TIANZHOU (CHARLES) MA

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Departmental Profile ◇ Ma Lab@UMD ◇ UMD BRIGHT

EDUCATION

University of Pittsburgh, Pittsburgh, PA, US

- Ph.D. in Biostatistics, *Apr 2018*
  - Thesis: *Differential expression and feature selection in the analysis of multiple omics studies.*
  - Advisors: George C. Tseng, ScD and Zhao Ren, PhD

Yale University, New Haven, CT, US

- M.S. in Biostatistics, *May 2013*
  - Thesis: *Incorporating functional annotation information in prioritizing disease associated SNPs from genome wide association studies.*
  - Advisor: Hongyu Zhao, PhD

University of Toronto, Toronto, ON, Canada

- Honours B.Sc. in Genes, Genetics and Biotechnology (specialist), *June 2010*
  - *with High Distinction (Summa Cum Laude)*

RESEARCH INTERESTS

- Bioinformatics, Statistical genetics (GWAS and post-GWAS fine mapping) and Multi-omics (e.g. expression of both coding and noncoding RNA, epigenomics, proteomics, etc.)
- Meta-analysis and data integration of omics data and with other data types (e.g. epigenetic regulation of genes, imaging-genetics)
- Statistical learning and high-dimensional variable selection
- Bayesian hierarchical modeling
- Survival data analysis
- Application of statistical and machine learning methods in cancer, neuroscience, psychiatry, addiction, infectious disease and epidemiology fields

PROFESSIONAL EXPERIENCE

- **Associate Professor in Biostatistics** Aug 2024 ∼ Now
  - Department of Epidemiology and Biostatistics, University of Maryland, College Park, MD
- **Assistant Professor in Biostatistics** Aug 2018 ∼ July 2024
  - Department of Epidemiology and Biostatistics, University of Maryland, College Park, MD
- **Assistant Professor in Psychiatry** Feb 2024 ∼ Now
  - Maryland Psychiatry Research Center, School of Medicine, University of Maryland, Baltimore, MD
- **UMD Affiliate** Dec 2018 ∼ Now
  - Maryland Population Research Center, University of Maryland, College Park, MD
- **Associate Member** Mar 2021 ∼ Now

[0]Last modified: November 22, 2024

– University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center (UMGCCC), University of Maryland, Baltimore, MD

PUBLICATIONS

Notes: ^: co-first author; *corresponding author; students underlined;

