

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

(Signature) _____
(Typed Name) Yuxin (Daisy) Zhu, PhD

(Date of this version)

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2021-present Assistant Professor, Johns Hopkins Armstrong Institute for Patient Safety and Quality, Baltimore, MD
2021-present Assistant Professor, Department of Neurology, Johns Hopkins School of Medicine, Baltimore, MD
2022-present Assistant Professor (joint), Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Personal Data

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Baltimore, Maryland, 21202
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Education and Training

Undergraduate
2009-2013 B.S., Mathematics, Nanjing University, Nanjing, Jiangsu, China
Doctoral/graduate
2013-2018 Ph.D., Biostatistics, Johns Hopkins University, Baltimore, MD
Postdoctoral
2018-2021 Postdoctoral fellow, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, and Division of Biostatistics and Bioinformatics, Department of Oncology, Johns Hopkins School of Medicine.

Professional Experience NONE

PUBLICATIONS

Original Research [OR]. (* for corresponding and/or senior authorship, underline for mentee, † for co-first authorship.)

Statistical research

1. Deng D, Du Y, Ji Z, Rao K, Wu Z, **Zhu Y**, and Coley RY. Predicting survival time for metastatic castration resistant prostate cancer: An iterative imputation approach. *F1000Research*. 2016; 5; (alphabetically ordered authorship except for the last author.) <https://doi.org/10.12688/f1000research.8628.1>
2. Wang Z, Tang Z, **Zhu Y**, Pettigrew C, Soldan A, Gross A, and Albert M. AD risk score for the early phases of disease based on unsupervised machine learning. *Alzheimer's & Dementia*. 2020; 16(11), 1524-1533; contributor in methodology. <https://doi.org/10.1002/alz.12140>
3. **Zhu Y**, Wang Z, Liberman AL, Chang TP, Newman-Toker D. Statistical insights for crude-rate-based operational measures of misdiagnosis-related harms. *Statistics in Medicine*. 2021 Sep 10;40(20):4430-41. <https://doi.org/10.1002/sim.9039>
4. **Zhu Y***, Wang MC. Obtaining optimal cutoff values for tree classifiers using multiple biomarkers. *Biometrics*. 2022 Mar;78(1):128-40. <https://doi.org/10.1111/biom.13409>
5. Wang MC, **Zhu Y**. Bias correction via outcome reassignment for cross-sectional data with binary disease outcome. *Lifetime Data Analysis*. 2022 Jun 24:1-6. <https://doi-org.proxy1.library.jhu.edu/10.1007/s10985-022-09559-3>
6. **Zhu Y**, Wang Z, Newman-Toker DE. Misdiagnosis-Related Harm Quantification Through Mixture Models and Harm Measures. *Biometrics*. 2022 Oct 11. <https://doi-org.proxy1.library.jhu.edu/10.1111/biom.13759>

7. Tang Z, **Zhu Y**, Wang Z. Characterizing Alzheimer's Disease Biomarker Cascade Through Non-linear Mixed Effect Models. arXiv preprint arXiv:2304.09754. 2023 Apr 19.

