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

PROFESSIONAL EXPERIENCE

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

Research Assistant Professor
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

2021	Interdepartmental Research Seed Grant, February. Michigan Biostat/Stat Research Initiative.
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.

JOHNS HOPKINS UNIVERSITY

2016	New Researcher Conference Travel Award, Institute of Mathematical Statistics. Madison, WI.
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, 2013	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
2008	First Class National Scholarship, Ministry of Education, China
2007	Excellent Undergraduate Student, Government of Shanghai
2006-07	First Class People's Scholarship
2006	First Class Shi Dai Scholarship

PUBLICATIONS   *: student advisee

PUBLISHED PEER-REVIEWED ARTICLES

1. 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*]

2. **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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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*. In Press. doi: 10.1016/j.cct.2021.106513.

8. **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*. PMID: 33031597. doi: 10.1111/biom.13388.

9. 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%). https://bit.ly/3tGmSHN

10. 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.

11. 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*. doi: 10.1093/geronb/gbaa128.

12. 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.

13 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.

14 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.

15 **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.

16 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]

17 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.

18 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.

19 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.

20 **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.

21 **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.

22 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.

23 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.

24 **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.

25 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. doi: 10.12688/f1000research.8628.1.

26 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.

27 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.

28 **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.

29 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

30 Chung S, Kontar R, **Wu Z** (2021+). Weakly-supervised multi-output regression via correlated Gaussian processes. Major revision submitted to *INFORMS Journal on Data Science*. [*arXiv*]

31 **Wu Z**, Li RZ, Chen I*, Li M* (2021+). Tree-Informed Bayesian Multi-Source Domain Adaptation: Cross-population Probabilistic Cause-of-death Assignment using Verbal Autopsy. Submitted. [*arXiv*]

32 Shi J*, **Wu Z**, Dempsey W (2021+). Assessing time-varying causal effects in the presence of cluster-level treatment effect heterogeneity. Submitted. [*arXiv*].

33 Chen I*, **Wu Z**, Harlow SD, Karvonen-Gutierrez CA, Hood M, Elliott M (2021+). 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. Submitted.

34 Li ZR, **Wu Z**, Chen I*, Clark S (2021+). Bayesian nested latent class models for cause-of-death assignment using verbal autopsies across heterogeneous domains. Submitted. [*arXiv*].

35 Carlozzi NE, Sanders AM, Choi S, **Wu Z**, Miner JA, Lyden A, Graves C, Sen S (2021+). A just-in-time-adaptive self-management intervention for caregivers of people with traumatic brain injury: proctocol for a randoimzed clinical trial. Submitted.

36 Wang J, Du L, Zou C, **Wu Z** (2021+). Dynamic statistical inference in massive datastreams. Submitted. [*arXiv*]

37 Wagner A, Porth J, **Wu Z**, Boulton ML, Finlay JM, and Kobayashi LC (2021+). Vaccine hesitancy during the COVID-19 pandemic: A latent class analysis of middle-aged and older US adults. Submitted.

38 Cleary J, Fang Y, Sen S, **Wu Z** (2021+). A caveat to using wearable sensor data for COVID-19 detection: the role of behavioral change after receipt of test results. Submitted. [*medRxiv*]

39 Li Q, Zhang T, Yang S, Su D, **Wu Z**, Zhang M (2021+). A novel compartment modeling of COVID-19 infection among three American states. Submitted.

TECHNICAL REPORTS

40 Moreno A*, Nagesh S, **Wu Z**, Dempsey W, Rehg J (2021+). Kernel deformed exponential families for sparse continuous attention. [*arXiv*]

41 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 https://github.com/zhenkewu/baker
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: domain-adaptive and semi-supervised learning of cause-of-deaths using verbal autopsy https://github.com/zhenkewu/doubletree

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 – 12/01/2021.
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

○ *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

○ *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: Principal Investigator on sub-contract

○ *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: 11/1/2021 – 04/31/2028
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 R01)*
Dates: 04/01/2022 – 03/31/2027
Principal Investigator: Andrew M Ryan (UM)
Responsibility: Co-Investigator
Total Cost: $ 3.64 million