Also available at My Google Scholar

Under revision, Ready to submit

1. Ke H^, Bhim A^, Pan Y, ..., **Ma T*** and Kochunov P*. (2024+). Predicting cerebral blood flow using voxel-wise resting-state functional MRI. Under revision in *Human Brain Mapping*.
2. Chen C, Chen S, Ye Z, Shi X and **Ma T**. (2024+). Robust Machine Learner for Mean Estimation with Information Integration from Auxiliary Data. Under revision in *JASA*.
3. Chen Y, **Ma T**, Saegusa T. (2024+). Neural Network Assisted Estimation for the Structural Nested Accelerated Failure Time Models. Under review in *Biostatistics*.
4. Pan Y, Bi C, Shardell M, Ye Z, ..., **Ma T**, Wang Z and Chen S. Brain-wide functional connectome analysis of 40,000 individuals reveals brain networks that show aging effects in older adults. (2024). Under revision in *Imaging Neuroscience*.
5. Bankole T, Chen M, Jiang Y, ..., **Ma T**, ..., Li Y. Maternal intake of soybean genistein reduced risk of high fat diet-induced obesity and non-alcoholic fatty liver disease through reshaping offspring gut microbiome, metabolome and liver transcriptome. Under review.
6. Kochunov P, Adhikari B, ..., **Ma T**, Soares J, Hong E. Functional vs. Structural Cortical Deficit Pattern Biomarkers for Major Depressive Disorder: Linked to Reduced Cerebral Blood Flow in Regionally Specific Pattern. (2024+). Under revision.
7. Lai J, Mesquita J, Hong F, **Ma T**, Cowling BJ and Milton DK. Influenza A (H3) viral aerosol shedding in nasally inoculated and naturally infected cases. (2024+). Under revision in *Influenza and Other Respiratory Viruses*.
8. Lai J, Tai S, **Ma T**, Cowling BJ and Milton DK. Comparison of Viral Aerosol Shedding in Influenza, Seasonal Coronavirus, and SARS-CoV-2 in a College Community. (2024+). Under revision in *Clinical Infectious Diseases*.
9. Anvari M, Kattakuzhy S, Ronn, M, ..., **Ma T**, Belcher A, Murphy S, Jeng P and Magidson J. (2024+). Peer Recovery to Improve Polysubstance Use and Mobile Telemedicine Retention (PRISM): A study protocol for a randomized, hybrid effectiveness-implementation trial of peer-delivered behavioral intervention for polysubstance use and medication for opioid use disorder retention in a rural community. Under revision.
10. Magidson J, Regenauer K, Johnson K, **Ma T**, ..., Myers B. (2024+). Siyakhana: A Hybrid Type 2 Effectiveness-Implementation Stepped-Wedge Trial to Reduce Stigma Towards Substance Use and Depression Among Community Health Workers in TB/HIV Care in South Africa. Under revision.
11. Anvari M, Kattakuzhy S, ..., **Ma T**, ..., Magidson J. (2024+). Peer Recovery to Improve Polysubstance Use and Mobile Telemedicine Retention (PRISM): A study protocol for a randomized, hybrid type 1 effectiveness-implementation trial of peer-delivered behavioral intervention for polysubstance use and medication for opioid use disorder retention in a rural community. Under revision.
12. Belus J, Ke H, **Ma T**, Regenauer K, Myers B and Magidson J. (2024+). Effects of HIV and Alcohol Stigma on Biomarker-Confirmed Alcohol Use Following a Peer-Delivered Intervention in South Africa. Under revision in *Drug and Alcohol Dependence*.
13. Hanley A, Nguyen Q, Badawi D, Chen J, **Ma T** and Slopen N. (2024+). Timeliness in Autism Diagnosis and Intervention Among Three Birth Cohorts of Children, 2016-2018. Under revision in *Pediatrics*.
14. Adenaiye O, Mesquita J, Hong F, German J, Tai S, Youssefi S, Albert, B, **Ma T**, ... and Milton D. (2024+). Tracking Acute Respiratory Infections in A College Resident Community. Ready to

submit.

15. Khan S, Adenaiye O, **Ma T**, ..., Milton D and Felgner P. (2024+). Subtype-specific IgA antibodies partially mediate in uenza immunity following vaccination. Ready to submit.
16. Linkov F, Goughnour, S, Vlad A, Elishaev E, **Ma T**, Xu Z, Edwards RP, Ramanathan R, Hamad G and Bovbjerg D. (2024+). Changes in the endometrial immune markers in women undergoing surgical weight loss. Ready to submit.

2024

Major work:

17. Ke H, Ye Z, Feng L, Zhang C, Li E, ... and **Ma T***. (2024+). NGRN: a browser-based platform for the construction, analysis and visualization of noncoding-RNA gene regulatory network from transcriptomic data. Under review.
18. Feng L, Liang M, Ye Z, ..., Chen S* and **Ma T***. (2024+). Association between Life's Essential 8, APOE4 and White Matter Brain Aging. Under review.
19. Canida T, Ke H, Ye Z, Chen S and **Ma T***. (2024). Multivariate Bayesian variable selection for multi-trait genetic fine mapping. *JRSS-C*. Accepted. Earlier arXiv version. A preliminary version has won the ICSA student travel award honorable mention.
20. **Ma T**$^\wedge$, Yang F$^\wedge$, Ke H and Ren Z*. (2024+). Robust distance correlation for variable screening. Under review in *Journal of Computational and Graphical Statistics*. Earlier arXiv version.
21. Feng L, Ye Z, Du Z, Canida T, Ke H, ..., Shenassa E* and **Ma T***. (2024). Association between allostatic load and accelerated white matter brain aging. *American Journal of Epidemiology*. Accepted.
22. Feng L$^\wedge$, Milleson H$^\wedge$, Ye Z, ..., **Ma T***. Nongenetic and genetic factors associated with white matter brain aging: exposome-wide and genome-wide association study. *Genes*. Special Issue: Advances in Bioinformatics and Environmental Health. Accepted.
23. Ye Z$^\wedge$, Pan Y$^\wedge$, Mccoy R, Bi C, Chen M, Feng L,...., **Ma T*** and Chen S*. (2024+). Contrasting association pattern of plasma low-density lipoprotein with white matter integrity in APOE4 carriers versus non-carriers. *Neurobiology of Aging*. Accepted.

