Jing Ma, Ph.D. CURRICULUM VITAE (Jan 6, 2026)

Personal Data

Place of Birth	Henan, China
Citizenship	China
Work Address	Fred Hutchinson Cancer Center Division of Publish Health Sciences 1100 Fairview Ave. N PO Box 19024 - M3-B232 Seattle, WA 98109-1024
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Education

2006-2010	Fudan University, Shanghai, China, B.S., Mathematics with University Distinction (Highest)
2010-2015	University of Michigan, Ann Arbor, MI, Ph.D., Statistics Dissertation advisor: George Michailidis

Postgraduate Training

2015-2017	Postdoctoral Research Fellow, Department of Biostatistics and Epidemiology & Department of Statistics, University of Pennsylvania.

Faculty Positions

2017-	Fred Hutchinson Cancer Center, Division of Public Health Sciences. Assistant Professor, Biostatistics Program, 2017-2023 Affiliate faculty, Department of Biostatistics, University of Washington, 2019- Associate Professor, Biostatistics Program, 2023- Co-Director of Fred Hutch Biostatistics Consulting and Collaboration Center, 2025-
2019-2020	Texas A&M University, Department of Statistics. Assistant Professor, 2019-2020 Adjunct Assistant Professor, 2020-2023

Honors

National Awards

2008	National Merit Scholarship from Ministry of Education of China
2015	Travel Award, National Science Foundation
2018	Travel Award, Biomedical Data Science Innovation Lab
2018	Travel Award, The Jayne Koskinas Ted Giovanis Foundation for Health and Policy
2019	Editor's Pick Article, mSystems

2021 Best Student Paper Award from WNAR awarded to PhD student Kun Yue

Department/University Awards

2010 College Graduate Excellence Award of Shanghai
2011 Outstanding First Year Ph.D. Student Award
2011-2012 Rackham International Students Fellowship
2012-2013 Graduate Student Instructor Excellence in Teaching Award
2012-2015 Rackham School of Graduate Studies Conference Travel Grant
2022 Best Poster Design Award from Fred Hutch awarded to undergraduate student Antoinette Fang

Research Funding

Current projects as Principal Investigator

2022-2027 NIH R01 GM145772
Title: Statistical Methods for Network-based Integrative Analysis of Microbiome Data
Total costs: $1,838,548
FTE: 25%

Current projects as Co-Investigator

2023-2027 NIH R01 GM151301 (PI: Wu M)
Title: Statistical Methods for Enhanced Mapping of Microbiome Relationships
Total costs: $1,222,242
FTE: 15%

2025-2029 NIH P30 CA015704 (PI: Lynch T)
Title: Cancer Center Support Grant Shared Resources Core
Total costs: $1,077,911
FTE: 15%

2026-2030 American Cancer Society Research Scholar Grant (PI: Markey K)
Title: Microbe-derived short-chain fatty acids regulate chronic GVHD by controlling B cell development
FTE: 5%

Pending projects as Principal Investigator

2026-2031 NIH R01 DK149546
Title: Novel Integrative Analysis Methods for Mapping Host-Microbiome Interactions in Diabetes
FTE: 25%

Completed projects as Principal Investigator

2021-2022 Fred Hutch Pathogen-Associated Malignancies Integrated Research Center / Microbiome Research Initiative Pilot Award
Title: Statistical Methods for Network-based Analysis of the Colorectal Cancer Microbiome
Total costs: $75,000
FTE: 15%

2022-2024 Fred Hutch Translational Data Science Integrated Research Center Pilot Award

Title: Systems biology analysis of the immunomodulatory influence of circulating gut microbe-derived metabolites after transplantation
Role: Contact PI; MPI with Kate Markey
Total costs: $100,000
FTE: 15%

Completed projects as Co-Investigator

2016-2018 NIH R21 AI129712 (PI: Roxby A; Sub: Fredricks D)
Title: DMPA Use and Vaginal Bacterial Diversity among African Women
Total costs (subaward): $240,924
FTE: 4%

2016-2021 NIH R01 ES025796 (PI: Self S)
Title: The Impact of Prenatal Exposure to Persistent Organic Pollutants on Kinetics of Immune Response to Vaccines and Seroprotection in Infants
Total costs: $2,940,493
FTE: 10%

2018-2022 NIH R01 GM129512 (PI: Wu M)
Title: Joint Analysis of Microbiome and Other Genomic Data Types
Total costs: $1,584,000
FTE: 15%

2018-2023 NIH U19 AG057377 (PI: Promislow D; Sub PI: Schwartz S)
Title: The Dog Aging Project: The Genetic and Environmental Determinants of Healthy Aging in Companion Dogs
Role: Data and Analysis Core Co-Lead
Total costs (subaward): $1,077,911
FTE: 10%

2020-2024 NIH R01 GM133848 (PI: Shojaie A; Sub PI)
Title: Novel Statistical Inference for Biomedical Big Data
Total costs (subaward): $193,903
FTE: 10%

2018-2024 NIH R01 CA217970 (PI: Phipps A)
Title: Bacterial Correlates of Colorectal Cancer Subtypes and Survival
Total costs (subaward): $2,839,982
FTE: 5%

Bibliography

[✉indicates the corresponding author.]
[† indicates alphabetical ordering authorship.]
[Names underlined indicate student or postdoc mentored.]

a) Publications in Refereed Journals

1. **Ma J**, Shojaie A and Michailidis G. Network-based pathway enrichment analysis with incomplete network information. Bioinformatics. 32(20):3165—3174, 2016. [original methodology]