Collaborative work

8. Pettigrew C, Soldan A, **Zhu Y**, Wang MC, Moghekar A, Brown T, Miller M, Albert M, and BIOCARD Research Team. Cortical thickness in relation to clinical symptom onset in preclinical AD. *NeuroImage: Clinical*. 2016; 12, 116-122. Role: primary statistician. <https://doi.org/10.1016/j.nicl.2016.06.010>
9. Guinney, Justin, et al. (Authorship as part of the Prostate Cancer Challenge DREAM Community) "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 (2017): 132-142. [https://doi-org.proxy1.library.jhu.edu/10.1016/S1470-2045\(16\)30560-5](https://doi-org.proxy1.library.jhu.edu/10.1016/S1470-2045(16)30560-5)
10. Pettigrew C, Soldan A, **Zhu Y**, Wang MC, Brown T, Miller M, Albert M, and BIOCARD Research Team. Cognitive reserve and cortical thickness in preclinical Alzheimer's disease. *Brain imaging and behavior*. 2017; 11(2), 357-367. Role: primary statistician. <https://doi.org/10.1007/s11682-016-9581-y>
11. Albert M, **Zhu Y**, Moghekar A, Mori S, Miller MI, Soldan A, Pettigrew C, Selnes O, Li S, and Wang MC. Predicting progression from normal cognition to mild cognitive impairment for individuals at 5 years. *Brain*. 2018; 141(3), 877-887. Role: primary statistician. <https://doi.org/10.1093/brain/awx365>
12. Newman-Toker DE, Schaffer AC, Yu-Moe CW, Nassery N, Tehrani ASS, Clemens GD, Wang Z, **Zhu Y**, Fanai M, and Siegal D. Serious misdiagnosis-related harms in malpractice claims: the "Big Three"—vascular events, infections, and cancers. *Diagnosis*. 2019; 6(3), 227-240. Role: secondary statistician. <https://doi.org/10.1515/dx-2019-0019>
13. Pettigrew C, Shao Y, **Zhu Y**, Grega M, Brichko R, Wang MC, Carlson MC, Albert M, and Soldan A. Self-reported lifestyle activities in relation to longitudinal cognitive trajectories. *Alzheimer Disease & Associated Disorders*. 2019; 33(1), 21-28. Role: primary statistician. <https://doi.org/10.1097/WAD.0000000000000281>
14. Soldan A, Pettigrew C, **Zhu Y**, Wang MC, Gottesman RF, DeCarli C, Albert M, and BIOCARD Research Team. Cognitive reserve and midlife vascular risk: Cognitive and clinical outcomes. *Annals of clinical and translational neurology*. 2020; 7(8), 1307-1317. Role: primary statistician. <https://doi.org/10.1002/acn3.51120>
15. Pettigrew C, Soldan A, **Zhu Y**, Cai Q, Wang MC, Moghekar A, Miller MI, Singh B, Martinez O, Fletcher E, and DeCarli C. Cognitive reserve and rate of change in Alzheimer's and cerebrovascular disease biomarkers among cognitively normal individuals. *Neurobiology of aging*. 2020; 88, 33-41. Role: primary statistician. <https://doi.org/10.1016/j.neurobiolaging.2019.12.003>
16. Soldan A, Pettigrew C, **Zhu Y**, Wang MC, Moghekar A, Gottesman RF, Martinez O, Fletcher E, DeCarli C, and Albert M. White matter hyperintensities and CSF Alzheimer disease biomarkers in preclinical Alzheimer disease. *Neurology*. 2020; 94(9), e950-e960. Role: primary statistician. <https://doi.org/10.1212/WNL.00000000000008864>
17. Newman-Toker DE, Wang Z, **Zhu Y**, Nassery N, Tehrani ASS., Schaffer AC, Yu-Moe CW, Clemens GD, Fanai M, and Siegal D. Rate of diagnostic errors and serious misdiagnosis-related harms for major vascular events, infections, and cancers: toward a national incidence estimate using the "Big Three". *Diagnosis* 8.1 (2021): 67-84. Role: secondary statistician. <https://doi.org/10.1515/dx-2019-0104>
18. Newman-Toker DE, Schaffer AC, Yu-Moe CW, Nassery N, Tehrani ASS, Clemens GD, Wang Z, **Zhu Y**, Fanai M and Siegal D. Corrigendum to: Serious misdiagnosis-related harms in malpractice claims: The "Big Three"—vascular events, infections, and cancers. *Diagnosis*. 2021; 8(1), pp.127-128. Role: secondary statistician. <https://doi.org/10.1515/dx-2020-0034>
19. Chen L, Soldan A, Oishi K, Faria A, **Zhu Y**, Albert M, van Zijl PC, and Li X. Quantitative susceptibility mapping of brain iron and β -amyloid in MRI and PET relating to cognitive performance in cognitively normal older adults. *Radiology*. 2021; 298, no. 2: 353-362. Role: contributing statistician. <https://doi.org/10.1148/radiol.2020201603>
20. Sharp AL, Baecker A, Nassery N, Park S, Hassoon A, Lee MS, Peterson S, Pitts S, Wang Z, **Zhu Y**, and Newman-Toker DE. Missed acute myocardial infarction in the emergency department—standardizing measurement of misdiagnosis-related harms using the SPADE method. *Diagnosis*. 2021; 8(2), pp.177-186. Role: secondary statistician. <https://doi.org/10.1515/dx-2020-0049>