Other work:

24. Xu Z, **Ma T**, Tang L, Talisa VB and Chang CCH. (2024). Bayesian response adaptive randomization design with a composite endpoint of mortality and morbidity. *Statistics in Medicine*. Accepted.
25. Lee H, **Ma T**, Ke H and Chen S. (2024+). dCCA: detecting differential covariation patterns between two types of high-throughput omics data. *Briefings in Bioinformatics*. Accepted.
26. Zou J, Shah O, Atkinson J, **Ma T**, Oesterreich S, Lee A and Tseng GC. (2023+). Transcriptomic congruence and selection of representative cancer models towards precision medicine. *Plos Computational Biology*. Accepted.
27. Wu Q, Zhang Y, **Ma T**, Kochunov P and Chen S. (2024). A multivariate to multivariate approach for voxel-wise genome-wide association analysis. *Statistics in Medicine*. Accepted.
28. Myers B, Regenauer K, Rose A, ..., **Ma T**, Sibeko G and Magidson J. (2024). CHW Training to Reduce Mental Health and Substance Use Stigma and Support Re-Engagement in TB/HIV Care in South Africa: Protocol for a Randomized, Stepped Wedge Hybrid Effectiveness-Implementation Trial. *Implementation Science Communications*. Accepted.
29. Bankole T, **Ma T**, ..., Li Z and Li Y. The Effect of Broccoli Glucoraphanin Supplementation on Ameliorating High-Fat-Diet-2 Induced Obesity Through the Gut Microbiome and Metabolome Interface. (2024). *Molecular Nutrition & Food Research*. Accepted.
30. Donohue B, Gao S, Nichols T, ..., **Ma T**, ..., Hong E and Kochunov P. Accelerating heritability, genetic correlation, and genome-wide association imaging genetic analyses in big and complex pedigrees. (2024). *Human Brain Mapping*. Accepted.
31. Cruz-Cano R, Dhimal M, Thu D, Zhang L, **Ma T**, ..., Sapkota A. (2024). A Prototype Early

Warning System for Diarrhoeal Disease to Combat Health Threats of Climate Change in the Asia-Pacific Region *Environmental Research Letters*. Accepted.

32. Lai J, Coleman K, Tai S, ..., **Ma T**, Cowling BJ and Milton DK. Relative efficacy of masks and respirators as source control for viral aerosol shedding from people infected with SARS-CoV-2. (2024).*eBioMedicine*. Accepted.
33. Pan Y, Bi C, Ye Z, ..., **Ma T**, ..., Chen S. Tobacco Smoking Functional Networks: A Whole-Brain Connectome Analysis in 24,539 Individuals. *Nicotine & Tobacco Research*. Accepted.
34. Pan Y, Hong E, Acheson A, ..., **Ma T**, ... Kochunov P and Chen S, A site-wise reliability analysis of the ABCD diffusion fractional anisotropy data: impact of scanner and analytical pipeline. (2024). *Human Brain Mapping*. Accepted.

2023

Major work:

35. Zong W, Rahman T, Zhu L, Zeng X, Zhang Y, Zou J, Liu S, Ren Z, Litman D, Li JJ, Osterreich S, **Ma T*** and Tseng GC*. (2023). Transcriptomic congruence analysis for evaluating model organisms. *Proceedings of the National Academy of Sciences*, 120(6): e2202584120.
36. Ye Z, Mo C, Liu S, Gao S, Feng L, Zhao B, Canida T, Wu Y, ..., Chen S* and **Ma T***. (2023). Deciphering the causal relationship between blood pressure and white matter integrity: a Mendelian Randomization study in the UK Biobank. *Journal of Neuroscience Research*. Accepted.
37. Feng L$^\wedge$, Ye Z$^\wedge$, Mo C, Wang J, Liu S, Gao S, Ke H, Canida T, ..., Chen S* and **Ma T***. (2023). Elevated blood pressure accelerates white matter brain aging among late middle-aged women: a Mendelian Randomization study in the UK Biobank. *Journal of Hypertension*. Accepted.
38. Mo C$^\wedge$, Ye Z$^\wedge$, Hatch K, Zhang Y, Wu Q, Liu S, Kochunov P, **Ma T*** and Chen S*. (2023). An in-depth association analysis of genetic variants within nicotine-related loci: Meeting in middle of GWAS and genetic fine-mapping. *Molecular and Cellular Neuroscience*. Accepted.

