlewicz P[†] (2025). Testing stationarity and change point detection in reinforcement learning. ([#]: co-first authors; [†]: co-senior authors). ► *Annals of Statistics*. 53(3): 1230-1256. doi: 10.1214/25-AOS2501. [[arXiv](#)][[Python code](#)]
- 5 Luo L[#], Shi C[#], Wang J[#], **Wu Z**, Li L (2025). Multivariate Dynamic Mediation Analysis. ([#]: equal contributions). ► *Annals of Statistics*: 53(1), 400-425. DOI: [[10.1214/24-AOS2475](#)]
- 6 Shi J, **Wu Z**, Dempsey W (2025). Incorporating Auxiliary Variables to Improve the Efficiency of Time-Varying Treatment Effect Estimation. ► *Journal of American Statistical Association (Theory and Methods)*. Accepted. doi: 10.1080/01621459.2025.2516197. [[arXiv](#)].
- 7 Feng J, Zhao W, **Wu Z**, Shi C, Yan X (2025). Beyond Average Value Function in Precision Medicine: Maximum Probability-Driven Reinforcement Learning for Survival Analysis. ► *NeurIPS: 39th Conference on Neural Information Processing Systems*. Accepted.
- 8 Hu L, Wang J, **Wu Z**, Shi C (2025). Generalized Fitted Q-iteration with Clustered Data. ► *Stat* 14(4): e70112. DOI:10.1002/sta4.70112.
- 9 Chen I, **Wu Z**, Harlow SD, Karvonen-Gutierrez CA, Hood M, Elliott M (2025). A joint modeling approach to study the association between subject-level longitudinal marker variabilities and repeated outcomes. ► *Journal of Applied Statistics*. 10.1080/02664763.2025.2589991.
- 10 Aballa A, Mwigereri DG, Zhao Z, Njoroge W, Khakali L, Maina R, Andai D, Orwa J, Bunde A, Weinheimer-Haus EM, Baker J, Atwoli L, Sen S, Waljee AK, Ngugi AK, Abubakar A, **Wu Z**, Merali Z, Frank E (2025). Depressive Symptoms among Kenya Healthcare Workers and Associated Factors. ► *JAMA Psychiatry*. 10.1001/jamapsychiatry.2025.3727.
- 11 Pennington T, Janda A, Colquhoun D, Neuman M, Kidwell K, Spino C, Thelen-Perry S, Krambrink A, Huang S, Ignacio R, **Wu Z**, Swisher L, Cloyd C, Vaughn S, Pescatore N, Bollini M, Mashour G, Hassett A, Kent C, Vlisides PE, Avidan M, Kheterpal S, for the THRIVE Research Group (2025). Protocol for the Trajectories of Recovery after Intravenous propofol versus inhaled Volatile anesthesia (THRIVE) Randomized Controlled Trial. ► *BMJ Open* 15(9), e103836. DOI:10.1136/bmjopen-2025-103836.
- 12 Carlozzi NE, Troost JP, Lombard WL, Miner JA, Graves CM, Choi SW, **Wu Z**, Sen S, Sander AM (2025) Completion and compliance rates for an intensive mHealth study design to promote self-awareness and self-care among care partners of individuals with traumatic brain injury. ► *Journal of Medical Internet Research, mHealth and uHealth*. 13:e73772. DOI: 10.2196/73772

- 13 Sosa-Moreno A, Lee GO, **Wu Z**, Fanny SA, Trueba G, Cooper PJ, Levy K, Eisenberg JNS (2025). Comparing the power of low vs. high-precision methods for measuring *E. coli* in drinking water in low-resource settings. ► *ACS ES&T Water*. 5(5):2244-2254. doi:10.1021/acsestwater.4c01117.
- 14 Mathis MR, Mirizzi K, Burns CJ, Janda AM, Mentz GB, Likosky DS, Pagani FD, Aaronson KD, **Wu Z**, Kheterpal S, Ghadimi K, Manojlovich MM, Guetterman TC (2025). Clinician Attitudes, Opinions, and Practice Patterns Regarding Inotrope Use for Cardiac Surgery: Protocol for a Mixed Methods Study. ► *BMJ Open*. 15:e100306. doi: 10.1136/bmjopen-2025-100306.
- 15 Carlozzi NE, Troost JP, Sander AM, Choi SW, **Wu Z**, Miner JA, Lombard W, Graves C, Sen S (2025). Improving outcomes for care partners of individuals with traumatic brain injury: Results for a mHealth randomized control trial of the CareQOL app. ► *Archives of Physical Medicine and Rehabilitation*. doi:10.1016/j.apmr.2024.12.022.
- 16 Li M, Wu B, Stephenson B, **Wu Z** (2024). ddltcm: An R package for overcoming weak separation in Bayesian latent class analysis via tree-regularization. ► *Journal of Open Source Software (JOSS)*: 9(99), 6220. doi: 10.21105/joss.06220. [[paper](#)][[R package](#)][[shinyapp](#)][[review](#)]
- 17 Du J, Yu Y, Zhang M, **Wu Z**, Ryan AM, Mukherjee B (2024). Outcome adaptive propensity score methods for handling censoring and high-dimensionality: Application to insurance claims. ► *Statistical Methods in Medical Research*. doi:[10.1177/09622802241306856](https://doi.org/10.1177/09622802241306856)
- 18 Yu M, **Wu Z**, Hicken M, Elliott M (2024). A Bayesian Approach for Modeling Variance of Intensive Longitudinal Biomarker Data as a Predictor of Health Outcomes. ► *Statistics in Medicine* 43(30): 5748-5764. DOI: [10.1002/sim.10281](https://doi.org/10.1002/sim.10281).
- 19 Wang J, Du L, Zou C, **Wu Z** (2024). Dynamic statistical inference in massive datastreams. ► *Statistica Sinica*. doi:10.5705/ss.202023.0195. [[arXiv](#)]
- 20 Aziz M, Davis GS, Park DE, Idris AH, Sariya S, Wang Y, Zerbonne S, Nordstrom L, Weaver B, Statham S, Johnson TJ, Campos J, Castro-Nallar E, Crandall KA, **Wu Z**, Liu CM, DeBiasi RL, Price LB (2024). Pediatric urinary tract infections caused by poultry-associated *Escherichia coli*. ► *Microbiology Spectrum*. DOI: 10.1128/spectrum.03415-23.
- 21 Li ZR, **Wu Z**, Chen I, Clark S (2024). Bayesian nested latent class models for cause-of-death assignment using verbal autopsies across heterogeneous domains. ► *Annals of Applied Statistics*. Vol. 18, No. 2, 1137-1159. doi: [10.1214/23-AOAS1826](https://doi.org/10.1214/23-AOAS1826)[[R package](#)].
- 22 Chen I, **Wu Z**, Harlow SD, Karvonen-Gutierrez CA, Hood M, Elliott M (2024). Variance as a predictor of health outcomes: using subject-level trajectories and variability of sex hormones to predict body fat changes in peri- and post-menopausal women. ► *Annals of Applied Statistics*. Vol. 18, No. 2, 1642-1667. doi: [10.1214/23-AOAS1852](https://doi.org/10.1214/23-AOAS1852)
- 23 **Wu Z**, Li RZ, Chen I, Li M (2024). Tree-Informed Bayesian Multi-Source Domain Adaptation: Cross-population Probabilistic Cause-of-death Assignment using Verbal Autopsy. ► *Biostatistics*. 25(4): 1233-

1253. doi: 10.1093/biostatistics/kxae005. [[arXiv](#)][[R package](#)]

- 24 Li M, Park DE, Aziz M, Liu CM, Price LB, **Wu Z** (2023). Integrating sample similarity information into latent class analysis: a tree-structured shrinkage approach. ► *Biometrics* 79(1):264-279. doi: 10.1111/biom.13580. PMCID:PMC10642217. PMID:34658017.[[Early View](#)][[bioRxiv](#)]
- 25 Kubale J[#], Kujawski S[#], Chen I, **Wu Z**, Mercado ES, Abu Khader I, Hasibra I, Whitaker B, Gresh L, Simaku A, Simoes EAF, Al-Gazo M, Rogers, S, Gerber SI, Balmaseda A, Tallo V, Al-Sanouri TM, Porter R, Bino S, Azziz-Baumgartner E, McMorrow M, Hunt D, Thompson M, Biggs H, Gordon A (2023). Etiology of acute lower respiratory illness hospitalizations among infants in four countries. ([#]: co-first-authors) ► *Open Forum Infectious Diseases*: 10(12), ofad580.
- 26 Wang J, **Wu Z**, Choi SW, Sen S, Yan X, Miner JA, Sander AM, Lyden AK, Troost J, Carrozzi N (2023). The Dosing of Mobile-Based Just-in-Time Adaptive Self-Management Prompts for Caregivers: Preliminary Findings From a Pilot Microrandomized Study. ► *Journal of Medical Internet Research, Formative Research*. doi:10.2196/43099.
- 27 Yan X, Newman MW, Park SY, Sander A, Choi SW, Miner J, **Wu Z**, Carrozzi N (2023). Identifying Design Opportunities for Adaptive mHealth Interventions that Target General Wellbeing: An Interview Study with Informal Care Partners. ► *JMIR Formative Research* 7:e47813. doi: 10.2196/47813; PMID: 37874621.
- 28 Willie N, Maina R, Frank E, Atwoli L, **Wu Z**, Ngugi A, Sen S, Wang JL, Wong S, Baker J, Weinheimer-Haus E, Khakali L, Aballa A, Orwa J, Nyongesa M, Waljee A, Abubakar A, Merali Z (2023). Use of mobile technology to identify behavioral mechanisms linked to mental health outcomes in Kenya: protocol for development and validation of predictive model. ► *BMC Research Notes* 16(1):1-9.
- 29 Piette JD, Thomas L, Krauss J, Newman S, Chen J, **Wu Z**, Bohnert ASB (2023). An Automatically-Adaptive Digital Health Intervention to Decrease Opioid-Related Risk While Conserving Counselor Time: Analysis of Treatment Decisions Based on Artificial Intelligence and Patient-Reported Risk Measures ► *Journal of Medical Internet Research*. 25:e44165.
- 30 Carrozzi NE, Choi SW, **Wu Z**, Sen S, Troost J, Lyden AK, Miner JA, Graves C, Sander AM (2023). The Reliability and Validity of the TBI-CareQOL System in Four Diverse Caregiver Groups. ► *Journal of Patient-Reported Outcomes*. 7(1):57.
- 31 Wang J, Shi C, **Wu Z** (2023). A Robust Test for the Stationarity Assumption in Sequential Decision Making. ► *40th International Conference on Machine Learning (ICML)*.
- Top peer-reviewed machine learning conference (2023 acceptance rate 27.9%)
- 32 Ge L, Wang J, Shi C, **Wu Z**, Song R (2023). A Reinforcement Learning Framework for Dynamic Mediation Analysis. ► *40th International Conference on Machine Learning (ICML)*. [[arXiv](#)]
- Top peer-reviewed machine learning conference (2023 acceptance rate 27.9%)
 - Winner, Student Paper Award, 2023 Applied Statistics Symposium, International Chinese Statistical Association (ICSA)