2. **Ma J** and Michailidis G. Joint structural estimation of multiple graphical models. Journal of Machine Learning Research. 17:1—48, 2016. [original methodology]
3. von Rundstedt, F, Kimal, R, **Ma J**, Arnold, J, Gohlke, J, Putluri, V, Krishnapuram, R, Piyarathna, D, Lotan, Y, Godde, D, Roth, S, Storkel, S, Levitt, J, Michailidis, G, Lerner, S, Coarfa, C, Sreekumar, A, Putluri, N. Integrated pathway analysis of a metabolic signature in bladder cancer - a linkage to The Cancer Genome Atlas project and prediction of survival. Journal of Urology. 195(6):1911—1919, 2016. [original work]
4. †Cai TT, **Ma J** and Zhang L. CHIME: clustering of high-dimensional Gaussian mixtures with EM algorithm and its optimality. Annals of Statistics. 47(3):1234—1267, 2019. [original methodology]
    a. L. Zhang was a recipient of ASA Biopharmaceutical Section Student Paper Award at the 2017 ICSA Applied Statistics Symposium.
5. †Cai TT, Li H, **Ma J**✉, and Xia Y. Differential Markov random field analysis with applications to detecting differential microbial community networks. Biometrika. 106(2):401—416, 2019. [original methodology]
6. **Ma J**, Karnovsky A, Afshinnia F, Wigginton J, Feldman H, Rader D, Shama K, Porter A, Rahman M, He J, Hamm L, Shafi T, Pennathur S, Michailidis G. Differential network-based enrichment analysis of lipid pathways altered in Chronic Kidney Disease progression. Bioinformatics. 35(18):3441—3452, 2019. [original methodology]
7. **Ma J**, Shojaie A and Michailidis G. A comparative study of topology-based pathway enrichment analysis methods. BMC Bioinformatics. 20 (546). 2019. [review]
8. Wang Y, Randolph T, Shojaie A and **Ma J**✉. The generalized matrix decomposition biplot and its application to the microbiome data. mSystems. 4:e00504-19. 2019. [original methodology]
    a. Selected as Editor's pick.
9. Vantaku V, Putluri V, Bader D, Maity S, **Ma J**, Sreekumar A and Putluri N. Epigenetic loss of AOX1 expression via EZH2 leads to metabolic deregulation in bladder cancer. Oncogene. 39:6265—6285, 2020. [original work]
10. **Ma J**. Joint microbial and metabolite network estimation with the censored Gaussian graphical model. Statistics in Biosciences. 13:351—372, 2021. [original methodology]
11. Hellstern M, **Ma J**, Yue K and Shojaie A. netgsa: Fast computation and interactive visualization for topology-based pathway enrichment analysis. PLoS Computational Biology. 17(6): e1008979, 2021. [original work]
12. Yue K, **Ma J**, Thornton T and Shojaie A. REHE: fast variance components estimation for linear mixed models. Genetic Epidemiology. 45(8):891—905, 2021. [original methodology]
    a. K. Yue was a recipient of the Best Student Paper Award at the 2021 WNAR meeting.
13. Wang Y, Shojaie A, Randolph T, Knight P, and **Ma J**. Generalized matrix decomposition regression: estimation and inference for two-way structured data.

The Annals of Applied Statistics. 17(4): 2944—2969, 2023. [original methodology]

14. Phipps AI, Hill CM, Lin G, Malen RC, Reedy AM, Kahsai O, Ammar H, Curtis K, Ma N, Randolph TW, **Ma J**, Ogino S, Newcomb PA, and Hullar MA. Fusobacterium nucleatum enrichment in colorectal tumor tissue: Associations with tumor characteristics and survival outcomes. Gastro Hep Advances. 2025 Feb 20;4(6):100644. [collaboration]
15. Fang A, Kumar L, Creevy KE, Dog Aging Project Consortium, Promislow DEL, and **Ma J**✉. Constructing the first comorbidity networks in companion dogs in the Dog Aging Project. *PLoS Computational Biology*. 2025; 21(8):e1012728 [original work]
    a. An earlier version of this work won the Best Poster Design Award at the competitive Fred Hutch Summer Undergraduate Research Program symposium.

b) Consortium Publications

16. Creevy KE, Akey JM, Kaeberlein M, Promislow DE, and Dog Aging Project Consortium (..., **Ma J**, ...). An open science study of ageing in companion dogs. Nature. 602:51—57, 2022. [collaboration]
17. Schwartz SM, Urfer SR, White M, Megquier K, Shrager S, Dog Aging Project Consortium (..., **Ma J**, ...), Akey JM, Benton B, Borenstein E, Castelhano MG, Coleman AE. Lifetime prevalence of malignant and benign tumors in companion dogs: cross-sectional analysis of Dog Aging Project baseline survey. Veterinary and Comparative Oncology. 20(4):797—804, 2022. [collaboration]
18. Bray EE, Zheng Z, Tolbert MK, McCoy BM, Dog Aging Project Consortium (..., **Ma J**, ...), Kaeberlein M, Kerr KF. Once-daily feeding is associated with better health in companion dogs: results from the Dog Aging Project. GeroScience. 44:1779—1790, 2022. [collaboration]
19. Lee H, Collins D, Creevy K, Promislow DE, and Dog Aging Project Consortium (..., **Ma J**, ...). Age and physical activity levels in companion dogs: results from the Dog Aging Project. The Journals of Gerontology: Series A. 77(10):1986—1993, 2022. [collaboration]
20. Hoffman JM, Tolbert MK, Promislow DE, Dog Aging Project Consortium (..., **Ma J**, ...). Demographic factors associated with joint supplement use in dogs from the Dog Aging Project. Frontiers in Veterinary Science. 9:906521, 2022. [collaboration]
21. Yarborough S, Fitzpatrick A, Schwartz SM, and Dog Aging Project Consortium (..., **Ma J**, ...). Evaluation of cognitive function in the Dog Aging Project: associations with baseline canine characteristics. Scientific Reports. 12:13316, 2022. [collaboration]
22. Praczko D, Tinkle AK, Arkenberg CR, McClelland RL, Creevy KE, Tolbert MK, Barnett BG, Chou L, Evans J, McNulty KE, Dog Aging Project Consortium (..., **Ma J**, ...), and Levine JM. Development and evaluation of a survey instrument to assess veterinary medical record suitability for multi-center research studies. Frontiers in Veterinary Science. 9:941036, 2022. [collaboration]