Other work:

39. Kochunov P, Ma Y, Hatch K, ..., **Ma T**, Chen S and Hong E. (2023+). Ancestral, Pregnancy, and Negative Early Life Risks Shape Children's Brain Dis/Similarity to Schizophrenia. *Biological Psychiatry*, Accepted.
40. Tian C, Ye Z, ... **Ma T**, ..., Song L. The causal effect of HbA1c on white matter brain aging by two-sample Mendelian randomization analysis. (2023). *Frontiers in Neuroscience*. Accepted.
41. Watson L, Haley D, Turpin R, **Ma T**, Nguyen Q, Mittel M and Dyer T. (2023). Going Beyond SAVA: Exploring Psychosocial and Structural Syndemic Effects as Predictors of HIV Risk Behaviors among Black Women. *Journal of Women's Health*. Accepted.

2022

Major work:

42. Ke H, Ren Z, Qi, J, Chen S, Tseng G, Ye Z and **Ma T***. (2022). High-dimension to high-dimension screening for detecting genome-wide epigenetic and noncoding RNA regulators of gene expression. *Bioinformatics*, 38(17): 4078-4087.
43. Mo C, Wang J, Ye Z, Ke H, ..., Kochunov P, Hong E, **Ma T*** and Chen S*. (2022). Evaluating the causal effect of tobacco smoking on white matter brain aging: a two-sample Mendelian randomization analysis in UK Biobank. *Addiction*, 118(4): 739-749.

Other work:

44. Xing Y, Du Y, Kochunov P, Erp TV, **Ma T** and Calhoun V. (2022). A novel neighborhood rough set-based feature selection method and its application to biomarker identification of schizophrenia. *IEEE Journal of Biomedical and Health Informatics*. Accepted.

45. Kochunov P, Ma Y, Hatch K, Jahanshad N, ..., **Ma T**, ..., Nichols T and Hong E. (2022). Brain-Wide vs. Genome-Wide Vulnerability Biomarkers for Severe Mental Illnesses. *Human Brain Mapping*, 43(16): 4970-4983.

2021

Major work:

46. Ye Z^, Mo C^, Ke H^, Yan Q, Chen C, Chen S* and **Ma T***. (2021). Meta-analysis of transcriptome-wide association studies across 13 brain tissues identified novel clusters of genes associated with nicotine addiction. *Genes*, 13(1): 37.
47. Ye Z^, Mo C^, Liu S^, Hatch K, Gao S, ..., Kochunov P*, Chen S* and **Ma T***. (2021). White matter integrity and nicotine dependence: evaluating vertical and horizontal pleiotropy. *Frontiers in Neuroscience*, 15.
48. Ye Z^, Ke H^, Chen, S, Cruz-Cano, R, He, X, Zhang, J, Dorgan J, Milton D and **Ma T***. (2021). Biomarker categorization in transcriptomic meta-analysis by concordant patterns with application to Pan-cancer studies. *Frontiers in Genetics*, 12.
49. Saegusa T, Zhao Z, Ke H, Ye Z, Xu Z, Chen S and **Ma T***. (2021). Detecting survival-associated biomarkers from heterogeneous populations. *Scientific Reports*, 11(1): 1-12.
50. Mo C^, Ye Z^, Ke H^, Lu T, Canida T, ..., Hong E, Kochunov P, **Ma T*** and Chen S*. (2021). A new Mendelian Randomization method to estimate causal effects of multivariate brain imaging exposures. *Pacific Symposium on Biocomputing (PSB) 2022*, pp. 73-84.
51. Wu Q, **Ma T**, Liu Q, Milton D, Zhang Y and Chen S. (2021). ICN: extracting interconnected communities in gene co-expression networks. *Bioinformatics*. In press. (a preliminary version won the student paper award of American Statistical Association (ASA) Statistics in Imaging Section).
52. Li Y, Rahman T, **Ma T**, Tang L and Tseng GC. (2021). A sparse negative binomial mixture model for clustering RNA-seq count data. *Biostatistics*. In press.