- 33 Yoshida T, Fan TS, McCormick T, **Wu Z**, Li ZR (2023). Bayesian Active Questionnaire Design for Cause-of-Death Assignment Using Verbal Autopsies. ► *Proceedings of the Conference on Health, Inference, and Learning (CHIL)*, PMLR 209:37-49. [[publisher's version](#)]
• **Selected as Oral Presentation (top 13%)**
- 34 Pennington BT, Colquhoun DA, Neuman MD, Politi MC, Janda A, Spino C, **Wu Z**, Thelen-Perry S, Kumar SS, Gregory SH, Avidan MS, Kheterpal S for the THRIVE research group (2023). Feasibility pilot trial for the Trajectories of Recovery after Intravenous propofol versus inhaled Volatile anesthesia (THRIVE) Pragmatic Randomized Controlled Trial. ► *BMJ Open*. 13(4):e070096. DOI:10.1136/bmjopen-2022-070096
- 35 Wang J, Fang Y, Frank E, Walton MA, Burmester M, Tewari A, Dempsey W, NeCamp T, Sen S, **Wu Z** (2023). Effectiveness of gamified competition in the context of mHealth intervention for medical interns: a micro-randomized trial. ► *npj Digital Medicine*. doi:10.1038/s41746-022-00715-5. [[publisher's version](#)][[R code](#)]
- 36 Liu CM, Aziz M, Park DE, **Wu Z**, Stegger M, Li M, Wang Y, Schmidlin K, Johnson TJ, Koch BJ, Hungate BA, Nordstrom L, Gauld L, Weaver B, Rolland D, Statham S, Hall B, Sariya S, Davis GS, Keim PS, Johnson JR, Price LB (2023). Using source-associated mobile genetic elements to identify zoonotic extraintestinal *E. coli* infections. ► *One Health*. DOI: 10.1016/j.onehlt.2023.100518.
• **Selected Press Coverage:** [[Washington Post](#)][[USA Today](#)] [[CNN](#)][[NYTimes](#)][[The Guardian](#)]
- 37 Kayser J, Wang X, **Wu Z**, Dimoji A, Xiang X (2023). Layperson-Facilitated Internet-Delivered Cognitive Behavioral Therapy for Homebound Older Adults with Depression: Protocol for a Randomized Controlled Trial. ► *JMIR Research Protocols* 12:e44210. PMID: 36811937; DOI: 10.2196/44210.
- 38 Shi J, **Wu Z**, Dempsey W (2022). Assessing time-varying causal effects in the presence of cluster-level treatment effect heterogeneity. ► *Biometrika*. DOI:10.1093/biomet/asac065. [[publisher](#)][[arXiv](#)].
• **Winner, Junior Researcher Travel Grant, American Causal Inference Conference (ACIC), Berkeley, CA, 2022**
- 39 Yao TH, **Wu Z**, Bharath K, Li J, and Baladandayuthapani V (2022). Probabilistic learning of treatment trees in cancer. ► *Annals of Applied Statistics* 17(3): 1884-1908. DOI: [[10.1214/22-AOAS1696](#)][[R code](#)]
• **Winner, ISBA Travel Award, Montreal, Canada, 2022**
- 40 Moreno A, **Wu Z**, Nagesh S, Dempsey W, Rehg J (2022). Kernel Multimodal Continuous Attention. ► *NeurIPS: Thirty-sixth Conference on Neural Information Processing Systems*. [[arXiv](#)]
• **Top peer-reviewed machine learning conference (2022 acceptance rate 25.6%)**
- 41 Chatha P, Wang Y, **Wu Z**, Regier J (2022). Dynamic Survival Transformers for Causal Inference with Electronic Health Records. ► *NeurIPS 2022, "Learning from Time Series for Health" Workshop*. [[ArXiv](#)]
• **Selected as a Spotlight paper**
- 42 Cleary J[#], Fang Y[#], Sen S, **Wu Z** (2022). A caveat to using wearable sensor data for COVID-19 detection: the role of behavioral change after receipt of test results. ► *PLOS ONE*. 17(12):e0277350.

doi:10.1371/journal.pone.0277350. #: co-first-authors.

- 43 Chung S, Kontar R, **Wu Z** (2022). Weakly-supervised multi-output regression via correlated Gaussian processes. ► *INFORMS Journal on Data Science*. In press. DOI: 10.1287/ijds.2022.0018.
• Best student paper finalist, Quality Control and Reliability Engineering (QC&RE), IISE annual conference, 2020
- 44 Horwitz A, Kentopp S, Cleary J, Ross K, **Wu Z**, Sen S, Czyz E (2022). Using machine learning with intensive longitudinal data to predict depression and suicidal ideation among medical interns over time. ► *Psychological Medicine*, 1-8. doi:10.1017/S0033291722003014
- 45 Carlozzi NE, Choi SW, **Wu Z**, Troost J, Lyden AK, Miner JA, Graves C, Wang J, Yan X, Sen S (2022). An App-Based Just-in-Time-Adaptive Self-Management Intervention for Care Partners: The CareQOL Feasibility Pilot Study. ► *Rehabilitation Psychology* 67(4): 497-512. DOI: 10.1037/rep0000472
- 46 Carlozzi NE, Sanders AM, Choi SW, **Wu Z**, Miner JA, Lyden AK, Graves C, Sen S (2022). Improving outcomes for care partners of persons with traumatic brain injury: Protocol for a randomized control trial of a just-in-time-adaptive self-management intervention. ► *PLoS ONE* 17(6):e0268726. PMID:35679283. PMCID:PMC9182304. DOI: 10.1371/journal.pone.0268726.
- 47 Wagner AL, Lu Y, Glover B, **Wu Z**, Prosser LA (2022). Preferences for STI and cancer vaccines in the US and in China. ► *Value in Health*. DOI: 10.1016/j.jval.2022.07.019.
- 48 Wagner AL, Porth J, **Wu Z**, Boulton ML, Finlay JM, and Kobayashi LC (2022). Vaccine hesitancy during the COVID-19 pandemic: A latent class analysis of middle-aged and older US adults. ► *Journal of Community Health*. In press. PMID:35079933. PMCID: PMC8788403. DOI:10.1007/s10900-022-01064-w.
- 49 **Wu Z** and Chen I (2021). Probabilistic cause-of-disease assignment using case-control diagnostic tests: a hierarchical Bayesian approach. ► *Statistics in Medicine* 40(4): 823-841. PMID: 33159360. doi: 10.1002/sim.8804.
- 50 Edupuganti S, Li M, **Wu Z**, Basu T, Barnes G, Carrier M, Sood SL, Griggs JJ, Schaefer JK (2021). Factors associated with inferior vena cava filter placement and retrieval for patients with cancer-associated thrombosis. ► *The American Journal of Medicine*. In press. doi: 10.1016/j.amjmed.2021.11.006.
- 51 Carbozzi NE, Choi SW, **Wu Z**, Miner JA, Lyden AK, Graves C, Sander AM, Wang J, Sen S (2021). An App-Based Just-in-Time Adaptive Self-management Intervention for Care Partners (CareQOL): Protocol for a Pilot Trial. ► *Journal of Medical Internet Research: Research Protocols* 10(12):e32842. doi: 10.2196/32842. PMID: 34889775.
- 52 Schaefer JK, Li M, **Wu Z**, Basu T, Barnes G, Carrier M, Griggs JJ and Sood SL (2021). Clinical and sociodemographic factors associated with anticoagulant use for cancer associated thrombosis. ► *Journal of Thrombosis and Thrombolysis*. PMID: 33544284. doi: 10.1007/s11239-021-02392-9.
- 53 Boss J, Rix A, Chen YH, Narisetty NN, **Wu Z**, Ferguson K, Meeker J, Mukherjee B (2021). A hierarchical integrative grouped lasso (HIGLASSO) framework for analyzing environmental mixtures. ► *Environmetrics*

32(8), e2698. doi: 10.1002/env.2698.

- 54 Nahum-Shani I, Potter L, Lam C, Yap J, Moreno A, Stoffel R, **Wu Z**, Wan N, Dempsey W, Kumar S, Murphy S, Rehg J, Wetter D (2021). The mobile-assistance for regulating smoking (MARS) micro-randomized trial design protocol. ► *Contemporary Clinical Trials* 110: 106513.
- 55 **Wu Z**, Casciola-Rosen L, Rosen A, Zeger SL (2020). A Bayesian approach to restricted latent class models for scientifically-structured clustering of multivariate binary outcomes. ► *Biometrics* 77(4): 1431-1444. PMID: 33031597. PMCID: PMC10642691. doi: 10.1111/biom.13388.
- 56 Moreno A, **Wu Z**, Yap J, Wetter D, Kumar S, Lam C, Nahum-Shani I, Dempsey W, Regh J (2020). A robust functional EM algorithm for incomplete panel count data. ► *33rd Advances in Neural Information Processing Systems (NeurIPS 2020)*: 19828-19838. PMID: 34103881. PMCID: PMC8182728.
• Top peer-reviewed machine learning conference (acceptance rate 20%).
- 57 Schaefer JK, Li M, **Wu Z**, Basu T, Dorsch M, Barnes GD, Carrier M, Griggs JJ and Sood SL (2020). Medication adherence in cancer associated thrombosis: a comparison of LMWH to DOACs. ► *Journal of Thrombosis and Haemostasis* 19(1): 212-220. PMID: 33104289. doi:10.1111/jth.15153.
- 58 Xiang X, Xuan L, Halavanau A, Jia X, Sun Y, Lai P, **Wu Z** (2020). Modern senicide in the face of a pandemic: an examination of public discourse and sentiment about older adults and COVID-19 using machine learning. ► *The Journals of Gerontology: Series B*. PMID: 32785620 PMCID: PMC7454882. doi: 10.1093/geronb/gbaa128.
- 59 NeCamp T, Sen S, Frank E, Walton M, Ionides E, Fang Y, Tewari A, **Wu Z** (2020). Assessing real-time moderation for developing adaptive mobile health interventions for medical interns: micro-randomized trial. ► *Journal of Medical Internet Research (JMIR)* 22(3): e15033. doi: 10.2196/15033. PMID: 32229469. PMCID: PMC7157494. Trial Registration: 2018 Intern Health Study Micro-randomized Trial (IHS), [NCT03972293](#).
- 60 Zeger SL, **Wu Z**, Coley Y, Fojo AT, Carter B, O'Brien K, Zandi P, Cooke M, Carey V, Crainiceanu C, Muschelli J, Gherman A, Mekosh J (2020). Using a Bayesian approach to predict patients' health and response to treatment. ► *Patient-Centered Outcomes Research Institute (PCORI)*. doi: 10.25302/09.2020.ME.140820318.
- 61 Kuang H, **Wu Z**, Fujiwara H, Whitesall S, Zajac C, Choi SW, Reddy P, Tewari M (2019). Computational analysis of continuous body temperature provides early discrimination of graft-versus-host disease in mice undergoing hematopoietic cell transplantation. ► *Blood Advances* 3(23): 3977-3981. PMID: 31809535. PMCID: PMC6963236. doi: 10.1182/bloodadvances.2019000613.
- 62 **Wu Z**, Casciola-Rosen L, Shah AA, Rosen A, Zeger SL (2019). Estimating auto-antibody signatures to detect autoimmune disease patient subsets. ► *Biostatistics* 20(1): 30-47. PMID: 29140482. PMCID: PMC6657300. doi: 10.1093/biostatistics/kxx061.
- 63 O'Brien KL, ..., **Wu Z**, ..., Zaman SMA (2019). Causes of severe pneumonia requiring hospital admission in children without HIV infection from Africa and Asia: the PERCH multi-country case-control study. ► *The Lancet* 394(10200): 757-779. PMID: 31257127. PMCID: PMC6727070. doi: 10.1016/S0140-