23. Collins D, Lee H, Dunbar MD, Crowder K, and Dog Aging Project Consortium (..., **Ma J**, ...). Associations between neighborhood disadvantage and dog walking among participants in the Dog Aging Project. International Journal of Environmental Research and Public Health. 9(18):11179, 2022. [collaboration]
24. Bray EE, Raichlen DA, Forsyth KK, Promislow DE, Alexander GE, MacLean EL, and Dog Aging Project Consortium (..., **Ma J**, ...). Associations between physical activity and cognitive dysfunction in older companion dogs: results from the Dog Aging Project. GeroScience. 45(2):645—661, 2023. [collaboration]
25. McNulty KE, Creevy KE, Fitzpatrick A, Wilkins V, Barnett BG, Dog Aging Project Consortium (..., **Ma J**, ...), and Ruple A. Development and validation of a novel instrument to capture companion dog mortality data: the Dog Aging Project End of Life Survey. Journal of the American Veterinary Medical Association. 261(9):1326—1336, 2023. [collaboration]
26. Xue D, Collins D, Kauffman M, Dunbar M, Crowder K, Schwartz SM, Dog Aging Project Consortium (...,**Ma J**, ...) and Ruple A. Big data from small animals: integrating multi-level environmental data into the Dog Aging Project. Scientific and Technical Review. 42:65—74, 2023. [collaboration]
27. McCoy BM, Brassington L, Jin K, Dolby GA, Shrager S, Collins D, Dunbar M, Snyder-Mackler N, Dog Aging Project Consortium (..., **Ma J**, ...). Social determinants of health and disease in companion dogs: A cohort study from the Dog Aging Project. Evolution, Medicine, and Public Health. 11(1):187—201, 2023. [collaboration]
28. Forsyth KK, McCoy BM, Schmid SM, Promislow DE, Snyder-Mackler N, Dog Aging Project Consortium (..., **Ma J**, ...) and Creevy KE. Lifetime prevalence of owner-reported medical conditions in the 25 most common dog breeds in the Dog Aging Project pack. Frontiers in Veterinary Science. 10:1140417, 2023. [collaboration]
29. Nam Y, White M, Karlsson EK, Creevy KE, Promislow DE, McClelland RL, and Dog Aging Project Consortium (..., **Ma J**, ...). Dog size and patterns of disease history across the canine age spectrum: results from the Dog Aging Project. PLoS One. Jan 2024 [collaboration]
30. Pearson EB, Hoffman JM, Melvin RL, McNulty KE, Creevy KE, Dog Aging Project Consortium (..., **Ma J**, ...), and Ruple A. Analysis of 2570 responses to Dog Aging Project End of Life Survey demonstrates that euthanasia is associated with cause of death but not age. Journal of the American Veterinary Medical Association. 262(2):1—10, 2024 [collaboration]
31. Schmid SM, Hoffman JM, Prescott J, Ernst H, Promislow, DE, Dog Aging Project Consortium (..., **Ma J**, ...), and Creevy KE. The companion dog as a model for inflammaging: a cross-sectional pilot study. GeroScience. 2024 Dec;46(6):5395-5407. [collaboration]
32. Wilkins V, Evans J, Park C, Dog Aging Project Consortium (..., **Ma J**, ...), Fitzpatrick AL, Creevy KE, and Ruple A. Validation of the shortened version of the Canine Behavioral Assessment and Research Questionnaire (C-BARQ)