21. Soldan A, Pettigrew C, **Zhu Y**, Wang MC, Bilgel M, Hou X, Lu H, Miller MI, Albert M and BIOCARD Research Team. Association of Lifestyle Activities with Functional Brain Connectivity and Relationship to Cognitive Decline among Older Adults. *Cerebral Cortex*. 2021. Role: primary statistician. <https://doi.org/10.1093/cercor/bhab187>
22. Liberman AL, Hassoon A, Fanai M, Badihian S, Rupani H, Peterson SM, Sebestyen K, Wang Z, **Zhu Y**, Lipton RB, Newman-Toker DE. Cerebrovascular Disease Hospitalizations following Emergency Department Headache Visits: A Nested Case-Control Study. *Academic Emergency Medicine*. 2021 Jul 26; Role: contributing statistician. <https://doi.org/10.1111/acem.14353>
23. Pettigrew C, Soldan A, Brichko R, **Zhu Y**, Wang MC, Kuttan K, Bilgel M, Mori S, Miller MI, Albert M. Computerized paired associate learning performance and imaging biomarkers in older adults without dementia. *Brain imaging and behavior*. 2021 Oct 23;1-9. Role: primary statistician. <https://doi.org/10.1007/s11682-021-00583-9>
24. Pettigrew C, Soldan A, Alm KH, Bakker A, **Zhu Y**, Wang MC, Kuttan K, Bilgel M, Miller MI, Faria A, Mori S. White matter tract integrity, but not amyloid burden, is related to cognition in cognitively normal older adults. *Alzheimer's & Dementia*. 2021 Dec;17:e055675. Role: primary Statistician. <https://doi.org/10.1002/alz.055675>
25. Sharp AL, Pallegadda R, Baecker A, Park S, Nassery N, Hassoon A, Peterson S, Pitts SI, Wang Z, **Zhu Y**, Newman-Toker DE. Are Mental Health and Substance Use Disorders Risk Factors for Missed Acute Myocardial Infarction Diagnoses Among Chest Pain or Dyspnea Encounters in the Emergency Department?. *Annals of Emergency Medicine*. 2022 Feb 1;79(2):93-101. Role: contributing statistician. <https://doi.org/10.1016/j.annemergmed.2021.08.016>
26. Chan CK, Pettigrew C, Soldan A, **Zhu Y**, Wang MC, Albert M, Rosenberg PB, BIOCARD Research Team. Association Between Late-Life Neuropsychiatric Symptoms and Cognitive Decline in Relation to White Matter Hyperintensities and Amyloid Burden. *Journal of Alzheimer's Disease*. 2022 Feb 21(Preprint):1-2. Role: primary statistician. <https://doi.org/10.3233/JAD-215267>
27. Lin Z, Lim C, Jiang D, Soldan A, Pettigrew C, Oishi K, **Zhu Y**, Moghekar A, Liu P, Albert M, Lu H. Longitudinal changes in brain oxygen extraction fraction (OEF) in older adults: Relationship to markers of vascular and Alzheimer's pathology. *Alzheimer's & Dementia*. 2023 Feb;19(2):569-77. Role: primary statistician. <https://doi.org/10.1002/alz.12727>
28. Liberman AL, Wang Z, **Zhu Y**, Hassoon A, Choi J, Austin JM, Johansen MC, Newman-Toker DE. Optimizing measurement of misdiagnosis-related harms using symptom-disease pair analysis of diagnostic error (SPADE): comparison groups to maximize SPADE validity. *Diagnosis*. 2023 Apr 5(0). Role: contributing statistician. <https://doi.org/10.1515/dx-2022-0130>
29. Soldan A, Oh S, Ryu T, Pettigrew C, **Zhu Y**, Moghekar A, Xiao MF, Pontone GM, Albert M, Na CH, Worley P. NPTX2 in cerebrospinal fluid predicts the progression from normal cognition to mild cognitive impairment. *Annals of neurology*. 2023 Oct;94(4):620-31. Role: primary statistician. <https://doi.org/10.1002/ana.26725>
30. Rani N, Alm KH, Speck CL, Soldan A, Pettigrew C, **Zhu Y**, Albert MS, Bakker A. Tau PET accumulation in Brodmann areas 35 and 36 is associated with individual differences in cognition in non-demented older adults. *Alzheimer's & Dementia*. 2023 Dec;19:e083095. Role: primary statistician. <https://doi.org/10.1002/alz.083095>
31. Alm KH, **Zhu Y**, Soldan A, Pettigrew C, Faria A, Hou X, Lu H, Mori S, Albert MS, Bakker A. Rates of change in structural and functional brain connectivity are associated with longitudinal changes in episodic memory in non-demented older adults. *Alzheimer's & Dementia*. 2023 Dec;19:e079875. Role: primary statistician. <https://doi.org/10.1002/alz.079875>
32. Pettigrew C, Na CH, Oh S, Soldan A, **Zhu Y**, Moghekar A, Albert MS, Worley PF. Synaptic Marker NPTX2 Predicts Risk of MCI Clinical Symptom Onset. *Alzheimer's & Dementia*. 2023 Dec;19:e079748. Role: primary Statistician. <https://doi.org/10.1002/alz.079748>
33. Rani N, Alm KH, Corona-Long CA, Speck CL, Soldan A, Pettigrew C, **Zhu Y**, Albert M, Bakker A. Tau PET burden in Brodmann areas 35 and 36 is associated with individual differences in cognition in non-