6736(19)30721-4. [DataViz: <http://perchresults.org>][Press Release]

- 64 Fritsche L, Gruber SB, **Wu Z**, Schmidt E, Zawistowski M, Moser SE, Blanc VM, Brummet CM, Kheterpal S, Abecasis GR, Mukherjee B (2018). Association of polygenic risk scores for multiple cancers in a genome-wide study: results from the Michigan Genomics Initiative. ► *American Journal of Human Genetics* 102(6): 1048-1061. PMID: 29779563. PMCID: PMC5992124. doi: 10.1016/j.ajhg.2018.04.001.
- 65 Xu G, **Wu Z** and Murphy SA (2018). Micro-randomized trial. In ► *Wiley StatsRef: Statistics Reference Online* (eds N. Balakrishnan, T. Colton, B. Everitt, W. Piegorsch, F. Ruggeri and J. L. Teugels). doi:10.1002/9781118445112.stat08050.
- 66 Deloria-Knoll M, Fu W, Shi Q, Prosperi C, **Wu Z**, Hammitt LL, Feikin DR, Baggett HC, Howie SRC, Scott JAG, Murdoch DR, Madhi SA, Thea DM, Brooks WA, Kotloff KL, Li M, Park DE, Lin W, Levine OS, O'Brien KL, Zeger SL (2017). Bayesian estimation of pneumonia etiology: epidemiologic considerations and applications to PERCH. ► *Clinical Infectious Diseases* 64(suppl 3): S213-S227. PMID: 28575370. PMCID: PMC5447849. doi: 10.1093/cid/cix144.
- 67 **Wu Z**, Deloria-Knoll M, and Zeger SL (2017). Nested partially-latent class models (npLCM) for dependent binary data; estimating disease etiology. ► *Biostatistics* 18(2): 200-213. PMID: 27549120. doi: 10.1093/biostatistics/kxw037.
- 68 **Wu Z** as part of the PERCH Study Group (2017). 16 articles in ► *Clinical Infectious Diseases* 64(suppl 3). Link to the complete list: <https://goo.gl/3egRN1>.
- 69 Seyednasrollah F et al. - **Wu Z** in Prostate Cancer DREAM Challenge Community (2017). A DREAM challenge to build prediction models for short-term discontinuation of docetaxel in metastatic castration-resistant prostate cancer. ► *JCO Clinical Cancer Informatics* 1: 1-15. PMID: 30657384. PMCID: PMC6874023. doi: 10.1200/CCI.17.00018.
- 70 Guinney J et al. - **Wu Z** in PCC DREAM Consortium (2017). Prediction of overall survival for patients with metastatic castration-resistant prostate cancer: development of a prognostic model through a crowd-sourced challenge with open clinical trial data. ► *The Lancet Oncology* 18(1): 132-142. PMID: 27864015. PMCID: PMC5217180. doi: 10.1016/S1470-2045(16)30560-5.
- 71 **Wu Z**, Deloria-Knoll M, Hammitt LL, and Zeger SL, for the PERCH Core Team (2016). Partially latent class models (pLCM) for case-control studies of childhood pneumonia etiology. ► *Journal of the Royal Statistical Society: Series C (Applied Statistics)* 65(1): 97-114. PMID: 32327815. PMCID: PMC7169268. doi: 10.1111/rssc.12101.
- 72 Deng D, Du Y, Ji Z, Rao K, **Wu Z**, Zhu Y, Coley RY (2016). Predicting survival time for metastatic castration-resistant prostate cancer: an iterative imputation approach. ► *F1000Research* 2016, 5: 2672. PMID: 28299176. PMCID: PMC5321124. doi: 10.12688/f1000research.8628.1.
- 73 Frangakis CE, Qian T, **Wu Z**, Diaz I (2015). Deductive Derivation and Turing-computerization of semi-parametric efficient estimation. ► *Biometrics* 71(4): 867-874. PMID: 26237182. PMCID: PMC4715631.

doi:10.1111/biom.12362. Discussion paper.

- 74 Frangakis CE, Qian T, **Wu Z**, Diaz I (2015). Rejoinder: Deductive derivation and Turing-computerization of semiparametric efficient Estimation. ► *Biometrics* 71(4): 881-883. PMID: 26229019. PMCID: PMC4715508. doi: 10.1111/biom.12365.
- 75 **Wu Z**, Frangakis CE, Louis TA, Scharfstein DO (2014). Estimating treatment effects in cluster randomized trials by calibrating covariate imbalances between clusters. ► *Biometrics* 70(4): 1014-1022. PMID: 25163648. PMCID: PMC4284983. doi: 10.1111/biom.12214.
- 76 Georgiades C, Geschwind J-F, Neil H, Hines-Peralta A, Liapi E, Hong K, **Wu Z**, Kamel I, Frangakis CE (2012). Lack of response after initial chemoembolization for hepatocellular carcinoma: does it predict failure of subsequent treatment? ► *Radiology* 265: 115-123. PMID: 22891361. PMCID: PMC4137783. doi: 10.1148/radiol.12112264.

SUBMITTED MANUSCRIPTS

- 77 Wang J, Shi C, Piette JD, Loftus JR, Zeng D, **Wu Z** (2025+). Counterfactually Fair Offline Reinforcement Learning via Sequential Data Preprocessing. ► *Journal of American Statistical Association: Special Issue in Statistics and Artificial Intelligence*. Major revision submitted. [[arXiv](#)]
- 78 Yu M, **Wu Z**, Hood MM, Karvonen-Gutierrez C, Harlo SD, Elliot M (2025+). Joint Modeling of Multiple Longitudinal Biomarkers and Survival Outcomes via Threshold Regression: Variability as a Predictor. ► *Biometrics*. In revision. [[arXiv](#)]
- 79 Sosa-Moreno A, Lee GO, Kann RS, Coloma J, Trueba G, Cevallos W, **Wu Z**, Gounaris D, Levy D, Eisenberg JNS (2025+). Extreme rainfall modifies the association between piped water intermittency and water quality in low-resource settings. ► *ACS ES&T Water*. Revision submitted.
- 80 Wang J, **Wu Z**, Sander AM, Sen S, Choi SW, Miner JA, Graves C, Carozzi N (2025+). Understanding the Impact of App Usability on the Efficacy of Mobile Health Intervention for Traumatic Brain Injury Caregivers. ► *Rehabilitation Psychology*. Major revision submitted.
- 81 Fang Y, Yang P, Frank E, Goldstein C, Wright AGC, Bohnert ASB, Vik Kheterpal, Sen S, **Wu Z**. (2025+) Patterns of smartphone typing performance by time awake: implications for unobtrusive ambulatory mental fatigue assessment. ► *PLoS Digital Health*. Revision submitted. [[medRxiv](#)]
- 82 Khakali L, Aballa A, Mwigereri DG, Weinheimer-Haus EM, Njoroge W, Maina R, Bunde A, Musitia P, Nyongesa MK, Orwa J, Shah J, **Wu Z**, Ngugi AK, Atwoli L, Sen S, Kolars C, Waljee AK, Abubakar A, Frank E, Merali Z (2025+). Feasibility and Acceptability of Using a Mobile Application and Wearable Tracking Devices in Mental Health Research: A Pilot Study among Kenyan Healthcare Workers. ► *JMIR mHealth and uHealth*. ► *JMIR mHealth and uHealth*. Revision requested.
- 83 Yashan Wang, Daniel Park, Maliha Aziz, Liseth Salinas, Edward Sung, Søren Hallstrøm, Cindy Liu, Marc Stegger, **Zhenke Wu**, Gabriel Trueba, Joseph Eisenberg, Jay Graham, and Lance Price. (2025+) Quantify-

ing the Zoonotic Burden of ESBL-Producing Escherichia coli among Urinary Tract Infections in Ecuador.
► *Spectrum*. Revision requested.

-
- 84 Chen X, McCormick T, Mukherjee B, **Wu Z** (2025+). A Unified Framework for Inference with General Missingness Patterns and Machine Learning Imputation. [[arXiv](#)]
• **Distinguished Student Paper Award, International Biometric Society, Eastern North American Region, Indianapolis, IN (2026) to XC**
- 85 Hu L[#], Li M[#], Shi C, **Wu Z[†]**, Fryzlewicz P[†] (2025+). Doubly Inhomogeneous Reinforcement Learning. ([#]: equal contribution and alphabetically-ordered; [†]: co-senior authors).
- 86 Loe A, Murray S, **Wu Z** (2025+). A Random Forest Inverse Probability Weighted Pseudo-Observation Framework for Alternating Recurrent Events.
- 87 Yao TH, **Wu Z**, Bharath K, and Baladandayuthapani V (2025+). Geometry-driven Bayesian inference of ultrametric covariance matrices. [[arXiv](#)]
- 88 Chen I, Shi Q, Zeger SL, **Wu Z** (2023+). baker: An R package for nested partially-latent class models. [[arXiv](#)][[R package](#)]
- 89 Fang Y[#], Yu M[#], **Wu Z**, Sen S, Bohnert ASB (2023+). Physical activity and depression prevention: an emulated trial with genomic subgroup analyses. ([#]: co-first author).
- 90 Cleary JL, Pereira-Lima K, Ma X, Chen L, Burmeister M, Meeks LM, Zhao Z, Ye J, Fang Y, **Wu Z**, Frank E, Zhang R, Zeng S, Zhao Q, Mata DA, Bohnert A, Li W, Sen S. (2024+) Depression Risk and Work Hours in Training Physicians Before and During COVID-19 Pandemic.
- 91 Xue R, Feng J, **Wu Z**, Wang W, Yan X (2025+). Off-Policy Evaluation in Reinforcement Learning with Nonstationary and Dependent Environments.
- 92 Wu X, Li T, Wang J, Wu S, **Wu Z**, Shi C (2025+). Double Integration for Federated Off-Policy Evaluation in Reinforcement Learning.
- 93 Zhang J, Wang J, Shi C, Piette JD, Zeng D, **Wu Z** (2025+). PyCFRL: A Python library for counterfactually fair offline reinforcement learning via data preprocessing. [[arXiv](#)][[python library](#)][[manual](#)]
- 94 Bei R, Graves CM, Choi SW, Sander AM, Fansher MJ, Miner JA, **Wu Z**, Klasnja P, Newman MW, Carlozzi N (2025+). A Qualitative Analysis of User Experiences of a mHealth Self-Care Intervention for Care Partners of Individuals with Traumatic Brain Injury.
- 95 Njoroge W, Aballa A, Lee M, Andai D, Khakali L, Maina R, Frank E, Atwoli L, **Wu Z**, Ngugi A, Sen S, Bunde A, Shah J, Weinheimer-Haus E, Mwigereri D, Orwa J, Waljee A, Abubakar A, Merali Z, Forger DB (2025+). Sleep characteristics and circadian rhythms among healthcare workers in Kenya using wearable technology.