Other work:

53. Chen C, Shen B, **Ma T**, Wang M and Wu R. (2021). A statistical framework for recovering pseudo-dynamic networks from static data. *Bioinformatics*, 38(9): 2481-2487.
54. Rose A, Belus J, **Ma T**, Lee J, Wan C, Reyes A, Joska J, Andersen L, Myers B and Magidson J. (2021). The Relationship Between Harmful Alcohol Use and Antiretroviral Non-adherence in People Accessing HIV Treatment in Cape Town, South Africa: An Event-Level Analysis. *AIDS and Behavior*, 26(6): 2055-2066.
55. Gao S, Donohue B, Hatch K, Chen S, **Ma T**, ..., Nichols T and Kochunov P. (2021). Comparing Empirical Kinship Derived Heritability for Imaging Genetics Traits in UK Biobank and Human Connectome Project. *NeuroImage*, 245:118700.
56. Adenaiye O, Lai J, Bueno de Mesquita PJ, Hong F, ..., **Ma T** and Milton D. (2021). Infectious severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in exhaled aerosols and efficacy of masks during early mild infection. *Clinical Infectious Diseases*, 75(1), e241-e248.
57. Hanley A, Nguyen Q, Badawi D, Chen J, **Ma T** and Slopen N. (2021). The Diagnostic Odyssey of Autism: A Cross-Sectional Study of 3 Age Cohorts of Children from the 2016-2018 National Survey of Children's Health. *Child and Adolescent Psychiatry and Mental Health*, 15(1), 1-9.
58. Kochunov P, Ma Y, Kvarta M, ..., **Ma T**, Chen S, Nichols T and Hong E. (2021). Separating Clinical and Subclinical Depression by Big Data Informed Structural Vulnerability Index and Its impact on Cognition: ENIGMA Dot Product. Pacific Symposium on Biocomputing (PSB) 2022, pp. 133-143.
59. Cruz-Cano R, **Ma T**, Yu Y, Lee M and Liu H. (2021). Forecasting COVID-19 Cases based on Social Distancing in Maryland, U.S.A.: A Time Series Approach. *Disaster Medicine and Public Health Preparedness*, 1-4.

2020

Major work:

60. **Ma T**, Ren Z and Tseng GC. (2020). Variable screening with multiple studies. *Statistica Sinica*, 30(2): 925-953.
61. Saegusa T, **Ma T**, Lee MT, Li G and Chen Y. (2020). Variable selection in censored threshold regression model with applications to HIV drug adherence data. *Statistics in Biosciences*, 12(3): 376-398.

Other work:

62. Wu Q, Milton D, Xing Y, **Ma T**, Zhang Z and Chen S. (2020). Link predictions for incomplete network data with outcome misclassification. *Statistics in Medicine*, 40(6): 1519-1534. (a preliminary version won the student paper award at 2020 Statistical Methods in Imaging (SMI) conference).
63. Zeng X, Zong W, Lin C, Fang Z, Li Y, **Ma T**, Lewis D, Enwright J and Tseng GC. (2020). Comparative Pathway Integrator: a framework of meta-analytic integration of multiple transcriptomic studies for consensual and differential pathway analysis. *Genes*, 11(6): 696.
64. Lin C, Chang L, **Ma T**, Oh H, French, B, ..., Tseng G and Sibille E. (2020). Older Molecular Brain Aging in Severe Mental Illness. *Molecular Psychiatry*, 1-11.
65. Yu Y, Liu S, Tao J, Ren B, Chen Z, Li F, Nalesnik M, **Ma T**, ..., Tseng G and Luo J. (2020). Pten-NOLC1 fusion promotes cancers involving MET and EGFR signalings. *Oncogene*, 40 (6), 1064-1076.

2019

Major work:

66. **Ma T**^, Huo Z^, Kuo A^, ..., Song C and Tseng GC. (2019). MetaOmics - Comprehensive Analysis Pipeline and Web-based Software Suite for Transcriptomic Meta-Analysis. *Bioinformatics*, 35(9): 1597-1599. PMID: 30518877.
67. Zhu L, Huo Z, **Ma T** and Tseng G. (2019). Bayesian indicator variable selection model with multi-layer overlapping groups. *Annals of Applied Statistics*, 13(4): 2611-2636. (a preliminary version won the ENAR 2018 distinguished student paper award).

