ZHENKE WU

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EDUCATION

2014 **Johns Hopkins 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

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 medicine. Towards this goal, I focus on two lines of methodological research: a) structured Bayesian latent variable models for clustering and disease subtyping, and b) study design and causal methods for evaluating sequential interventions that tailor to individuals' changing circumstances such as in mobile health studies. 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.

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.

PROFESSIONAL EXPERIENCE

2016 - present **Assistant Professor**
Department of Biostatistics, University of Michigan (UMich)

Research Assistant Professor; Faculty Affiliate
Michigan Institute for Data Science (MIDAS), UMich

2017 - present **Faculty Associate**
Quantitative Methodology Program, Survey Research Center
Institute for Social Research (ISR), UMich

2016- present **Member**
Cancer Epidemiology and Prevention (CEP) research program, Rogel Cancer Center

2018 - present **Member**
Institute for Health Policy Innovation (IHPI), UMich

2014 - 2016 **Postdoctoral Fellow**
Hopkins individualized Health (*in*Health), JHU
Department of Biostatistics, JHSPH

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

2015 August **Visiting Scholar**
Combining Health Information, Computation and Statistics (CHICAS)
Lancaster University, Lancaster, England

2013 - 2014 **External Consultant**
Child Health Research Foundation (CHRF), Dhaka, Bangladesh; National Center for Immunization and Respiratory Diseases (NCIRD), The U.S. CDC

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

Honors and Awards

UNIVERSITY OF MICHIGAN (UMich)

2021 Interdepartmental Research Seed Grant, February. 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), February 1. Michigan Biostat/Stat Research Retreat.
2017 Travel Award for ENAR Junior Investigator Workshop, International Biometric Society. Washington, DC.

SELECTED AWARDS from **DISSERTATION ADVISEES**

(see the full list under each advisee's name in Section "Teaching")

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 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 *: *advisee*

Citations: 1,798 (Google Scholar); h-index: 20; i-10 index: 28

PUBLISHED PEER-REVIEWED ARTICLES

1 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*]

2 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.

3 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.

4 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**

5 Yao TH*, **Wu Z**, Bharath K, Li J, and Baladandayuthapani V (2022). Probabilistic learning of treatment trees in cancer. ► *Annals of Applied Statistics*. Accepted. [*arXiv*][*R code*]
- **Winner, ISBA Travel Award, Montreal, Canada, 2022**

6 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%)

7 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**

8 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

9 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 (QCRE), IISE annual conference, 2020**

10 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

11 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

12 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.

13 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.

14 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.

15 Li M*, Park DE, Aziz M, Liu CM, Price LB, **Wu Z** (2021). Integrating sample similarity information into latent class analysis: a tree-structured shrinkage approach. ► *Biometrics*. In press. doi: 10.1111/biom.13580. [Early View][*bioRxiv*]

16 **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.

17 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.

18 Carlozzi 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.

19 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.

20 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.

21 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. doi: 10.1016/j.cct.2021.106513.

22 **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. doi: 10.1111/biom.13388.

23 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%).

24 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.

25 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.

26 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.

27 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.

28 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.

29 **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.

30 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]

31 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 phenome-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.

32 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.

33 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.

34 **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.

35 **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.

36 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.

37 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 crowdsourced 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.

38 **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.

39 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.

40 Frangakis CE, Qian T, **Wu Z**, Diaz I (2015). Deductive Derivation and Turing-computerization of semiparametric efficient estimation. ► *Biometrics* 71(4): 867-874. PMID: 26237182. PMCID: PMC4715631. doi:10.1111/biom.12362. Discussion paper.

41 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.

42 **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.

43 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 x *indicates papers under revision.*

44 **Wu Z**, Li RZ, Chen I*, Li M* (2023+). Tree-Informed Bayesian Multi-Source Domain Adaptation: Cross-population

Probabilistic Cause-of-death Assignment using Verbal Autopsy. ► *Biostatsitics*. Major revision. [*arXiv*][*R package*]

45 Chen I*, **Wu Z**, Harlow SD, Karvonen-Gutierrez CA, Hood M, Elliott M (2023+). 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*. Major revision. [*arXiv*]

46 Li ZR, **Wu Z**, Chen I*, Clark S (2023+). Bayesian nested latent class models for cause-of-death assignment using verbal autopsies across heterogeneous domains. ► *Annals of Applied Statistics*. Major revision. [*arXiv*][*R package*].