TECHNICAL REPORTS

- 96 Shi J, Wu Z, Dempsey W (2023). Estimating Time-Varying Direct and Indirect Causal Excursion Effects for Longitudinal Binary Outcomes. [[arXiv](#)]
• Travel Award for the 14th International Conference on Health Policy Statistics (ICHPS), Scottsdale, AZ, 2023
- 97 Bi Q, Hong C, Meng J, Wu Z, Zhou P, Ye C, Sun B, Kucirka LM, Azman AS, Wang T, Chen J, Wang Z, Liu L, Lessler J, Edwards JK, Ma T, Zhang G (2020). Characterization of clinical progression of COVID-19 patients in Shenzhen, China: an observational cohort study. [[medRxiv](#)]

SOFTWARE (total: 15)

baker:	(83,000+ downloads as of Apr 2025) Bayesian Analysis Kit for Etiology Research - Fitting and visualizing Bayesian nested partially-latent class models for estimating disease etiology [CRAN link] [Github: Devel] Feb 2022: “Top 40” New CRAN Packages
ddtlcm:	Tree-regularized Latent Class Analysis via Dirichlet-Diffusion Tree to Improve Latent Class Analysis with Weakly Separated Profiles in Small Sample Sizes (maintainer: Mengbing Li) [CRAN link][Shinyapp link]
mpcr:	Robust covariate-calibrated estimation of treatment effect in matched-pair cluster randomized trials. https://github.com/zhenkewu/mpcr
spotgear:	Subset Profiling and Organizing Tools for Gel Electrophoresis Autoradiography in R https://github.com/zhenkewu/spotgear
rewind:	Reconstructing Etiology with Binary Decomposition https://github.com/zhenkewu/rewind
slamR:	Structured Latent Attribute Models in R https://github.com/zhenkewu/slamR
lotR:	Latent class analysis for observations over leaves in a tree https://github.com/zhenkewu/lotR
doubletree:	Nested latent class models with double-tree shrinkage https://github.com/zhenkewu/doubletree
LCVA:	Nested latent class model for Verbal Autopsy (maintainer: Zehang Richard Li) https://github.com/richardli/LCVA
CUSUM-RL:	Reinforcement Learning in Possibly Nonstationary Environments (CUSUM-RL) (maintainer: M Li); in Python https://github.com/lmengbinggz/CUSUM-RL
Double-CUSUM-RL	A Robust Test for the Stationarity Assumption in Sequential Decision Making (maintainer: J Wang); in Python. Link to GitHub Repo

- mediationRL:** A Reinforcement Learning Framework for Dynamic Mediation Analysis (maintainer: G Lin); in Python. <https://github.com/linlinlin97/MediationRL>
- synthEHRella:** A Python package for synthetic Electronic Health Records (EHR) data generation benchmarking. (maintainer: X Chen); in Python. <https://github.com/chenxran/synthEHRella>
- MedtimeRL:** A Python package for Multivariate Dynamic Mediation Analysis Under a Reinforcement Learning Framework. (maintainer: J Wang); in Python. <https://github.com/jtwang95/MedtimeRL>
- PyCFRL:** CFRL: A Python library for counterfactually fair offline reinforcement learning via sequential data preprocessing. (maintainer: J Zhang); in Python. <https://github.com/JianhanZhang/PyCFRL>

RESEARCH GRANT PARTICIPATION ◆ *as Principal Investigator.*

Ongoing Research Support: as PI/MPI/Co-PI

- ◆ *Developing Reinforcement Learning Methods for Building Reliable Interventional Digital Health Systems*
PCORI Award (ME-2025C1-44006)
Improving Methods for Conducting Patient-Centered Comparative Effectiveness Research (Cycle 1, 2025)
Dates: 03/01/2026-02/28/2029
Responsibility: Principal Investigator
Total: \$1.02 Million (3 years with 3-month peer-review period)
 - ◆ *AI-Powered Cause-of-Death Assistant (CODA) Consortium*
Gates Foundation
Dates: 10/2025-09/2027
Principal Investigator: Tyler McCormick (UW)
Responsibility: Principal Investigator on subaward
Total: \$81,126 (UMich subward portion)
- Ongoing Research Support: as Co-Investigator
- *THRIVE: Trajectories of Recovery after Intravenous propofol vs inhaled Volatile Anesthesia (PCORI Phased Large Awards for Comparative Effectiveness Research (PLACER), Cycle 3, 2020)*
Web: <https://thrivetrial.com/>
Dates: 1/1/2022 – 06/30/2028
Principal Investigators: Sachin Kheterpal (UM), Michael Avidan (WUSTL)
Responsibility: Co-Investigator
Total Direct Cost: \$ 25 million
 - *Utilizing health Information for Meaningful impact in East Africa through Data Science (UZIMA-DS)* (NIH U54 TW012089)
Dates: 09/15/2021 – 06/30/2026
Principal Investigator: Akbar K. Waljee (UM Subcontract from Aga Khan University (AKU), Kenya)
Responsibility: Co-Investigator
Total Cost: \$ 6.5 million
 - *Zoonotic Uropathogenic Escherichia coli in Northwest Ecuador: Incidence and Risk Factors* (NIH R01AI167989)
Dates: 07/06/2022 – 07/05/2027

Principal Investigator: Joseph NE Eisenberg (UM), Jay P Graham (UC Berkeley)

Responsibility: Co-Investigator

Total Cost: \$ 3.59 million

- *The effects of bundled payment on acute cardiovascular outcomes among older adults (NIH R01AG047932)*

Dates: 06/01/2022 – 05/31/2027

Principal Investigator: Andrew M Ryan (Brown University)

Responsibility: Co-Investigator

Total Cost: \$ 3.64 million

- *Move and Snooze: Adding insomnia treatment to an exercise program to improve pain outcomes in older adults with knee osteoarthritis (NIH 1R01AG081299)*

Dates: 09/30/2023 – 06/30/2028

Principal Investigator: Daniel Whibley

Responsibility: Co-Investigator

- *Management of Antithrombotic Therapy Following Intracranial Hemorrhage In Patients With Primary and Metastatic Brain Cancer (Rogel Cancer Center Discovery Award)*

Dates: 05/2024-06/2025

Principal Investigator: Jordan Schaefer

Responsibility: Co-Investigator

Total: \$75,000

- *Evaluation of Social Determinant of Health (SDoH) factors Impacting Prescriber Treatment Decisions for VTE (Pfizer, Inc.)*

Dates: 08/2024-03/2026

Principal Investigator: Sood; Schaefer

Responsibility: Statistician

- *Low-burden Adaptive Mobile Interventions for Mood and Suicide Risk (NIH K23MH13176101)*

Dates: 09/07/2022 – 08/31/2026

Principal Investigator: Adam Horwitz (UM)

Responsibility: Consultant

Completed Research Support

- ◆ *Counterfactually Fair Sequential Decision Making with Application to Reducing Self-reported Opioid Misuse Behaviors (e-Health and Artificial Intelligence; Summer Student Support Program)*

Dates: 05/2025-08/2025

Responsibility: **Principal Investigator**

Total: \$12,000

- ◆ *Developing Innovative Statistical Framework to Integrate Multiple Verbal Autopsy Datasets to Estimate Cause-specific Mortality (NIH R03HD110962)*

Dates: 12/01/2022 – 11/30/2024

Principal Investigator: Zehang Richard Li (UCSC)

Responsibility: **Principal Investigator on subcontract**

- ◆ *Bayesian Hierarchical Models for Using Mobile Technology to Individualize Care in Mental Health (University of Michigan Precision Health Investigator Awards)*

Dates: 12/01/2018 – 12/01/2022.

Principal Investigator: Zhenke Wu

Responsibility: **Principal Investigator**

Total: \$300,000

- ◆ *Structured Latent Variable Methods for High-Dimensional EHR and Administrative Data (Propelling Original Data Science (PODS) Grants, Michigan Institute for Data Sciences)*
Dates: 06/10/2021 – 12/09/2022.
Principal Investigator: Zhenke Wu
Responsibility: **Principal Investigator**
Total: \$55,535
- ◆ *Transformers for Robust Causal Inference using Electronic Health Records and Claims Data (Joint Statistics and Biostatistics Research Award)*
Dates: 05/01/2021 – 8/31/2022.
Principal Investigators: Zhenke Wu and Jeffrey Regier
Responsibility: **Co-Principal Investigator**
Total: \$10,000
- *Variance as a Predictor of Health Outcomes (NIH 1R56AG06669301A1)*
Dates: 09/30/2021 – 08/31/2022
Principal Investigator: Michael Elliott (UM)
Responsibility: Co-Investigator
Total Cost: \$ 374,998.
- *Improving Outcomes for Care Partners of Persons with Traumatic Brain Injury (NIH 2R01NR013658)*
Dates: 12/01/2019 – 11/31/2024
Principal Investigator: Noelle Carlozzi
Responsibility: Co-Investigator
- *Sinai-Emory Multi-institutional CIVIC (Collaborative Influenza Vaccine Innovation Centers) (NIH NIAID)*
Dates: 03/01/2020 – 08/30/2022
Principal Investigator: Aubree Gordon (UM site)
Responsibility: Co-Investigator
- *Mobile Technology to Identify Mechanisms Linking Genetic Variation and Depression (NIH 2R01MH101459)*
Dates: 07/01/2018 – 03/31/2023
Principal Investigator: Srijan Sen
Responsibility: Co-Investigator
- *You-M: Personalizing Student Performance at the University of Michigan (UM Biosciences Initiative, BSI)*
Dates: 01/01/2021 – 12/31/2022
Principal Investigators: Kenneth Kozloff, Margit Burmeister, Pete Bodary
Responsibility: Co-Investigator
Total: \$779,349
- *Novel Use of mHealth Data to Identify States of Vulnerability and Receptivity to JITAIs (NIH U01CA229437)*
Dates: 04/01/2018 – 03/31/2023
Principal Investigators: Inbal Nahum-Shani (University of Michigan) and David Wetter (University of Utah)
Responsibility: Co-Investigator
- *Opportunities to Optimize the Receipt of Preventive Services among Children with Sickle Cell Anemia: A Mixed Methods Approach (NIH AHRQ R01HS027785-01A1)*
Dates: 09/01/2021-08/31/2025
Principal Investigator: Sarah Reeves (UM)
Responsibility: Co-Investigator
Total Cost: \$ 1.6 million