using participants from the Dog Aging Project. Plos One. 2024 Apr 11;19(4):e0299973. [collaboration]
33. Matheson R, Sexton C, Wise CF, O'Brien J, Keyser AJ, Kauffman M, Dunbar MD, Dog Aging Project Consortium (..., **Ma J**, ...), Stapleton HM, and Ruple A. Silicone tags as an effective method of monitoring environmental contaminant exposures in a geographically diverse sample of dogs from the Dog Aging Project. Frontiers in Veterinary Science. 11:1394061, 2024. [collaboration]
34. O'Brien JS, Tolbert MK, Dog Aging Project Consortium (..., **Ma J**, ...), and Ruple A. Dog and owner demographics impact dietary choices in the Dog Aging Project cohort. Journal of the American Veterinary Medical Association. 2024 Aug 14;1:1-0. [collaboration]
35. Schmid SM, Hoffman JM, Gould EN, Moon A, Creevy KE, Dog Aging Project Consortium (..., **Ma J**, ...). Cross-sectional survey of 43,517 dogs in the Dog Aging Project identifies owner-reported lifetime prevalence and characteristics of gastrointestinal disease. Journal of the American Veterinary Medical Association. 2024 Sep;1-9. [collaboration]
36. Holland SN, Tinkle AK, Prescott JN, Blattman BL, McClelland RL, Nam Y, Dog Aging Project Consortium (..., **Ma J**, ...), Creevy KE, Fajt VR. Factors associated with missing biological samples in the dog ageing project. Veterinary Medicine and Science. 2024 Nov;10(6):e70113. [collaboration]
37. Hargrave SH, Bray EE, McGrath S, Alexander GE, Block TA, Chao N, Darvas M, Douglas LELC, …, Dog Aging Project Consortium (..., **Ma J**, ...), and MacLean EL. Characterizing dog cognitive aging using spontaneous problem-solving measures: development of a battery of tests from the Dog Aging Project. GeroScience. 2025 Feb;47(1):23-43. [collaboration]
38. Holland SN, Tinkle AK, Prescott JN, Blattman BL; Dog Aging Project Consortium (..., **Ma J**, ...); Creevy KE, Fajt VR. The effects of resting time, centrifugation time, and technician training on plasma sample quantity and quality: Implications for the Dog Aging Project. Vet Clin Pathol. 2025 Mar;54(1):7-14. [collaboration]
39. Ortiz AV, Luo I, O'Brien J, Murphy M, Rollins AW, Kaeberlein M; Dog Aging Project Consortium (..., **Ma J**, ...); Ruple A, Kerr KF, Tolbert MK. Association Between Diet Type and Owner-Reported Health Conditions in Dogs in the Dog Aging Project. Journal of Veterinary Internal Medicine. 2025 May-Jun; 39(3):e70060. [collaboration]
40. Prescott, J., Keyser, A.J., Litwin, P., Dunbar, M.D., McClelland, R., Ruple, A., …, Dog Aging Project Consortium (..., **Ma J**, ...), Borenstein E., Snyder-Mackler N., Promislow, D.E. Rationale and design of the Dog Aging Project precision cohort: a multi-omic resource for longitudinal research in geroscience. GeroScience. Mar 2025. [collaboration]
41. Gartner, K., Hoffman, J. M., McNulty, K. E., Zheng, Z., Ruple, A., Creevy, K. E., & Dog Aging Project Consortium (..., **Ma J**, ...). Food motivation and owner feeding management practices are associated with overweight among Dog Aging Project participants. American Journal of Veterinary Research. 2025 Mar 13;86(5):ajvr.24.11.0358 [collaboration]

42. Long, T., McNulty, K. E., Creevy, K. E., Fitzpatrick, A., Hutchison, A., Dog Aging Project Consortium (..., **Ma J**, ...) & Ruple, A. Development and validation of a chronic diagnosis inventory that enables reliable documentation of canine multimorbidity in the Dog Aging Project. American Journal of Veterinary Research. 2025 Mar 31;86(6):ajvr.25.02.0038. [collaboration]
43. Coleman AE, Creevy KE, Anderson R, Reed MJ, Fajt VR, Aicher KM, …, Kaeberlein M, and Dog Aging Project Consortium (..., **Ma J**, ...). Test of Rapamycin in Aging Dogs (TRIAD): study design and rationale for a prospective, parallel-group, double-masked, randomized, placebo-controlled, multicenter trial of rapamycin in healthy middle-aged dogs from the Dog Aging Project. Geroscience. 2025 Jun;47(3):2851-2877. [collaboration]
44. O'Brien JS, Grzywinski M, Sexton CL; Dog Aging Project Consortium (..., **Ma J**, ...); Dunbar MD, Ruple A. Environmental exposures and health outcomes in dogs differ according to geographic region in the United States among Dog Aging Project participants. *Am J Vet Res*. 2025 Jun 30:1-10. [collaboration]
45. Hargrave SH, Keyser AJ, Kristal E, Alexander GE, Block TA, Bray EE, Douglas LELC, Kennedy BS, Promislow DEL, Raichlen DA; Dog Aging Project Consortium (..., **Ma J**, ...); MacLean EL. Functional assessments of short-term spatial memory in the Dog Aging Project identify strong associations with age that are not moderated by body mass. *GeroScience*. June 2025 [collaboration]
46. Sexton CL, O'Brien J, Lytle J, Rodgers S, Keyser A, Kauffman M, Dunbar MD, Dog Aging Project Consortium (..., **Ma J**, ...), Edwards M, Krometis LA, Ruple A. Testing for heavy metals in drinking water collected from Dog Aging Project participants. *PLOS Water*. 2025 Aug 6;4(8):e0000296. [collaboration]
47. O'Brien JS, Lawson E, Dog Aging Project Consortium (..., **Ma J**, ...), Tolbert MK, Ruple A. Findings from the Dog Aging Project: home-prepared diets for companion dogs feature diverse ingredients, and few are nutritionally complete. *American Journal of Veterinary Research*. 2025 Aug 27;1(aop):1-9. [collaboration]
48. Harrison BR, Partida-Aguilar M, Marye A, Djukovic D, Kauffman M, Dunbar MD, …, Dog Aging Project Consortium (..., **Ma J**, ...), Avery A, Borenstein E, Snyder-Mackler N, Promislow DE. Protein catabolites as blood-based biomarkers of aging physiology: Findings from the Dog Aging Project. *Aging Cell*. Sep 2025. [collaboration]
49. Sexton CL, Reichel C, Keyser A, Dunbar MD, Dog Aging Project Consortium (..., **Ma J**, ...), Ruple A. Comparing owner reported and genetic breed identification reveals high concordance in a large cohort from the Dog Aging Project. *Scientific Reports*. 2025 Aug 20;15(1):30493. [collaboration]
50. Li Y, Sexton CL, Dog Aging Project Consortium (..., **Ma J**, ...), Fitzpatrick A, Ruple A. An analysis of behavioral characteristics and enrollment year variability in 47,444 dogs entering the Dog Aging Project from 2020 to 2023. *PLoS One*. 2025 Sep 10;20(9):e0330257. [collaboration]
51. Ryave J, Kutrybala I, O'Brien J, Ruple A, Wilkins V, Schmid SM, Hoffman JM, Reiter T, Fajt VR, Creevy KE, Dog Aging Project Consortium (..., **Ma J**, ...).