47 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. Major revision.

48 Piette JD, Thomas L, Krauss J, Newman S, Chen J, **Wu Z**, Bohnert ASB (2023+). Can An Automatically-Adaptive Digital Health Intervention Learn To Decrease Opioid-Related Risk While Conserving Counselor Time? ► *Journal of Medical Internet Research*. Major revision.

49 Chen I*, Shi Q*, Zeger SL, **Wu Z** (2023+). baker: An R package for nested partially-latent class models. Submitted. [*arXiv*][*R package*]

50 Li M$^{\sharp,*}$, Shi C$^{\sharp}$, **Wu Z**†, Fryzlewicz P† (2023+). Testing stationarity and change point detection in reinforcement learning. ($^{\sharp}$: co-first authors; †: co-senior authors). Submitted. [*arXiv*][*Python code*]

51 Wang J, Du L, Zou C, **Wu Z** (2023+). Dynamic statistical inference in massive datastreams. Submitted. [*arXiv*]

52 Yu Y, Du J, Zhang M, **Wu Z**, Ryan AM, Mukherjee B (2023+). Outcome adaptive propensity score methods for handling censoring and high-dimensionality: Application to insurance claims. Submitted. [*arXiv*]

53 Carlozzi NE, Choi WS, **Wu Z**, Sen S, Troost J, Lyden AK, Miner JA, Graves C, Sander AM (2023+). Reliability and Validity of the TBI-CareQOL System in Three New Caregiver Groups. Submitted.

54 Wang J*, **Wu Z**, Choi SW, Sen S, Yan X, Miner JA, Sander AM, Lyden AK, Troost J, Carlozzi N (2023+). Does the Dosing of Just-in-Time-Adaptive Self-Management Prompts Matter? Preliminary findings from a pilot study. Submitted.

55 Hu L$^{\sharp}$, Li M$^{*,\sharp}$, Shi C, **Wu Z**†, Fryzlewicz P† (2023+). Doubly Inhomogeneous Reinforcement Learning. ($^{\sharp}$: equal contribution and alphabetically-ordered; †: co-senior authors). Submitted.

56 Shi J*, **Wu Z**, Dempsey W (2023+). Estimating Time-Varying Direct and Indirect Causal Excursion Effects for Longitudinal Binary Outcomes. Submitted. [arXiv]

- **Travel Award for the 14th International Conference on Health Policy Statistics (ICHPS), Scottsdale, AZ, 2023**

57 Wang J*, Shi C, **Wu Z** (2023+). A Robust Test for the Stationarity Assumption in Reinforcement Learning. Submitted.

58 Ge L, Wang J*, Shi C, **Wu Z**, Song R (2023+). A Reinforcement Learning Framework for Dynamic Mediation Analysis. Submitted.

59 Yoshida T, Fan TS, McCormick T, **Wu Z**, Li ZR (2023+). Bayesian Active Questionnaire Design for Cause-of-Death Assignment Using Verbal Autopsies. Submitted.

TECHNICAL REPORTS

60 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

baker: Bayesian Analysis Kit for Etiology Research - Fitting and visualizing Bayesian nested partially-latent class models for estimating disease etiology
CRAN: https://CRAN.R-project.org/package=baker
Development version: https://github.com/zhenkewu/baker
February 2022: "Top 40" New CRAN Packages

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: ZR Li)
https://github.com/richardli/LCVA

CUSUM-RL: Reinforcement Learning in Possibly Nonstationary Environments (CUSUM-RL) (maintainer: M Li); in Python
https://github.com/limengbinggz/CUSUM-RL

RESEARCH GRANT PARTICIPATION ◆ *indicates grants funded as a Principal or Co-Principal Investigator.*

ONGOTING RESEARCH SUPPORT

◆ *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: $\$10,000$
- *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**
- *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 – present
  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
- *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
- *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
- *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

- *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.
- *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
- *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
- *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

- *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**
- *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 (Accerlerating 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 x *upcoming;* x *keynote*

SCIENTIFIC MEETINGS *invited, ♯posters

1 *July 2023, The 12th ICSA International Conference, Chinese University of Hong Kong, Hong Kong.