- ◆ *Autoantibodies Define Scleroderma Subgroups with Distinct Relationships to Cancer (NIH R01AR073208)*
Dates: 04/01/2018 – 03/31/2023
Principal Investigators: Livia Casciola-Rosen and Ami Shah (Johns Hopkins)
Responsibility: **Subcontract Principal Investigator**
Total: \$60,000
- ◆ *Personalized Diagnosis for Disease Etiology Studies and Cognitive Assessment (UM MCubed 3.0)*
Dates: 09/01/2018 – 12/31/2020
Principal Investigators: Zhenke Wu, Gongjun Xu, Yang Chen
Responsibility: **Co-Principal Investigator**
Total: \$60,000
- ◆ *Structured Latent Variable Models for Multivariate Binary Data Observed over Taxonomies (Shark Tank for Research Ideas in Data Science and Statistics, STRIDES, UM)*
Dates: 03/01/2019 – 03/01/2020
Principal Investigators: Zhenke Wu and Gongjun Xu
Responsibility: **Co-Principal Investigator**
Total: \$15,000
- ◆ *Bayesian Hierarchical Models for Design and Analysis of Studies to Individualize Healthcare (Funding for Methodological Research, Patient-Centered Outcomes Research Institute)*
Dates: 09/01/2016 – 08/31/2018
Principal Investigator: Scott L. Zeger (Johns Hopkins)
Responsibility: **Principal Investigator on subcontract**
Subcontract Total: \$73,773
- ◆ *Pneumonia Etiology Research for Child Health (PERCH) (Gates Foundation 305215)*
Dates: 09/01/2016 – 12/31/2017
Principal Investigator: Katherine O'Brien (Johns Hopkins at the time of award)
Responsibility: **Principal Investigator on subcontract**
Subcontract Total: \$66,696
- *Mobile Technology and Data Analytics to Identify Real-Time Predictors of Caregiver Well-Being (Accelerating Synergy Award, UL1TR002240; Michigan Institute for Clinical Health Research (MICHR) and Institute for Healthcare Policy Innovation (IHPI))*
Dates: 03/01/2020 – 02/28/2021
Principal Investigator: Noelle Carlozzi
Responsibility: Co-Investigator
Total: \$100,000
- *Identifying Real-Time Data Predictors of Stress and Depression Using Mobile Technology (Michigan Institute for Data Science; Funding for methodological research in the area of health sciences)*
Dates: 03/01/2017 – 02/28/2019
Principal Investigators: Srijan Sen
Responsibility: Co-Investigator
Total: \$521,051
- *Prostate Cancer DREAM Challenge Educational Program Award (Project Data Sphere, LLC (PDS) by AstraZeneca)*
Dates: 10/01/2015 – 03/31/2016
Principal Investigator: Yates Coley
Responsibility: Co-Investigator
Total: \$2,307.69

PRESENTATIONS  *upcoming*;  *keynote or plenary*

SCIENTIFIC MEETINGS **invited*, #*posters*

- 1 *Mar 2026. Invited session titled: "Robust Statistical Methods for Health and Biomedical Studies". ENAR, Indianapolis, IN.
- 2 *Aug 6, 2025. "When Many Models Are Equally Accurate: Exploring Interpretability and Uncertainty Quantification." Joint Statistical Meetings. Nashville, TN. Discussant.
- 3 *Jul 11-13, 2025. Joint Conference on Statistics and Data Science in China. Hangzhou, China.
- 4 *Jun 15-18, 2025. ICSA Applied Statistics Symposium. Storrs, CT.
- 5 *Jun 12-14, 2025. IISA Conference. Lincoln, Nebraska
- 6 *May 13-16, 2025. "Safe and Effective ML/AI Systems and Algorithmic Discrimination Protections: A Causal Take". American Causal Infernce Conference (ACIC). Detroit, Michigan.
- 7 *Feb 26, 2025. Exploring Apple SensorKit for unobtrusive ambulatory mental fatigue assessment. Workshop on "Emerging Statistical Methods for Digital Health Data." Banff International Research Station (BIRS) for Mathematical Innovation and Discovery. Banff, Canada.
- 8 Jan 8, 2025. Counterfactually Fair Sequential Decision Making with Application to Reducing Self-reported Opioid Misuse Behaviors. International Conference on Health Policy Statistics (ICHPS), San Diego, CA.
- 9 *Aug, 2024. Roundtable discussion on "Injecting Generative Artificial Intelligence (GenAI) into Your Statistical Research: Best Practices". Joint Statistical Meeting, Portland, Oregon, US.
- 10 *Jul 17, 2024. EcoSta, Beijing Normal University, Beijing, China.
- 11 *Jul 14, 2024. Med-X Mini Symposium on Brain Research. Med-X Research Institute, Shanghai Jiao Tong University (SJTU), Shanghai, China.
- 12 *Jun 28-30, 2024, International Chinese Statistics Association (ICSA), China Conference, Wuhan, China.
- 13 *Jun 25-26, 2024, EAC-ISBA Conference, Hong Kong. (virtual)
- 14 *May 15-17, 2024, 19th International Association of Official Statistics (IAOS) Conference and 4th Regional International Statistical Institute (ISI), Mexico City, Mexico.
- 15 *Mar 2024, ENAR, Baltimore, MD. "Methodological advances in and practical considerations for data originating from randomized trials"
- 16 *Mar 2024, "Some problems of offline reinforcement learning in interventional mobile health". Workshop on Statistical Methods for Digital Health Technologies Data, Baltimore, MD.
- 17 *Feb 2024, Biomedical Data Science Workshop, Statistics and Computer Science, University of California, Irvine, CA
- 18 Feb 2024, Third Annual UZIMA (UtiliZe health Information for Meaningful impact in East Africa through Data Science) Meeting ([NIH Data Science in Africa Initiative](#)). Kilifi, Kenya.
- 19 *Dec 2023, CMStatistics 2023. Berlin, Germany.
- 20 *Aug 2023, Joint Statistical Meeting. Toronto, Canada.
- 21 *Aug 2023, EcoSta. Tokyo, Japan (virtual).
- 22 *Jul 2023, Joint Conference on Statistics and Data Science in China (JCSDS). Beijing, China.

- 23 *Jul 2023, The 12th ICSA International Conference, Chinese University of Hong Kong, Hong Kong.
- 24 *Jun 2023, Western North American Region (WNAR) Conference, International Biometric Society (IBS), Anchorage, Alaska.
- 25 *Jun 2023, International Chineses Statistical Association (ICSA) 2023 Applied Statistics Symposium. Ann Arbor, Michigan.
- 26 *Dec 2022, 15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2022). King's College London, London, UK.
- 27 *Aug 2022, Joint Statistical Meetings, Washington DC
- 28 *Aug 2022, Recent Advances in Nonparametric and Semiparametric Methods for Complex Data, Invited Papers by Journal of Nonparametric Statistics. Joint Statistical Meetings, Washington DC, Discussant.
- 29 *Jun 2022, World Meeting of the International Society for Bayesian Analysis (ISBA), Montreal, Canada
- 30 *Jun 2022, International Chinese Statistical Association (ICSA) Applied Statistics Symposium, Gainesville, FL
- 31 *Jun 2022, EcoSta Conference, Kyoto, Japan (virtual)
- 32 *Aug 2021, Joint Statistical Meetings, Seattle WA (virtual)
- 33 *Jul 2021, World Meeting of the International Society for Bayesian Analysis (ISBA) (virtual)
- 34 *Jun 2021, 4th International Conference on Econometrics and Statistics (EcoSta 2021), HKUST, Hong Kong (virtual).
- 35 *Dec 2020, ICSA Applied Statistics Symposium, Houston, TX (virtual)
- 36 *Aug 2020, Joint Statistical Meeting. Aug 1-6. Philadelphia, PA (virtual)
- 37 *Dec 2019, International Indian Statistical Association Conference. IIT Bombay, Mumbai, India.
- 38 *Dec 2019, 11th International Chinese Statistical Association (ICSA) International Conference. Zhejiang University, Hangzhou, China.
- 39 *Jul 2019, Joint Statistical Meeting, Denver, Colorado.
- 40 *Jul 2019, International Chinese Statistical Association (ICSA) China Conference. Naikai University, Tianjin, China.
- 41 *Jun 2019, 3rd International Conference on Econometrics and Statistics (EcoStat 2019). National Chung Hsing University (NCHU), Taichung, Taiwan.
- 42 *Jun 2019, Applied International Chinese Statistical Association (ICSA) Statistics Symposium. Raleigh, North Carolina.
- 43 #Oct 2018, MIDAS Annual Symposium, University of Michigan, Ann Arbor, MI.
- 44 Jul 2018, Joint Statistical Meeting. Vancouver, Canada.
- 45 #Jul 2018, 25th Model-Based Clustering Workshop. Ann Arbor, MI.
- 46 *Jun 2018, 2nd International Conference on Econometrics and Statistics (EcoStat 2018). The City University of Hong Kong.
- 47 *Jun 2018, Applied Statistics Symposium. International Chinese Statistical Association (ICSA). New Brunswick, NJ, USA.

48 Mar 2018, Eastern North American Regional meeting of the International Biometric Society. Atlanta, GA.

49 *Jul 2017, International Biometric Society, Brazilian Regional Meeting. Federal University of Lavras (UFLA), Lavras, MG, Brazil. **Plenary Talk**.

50 Mar 2017, Eastern North American Regional meeting of the International Biometric Society. Washington, DC.

51 Aug 2016, Joint Statistical Meetings. Chicago, IL.

52 #Jul 2016, 18th Meeting of New Researcher Conference in Statistics and Probability. University of Wisconsin, Madison.

53 Mar 2016, Eastern North American Regional meeting of the International Biometric Society. Austin, TX.

54 Mar 2015, Eastern North American Regional meeting of the International Biometric Society. Miami, FL.

55 Aug 2014, Joint Statistical Meetings. Boston, MA.

56 Mar 2014, Eastern North American Regional meeting of the International Biometric Society. Baltimore, MD.

57 Aug 2013, Joint Statistical Meeting. Montreal, QC, Canada.

58 #Mar 2013, Eastern North American Regional meeting of the International Biometric Society. Orlando, FL.