Owner-reported experiences are similar for dogs experiencing euthanasia or unassisted death: evaluation of the Dog Aging Project's End of Life Survey free-text responses. *Journal of the American Veterinary Medical Association*. 2025 Oct 8;1(aop):1-7. [collaboration]

52. McGrath S, Hull E, Dunbar MD, Prescott J, Keyser AJ, MacLean E, Darvas M, Latimer C, Moreno J, MacCoss MJ, Kauffman M, Dog Aging Project Consortium (..., **Ma J**, ...). The companion dog as a translational model for Alzheimer's disease: Development of a longitudinal research platform and post mortem protocols. *Alzheimer's & Dementia*. 2025 Sep;21(9):e70630. [collaboration]

c) Manuscripts Submitted

53. **Ma J**. Inference for microbe—metabolite association networks using a latent graph model. Invited revision submitted for Biometrics. https://arxiv.org/abs/2506.12275. [original methodology]
54. McCoy BM, Mariner BL, Cheng CF, Slikas E, Adjangba C, Greenier A, Brassington L, Marye A, Harrison BR, Partida-Aguilar M, Bamberger T, Algavi Y, Muller E, Harris A, Rout E; Dog Aging Project Consortium (..., **Ma J**, ...); Avery A, Borenstein E, Promislow D, Snyder-Mackler N. Aging at scale: Younger dogs and larger breeds from the Dog Aging Project show accelerated epigenetic aging. bioRxiv [Preprint]. 2024 Oct 29:2024.doi: https://doi.org/10.1101/2024.10.03.616519.
55. Mariner BL, McCoy BM, Greenier A, Brassington L, Slikas E, Adjangba C, Marye A, Harrison BR, Bamberger T, Algavi Y, Muller E, Harris A, Rout E, Dog Aging Project Consortium (..., **Ma J**, ...), Avery A, Borenstein E, Promislow D, Snyder-Mackler N. DNA methylation of transposons pattern aging differences across a diverse cohort of dogs from the Dog Aging Project. bioRxiv [Preprint]. 2025 Jan 13. doi: https://doi.org/10.1101/2024.10.08.617286. [collaboration]
56. Sarah M Schmid; Courtney L Sexton; Alexandria Yoerger; Mandy Kauffman; Robyn L McClelland; Dog Aging Project Consortium (..., **Ma J**, ...); Kate E Creevy; Audrey Ruple. Accuracy of owner-reported diagnoses for dogs enrolled in the Dog Aging Project as compared to veterinary electronic medical records. Submitted to *PLOS One.* June 2025 [collaboration]
57. T Bamberger, E Muller, YM. Algavi, A Greenier, C Adjangba, E Slikas, L Brassington, B Mariner, B McCoy, BR. Harrison, M Partida-Aguilar, A Marye, A Harris, E Rout, Dog Aging Project Consortium (..., **Ma J**, ...), A Avery, DEL Promislow, N Snyder-Mackler, E Borenstein. Mapping the canine microbiome: Insights from the Dog Aging Project. Submitted to *Nature Communications.* June 2025. https://doi.org/10.1101/2024.12.02.625632 [collaboration]
58. CM Hill, RC Malen, AM Reedy, O Kahsai, H Ammar, K Curtis, N Ma, TW Randolph, **Jing Ma**, CE. Thomas, S Ogino, JD Potter, DD. Buchanan, PA. Newcomb, MAJ Hullar, AI Phipps. Associations of epidemiologic risk factors with Fusobacterium nucleatum and bacterial alpha diversity in the colorectal tumor-associated microbiota. Submitted to *Cancer Causes & Control.* July 2025 [collaboration]

59. Harrison BR, Akey JM, Snyder-Mackler N, Raftery D, Dog Aging Project Consortium (..., **Ma J**, …), Creevy KE, Promislow DE. Dogs and humans share biomarkers of mortality. bioRxiv. 2025 Aug 25:2025-08. https://doi.org/10.1101/2025.08.20.671317 [collaboration]

d) Manuscripts under Revision

60. Wang Y, **Ma J**, and Shojaie A. Direct estimation of differential Granger causality between two high-dimensional time series. https://arxiv.org/abs/2109.07609. [original methodology]
61. **Ma J**✉, Xie P, Pantoja K, and Jones DE. Variable selection in balance regression with applications to microbiome compositional data. https://arxiv.org/abs/2304.00143. [original methodology]

e) Book Chapters

1. Li H and **Ma J**. Graphical models in genetics, genomics and metagenomics. In the Handbook of Graphical Models. Editors: Mathias Drton, Steffen Lauritzen, Marloes Maathuis, Martin Wainwright. Chapman & Hall / CRC, 2018.
2. **Ma J**, Yue K and Shojaie A. Networks for compositional data. InStatistical Analysis of Microbiome Data. Editors: Subharup Guha, Somnath Datta. Springer, 2021

f) Published Software

- CHIME: Matlab code for clustering high-dimensional Gaussian mixtures with the EM algorithm. On GitHub.
- DNEA: R code for differential network-based enrichment analysis. On GitHub.
    - R package on Bioconductor.
- GMDecomp: R package for generalized matrix decomposition (GMD) and GMD-biplots. On GitHub.
- JSEM: R code for joint structural estimation of multiple Gaussian graphical models. On GitHub.
- KPR: R package for kernel penalized regression and inference. On GitHub.
- metaMint: R package for inferring metabolite and microbial interaction networks. On GitHub.
- netgsa: R package for network-based pathway enrichment analysis. Myitemize
    - Stable release on CRAN.
    - Development version on GitHub.
- REHE: R code for fast variance component estimation in linear mixed models. On GitHub.
- slr: R package for regression and classification analysis of compositional data. On GitHub.
- TestBMN: R package for testing high-dimensional binary Markov networks. On GitHub.