2 *June 2023, Western North American Region (WNAR) Conference, International Biometric Society (IBS), Anchorage, Alaska.

3 *August 2023, Joint Statistical Meeting. Toronto, Canada.

4 *June 2023, International Chineses Statistical Association (ICSA) 2023 Applied Statistics Symposium. Ann Arbor, Michigan.

5 *December 2022, 15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2022). King's College London, London, UK.

6 *August 2022, Joint Statistical Meetings, Washington DC

7 *June 2022, World Meeting of the International Society for Bayesian Analysis (ISBA), Montreal, Canada

8 *June 2022, International Chinese Statistical Association (ICSA) Applied Statistics Symposium, Gainesville, FL

9 *June 2022, EcoSta Conference, Kyoto, Japan (virtual)

10 *August 2021, Joint Statistical Meetings, Seattle WA (virtual)

11 *July 2021, World Meeting of the International Society for Bayesian Analysis (ISBA) (virtual)

12 *June 2021, 4th International Conference on Econometrics and Statistics (EcoSta 2021), HKUST, Hong Kong (virtual).

13 *December 2020, ICSA Applied Statistics Symposium, Houston, TX (virtual)

14 *August 2020, Joint Statistical Meeting. August 1-6. Philadelphia, PA (virtual)

15 *December 2019, International Indian Statistical Association Conference. IIT Bombay, Mumbai, India.

16 *December 2019, 11th International Chinese Statistical Association (ICSA) International Conference. Zhejiang University, Hangzhou, China.

17 *July 2019, Joint Statistical Meeting, Denver, Colorado.

18 *July 2019, International Chinese Statistical Association (ICSA) China Conference. Naikai University, Tianjin, China.

19 *June 2019, 3rd International Conference on Econometrics and Statistics (EcoStat 2019). National Chung Hsing University (NCHU), Taichung, Taiwan.

20 *June 2019, Applied International Chinese Statistical Association (ICSA) Statistics Symposium. Raleigh, North Carolina.

21 ♯October 2018, MIDAS Annual Symposium, University of Michigan, Ann Arbor, MI.

22 July 2018, Joint Statistical Meeting. Vancouver, Canada.

23 ♯July 2018, 25th Model-Based Clustering Workshop. Ann Arbor, MI.

24 *June 2018, 2nd International Conference on Econometrics and Statistics (EcoStat 2018). The City University of Hong Kong.

25 *June 2018, Applied Statistics Symposium. International Chinese Statistical Association (ICSA). New Brunswick, NJ, USA.

26 March 2018, Eastern North American Regional meeting of the International Biometric Society. Atlanta, GA.

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

28 March 2017, Eastern North American Regional meeting of the International Biometric Society. Washington, DC.

29 August 2016, Joint Statistical Meetings. Chicago, IL.

30 ♯July 2016, 18th Meeting of New Researcher Conference in Statistics and Probability. University of Wisconsin, Madison.

31 March 2016, Eastern North American Regional meeting of the International Biometric Society. Austin, TX.

32 March 2015, Eastern North American Regional meeting of the International Biometric Society. Miami, FL.

33 August 2014, Joint Statistical Meetings. Boston, MA.

34 March 2014, Eastern North American Regional meeting of the International Biometric Society. Baltimore, MD.

35 August 2013, Joint Statistical Meeting. Montreal, QC, Canada.

36 ♯March 2013, Eastern North American Regional meeting of the International Biometric Society. Orlando, FL.