INVITED SEMINARS & COLLOQUIUMS (EXTERNAL)

59 Spring 2026, Department of Biostatistics, Brown University, Providence, RI.

60 Feb 25, 2026, Biostatistics Branch, Division of Cancer Epidemiology and Genetics, National Cancer Institute, NIH. (virtual)

61 Jan 19, 2026, Department of Information Systems, Business Statistics, and Operations Management, Business School, Hong Kong University of Science and Technology, Hong Kong.

62 Jan 16, 2026, Department of Statistics, The Chinese University of Hong Kong (CUHK), Hong Kong.

63 Jan 5, 2026, Department of Statistics, East China Normal University, Shanghai, China.

64 July 16, 2025. School of Statistics and Data Science, Shanghai University of Finance and Economics (Sufe). Shanghai, China.

65 July 23, 2024. Center for Data Science, Zhejiang University, Hangzhou, China.

66 May 2024, Department of Statistics, Instituto Tecnológico Autónomo de México (ITAM), Mexico City, Mexico

67 April 2024, Division of Biostatistics & Health Data Science, University of Minnesota, Minneapolis, MN

68 February 2024, Department of Biostatistics and Informatics, University of Colorado (CU), Aurora, CO.

69 November 2023, The Institute of Population Research at Peking University (IPRPKU) (virtual).

70 October 2023, Department of Statistics, University of Michigan, Ann Arbor, MI.

71 July 2023, Department of Statistics and Actuarial Sciences, The University of Hong Kong (HKU), Hong Kong.

72 July 2023, Department of Statistics, The Chinese University of Hong Kong (CUHK), Hong Kong.

73 April 2022, Department of Biostatistics and Bioinformatics, Duke University, Durham, NC (virtual)

74 March 2021, University of Illinois, Chicago, Section of Biostatistics, School of Public Health (virtual)

75 November 2020, Johns Hopkins Department of Biostatistics Seminar (virtual)

76 March 2020, Mental Health Data Science, Department of Psychiatry, Columbia University.

- 77 November 2019, Department of Statistics and Data Science (SDS), University of Texas, Austin, TX.
- 78 September 2019, Department of Statistics, Taxes A&M University, College Station, TX.
- 79 February 2019, *Statistical Methods for Developing Personalized Mobile Health Interventions*, National University of Singapore.
- 80 December 2017, Statistical Reinforcement Learning Lab. Department of Statistics, Harvard University, Cambridge, MA.
- 81 February 2016, Department of Biostatistics, University of Michigan, Ann Arbor, MI.
- 82 February 2016, Department of Biostatistics, University of Massachusetts, Amherst. Amherst, MA.
- 83 February 2016, Biostatistics Research Branch, Division of Clinical Research, National Institute of Allergy and Infectious Diseases, NIH. Rockville, MD.
- 84 November 2015, Biostatistics Grand Rounds, Johns Hopkins Bloomberg School of Public Health. Baltimore, MD.
- 85 August 2015, CHICAS, Medical School, Lancaster University. Lancaster, England.
- 86 February 2015, Department of Biostatistics, Brown University. Providence, RI.

INVITED SEMINARS (INTERNAL)

- 87 Feb 27, 2026. Ensuring Equity in Sequential Clinical Decision Making: Counterfactual Fairness in Reinforcement Learning for Opioid Use Disorder Services. [E-Health and Artificial Intelligence \(e-HAIL\)](#). University of Michigan.
- 88 September 26, 2024, Tools and technology seminar for the Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor.
- 89 April 17, 2024, Cancer Data Science, Rogel Cancer Center, University of Michigan, Ann Arbor
- 90 March 18, 2024, Michigan Perspectives: Connecting AI Techniques to Environmental Health Statistics Research (M-LEEd Environmental Statistics Day Symposium).
- 91 March 2022, Propelling Original Data Science (PODS) Grants Showcase, Michigan Institute of Data Science.
- 92 October 2021, Brown Bag Seminar Series, Biostatistics, UMich.
- 93 January 2021, Michigan Biostat DEI Seminar (virtual)
- 94 November 2020, Brown Bag Seminar Series, Biostatistics, UMich. (virtual)
- 95 September 2020, Environmental Statistics Discussion. Integrated Health Science Core, Michigan Center on Lifesstage Environmental Exposures and Disease (M-LEEd). (virtual)
- 96 June 2020, Michigan Institute for Data Science (MIDAS) COVID-19 Special Seminar Series (with Veera Baladandayuthapani; virtual; [recording](#))
- 97 July 2019, **Plenary talk**, Symposium for Big Data Summer Institute, Big Data Summer Institute, University of Michigan, Ann Arbor, MI.
- 98 May 2018, Cancer Control and Population Sciences (CCPS), University of Michigan Cancer Center.
- 99 May 2018, Health Sciences Challenge Symposium. Michigan Institute for Data Sciences, University of Michigan.
- 100 April 2018, Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS) University of Michigan. Junior Faculty **Keynote Speaker**.

OTHER MEETINGS AND EVENTS **invited*; ‡*posters*

- 101 *Aug 21, 2025. Analysis Case Study: Evaluate Mobile Health Interventions via Micro-Randomized Trials. Early Career Researcher Trainining Session on Machine Learning. Data Science in Africa (UZIMA-DS), Institute for Human Development, Aga Khan University, Nairobi, Kenya. (virtual)
- 102 *December 13th, 2024. Counterfactually Fair Offline Reinforcement Learning via Sequential Data Preprocessing. Online Public Seminar.
- 103 *November 1st, 2024, Panel on "Novel Methodology and Digital Biomarkers". 2024 Mobile Technologies Research Innovation Collaborative (MeTRIC) Symposium, Ann Arbor, MI.
- 104 *December 13th, 2022, Research Forum "New Mathematical Approaches to Computational Psychiatry and Fatigue", Cognitive Fatigue Multidisciplinary University Research Initiatives (MURI) Research Forum (Organized by Professor Daniel Forger, UMICH).
- 105 *May 2018, Panel on Statistical and Data Science Research. Foundations of Data Science. Fifth Bayesian, Fiducial and Frequentist Conference (BFF5) (May 6-9, 2018; Ann Arbor, MI)
- 106 *July 2017, Rheumatology Data Science Meeting. Johns Hopkins School of Medicine, Bayview Medical Center.
- 107 *November 2016, Interdisciplinary Group Seminar (IGS), Center for Statistical Genetics, University of Michigan. Ann Arbor, MI
- 108 *November 2016, Annual School of Public Health Excellence in Research Symposium, University of Michigan. Ann Arbor, MI.
- 109 *December 2014, Pneumonia Etiology Research for Child Health (PERCH) Executive Committee Meeting. London, England.
- 110 ‡February 2014, Delta Omega Scientific Poster Competition. Baltimore, MD.
- 111 *December 2013, Pneumonia Etiology Research for Child Health (PERCH) Executive Committee Meeting. London, England.
- 112 *November 2013, US Centers for Disease Control and Child Health Research Foundation: Aetiology of Neonatal Infection in South Asia (ANISA) Project Committee Meeting. San Diego, CA.
- 113 *December 2012, Department of Biostatistics. Johns Hopkins Biostatistics Causal Inference Working Group. Baltimore, MD.

HOSTED ATTENDEES  *upcoming*

-
- 1 May 19-21, 2026. [Institute for Healthcare Policy and Innovation \(IHPI\) Impact Accelerator Program: Policy and Communications Training](#), University of Michigan.
 - 2 Jan 12-16, 2026. Sanya Workshop on Causality and Machine Learning, Tsinghua Sanya International Mathematics Forum, Yau Mathematical Sciences Center, Tsinghua University.
 - 3 2025 University of Michigan Symposium on AI, Data Center Infrastructure, and Climate. Ann Arbor, MI. Oct 30, 2025
 - "This invitation-only symposium will bring together influential voices from the university and beyond to critically examine the intersection of artificial intelligence, data center infrastructure, and climate change. Together, we will explore bold opportunities for collaboration and develop ideas with the potential for transformative impact."

- 4 [Emerging Statistical Methods for Digital Health Data](#). BIRS Workshop, Banff, AB, Canada. February 23 - 28, 2025
- 5 [Use of Wearable and Implantable Devices in Health Research](#), BIRS Workshop, Banff, AB, Canada. February 23-28, 2020
- 6 U-M Ideas Lab: Predicting Human Performance. Biosciences Initiative, University of Michigan. October 13-15, 2019
- 7 [Statistical Methods for Developing Personalized Mobile Health Interventions](#), National University of Singapore, February 4 - March 1, 2019
- 8 [Program on Statistical, Mathematical, and Computational Methods for Precision Medicine \(PMED\)](#), SAMSI, Raleigh, Durham, NC. August 13-17, 2018
- 9 Methods Summit. PCORI Annual Meeting: Building a Patient-Centered Research Community. Arlington VA. October 6-8, 2015

PROFESSIONAL SOCIETY MEMBERSHIPS

- American Statistical Association (ASA)
- Eastern North American Region (ENAR), International Biometric Society
- International Society for Bayesian Analysis (ISBA)
- International Chinese Statistical Association (ICSA)
- International Statistical Institute (ISI)

SERVICE

PROFESSIONAL AT LARGE

Leadership and Advisory Roles

- 2023-present Scientific Advisory Committee (SAC), Reference Death Archive, World Health Organization (WHO).
- 2023-present Advisory Board, openVA (<https://openva.net/>): The openVA team develops and maintains various tools, algorithms, and software related to Verbal Autopsy.
- 2025-present Executive Committee, [Interdisciplinary Research Training in Health and Aging \(IRTHA\) T32 program](#)
- 2010 Co-Founder, [Chinese Public Health Forum \(CPHF\)](#) at Johns Hopkins

Professional Society Leadership

- 2025 Treasurer, Health Policy and Statistics Section (HPSS), American Statistical Association
- 2024 JSM Program Chair, Biometrics Section, American Statistical Association
- 2018-20 Regional Advisory Board, *Eastern North American Regional (ENAR) Meeting of the International Biometric Society*

Program Committee

- 2024 Organizing Committee, Eastern North American Region (ENAR) of International Biometrics Society Annual Meeting, New Orleans, LA. March, 2025
- 2023 Co-Chair of Local Committee, International Chinese Statistical Association (ICSA) Applied Statistics Symposium (Ann Arbor, MI; June 2023)
- 2024 7th International Conference on Econometrics and Statistics (EcoSta 2024), Beijing Normal University.
- 2021 *AI for Behavior Change, The AAAI-21 Workshop on AI For Behavior Change*, Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21) (February 8-9; Virtual)

Editorial Service

- Associate** • [Annals of Applied Statistics](#) (2024 - present)
- Editor** • [Biostatistics](#) (2024 - present)
- [The Journal of the Royal Statistical Society, Series A \(Statistics in Society\)](#) (2025 - 2029)

Statistical Reviewer • [New England Journal of Medicine - Artificial Intelligence \(NEJM-AI\)](#) (2024 - present). Standing member.