g) Other Publications

Ma J. Estimation and Inference in High-Dimensional Gaussian Graphical Models with Structural Constraints. University of Michigan. 2015. [PhD Thesis]

Professional Organizations

2010-	Member of American Statistical Association
2014-	Member of International Chinese Statistical Association
2016-2017	Member of Eastern North American Region International Biometric Society
2025-	Member of International Biometric Society

Teaching Responsibilities

Teaching at University of Michigan

- Lab Instructor: Introduction to Statistics and Data Analysis (STAT250). Fall 2010 & Winter 2011
- Instructor: Applied Qualifying Exam. Summer 2012, 2013 & 2014
- Instructor: Linear Algebra Bootcamp. Summer 2013 & 2014
- Graduate Student Instructor:
    - English Language Institute. Summer 2011
- STAT600: Applied Statistics and Data Analysis. Fall 2011 & 2012
    - GSI Excellence in Teaching Award
- STAT425: Introduction to Probability and Statistics. Fall 2011 & Winter 2012
- STAT601: Multivariate and Categorical Data Analysis. Winter 2012

Teaching at Texas A&M University

- Instructor: Statistics for Biology (STAT312). Fall 2019

Teaching at University of Washington

- Guest Lecturer: UW STAT/BIOST 111 Undergraduate Seminar Series, Spring 2024

Other Teaching

- Guest Lecturer: Wellcome Genome Course on ``Genetic Analysis of Mendelian and Complex Disorders". Summer 2022

Advising and Mentoring

Postdoctoral Fellows

2018-2020	Yue Wang, PhD in Biostatistics, UNC Chapel Hill (joint with Ali Shojaie). First position: Assistant Professor of Statistics at Arizona State University. Current position: Assistant Professor of Biostatistics & Informatics a the University of Colorado Anschutz Medical Campus
2021-2022	Ilias Moysidis, PhD in Statistics, Pennsylvania State University. Current/First position: Researcher at Centre for Research & Technology - Hellas, Greece.

2025- Poorbita Kundu, PhD in Statistics, UC Davis.

Graduate Students (RA over 6 months)

2017-2019 Kun Yue, UW Biostatistics PhD student, joint with Ali Shojaie.
Current position: Data and Applied Scientist at Microsoft

2020-2022 Kristyn Pantoja, Texas A&M Statistics PhD student, joint with David Jones.
Current position: Principal Biostatistician at Novartis

2022-2024 Xinyi Xie, UW Statistics MS student.
Current position: Software Engineer at Google

2022-2025 Wenjie Guan, UW Statistics MS student.
Current position: PhD student in Statistics at Cornell University

2023-2025 Zichun Xu, UW Biostatistics PhD student.

2024-2025 Paizhe Xie, UW Statistics MS student.
Current position: PhD student in Statistics at Washington University in St. Louis

2024-2025 Bumjun Park, UW Biostatistics PhD student.

2024-2025 Mohamad Daniel Bairakdar, UW Biostatistics PhD student.

2025 Jiayi Sun, UW Statistics MS student.

Undergraduate Students

2021-2022 Lakshin Kumar, UW Biochemistry undergraduate student, joint with Daniel Promislow.

2022-2024 Antoinette Fang, University of Chicago Mathematics undergraduate student.
Current position: PhD student in Biostatistics at UC Los Angeles

2024 Luna Tewolde, SeattleStatGROWS summer intern from UC Berkeley Chemistry.

MS and PhD Committees in Non-Chair Role

2018-2019 Arjun Sondhi, UW Biostatistics PhD student (advisor: Ali Shojaie).

2022-2023 Pearl Liu, UW Biostatistics PhD student (advisor: Michael Wu).

2022-2023 Fang Nan, UW Biostatistics MS student (advisor: Chongzhi Di).

2024- Jordan Jackson, UW Molecular Medicine and Mechanisms of Disease PhD student (advisor: Neel Dey)

Independent Study Students

2020 Yuan Tian, UW Biostatistics MS student.

2022-2023 Yinsheng Wang, UW Operations Research PhD student.

2023 Jordan Jackson, UW Molecular Medicine and Mechanisms of Disease PhD student.

Special National Responsibilities

Grant Review

02/2022 NIH Biodata Management and Analysis (BDMA) Study Section

03/2023 NIH Small Business: Computational, Modeling, and Biodata Management (MCST-14) Study Section

03/2024 NIH Special Emphasis Panel ZRG1

07/2025 NIH Analytics and Statistics for Population Research Panels A (ASPA) Study Section

Committee

2023 Member of 2023 WNAR Conference Organizing Committee
2024- Chair of ASA Section on Genomics and Genetics Student Paper Award Committee
2026 Member of 2026 SLDS Conference Organizing Committee

Conference Review

2016 Reviewer for International Conference on Information Systems
2016 Reviewer for Conference on Neural Information Processing Systems (NeurIPS)
2018 Judge for ASA Section on Genomics and Genetics Student Paper Competition
2018 Reviewer for Conference on Neural Information Processing Systems (NeurIPS)
2019 Judge for ASA Section on Genomics and Genetics Student Paper Competition
2020 Judge for ASA Section on Genomics and Genetics Student Paper Competition
2022 Judge for ICSA Student Paper Competition
2023 Judge for ASA Section on Genomics and Genetics Student Paper Competition
2024 Judge for ASA Section on Genomics and Genetics Student Paper Competition