INVITED SEMINARS & COLLOQUIUMS

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

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

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

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

5 November 2019, Department of Statistics and Data Science (SDS), University of Texas, Austin, TX.

6 September 2019, Department of Statistics, Taxes A&M University, College Station, TX.

7 February 2019, *Statistical Methods for Developing Personalized Mobile Health Interventions*, National University of Singapore.

8 December 2017, Statistical Reinforcement Learning Lab. Department of Statistics, Harvard University, Cambridge, MA.

9 February 2016, Department of Biostatistics, University of Michigan, Ann Arbor, MI.

10 February 2016, Department of Biostatistics, University of Massachusetts, Amherst. Amherst, MA.

11 February 2016, Biostatistics Research Branch, Division of Clinical Research, National Institute of Allergy and Infectious Diseases, NIH. Rockville, MD.

12 November 2015, Biostatistics Grand Rounds, Johns Hopkins Bloomberg School of Public Health. Baltimore, MD.

13 August 2015, CHICAS, Medical School, Lancaster University. Lancaster, England.

14 February 2015, Department of Biostatistics, Brown University. Providence, RI.

INTERNAL INVITED PRESENTATIONS

1 March 2022, Propelling Original Data Science (PODS) Grants Showcase, Michigan Institute of Data Science.

2 October 2021, Brown Bag Seminar Series, Biostatistics, UMich.

3 January 2021, Michigan Biostat DEI Seminar (virtual)

4 November 2020, Brown Bag Seminar Series, Biostatistics, UMich. (virtual)

5 September 2020, Environmental Statistics Discussion. Integrated Health Science Core, Michigan Center on Lifestage Environmental Exposures and Disease (M-LEEaD). (virtual)

6 June 2020, Michigan Institute for Data Science (MIDAS) COVID-19 Special Seminar Series (with Veera Baladandayuthapani; virtual; recording)

7 July 2019, **Plenary talk**, Symposium for Big Data Summer Institute, Big Data Summer Institute, University of Michigan, Ann Arbor, MI.

8 May 2018, Cancer Control and Population Sciences (CCPS), University of Michigan Cancer Center.

9 May 2018, Health Sciences Challenge Symposium. Michigan Institute for Data Sciences, University of Michigan.

10 April 2018, Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS) University of Michigan. Junior Faculty **Keynote Speaker**.

OTHER MEETINGS AND EVENTS **invited; ♯posters*

1 *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).

2 *July 2017, Rheumatology Data Science Meeting. Johns Hopkins School of Medicine, Bayview Medical Center.

3 *November 2016, Interdisciplinary Group Seminar (IGS), Center for Statistical Genetics, University of Michigan. Ann Arbor, MI

4 *November 2016, Annual School of Public Health Excellence in Research Symposium, University of Michigan. Ann Arbor, MI.

5 *December 2014, Pneumonia Etiology Research for Child Health (PERCH) Executive Committee Meeting. London, England.

6 ♯February 2014, Delta Omega Scientific Poster Competition. Baltimore, MD.

7 *December 2013, Pneumonia Etiology Research for Child Health (PERCH) Executive Committee Meeting. London, England.

8 *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.

9 *December 2012, Department of Biostatistics. Johns Hopkins Biostatistics Causal Inference Working Group. Baltimore, MD.

PROFESSIONAL AFFILIATIONS

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

SERVICE

INTERNAL

Department of Biostatistics, UMich

2017-18,2022-23	Faculty Search
2016-17,2022-23	Admissions
2018,2020-2023	Computing, Social Media and Website Reform
2017-2020	Seminars/Brown Bag
2019-2021	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-present	Junior Faculty Advisory Board (J-FAB)
2018	Health Informatics

Michigan Institute of Data Science, UMich

2019, 2020	Program Committee, Annual MIDAS Symposium, November
2016	Poster Competition Judge, Michigan Institute of Data Science Symposium, November 15

University of Michigan, Ann Arbor

2022-present	Faculty Search Committee, Eisenberg Family Depression Center

PROFESSIONAL AT LARGE

Local Committee Chair
International Chinese Statistical Association (ICSA) Applied Statistics Symposium (Ann Arbor, MI; June 2023)