Referee *The numbers in parentheses indicate the number of manuscripts reviewed or currently reviewing, excluding revisions.*

Journals: (alphabetically ordered)

- Annals of Applied Statistics (8)
- Annals of Statistics (1)
- Bayesian Analysis (1)
- Biometrics (18)
- Biostatistics (4)
- Educational and Psychological Measurements (1)
- Electronic Journal of Statistics (2)
- F1000 (1)
- Journal of Business and Economic Statistics (1)
- Computational Statistics and Data Analysis (2)
- Epidemiology (1)
- Pharmaceutical Statistics(1)
- PLOS ONE (1)
- Proceedings of National Academy of Sciences (PNAS) (2)
- Rapid Reviews\Infectious Disease (1)
- Statistics in Medicine (13)
- Statistical Methods in Medical Research (1)
- Statistical Science (1)
- Sankhya (The Indian Journal of Statistics) (1)
- Technometrics (1)
- Nature (1)
- Nature Partner Journal (npj) Digital Medicine (1)
- New England Journal of Medicine - Artificial Intelligence (NEJM-AI) (2)
- IEEE Open Journal of Engineering in Medicine and Biology (1)
- International Journal of Epidemiology (1)
- Journal of American Statistical Association: Application and Case Studies (3)
- Journal of American Statistical Association: Theory and Methods (3)
- Journal of Educational and Behavioral Statistics (1)
- Journal of Royal Statistical Society, Series A (1)
- Journal of Statistical Planning and Inference (1)
- Ophthalmic Epidemiology (1)
- Psychiatric Services (1)

Conferences: *International Conference on Machine Learning 2022 (2), NeurIPS 2023*

Workshops: *AI for Behavior Change, AAAI Workshop, 2021(2), 2022(2)*

Final Reports: Patient-Centered Outcomes Research Institute (PCORI) (1)

Grant Review Panels

- 2025 ASPB (Analytics and Statistics for Population Research Panel B)
2024 PCORI Methods Panel Scientist Reviewer (Improving Methods for Conducting Patient-Centered Outcomes Research)
2023 Italy–Singapore Science and Technology Cooperation Call for Joint Research Proposals, Agency for Science, Technology and Research (A*STAR), Ministry of Trade and Industry, Singapore
2022,2023 MIDAS PODS Grant
2021,2022 Michigan Medicine - Peking University Health Science Center Joint Institute for Translational Clinical Research
2019,2021 UM Precision Health Investigator Awards
2019 MIDAS Propelling Original Data Science (PODS) Grants
2017,2018 Michigan Institute for Clinical and Health Research (MICHR) Pilot Grant
2016 Johns Hopkins Individualized Health Initiative Request for Proposal (RFP)
2016 Methodology Research Grant, Medical Research Council, United Kingdom

Other Professional Services

Conference *International Conference on Health Policy Statistics (ICHPS)*

Committee 1. Student Committee (2023)

Eastern North American Regional (ENAR) Meeting of the International Biometric Society

1. Paper Award Committee (2019-2021)
2. Educational Advisory Committee (2018; Atlanta, GA)

American Statistical Association

1. Student paper competition committee, Section on Bayesian Statistical Science (SBSS; 2024)
2. Student Paper Award Committee, Statistical Learning and Data Science (SLDS; 2020, 2022, 2025, 2026)
3. Young Investigator Award (YIA) Committee, Statistics in Epidemiology (2022, 2023, 2024)
4. David P. Byar Early Career Award Committee, Biometrics Section (2020)
5. Paper Award Committee, Section on Bayesian Statistical Science (2020)
6. Paper Award Committee, Health Policy Statistics Section (2020)

International Chinese Statistical Association (ICSA)

1. Student paper competition (2021)

Session Organizer	<p>① Statistical Foundation in the AI-augmented Scientific Landscape: A New Deal. ENAR, Indianapolis, IN. March 15-18, 2026</p> <p>2. Statistical innovations for advancing safety and equity of machine learning algorithms in healthcare. International Conference on Health Policy Statistics (ICHPS), San Diego, CA. January 6-8, 2025. (Co-organized with Prof. Jean Feng, UCSF)</p> <p>3. Reaping the Benefits of Digital Health Data for Improving Public Health and Biomedical Studies, JSM (August 5-10, 2023; Toronto, Canada)</p> <p>4. Modern Tree-integrative Statistical Methods for Biomedical and Public Health Studies, ENAR (March 27-30, 2022; Houston, TX)</p> <p>5. Recent Advances in Latent Variable Modeling for Modern Scientific Studies, 12th International Conference of International Chinese Statistical Association (December 18-22, 2022)</p> <p>6. Statistical Methods for Improving Inferences and Decision-Making in Population Health, Joint Statistical Meeting (July 27 - August 1, 2019; Denver, CO)</p>
--------------------------	---

- Session Chair**
1. Quantifying Bias in AI Models in Real-World Health Settings, International Conference on Health Policy Statistics (ICHPS), San Diego, CA. January 7, 2025.
 2. Success stories, challenges, and opportunities in use of observational health data for generating clinical evidence, ENAR, International Biometric Society (IBS) (Mar 10-13, 2024, Baltimore, MD)
 3. Topo-geometric data analysis, Joint Statistical Meetings (August 8, Toronto, Canada)
 4. Showcase of the Power of Statistics in Observational Studies for Precision Health, 12th International Conference of International Chinese Statistical Association (July 7, 2023, Hong Kong)
 5. Panel on Careers in Data Science, Applied Statistics Symposium, ICSA (June 12, 2023, Ann Arbor)
 6. Keynote of Workshop “Modern Statistical and Machine Learning Methods for Big Data”, October 22nd, 2022, Ann Arbor
 7. Statistical Methods for Discovering Latent Structures in High-Dimensional and Complex Data, 2022 JSM (August)
 8. Recent Statistical Advances for Mobile Health, 2021 JSM (August 11th; Virtual)
 9. Modern Graphical Modeling of Complex Biomedical Systems, 2020 JSM (August 6; Virtual)
 10. New Weighting Methods for Causal Inference, 2020 ENAR (March 24; Virtual)
 11. Keynote “Computational Ecology and AI for Conservation” by Tanya Berger-Wolf, Michigan Institute for Data Science Annual Symposium, November 15, 2019. Ann Arbor, MI
 12. Towards a Learning-Health System: Methods and Strategies for Data-Driven Healthcare, Joint Statistical Meetings (July 29 - August 3, 2017; Baltimore, MD)
- Poster Judge**
1. Statistical Learning and Data Science (SLDS), Joint Statistical Meeting (July 30, 2019, Denver, CO)
 2. International Indian Statistical Association (IISA) Conference, 2019, Mumbai, India.

Data Safety Monitoring Board (DSMB)

1. 2025 Apr-2027 Feb. Improving coping to reduce suicide risk following ED discharge. Electronic Safety Planning and Text Support (eSATS) intervention. PIs: Ewa Czyz, PhD; Adam Horwitz, PhD. Grant Title: *Facilitating effective coping to reduce suicide risk following ED discharge: A micro-randomized trial to develop an adaptive text-based intervention* Grant Number: R34 MH 133057 Funded by: NIMH

External Promotion and Tenure Letters of Support

1. Columbia University

External Titled Professorship Nomination Letters of Support

1. University of Minnesota, Twin Cities

INTERNAL SERVICE

Department of Biostatistics, UMich

2025	Student Awards Committee
2025	AI, Computing, Website Committee (Chair)
2025	Academic Events Committee
2023, 2024	Retreat Planning and 2030 Visioning
2023	Diversity, Equity and Inclusion
2017-18, 2022-23	Faculty Search
2016-17, 2022-23	Admissions
2018, 2020-23, 2024	Computing, Social Media and Website Reform (Chair for 2022-2023, 2024)
2017-2020	Seminars/Brown Bag (Chair)
2019-2021, 2024	Student Awards
2018	Rod Little Distinguished Lectureship Organizing Committee
2018	Faculty Speaker on Prospective Student Day, November 10
2017-18	Qualifying Exam Modernization Proposal

School of Public Health, UMich

2019-2023	Junior Faculty Advisory Board (J-FAB)
2018	Health Informatics

UMich

2023-present	Launch Committee for Junior Faculty (Professor Meng Wang - DCMB)
2022-present	Faculty Search Committee, Eisenberg Family Depression Center
2019, 2020	Program Committee, Annual MIDAS Symposium, November
2016	Poster Competition Judge, Michigan Institute of Data Science Symposium, Nov 15

TEACHING AND MENTORING

DOCTORAL DISSERTATION ADVISEES (Chair or Co-chair)

*expected graduation

- 2028* Xingran Chen
Thesis Title: *Predictive Powered Inference and Synthetic Electronic Health Records Data.*
- 2026* Abigail Loe (Co-Chair: Susan Murray)
Thesis Title: *Machine Learning Methods for Recurrent and Other Complex Events Analyses*
First Position After Graduation: Assistant Professor (tenure-track), Mathematics, Statistics, and Computer Science, Macalester College, MN.
- 2026* Mingyan Yu (Co-Chair: Michael Elliott)
Thesis Title: *A Bayesian Approach to Modeling Variance of Intensive Longitudinal Biomarker Data as a Predictor of Health Outcomes*

Graduated: (total: 7)

- 2020- Jitao Wang (Co-Chair: Chengchun Shi, LSE)
2025 **Thesis Title:** *Reinforcement Learning for Interventional Mobile Health: Non-stationarity, Mediation, and Fairness Considerations*
First Position After Graduation/Current Position: Capital One
- 2019- Mengbing Li (Chair)
2025 **Thesis Title:** *Bayesian Structured Latent Variable Models for Individualizing Healthcare*
First Position After Graduation/Current Position: Eli Lilly, Indianapolis, IN.
- 2018- Irena Chen (Co-Chair: Michael Elliott)
2023 **Thesis Title:** *Joint Modeling Methods for Individual-level Variances as Predictors of Health Outcomes*
First Position After Graduation/Current Position: Postdoctoral Fellow, Department of Digital and Computational Demography, Max Planck Institute, Germany
- 2019- Tsung-Hung Yao (Co-Chair: Veera Baladandayuthapani)
2023 **Thesis Title:** *Bayesian Learning of Structured Covariances with Applications to Cancer Data*
First Position After Graduation/Current Position: Postdoctoral Fellow, Department of Biostatistics, MD Anderson Cancer Center
- 2020- Jieru (Hera) Shi (Co-Chair: Walter Dempsey)
2023 **Thesis Title:** *Statistical Methods for Assessing Time-Varying Causal Effects: Novel Estimands and Inference*
First Position After Graduation/Current Position: Postdoctoral Fellow, Department of Pure Mathematics and Mathematical Statistics (DPMMS), University of Cambridge, UK
- 2020- Nicole Wakim (Co-Chair: Thomas Braun)
2023 **Thesis Title:** *Missing Data Methods for Correlating Digital Biomarkers and Longitudinal Outcomes*
First Position After Graduation/Current Position: Research Assistant Professor at OHSU

- 2017- Tim NeCamp, PhD (Co-Chair: Edward Ionides). NSF Graduate Student Fellowship.
2019 Thesis Title: *Design and Analysis of Sequential Randomized Trials with Applications to Mental Health and Online Education.*
First Position After Graduation/Current Position: Co-Founder of [Data Bloom](#)

Undergraduate Honor Thesis Research Advisees

- 1 Jianhan Zhang (2024 - present). Department of Statistics (Data Science), Pure Mathematics. Thesis Title: *Counterfactual Fairness in Reinforcement Learning via Marginal Distribution Matching.*

Doctoral Research Fellowship Mentees

- 1 Ariana Haidari (2025 Dec - present). "Multi-Omic Analysis of Phthalate Exposure and Early Life Risk of Type 2 Diabetes." National Institute Of Environmental Health Sciences (NIEHS), NIH. Award Number F31ES037229. Sponsor: Jackie Goodrich, PhD.