demented older adults. *Frontiers in Aging Neuroscience*. 2023 Dec 14;15:1272946. Role: contributing statistician. <https://doi.org/10.3389/fnagi.2023.1272946>

34. Bastani PB, Rieiro H, Badihian S, Otero-Millan J, Farrell N, Parker M, Newman-Toker D, **Zhu Y**, Saber Tehrani A. Quantifying induced nystagmus using a smartphone eye tracking application (EyePhone). *Journal of the American Heart Association*. 2024 Jan 16;13(2):e030927. Role: contributing statistician. <https://doi.org/10.1161/JAHA.123.030927>
35. Newman-Toker DE, Nassery N, Schaffer AC, Yu-Moe CW, Clemens GD, Wang Z, **Zhu Y**, Tehrani AS, Fanai M, Hassoon A, Siegal D. Burden of serious harms from diagnostic error in the USA. *BMJ Quality & Safety*. 2024 Feb 1;33(2):109-20. Role: secondary statistician. <https://doi.org/10.1136/bmjqs-2021-014130>
36. Austin JM, Zhu Y, Sebestyen K, Fracica EA, Newman-Toker DE. The Development and Endorsement of a Performance Measure for Stroke Misdiagnosis in the Emergency Department. *Quality Management in Healthcare*. 2024 Oct 1;33(4):289-90. Role: primary statistician. <https://doi.org/10.1097/QMH.0000000000000492>
37. Wu J, Oishi K, Soldan A, Pettigrew C, Lin Z, **Zhu Y**, Jiang D, Li X, Moghekar A, Liu P, Oishi K. Longitudinal changes in cerebral metabolic rate of oxygen in older adults without and with cognitive impairment. *Alzheimer's & Dementia*. 2024 Dec;20:e085554. Role: consulting statistician. <https://doi.org/10.1002/alz.085554>
38. Anderson CL, Vazquez J, **Zhu Y**, Pettigrew C, Moghekar A, Erus G, Davatzikos C, Xiao MF, Worley PF, Albert MS, Soldan A. The synaptic marker NPTX2 and longitudinal brain atrophy among cognitively unimpaired adults. *Alzheimer's & Dementia*. 2024 Dec;20:e093019. Role: primary statistician. <https://doi.org/10.1002/alz.093019>
39. Vazquez J, Soldan A, Pettigrew C, **Zhu Y**, Anderson C, Moghekar A, Oh S, Na CH, Albert M, Worley P. CSF Levels of NPTX2 are Associated With Decreased Rate of Brain Atrophy Over Time in Cognitively Unimpaired Individuals (P7-3.014). In *Neurology* 2025 Apr 8 (Vol. 104, No. 7_Supplement_1, p. 5269). Hagerstown, MD: Lippincott Williams & Wilkins. Role: primary statistician. <https://doi.org/10.1212/WNL.00000000000212247>