Referee Service

Annals of Applied Statistics, Bioinformatics, Biometrical Journal, Biometrika, Biometrics, Biostatistics, BMC Bioinformatics, Electronic Journal of Statistics, Frontiers in Genetics, Gut Microbes, IEEE Access, ISME Communications, Journal of Computational Biology, Journal of Computational and Graphical Statistics, Journal of Machine Learning Research, Journal of Multivariate Analysis, Journal of the American Statistical Association — Applications & Case Studies, Journal of the American Statistical Association — Theory & Methodology, Molecular & Cellular Proteomics, Nature Communications, Nucleic Acids Research, Optimization and Engineering, PLOS Computational Biology, Scientific Reports, Statistics in Biosciences, Statistics in Medicine, Structural Equation Modeling, Wiley Interdisciplinary Reviews: Computational Statistics

Special Local Responsibilities

Grant Review

2020 Fred Hutch Translational Data Science Integrated Research Center Pilot Grant
2020 UW Institute of Translational Health Sciences Research Innovation Award
2020 Fred Hutch Division of Public Health Sciences Bid & Proposal Projects

2021	Fred Hutch Translational Data Science Integrated Research Center Pilot Grant
2024	Fred Hutch Translational Data Science Integrated Research Center Pilot Grant

University of Michigan

2011-2012	Coordinator of Reading Group on Statistical Modeling and Analysis of Networks, Department of Statistics
2011-2013	Co-Chair, Graduate Student Statistical Topics Seminar Series, Department of Statistics

Fred Hutchinson Cancer Center & University of Washington

03/18	Organizing committee member of the 2018 Fred Hutch Microbiome Symposium
03/18	Faculty host for UW Biostatistics Prospective PhD Student Visit Days
2019	Chair of Biostatistics Seminar Series
03/21	Faculty host for UW Biostatistics Prospective PhD Student Visit Days
10/21	Panelist for Fred Hutch Biostatistics Post-doc faculty recruitment meeting
03/22	UW MSTP Prospective MD/PhD Student Interview
03/22	Fred Hutch PHS Biostatistician/Clinical Trialist Faculty Search Interview
05/22	Judge for Fred Hutch Joint Microbiome Research Initiative & Pathogen-Associated Malignancies IRC Retreat Lightning Talks and Posters
11/22	Organizing committee member of the 2022 Fred Hutch Biostatistics Program Faculty Retreat
03/23	Faculty host for UW Biostatistics Prospective PhD Student Visit Days
05/23	Reviewer for Fred Hutch PHS Research Staff Appreciation Award
10/24	Organizing committee member of the 2024 Fred Hutch PHS Faculty Retreat
04/24	Fred Hutch PHS Biostatistics Program Head Search Interview
05/24	Fred Hutch PHS Epidemiology Junior Faculty Search Interview
2024-	Fred Hutch Chen Hu Endowed Trainee Travel Award Committee
07/24	Fred Hutch SeattleStatGROWs Faculty Mentor
2026	UW Biostatistics PhD Admissions Committee

Texas A&M University

2019-2020	Chair of grants writing committee

Presentations

Invited Talks at Conferences and Symposia

[06/14] International Chinese Statistical Association/Korean International Statistical Society Joint Applied Statistics Symposium, Portland, OR: *Pathway enrichment analysis with incomplete network information.*

[06/16] International Chinese Statistical Association Applied Statistics Symposium, Atlanta, GA: *A zero-inflated Poisson model for abundance quantification from metagenomic data.*

[06/17] International Chinese Statistical Association Applied Statistics Symposium, Chicago, IL: *Differential network biology: testing differences in microbial networks.*

[03/18] Fred Hutch Microbiome Symposium, Seattle, WA: *Inferring differential microbial interactions from co-occurrence data using Markov networks.*

[06/18] Data Science Innovation Lab: Mathematical Challenges of Single Cell Dynamics, Bend, OR: *Understanding therapeutic failures through 4D single-cell analysis of metabolic heterogeneity.*

[07/18] The 12th International Vilnius Conference on Probability Theory and Mathematical Statistics / 2018 IMS Annual Meeting on Probability and Statistics, Vilnius, Lithuania (Organizer: Hongzhe Li): *Mixed graphical models for joint analysis of microbiome and metabolomic data.*

[07/18] Joint Statistical Meetings, Vancouver, Canada (Topic-contributed session; Organizer: Ni Zhao): id.

[12/18] The 11th International Conference of the ERCIM WG on Computational and Methodological Statistics, Pisa, Italy (Organizer: Yin Xia): *Sparse clustering of Gaussian mixtures.*

[02/19] BIRS Workshop on "The Role of Genomics and Metagenomics in Human Health: Recent Developments in Statistical and Computational Methods", Banff, Canada (Organizer: Hongzhe Li): *Variance components estimation in linear mixed models.*

[07/19] International Chinese Statistical Association Conference, Tianjin, China (Organizer: Hongzhe Li): *A framework for multi-view analysis of microbiome data.*

[12/19] The 12th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK (Organizer: Ni Yang): *Generalized matrix decomposition: From exploratory analysis to high-dimensional inference.*

[08/20] (Virtual) Joint Statistical Meetings, Philadelphia, PA (Topic-contributed session; Organizer: Sandipan Roy): *Fast estimation of change points in regime switching Gaussian graphical models.*

[02/22] (Virtual) IMSI Workshop — Multiscale Microbial Communities: Dynamical Models, Ecology, and One Health, Chicago, IL (Organizers: Hongzhe Li, Pamela Martinez, Shulei Wang): *Regression analysis of multi-view microbiome data.*