CLASSROOM INSTRUCTION (Principal Instructor) x *upcoming*

University of Michigan, Ann Arbor

- 1 BIOSTAT 653 Theory and Application of Longitudinal Analysis (2025 Fall; ~ 60 Master/Doctoral Students).
- 2 BIOSTAT 653 Theory and Application of Longitudinal Analysis (2024 Fall; ~ 55 Master/Doctoral Students).
- 3 BIOSTAT 653 Theory and Application of Longitudinal Analysis (2023 Fall; 46 Master/Doctoral Students).
- 4 BIOSTAT 653 Theory and Application of Longitudinal Analysis (2022 Fall). 50 Master/Doctoral Students.
- 5 BIOSTAT 522 Biostatistical Analysis for Health-Related Studies (2022 Winter). 158 Master, MPH, Medical Non-Biostat Students (Epidemiology, Nutrition, Medicine).
- 6 BIOSTAT 653 Theory and Application of Longitudinal Analysis (2021 Fall). 40 Master/Doctoral Students.
- 7 BIOSTAT 653 Theory and Application of Longitudinal Analysis (2020 Fall). 50 Master/Doctoral Students.
- 8 BIOSTAT 653 Applied Stats III: Longitudinal Analysis (2019 Fall). 67 Master/Doctoral Biostat Students
- 9 BIOSTAT 653 Applied Stats III: Longitudinal Analysis (2018 Fall). 47 Master/Doctoral Biostat Students
- 10 BIOSTAT 523 Statistical Methods in Epidemiology (2017 Fall). 84 Master/Doctoral Epidemiology Students
- 11 BIOSTAT 830 Advanced Topics in Biostatistics: [Statistical and Computational Methods for Learning through Graphical Models](#) (2016 Fall). 11 Doctoral Students

CLASSROOM INSTRUCTION (Invited Guest Lecturer)

University of Michigan, Ann Arbor

- 1 Dec 3, 2025. Informative Bayes for Estimating Population Disease Etiology. BIOSTAT682: Applied Bayesian Inference (Primary Instructor: Jian Kang). Department of Biostatistics.
- 2 Sep 4, 2025. Shrinkage methods and variable selection. EPID815: Modern Statistical Methods in Epidemiologic Studies (Primary Instructor: Sung Kyun Park). Department of Epidemiology.
- 3 Jun 27, 2025. Shrinkage methods and variable selection. Big Data Summer Institute, Department of Biostatistics
- 4 Sep 24, 2024. AI in Public Health. PUBHLTH555.

- 5 Mar 28, 2024. *The Use of GenAI/LLM tools in Statistical Research Workflow.* Introduction to Health Data Science (Primary Instructor: Peter Song)[[slides](#)]
- 6 Jun 2018, 2019. Causal Inference. Big Data Summer Institute, Department of Biostatistics
- 7 Jun 22, 2017. Network. Big Data Summer Institute, Department of Biostatistics
- 8 Oct 28, 2016. Cancer Biostatistics Seminar Course (BIOSTAT 803), Department of Biostatistics, (Instructor: Jeremy M G Taylor)

OTHER TEACHING

Short Courses/Tutorials

- 1 Mar 15-18, 2026. "A Statistician's Guide to Integrating Generative AI into Scientific Research." ENAR Spring Meeting. Indianapolis, IN. Two-hour tutorial and hands-on interactive session.
- o Nov 17, 2014. Statistical Methods for Individualizing Health (co-taught with Scott Zeger), Mayo Clinic, Department of Health Sciences Research, Rochester, MN

Workshop

- o [Big Data Summer Institute](#), NIH BD2K R25 (PI: Mukherjee). Undergraduate Projects on Statistical Methods for Electronic Health Records (data: Michigan Genomics Initiative). Department of Biostatistics, University of Michigan. (2017 Summer)

GRADUATE STUDENT RESEARCH ASSISTANTSHIP (GSRA)

Funded and Supervised

Kaiyuan (Kevin) Wang (May-Dec 2025)
Abigail Loe (2022 Jan - 2022 Dec)
Jitao Wang (2020 Sep - present)
Irena Chen (2019 Jan - 2022 Aug)
Nicole Wakim (2021 May - 2021 Aug)
Zhongyuan Lyu (2018 May - 2018 Aug)

Zihan Wang (Jun-Aug 2025)
Chen Chen (2021 Nov - 2022 Aug)
Mengbing Li (2018 Jan - 2023 Aug)
Tian Xie (2020 Jan - 2022 Aug)
Jieru (Hera) Shi (2020 May - 2020 Aug)
Zezhi Zhang (2017 May - 2017 Aug)

Supervised

Mingyan Yu (2022 May - present)

DOCTORAL DISSERTATION COMMITTEE (Non-Chair Role; Total: 42)

2025-present	Lantian Xu (Biostatistics)
2025-present	Yao Song (Biostatistics)
2025	Zhengqi Xu (Electrical and Computer Engineering)
2025-present	Kelvin Pengyuan Zhang (Epidemiology)
2025-present	Tzu-Hsuan Lin (Biostatistics)
2025-present	Joshua Foster-Tucker (Epidemiology)
2025-present	Lauren MacConnachie (Epidemiology)
2024-2025	Yue Chu (Sociology, Ohio State University)
2024-2025	Yuan Zhong (Biostatistics)
2024-present	Jiaxin Wu (Epidemiology)

2024	Jing Ouyang (Stat)
2023-2024	Chang Wang (Biostat)
2023-present	Haneen BouGhanem (Nutritional Sciences)
2023-present	Ariana Haidari (Environmental Health Sciences)
2023-2024	Yuliang Xu (Biostat)
2022-2024	Greg Hoy (Epidemiology)
2022-2024	Hyeon Joo (Learning Health Sciences/Scientific Computing)
2022-2023	Moyan Li (IOE)
2022-2023	Jennifer Cleary (Psychology)
2022-2024	Madeline Abbott (Biostat)
2022	Chenchen Ma (Stat)
2022-2024	Wade Sanders (Epidemiology)
2021-2024	Charlotte Mann (Stat)
2021-2024	Andrea Sosa Moreno (Epidemiology)
2021-2023	Aaron Frutos (Epidemiology)
2021-2023	Yizhuo Wang (Biostat)
2020-2022	Youfei Yu (Biostat)
2020-2021	Yiwang Zhou (Biostat)
2020-2022	Kuan-Han Wu (Bioinformatics)
2020-2022	Chengcheng Li (Stat)
2020	Xubo Yue (IOE)
2020-2023	Seokhyun Chung (IOE)
2021	Edward Wu (Stat)
2020	Nina Zhou (Biostat)
2020	Brook Luers (Stat)
2020	Aritra Guha (Stat)
2018-2020	April Cho (Stat)
2018-2020	Yuqi Gu (Stat)
2019-2020	Yingchao Zhong (Biostat)
2019-2020	Lan Luo (Biostat)
2019-2020	Yingchao Zhong (Biostat)
2019	Ruofei Zhao (Stat)
2018	Jun Guo (Stat)

DOCTORAL PRELIMINARY EXAM COMMITTEE

2022-2023 Prayag Chatha (Stat)

MASTER'S DISSERTATION COMMITTEE (Non-Chair Role)

2022-present Xiaochun Gai (Nutritional Sciences), Zhichun (Irene) Xu (Nutritional Sciences)

PARTICIPATION IN RESEARCH

2024 Fall - present Jianhan Zhang (Undergrad, Pure Math, Data Science)
2024 Fall Owen Yoo (Undergrad, Statistics and Data Science, Minor in Music)

2024 May-Dec	Peter Yang (Undergrad, Math, Statistics and Data Science, Computer Science)
2023 Jan-2024 May	Xingran Chen (MS, Biostat; Outstanding First-Year Master Student)
2023 Summer	Bolin Wu (Undergrad, Computer Science)
2020 Fall	Ting Gong (MS, Data Science)
2020 Winter	Jiayuan Dong (Accelerated MS, Applied Statistics)
2018 Fall	Jing Chu (MS, Applied Statistics)
2018 Summer	Jitao Wang (MA, Biostat)

GENERAL ACADEMIC ADVISOR

2024	Jingze Li (MS), Xiangyu Ji (MS), Junhua Tan (MS), Xuanhao Yan (MS), Aditaya Jalin (MS), Zizhao Xie (MS)
2023	Zihan Wang (MS), Yiren Hou (MS)
2021-2022	Runye Shi (MS)
2020-2021	Yajing Li (MS), Qiyuan Shi (MS), Jitao Wang (MS), Tian Xie (MS), Yuliang Xu (PhD)
2019-2020	Yajing Li (MS), Ruohan Liao (MS), Tian Xie (MS), Zheng Xu (PhD)

GRADUATE STUDENT INSTRUCTOR (GSI)

*indicates winning a Departmental Outstanding GSI Award

BIOSTAT653, Fall 2025	Ziyu Liu, Liangbo Lyu
BIOSTAT653, Fall 2024	Xingran Chen, Tai Yang
BIOSTAT653, Fall 2023	Yao Song, Tzu-Hsuan Lin
BIOSTAT653, Fall 2022	*Mengbing Li
BIOSTAT522, Winter 2022	*Jenna Bedrava, *Karen Angulo Diaz (Honorable Mention), Andre Guerra, Sabir Meah
BIOSTAT653, Fall 2021	Qingzhi Liu
BIOSTAT653, Fall 2020	Yuliang Xu
BIOSTAT653, Fall 2019	Zheng Xu
BIOSTAT653, Fall 2018	Nina Zhou
BIOSTAT523, Fall 2017	*Pedro Orozco del Pino, Chen Liang