Review Articles [RA] NONE

Case Reports [CR] NONE

Book Chapters, Monographs [BC]

1. Scharfstein D, **Zhu Y**, and Tsiatis A. Handbook of Statistical Methods for Randomized Controlled Trials. (1st Edition.) Part II.4. Time to event subject to censoring: logrank test, Kaplan-Meier estimation and Cox proportional hazards regression models. CRC press. 2021.

Books, Textbooks [BK] NONE

Editorials [ED] NONE

Guidelines/Protocols, Consensus Statement, Expert Opinion, Consortium Articles
NONE

[GL] Letters, Correspondence [LT] NONE

FUNDING

EXTRAMURAL Funding

Current

| | |
|-----------------------|---|
| 09/30/2022-09/29/2026 | Armstrong Institute Center for Diagnostic Excellence-Pursuing Scalable System-Level Diagnostic Quality, Value and Equity by Applying Safety Science to Emergency Department Diagnosis R18 HS29350 AHRQ \$3,999,993 |
|-----------------------|---|

PI: David Newman-Toker/Kathy McDonald
5%

07/01/2024-06/30/2026 Time-Dynamic Tree-Based Methods for Personalized Alzheimer's Disease Prediction
R03 AG083470
NIH/NIA
\$327,5000 (total funding)
PI: Yuxin Zhu
24%

09/01/2019-05/31/2025 Biomarkers of Cognitive Decline Among Normal Individuals: The BIOCARD Cohort
U19 AG033655
NIH/NIA
\$21,497,064
PI: Marilyn Albert
35%

Past
09/15/2020 – 05/31/2024 Statistical Models of Alzheimer's Disease Pathological Cascade
5R01AG068002
NIH/NIA
\$1,637,500
PI: Zheyu Wang
20%

06/01/2020 – 05/31/2024 Towards a National Diagnostic Excellence Dashboard—Partnering with Stakeholders to Construct Evidence-Based Operational Measures of Misdiagnosis-Related Harms
R01 HS027614
AHRQ
\$1,529,695
PI: David Newman-Toker
20%

09/20/2021 – 03/19/2023 Natus Algorithm-Fox Squirrel
N/A
Natus Medical Incorporated
\$2,521,365
PI: David Newman-Toker
10%

01/01/2023 – 06/31/2023 Maternal, Infant & Early Childhood Home Visiting Program
23VMZP
State of New Jersey
\$522,110
PI: Cynthia Minkovitz
5%

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| 05/15/2018-04/30/2021 | National diagnostic performance dashboard to measure and track diagnostic error using big data #5756 Gordon and Betty Moore Foundation \$2,355,438 PI: David Newman-Toker Statistician, 50%. |
| 07/01/2009-03/31/2019 | Biomarkers of Cognitive Decline among Normal Individuals: the BIOCARD Cohort U19 AG033655 NIH/NIA PI: Marilyn Albert ~\$3,000,000 yearly Statistician, 100% from 09/2014 to 06/2018, 50% from 06/2018 to 03/2019. |

INTRAMURAL Funding NONE

CLINICAL ACTIVITIES

NONE

EDUCATIONAL ACTIVITIES

Educational Focus

I have experience teaching in statistical curriculum courses, special topics, and statistical courses for non-statistics students at undergraduate and graduate levels. I teach to help students succeed and inspire interest in meaningful research and application.