Executive Committee
2024 JSM Program Chair, Biometrics Section, American Statistical Association

Committee Member

International Conference on Health Policy Statistics (ICHPS)
1. Student Committee (2023)

Eastern North American Regional (ENAR) Meeting of the International Biometric Society
1. Paper Award Committee (2019-2021)
2. Regional Advisory Board (2018-2020)
3. Educational Advisory Committee (2018; Atlanta, GA)

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

International Chinese Statistical Association (ICSA)
1. Student paper competition (2021)

Program Committee
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, 2021; Virtual)

Session Organizer

1. Reaping the Benefits of Digital Health Data for Improving Public Health and Biomedical Studies, JSM (August 5-10, 2023; Toronto, Canada)
2. Modern Tree-integrative Statistical Methods for Biomedical and Public Health Studies, ENAR (March 27-30, 2022; Houston, TX)
3. Recent Advances in Latent Variable Modeling for Modern Scientific Studies, 12th International Conference of International Chinese Statistical Association (December 18-22, 2022)
4. Statistical Methods for Improving Inferences and Decision-Making in Population Health, Joint Statistical Meeting (July 27 - August 1, 2019; Denver, CO)

Session Chair

1. Keynote of Workshop "Modern Statistical and Machine Learning Methods for Big Data", October 22nd, 2022, Ann Arbor
2. Statistical Methods for Discovering Latent Structures in High-Dimensional and Complex Data, 2022 JSM (August)
3. Recent Statistical Advances for Mobile Health, 2021 JSM (August 11th; Virtual)
4. Modern Graphical Modeling of Complex Biomedical Systems, 2020 JSM (August 6; Virtual)
5. New Weighting Methods for Causal Inference, 2020 ENAR (March 24; Virtual)
6. Towards a Learning-Health System: Methods and Strategies for Data-Driven Healthcare, Joint Statistical Meetings (July 29 - August 3, 2017; Baltimore, MD)

Discussant

1. Recent Advances in Nonparametric and Semiparametric Methods for Complex Data, Invited Papers by Journal of Nonparametric Statistics, 2022 JSM (August)

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.

Co-Founder

Chinese Public Health Forum (CPHF) at Johns Hopkins, 2010-12

Hosted Attendee

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

Panelist

1. Foundations of Data Science. Fifth Bayesian, Fiducial and Frequentist Conference (BFF5) (May 6-9, 2018; Ann Arbor, MI)
2. Studio Consultation, Johns Hopkins Institute for Clinical and Transnational Research (ICTR) (2015)

Referee

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

Journals: **(alphabetically ordered)**
Annals of Applied Statistics (3)
Bayesian Analysis (1)
Biometrics (10)
Biostatistics (3)
Journal of Business and Economic Statistics (1)
Statistics in Medicine (12)
Annals of Statistics (1)
Computational Statistics and Data Analysis (2)
Epidemiology (1)
Pharmaceutical Statistics(1)
PLOS ONE (1)
Proceedings of National Academy of Sciences (PNAS) (1)
Statistical Science (1)
Sankhya (The Indian Journal of Statistics) (1)
Technometrics (1)
Nature (1)
Nature Partner Journal (npj) Digital Medicine (1)
International Journal of Epidemiology (1)
Journal of American Statistical Association A&CS (2)
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)*

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

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

Grants:
1. 2022 MIDAS PODS Grant
2. 2021, 2022 Michigan Medicine - Peking University Health Science Center Joint Institute for Translational Clinical Research
3. 2019, 2021 UM Precision Health Investigator Awards
4. 2019 MIDAS Propelling Original Data Science (PODS) Grants
5. 2017, 2018 Michigan Institute for Clinical and Health Research (MICHR) Pilot Grant
6. 2016 Johns Hopkins Individualized Health Initiative Request for Proposal (RFP)
7. 2016 Methodology Research Grant, Medical Research Council, United Kingdom

Advisory Board

openVA (https://openva.net/): The openVA team develops and maintains various tools, algorithms, and software related to Verbal Autopsy.