[07/22] (Virtual) International Chinese Statistical Association Conference, Xi'an, China (Organizer: Gen Li): *Predictive modeling of compositional data via supervised log-ratios.*

[12/22] (Virtual) The 14th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK (Organizer: Aaron Molstad): *Regression analysis of multi-view microbiome data.*

[06/23] International Chinese Statistical Association Applied Statistics Symposium, Ann Arbor, MI (Organizer: Wen Zhou): *Group Factor Regression for Analyzing Multi-view Microbiome Data.*

[08/23] Joint Statistical Meetings, Toronto, CA (Invited session; Organizer: Huilin Li): *id.*

[06/24] International Chinese Statistical Association Applied Statistics Symposium, Nashville, TN (Organizer: Qian Wu): *Structured dimensionality reduction of multi-view data.*

[09/24] Royal Statistical Society 2024 Conference, Brighton, UK (Contributed session): *Testing associations between multi-view data and outcomes.*

[11/24] The Conference on Statistical Learning and Data Science, Newport Beach, CA (Organizer: Ali Shojaie): *id.*

[06/25] WNAR 2025 Meeting, Whistler, BC, Canada (Organizer: Yuan Jiang): *Inference for microbe-metabolite networks using a latent graph model.*

[07/25] BIRS Workshop on "Novel Statistical Approaches for Studying Multi-omics Data", Banff, Canada (Organizer: Jingjing Yang, Mingyao Li, Xiang Zhou, Sarah Gagliano Taliun, Christine Peterson, Tian Ge): *id*.

[12/25] The 19th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CMStatistics) (Organizer: Li-Xuan Qin): *Variable selection in compositional data analysis*.

[06/26] International Chinese Statistical Association Conference, Shenzhen, China (Organizer: Zhigang Li)

[08/26] Joint Statistical Meetings, Boston, MA (Organizer: Rebecca Deek)

Invited Seminars and Colloquia

[10/16] (Virtual) Department of Mathematics and Statistics, Lancaster University, Lancaster, UK: *Differential network biology: testing differences in microbial networks.*

[01/17] Department of Statistics, University of Warwick, Coventry, UK: *id*.

[02/17] Biostatistics Program, Public Health Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA: *id.*

[01/18] Department of Biostatistics, University of Washington, Seattle, WA: *id*.

[01/18] Department of Statistics, University of Florida, Gainesville, FL: *Graphical models and differential networks for microbiome data.*

[01/18] Biostatistics/ATME Joint Seminar, Public Health Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA: *Network-based enrichment analysis.*

[02/18] Statistical Learning Applied to Biology Lab Seminar, Department of Biostatistics, University of Washington, Seattle, WA: *Statistical machine learning methods in genetics and genomics.*

[02/18] Mini-TED Talk at Translational Research Program, Public Health Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA: *Differential network biology.*

[11/18] Department of Statistics, Texas A&M University, College Station, TX: *Graphical models and differential networks for microbiome data.*

[09/19] University of Michigan 50th Anniversary Symposium, Ann Arbor, US: *Graphical models and differential networks for microbiome data*.

[12/19] (Virtual) The Dog Aging Project Science Seminar Series, Texas A&M University, College Station, TX: *Statistical considerations in the Dog Aging Project.*

[10/20] (Virtual) Hanash Lab Meeting, The University of Texas MD Anderson Cancer Center: *Machine learning tools for omics data analysis*.

[01/21] (Virtual) Gut Origins of Latino Diabetes (GOLD) Monthly Meeting, Albert Einstein College of Medicine, New York, NY: *Statistical methods for microbiome data analysis.*

[03/21] (Virtual) Translational Data Science Seminar Series, Fred Hutchinson Cancer Research Center, Seattle, WA: *Systems biology approaches for microbiome data analysis.*

[11/21] (Virtual) Biostatistics Seminar Series, Fred Hutchinson Cancer Research Center, Seattle, WA: *Network-based methods for analysis of microbiome and metabolomic data.*

[11/21] (Virtual) ASA Section of Statistics in Genomics and Genetics (SSGG) Webinars: *id.*

[09/22] (Virtual) Gut Origins of Latino Diabetes (GOLD) Monthly Meeting, Albert Einstein College of Medicine, New York, NY: *Association between gut microbiome and brain structures*

[10/22] Mini-TED Talk at Public Health Sciences Division Faculty Meeting, Fred Hutchinson Cancer Center, Seattle, WA: *Statistical methods for analysis of the microbiome*

[10/22] (Virtual) Fred Hutch-UW Rigor, Reproducibility and Transparency Seminar Series, Seattle, WA: *Statistical methods to enhance reproducible microbiome biomarker discovery*

[04/23] (Virtual) Fred Hutch Microbiome Research Initiative Seminar Series, Seattle, WA: *Systems biology analysis of the microbiome*

[05/23] (Virtual) Fred Hutch Data of Cancer Research Seminar Series, Seattle, WA: *Microbiome data for cancer research*

[06/23] Fred Hutch Public Health Sciences Promotion Seminar, Seattle, WA: *Statistical Data Integration: Principled Methods for Analyzing Multi-view Microbiome Data*

[04/24] Fred Hutch Public Health Sciences All Staff Seminar, Seattle, WA: *Statistical modeling for enhanced microbiome biomarker recovery*

[07/24] Fred Hutch SeattleStatGROWS Scientific Talk, Seattle, WA: *Statistics---A personal journey.*

[05/25] Department of Biostatistics, University of Washington, Seattle, WA: *Multi-Omics Integration with Applications to Microbiome Data Analysis*.

[07/25] Fred Hutch SeattleStatGROWS Scientific Talk, Seattle, WA: *Statistics---A personal journey.*