Teaching and Facilitating Learning (Role, learner level, course title, venue; any explanatory notes)

Classroom instruction

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| 2021, 2023 | Guest lecturer, graduate-level, “140.860.01 Current Topics in Biostatistics Research”, Johns Hopkins Bloomberg School of Public Health, Department of Biostatistics. Details: (2021) 29 students, “Optimal Rule for Prefixed Tree Classifiers”; (2023) 26 students, “Statistical Methods for Alzheimer's Disease and AD-related biomarkers”. |
| 2022 - 2024 | Primary instructor, graduate-level, “140.607.79 Multilevel Models”, Johns Hopkins Bloomberg School of Public Health, Biostatistics and Epidemiology Summer Institute. Class size: 19 (2022), 17 (2023), 7 (2024). Recognized for <u>Excellence in Teaching</u> (2024). |
| 2022 - 2024 | Primary instructor, graduate-level, “140.641.01 Survival Analysis”, Johns Hopkins Bloomberg School of Public Health, Department of Biostatistics. Class size: 30 (2022), 24 (2023), 31 (2024). Recognized for <u>Excellence in Teaching</u> (2022, 2023, 2024). |

Clinical instruction

NONE

CME instruction

NONE

Workshop / seminars

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| 2024 – Present | Co-leader of the SLAM working group (Survival, Longitudinal And Multivariate statistics working group), Department of Biostatistics, Johns Hopkins University. Website: SLAM Working Group - About SLAM (google.com) |
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Mentoring

Pre-doctoral Advisees / Mentees

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|-------------------------|---|
| 2022 October – 2024 May | Zhirui Fu, Department of Biostatistics (ScM thesis advisor; thesis work won <u>JSM 2024 Risk Analysis Student Paper Award</u> ; current position: PhD candidate, Department of Biostatistics, Emory University). |
| 2024 January – August | Jingyi Hao, Department of Applied Mathematics and Statistics (MS; project manuscript received <u>Honorable Mention in the JSM 2025 ASA MDD Student Paper Competition</u> ; current position: PhD candidate, Department of Statistics, North Carolina State University). |
| 2023 July - | Kexin Zhang, Department of Applied Mathematics and Statistics (MS). |
| 2024 June - | Xiyao Zou, Department of Biostatistics (ScM thesis advisor). |
| 2024 June - | Jiyue Zhang, Department of Applied Mathematics and Statistics (MS). |

Preliminary Schoolwide Oral Exam Committee (* for alternate member, † for advisor.)

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| 2022 | *Ruzhang Zhao, Department of Biostatistics (PhD), Johns Hopkins Bloomberg School of Public Health. Advisor: Dr. Hongkai Ji. |
| 2022 | *Wei Jin, Department of Applied Mathematics and Statistics (PhD), Johns Hopkins Whiting School of Engineering. Advisor: Dr. Yanxun Xu. |
| 2022 | *Kunbo Wang, Department of Applied Mathematics and Statistics (PhD), Johns Hopkins Whiting School of Engineering. Advisor: Dr. Yanxun Xu. |
| 2022 | Dongliang Zhang, Department of Biostatistics (PhD), Johns Hopkins Bloomberg School of Public Health. Advisor: Dr. Martin Lindquist. |
| 2024 | Zhiyue Zhang, Department of Applied Mathematics and Statistics (PhD), Johns Hopkins Whiting School of Engineering. Advisor: Dr. Yanxun Xu. |
| 2025 | *Julie Kim, Health Policy. Advisor: Dr. Matt Austin. |

Thesis Reader/Committees (* for alternate member, † for advisor.)