TEACHING AND MENTORING

DOCTORAL DISSERTATION ADVISEES (Chair or Co-chair)

**expected graduation*

2025* Jitao Wang (Chair)
Thesis Title: *Causal Inference Methods for Micro-randoimzed Trials with Dynamic Networks*
- **Outstanding First Year Masters Student**

2024* Mengbing Li (Chair)
Thesis Title: *Structured Latent Variable Models for Individualizing Healthcare*
- **Best Doctoral Qualifying Exam Award**, 2019
- **Outstanding Biostatistics Graduate Student Instructor Award**, 2018

2023* Jieru (Hera) Shi (Co-Chair with Walter Dempsey)
Thesis Title: *Statistical Methods for Assessing Time-Varying Causal Effects: Novel Estimands and Inference*
- **Travel Award** for the 14th International Conference on Health Policy Statistics (ICHPS), Scottsdale, AZ, 2023
- **Winner, Junior Researcher Travel Grant**, American Causal Inference Conference (ACIC), Berkeley, CA, 2022

2023* Irena Chen (Co-Chair with Michael Elliott)
Thesis Title: *Bayesian Methods for Variance as a Predictor for Health*
- **Poster Competition Award**, "Most Likely to Make an Impact in the Field", MIDAS Annual Data Science Symposium, November 15, 2019

2023* Tsung-Hung Yao (Co-Chair with Veera Baladandayuthapani)
Thesis Title: *Bayesian Learning of Structured Covariances with Applications to Cancer Data*
- **ISBA Travel Award**, Montreal, Canada, 2022
- **Outstanding Biostatistics Graduate Student Instructor Award**, 2019

Graduated:

2020-2023 Nicole Wakim (Co-Chair with Thomas Braun)
Thesis Title: *Missing Data Methods for Correlating Digital Biomarkers and Longitudinal Outcomes*
Current Position: Research Assistant Professor at OHSU
- **Departmental Citizenship Outreach Award, Honorable Mention**, 2021

2017-2019 Tim NeCamp, PhD (Co-Chair with Edward Ionides).
Thesis Title: *Design and Analysis of Sequential Randomized Trials with Applications to Mental Health and Online Education.*
Current Position: Co-Founder of Data Bloom
- **NSF Graduate Student Fellowship**
- **2018 Rackham Outstanding Graduate Student Instructor Award**
- **Best Speed Oral Presentation at MSSISS** 2018: "Predicting mood using multivariate mobile sensor data streams for medical interns"

CLASSROOM INSTRUCTION (Principal Instructor)

University of Michigan, Ann Arbor

- BIOSTAT 653 Theory and Application of Longitudinal Analysis (2022 Fall). 50 Master/Doctoral Students.
- BIOSTAT 522 Biostatistical Analysis for Health-Related Studies (2022 Winter). 158 Master/MPH/Medical Non-Biostat Students (Epidemiology, Nutrition, Medicine).
- BIOSTAT 653 Theory and Application of Longitudinal Analysis (2021 Fall). 40 Master/Doctoral Students.
- BIOSTAT 653 Theory and Application of Longitudinal Analysis (2020 Fall). 50 Master/Doctoral Students.
- BIOSTAT 653 Applied Stats III: Longitudinal Analysis (2019 Fall). 67 Master/Doctoral Biostat Students

- BIOSTAT 653 Applied Stats III: Longitudinal Analysis (2018 Fall). 47 Master/Doctoral Biostat Students
- BIOSTAT 523 Statistical Methods in Epidemiology (2017 Fall). 84 Master/Doctoral Epidemiology Students
- BIOSTAT 830 Advanced Topics in Biostatistics: Statistical and Computational Methods for Learning through Graphical Models (2016 Fall). 11 Doctoral Students

CLASSROOM INSTRUCTION (Invited Guest Lectuer)