COMPLETED

◆ *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

○ *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

○ *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

○ *Bayesian Hierarchical Models for Design and Analysis of Studies to Individualize Healthcare (Funding for Methodological Research, Patient-Centered Outcomes Research Institute)*
Dates: 07/01/2015 – 08/31/2018
Principal Investigator: Scott L. Zeger (Johns Hopkins)
Responsibility: Principal Investigator on subcontract

○ *Pneumonia Etiology Research for Child Health (PERCH) (Gates Foundation 305215)*
Dates: 09/01/2014 – 12/31/2017
Principal Investigator: Katherine O'Brien (Johns Hopkins at the time of award)
Responsibility: Principal Investigator on subcontract

○ *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

PENDING (SELECTED)

○ *Evaluating Impact of COVID-19 Experiences and Vaccine Hesitancy on Uptake of Adult Vaccines and Control of Vaccine-preventable Disease (NIH R01)*
Dates: 12/01/2021 – 11/31/2026
Principal Investigator: Abram Wagner (UM)
Responsibility: Co-Investigator
Total Cost: $ 3.58 million

Presentations

SCIENTIFIC MEETINGS *invited, ♯posters

1. *August 2022, Joint Statistical Meetings, Washington DC

2. *June 2022, EcoSta Conference, Kyoto, Japan

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

INVITED SEMINARS

1 March 2022, Department of Biostatistics and Bioinformatics, Duke University, Durham, NC.

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.

OTHER MEETINGS AND EVENTS ♯*posters*

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

2 January 2021, Michigan Biostat DEI Seminar (virtual)

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

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

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

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

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

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

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

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

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

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

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

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

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

16 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.

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

SERVICE

INSTITUTIONAL

Department of Biostatistics, UMich

2018,2020,2022	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	Qualifying Exam Modernization Proposal
2017	Faculty Search
2016	Admissions

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

SERVICE TO PROFESSION AT LARGE

Local Committee Chair	International Chinese Statistical Association (ICSA) Applied Statistics Symposium (Ann Arbor, MI; upcoming in 2023)
Committee Member	Eastern North American Regional Meeting of the International Biometric Society - Paper Award Committee (2019-2021) - Regional Advisory Board (2018-2020) - Educational Advisory Committee (2018; Atlanta, GA) American Statistical Association - Paper Award Committee, Statistics in Epidemiology (2021) - David P. Byar Early Career Award Committee, Biometrics Section (2020) - Paper Award Committee, Section on Bayesian Statistical Science (2020) - Paper Award Committee, Health Policy Statistics Section (2020) - Paper Award Committee, Statistical Learning and Data Science (2020) International Chinese Statistical Association (ICSA) - 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	*- Modern Tree-integrative Statistical Methods for Biomedical and Public Health Studies, ENAR (March 27-30, 2022; Houston, TX)* *- Recent Advances in Latent Variable Modeling for Modern Scientific Studies, 12th International Conference of International Chinese Statistical Association (December 18-22, 2022)* *- Statistical Methods for Improving Inferences and Decision-Making in Population Health*, Joint Statistical Meeting (July 27 - August 1, 2019; Denver, CO)
Session Chair	*- Recent Statistical Advances for Mobile Health*, 2021 JSM (August 11th; Virtual) *- Modern Graphical Modeling of Complex Biomedical Systems*, 2020 JSM (August 6; Virtual) *- New Weighting Methods for Causal Inference*, 2020 ENAR (March 24; Virtual) *- Towards a Learning-Health System: Methods and Strategies for Data-Driven Healthcare*, Joint Statistical Meetings (July 29 - August 3, 2017; Baltimore, MD)
Poster Judge	- Statistical Learning and Data Science (SLDS), Joint Statistical Meeting (July 30, 2019, Denver, CO) - International Indian Statistical Association (IISA) Conference, 2019, Mumbai, India.
Co-Founder	Chinese Public Health Forum (CPHF) at Johns Hopkins, 2010-12
Hosted Attendee	- Use of Wearable and Implantable Devices in Health Research, BIRS Workshop, Banff, AB, Canada. Feb 23-28, 2020 - U-M Ideas Lab: Predicting Human Performance. Biosciences Initiative, University of Michigan. Oct 13-15, 2019 - Statistical Methods for Developing Personalized Mobile Health Interventions, National University of Singapore, Feb 4 - March 1, 2019 - Program on Statistical, Mathematical, and Computational Methods for Precision Medicine (PMED), SAMSI, Raleigh, Durham, NC. August 13-17, 2018. - Methods Summit. PCORI Annual Meeting: Building a Patient-Centered Research Community. Arlington VA. October 6-8, 2015