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| 2023 | Chunnan Liu, Department of Biostatistics (ScM), Johns Hopkins Bloomberg School of Public Health. Thesis title: “The Association Between Binary Surrogate Endpoints and Time-to-Event Outcomes in Two-Arm Clinical Trials.” Role: thesis reader. Advisor: Dr. Chen Hu. |
| 2024 | Dongliang Zhang, Department of Biostatistics (PhD), Johns Hopkins Bloomberg School of Public Health. Thesis title: “Novel Methods and Applications in Analyzing High-Dimensional Neuroimaging Data”. Role: voting member. Advisor: Dr. Martin Lindquist. |
| 2024 | *Ruzhang Zhao, Department of Biostatistics (PhD), Johns Hopkins Bloomberg School of Public Health. Thesis title: “Integrative and Transfer Learning Methods for Disparate Data with Applications in Single-Cell Genomics and Statistical Genetics”. Role: alternate voting member. Advisor: Dr. Hongkai Ji. |
| 2024 | †Zhirui Fu, Department of Biostatistics (ScM), Johns Hopkins Bloomberg School of Public Health. Thesis title: “Semiparametric Change Point Model for Survival Outcomes in the Presence of a U-Shaped Risk”. Role: advisor. |
| 2024 | Weixiao Dai, Department of Biostatistics (PhD), George Washington. Thesis title: “Patient-Centric Pragmatic Subgroup Analyses in Clinical Trials based on the Desirability of Outcome Ranking (DOOR)”. Role: voting member. Advisors: Drs. Scott R. Evans, and Toshimitsu Hamasaki. |
| 2024 | Meghan Ames, (DrPH) Johns Hopkins Bloomberg School of Public Health. Thesis title: “Lifestyle Medicine Implementation: Teaching Healthcare Professionals to Recommend Healthy Behaviors”. Role: voting member. Advisor: Dr. Joel Gittelsohn. |
| 2025 | †Xiyao Zou, Department of Biostatistics (ScM), Johns Hopkins Bloomberg School of Public Health. Thesis title: “A Survival Tree Approach for Risk-Adjusted Time-to-Event Modelling: Integrating Absolute Risk and Biomarker-Driven Splitting”. Role: advisor. |
| 2025 | Yuhan Xiao, Department of Biostatistics (ScM), Johns Hopkins Bloomberg School of Public Health. Thesis title: “Enhancing Survival Prediction Models: Insights on Biomarker Inclusion and Model Updating” Role: thesis reader. Advisor: Dr. Chen Hu. |

Ad-hoc

2022 June -August Internship program in collaboration with Eli Lilly; co-advising with Yu Du (Sr. Advisor | Statistics Group). Mentee: Dongliang Zhang.

Mentoring, coaching and advising programs

NONE

2024- *STATCOM (Statistics in the Community)*, faculty advisor.

Assessment and Evaluation

NONE

Program Building and Curriculum Development

NONE

Educational Leadership

NONE

Educational Demonstration Activities to external audiences

NONE

RESEARCH ACTIVITIES

Research Focus

My research focuses on developing statistical methods for biomarkers and electronic medical records. I work on methods that combine biomarkers to predict cognitive decline related to preclinical Alzheimer's Disease among normal individuals. I also develop methods to evaluate misdiagnosis-related harm at institution or medical system levels using electronic medical records. Methodologically, I work on tree-based models, latent variable models, survival analysis, and recurrent event analysis. My general interest is in interpretable and robust statistical methodology that advances biomedical understanding and informs practices.

Research Program Building / Leadership

Johns Hopkins Alzheimer's Disease Research Center, Data Management and Statistics Core, Core co-leader.