University of Michigan, Ann Arbor

- Causal Inference. Big Data Summer Institute, Department of Biostatistics (June 2018, 2019)
- Network. Big Data Summer Institute, Department of Biostatistics (June 22, 2017)
- Cancer Biostatistics Seminar Course (BIOSTAT 803), Department of Biostatistics, (Instructor: Jeremy M G Taylor; October 28, 2016)

Johns Hopkins Bloomberg School of Public Health

- Data Visualization for Individualized Health via `ggplot2`. Public Health Studies, Undergraduate Seminar Course (Instructor: Yates Coley; March 1, 2016)
- 140.653 Methods in Biostatistics (Master-level) (Instructor: Scott Zeger; February 11, 2016)

OTHER TEACHING

Short Courses

- Statistical Methods for Individualizing Health (co-taught with Scott Zeger), Mayo Clinic, Department of Health Sciences Research, Rochester, MN (November 17, 2014)

Workshop

- 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)

TEACHING ASSISTANT

- 140.656 Multilevel Statistical Models, Graduate, Elizabeth Colantuoni (2014)
- 140.655, Analysis of Longitudinal Data, Graduate, Elizabeth Colantuoni (2014)
- 280.346 Biostatistics in Public Health, Undergraduate, Scott Zeger (2013)
- Case-based Introduction to Biostatistics, **www.coursera.org**, Scott Zeger, $\sim 23,000$ global enrollments (2013)
- 140.762 Bayesian Methods II, Graduate, Gary Rosner (2013)
- 140.763 Bayesian Methods I, Graduate, Gary Rosner (2013)
- 280.346 Biostatistics in Public Health, Undergraduate, Scott Zeger (2012)
- 550.621 Advanced Probability Theory II, Graduate, James Fill (2012)
- 550.620 Advanced Probability Theory I, Graduate, James Fill (2011)
- 140.646-649 Essentials of Probability and Statistical Inference (I, II, III, IV), Graduate, Michael Rosenblum and Charles Rohde (2010-2011)

GRADUATE STUDENT RESEARCH ASSISTANTSHIP

Funded and Supervised

Abigail Loe (2022 January - 2022 December)
Jitao Wang (2020 September - present)
Irena Chen (2019 January - 2022 August)
Nicole Wakim (2021 May - 2021 August)
Zhongyuan Lyu (2018 May - 2018 August)
Chen Chen (2021 November - 2022 August)
Mengbing Li (2018 January - present)
Tian Xie (2020 January - 2022 August)
Jieru (Hera) Shi (2020 May - 2020 August)
Zezhi Zhang (2017 May - 2017 August)

Supervised

Mingyan Yu (2022 May - present)

DOCTORAL DISSERTATION COMMITTEE (Non-Chair Role)

2022-present	Greg Hoy (Epidemiology)
2022-present	Hyeon Joo (Learning Health Sciences/Scientific Computing)
2022-present	Moyan Li (IOE)
2022-present	Jennifer Cleary (Psychology)
2022-present	Prayag Chatha (Stat)
2022-present	Madeline Abbott (Biostat)
2022	Chenchen Ma (Stat)
2022-present	Wade Sanders (Epidemiology)
2021-present	Charlotte Mann (Stat)
2021-present	Andrea Sosa Moreno (Epidemiology)
2021-2023	Aaron Frutos (Epidemiology)
2021-present	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-present	Xubo Yue (IOE)
2020-present	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)

MASTER'S DISSERTATION COMMITTEE (Non-Chair Role)

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

PARTICIPATION IN RESEARCH

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

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)

BIOSTAT653, Fall 2022	Mengbing Li
BIOSTAT522, Winter 2022	Jenna Bedrava (**Departmental Outstanding GSI**), Karen Angulo Diaz (**Honorable Mention for Outstanding GSI**), Andre Guerra, Sabir Meah
BIOSTAT653, Fall 2021	Qingzhi Liu
BIOSTAT653, Fall 2020	Yuliang Xu
BIOSTAT653, Fall 2019	Zheng Xu
BIOSTAT653, Fall2018	Nina Zhou
BIOSTAT523, Fall2017	Pedro Orozco del Pino (**Departmental Outstanding GSI Award**), Chen Liang