Panelist	Foundations of Data Science. Fifth Bayesian, Fiducial and Frequentist Conference (BFF5) (May 6-9, 2018; Ann Arbor, MI)
Referee	*The numbers in parentheses indicate the number of manuscripts reviewed or currently reviewing, excluding revisions.*

Journals: *Annals of Applied Statistics (1), Biometrics (7), Biostatistics (1), Journal of Business and Economic Statistics (1), Statistics in Medicine (9), Annals of Statistics (1), Computational Statistics and Data Analysis (2), Epidemiology (1), Pharmaceutical Statistics(1), PLOS One (1), Statistical Science (1), Sankhya (The Indian Journal of Statistics) (1), Technometrics (1), Nature Partner Journal (npj) Digital Medicine (1), International Journal of Epidemiology (1), Journal of Royal Statistical Society, Series A (1), Ophthalmic Epidemiology (1), Psychiatric Services (1), Journal of Educational and Behavioral Statistics (1)*

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

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

Grants: - 2021 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

TEACHING **upcoming*   (see website for materials)

CLASSROOM INSTRUCTION (Principal Instructor)

University of Michigan, Ann Arbor

- *BIOSTAT 522 Biostatistical Analysis for Health-Related Studies (2022 Winter).
- 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)

PHD DISSERTATION ADVISEES (*Chair or Co-chair*)

expected graduation

2024*	Jitao Wang (Chair)
	Topic: *Causal Inference Methods for Micro-randoimzed Trials with Dynamic Networks*
	• Outstanding First Year Masters Student
2024*	Jieru (Hera) Shi (Co-Chair with Walter Dempsey)
	Topic: *Statistical Methods for Assessing Time-varying Causal Effects with Clustered Outcomes*
2023*	Irena Chen (Co-Chair with Michael Elliott)
	Thesis: *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*	Mengbing Li (Chair)
	Topic: *Structured Latent Variable Models for Individualizing Healthcare*
	• Best Doctoral Qualifying Exam Award, 2019
	• Outstanding Biostatistics Graduate Student Instructor Award, 2018
2022*	Tsung-Hung Yao (Co-Chair with Veera Baladandayuthapani)
	Topic: *Bayesian Nonparametric and Regularized Methods for Structural Learning of Graphs*
	• Outstanding Biostatistics Graduate Student Instructor Award, 2019
2022*	Nicole Wakim (Co-Chair with Thomas Braun)
	Topic: *Missing Data Methods for Correlating Digital Biomarkers and Longitudinal Outcomes*

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.*
Currently 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"

RESEARCH ASSISTANTSHIP FUNDED

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

DOCTORAL DISSERTATION COMMITTEE (Non-Chair Role)

2021-present   Charlotte Mann (Stat)
2021-present   Andrea Sosa Moreno (Epidemiology)
2021-present   Aaron Frutos (Epidemiology)
2021-present   Yizhuo Wang (Biostat)
2020-present   Yiwang Zhou (Biostat)
2020-present   Youfei Yu (Biostat)
2020-present   Kuan-Han Wu (Bioinformatics)
2020-present   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)

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 (Biostat)

ACADEMIC ADVISOR

2021-2022   Runye Shi
2020-2021   Yajing Li, Qiyuan Shi, Jitao Wang, Tian Xie, Yuliang Xu
2019-2020   Yajing Li, Ruohan Liao, Tian Xie, Zheng Xu

GRADUATE STUDENT INSTRUCTOR (GSI)

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