Research Demonstration Activities

NONE

Inventions, Patents, Copyrights

NONE

Technology Transfer Activities

NONE

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

NONE

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

NONE

Editorial Activities

NONE

Editorial Board appointments

NONE

Journal peer review activities

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| 2019-present | Biostatistics & Epidemiology |
| 2021-present | Journal of the American Statistical Association |
| 2021-present | Alzheimer's & Dementia |
| 2022-present | HealthScienceReport |
| 2022-present | Quality Management in Healthcare |
| 2022-present | JAMA Pediatrics |
| 2022-present | Journal of Alzheimer's Disease |
| 2022-present | American Journal of Perinatology |
| 2022-present | Biometrics |
| 2023-present | Scientific Reports |
| 2023-present | Informatics |
| 2023-present | Alzheimer's Research & Therapy |

Other peer review activities NONE

Advisory Committees, Review Groups/Study Sections

2023 – present Data Monitoring and Safety Board, “Clinical trial evaluating the efficacy and safety of AGB101 for treatment of Parkinson's disease related psychosis”, PI: Dr. Christopher Morrow, Johns Hopkins University, Baltimore MD.

2024 February National Institute of Health, Analytics and Statistics for Population Research Panel B (ASPB), study section reviewer.

2025 – present Data Monitoring and Safety Board, “Clinical trial evaluating the efficacy of AGB101 for reducing hippocampal overactivity in older adults (AGB101-CN)”, PI: Dr. Marilyn Albert, Johns Hopkins University, Baltimore MD.

Professional Societies NONE

Conference Organizer

JHMI/Regional

2024 May 8th Annual Diagnostic Excellence Summit. Planning Committee member and moderator.

Professional Societies

2020-present Member, American Statistical Association

2020-present Member, Eastern North American Region of the International Biometric Society

Session Chair

2021 August Joint Statistical Meetings. Invited Session “Advances and Challenges in Recent Diagnostic Research”. Virtual.

2024 August Joint Statistical Meetings. Invited Session “Leveraging Biomarkers for Early Detection of Dementia and Acceleration of Drug Development”. Portland, OR.

Consultantships NONE

RECOGNITION

Awards, Honors

Invited Talks

JHMI/Regional

2024 “SPADE-based Regression Methods and Quality Measures for Quantifying Misdiagnosis-Related Harm”, Anesthesiology and Critical Care Medicine Discovery Rounds, Baltimore, MD.

2024 Quality and Safety Research Day. Reaction Panel panelist. Baltimore, MD.

National

2020 “Obtaining Optimal Rule for a Prefixed Tree Classifier”, Michigan Statistics for Individualized-healthcare Lab (MiSIL), Department of Biostatistics, University of Michigan. Virtual.

2023 October “The SPADE-Prediction Project”, Society to Improve Diagnosis in Medicine Conference, Research and Education Day, Cleveland, OH.

2024 August Joint Statistical Meeting. “Quantifying Misdiagnosis-related harm leveraging health record data and through mixture-model-based novel measures” in Invited Session “Navigating Electronic Health Record Data for Deeper Insights: Case Studies and Statistical Solutions”. (Unable to present due to sudden illness, presented by co-author.) Portland, OR.

- 2025 March ENAR. Discussant in Invited Session “Statistical Consideration and Challenges with Survival Estimands in Clinical Trial”. New Orleans, LA.
- 2025 May “Optimal Personalized and Dynamic Classification with Fixed Trees for Survival Outcomes”, Department of Statistics, Donald Bren School of Information & Computer Sciences, University of California Irvine, Irvine, CA.

Visiting Professorships

NONE

OTHER PROFESSIONAL ACCOMPLISHMENTS

Oral/Podium Presentations

- 2016 “Optimal Decision Rule for Multiple Biomarkers Combined as Tree-based Classifiers”, Joint Statistical Meetings, Chicago, IL.
- 2017 “Adaptive Estimation of High Dimensional Partially Linear Model with Some Provable Gains”, Joint Statistical Meetings, Baltimore, MD, and Conference on Frontiers of Big Data Statistical Sciences (organized by ICSA Canada Chapter), Vancouver, BC, Canada.
- 2020 “Joint Rate Regression Models for Bivariate Recurrent Events with Frailty Processes”, Joint Statistical Meetings. Virtual.