Other work:

68. Huo Z, Zhu L, **Ma T**, ..., Zhao J and Tseng G. (2019). Two-way Horizontal and Vertical Omics Integration for Disease Subtype Discovery. *Statistics in Biosciences*, 12(1): 1-22.
69. Grabosch S, Bulatovic M, Zeng F, **Ma T**, ..., Edwards R and Vlad A. Cisplatin-induced immune modulation in ovarian cancer mouse models with distinct inflammation profiles. *Oncogene*, 38(13): 2380-2393. PMID: 30518877.

2018

Major work:

70. Fang Z, **Ma T**, Zhu L, ..., Tang G and Tseng GC. (2018). A Bayesian Model for Integrating High-Throughput Multi-Omics Data with Missingness Handling. *Bioinformatics*, 34(22):3801-3808. PMID: 30184058.

Other work:

71. Andersen CL, Boisen MM, Sikora MJ, **Ma T**, ..., Edwards RP and Oesterreich S. (2018). The evolution of estrogen receptor signaling in the progression of endometriosis to endometriosis-associated ovarian cancer. *Hormones and Cancer*, 9(6): 399-407. PMID: 30302736.
72. Scifo E, Pabba M, Kapadia F, **Ma T.**, Lewis DA, Tseng GC and Sibille E. (2018). Sustained molecular pathology across episodes and remission in depression. *Biological Psychiatry*, 83(1):

81-89. PMID: 28935211.

2017

Major work:

73. **Ma T**, Liang F and Tseng GC. (2017). Biomarker detection and categorization in ribonucleic acid sequencing meta-analysis using Bayesian hierarchical models. *Journal of the Royal Statistical Society: Series C*, 66(4): 847-867. (won ASA Section on Bayesian Statistical Science (SBSS) student paper award to attend 2017 JSM, reported on RNA-Seq Blog)
74. **Ma T**, Liang F, Oesterreich S and Tseng GC. (2017). A Joint Bayesian Model for Integrating Microarray and RNA Sequencing Transcriptomic Data. *Journal of Computational Biology*, 24(7): 647-662. (selected to present at Dahshu Data Science Symposium: Computational Precision Health 2017 and won the best paper award)
75. **Ma T**, Song C and Tseng GC. (2017). Discussant paper on "Statistical contributions to bioinformatics: Design, modelling, structure learning and integration". *Statistical Modelling*, 17(4-5): 305-315.

Other work:

76. Andersen CL, Sikora MJ, Boisen MM, **Ma T**, ..., Edwards RP and Oesterreich S. (2017). Active estrogen receptor-alpha signaling in ovarian cancer models and clinical specimens. *Clinical Cancer Research*, 23(14): 3802-3812. PMID: 28073843.
77. Linkov F, Goughnoura SL, **Ma T**, Xu Z, ..., McCloskey C and Bovbjerg DH. (2017). Changes in inflammatory endometrial cancer-associated biomarkers in individuals undergoing surgical weight loss. *Gynecologic Oncology*. Accepted. PMID: 28797697.
78. French L, **Ma T**, Oh H, Tseng GC and Sibille E. (2017). Age-related gene expression in the frontal cortex suggests synaptic function changes in specific inhibitory neuron subtypes. *Frontiers in aging neuroscience*, 9: 162. PMID: 28611654.
79. Pabba M, Scifo E, Kapadia F, Nikolova YS, **Ma T**, Mechawar N, Tseng GC and Sibille E. (2017). Resilient protein co-expression network in male orbitofrontal cortex layer 2/3 during human aging. *Neurobiology of Aging*, 58: 180-190. PMID: 28750307.
80. Grabosch S, Tseng G, Edwards RP, Lankes HA, Moore K, Odunsi K, Vlad A, **Ma T**, ..., Walker JL and Birrer M. (2017). Multiplex profiling identifies distinct local and systemic alterations during intraperitoneal chemotherapy for ovarian cancer: An NRG Oncology/Gynecologic Oncology Group Study. *Gynecologic Oncology*, 146(1):137-145. PMID: 28483269.

2016 and before

81. Liu S, Tsai W, Ding Y, Chen R, Fang Z, Huo Z, Kim S, **Ma T**, ..., Chung I and Tseng GC. (2016). Comprehensive evaluation of fusion transcript detection algorithms and a meta-caller to combine top performing methods in paired-end RNA-seq data. *Nucleic Acids Research*, 44(5):e47. PMID: 26582927.
82. Zhang L, **Ma T**, ..., Tseng G and Vlad AM. (2016). Effects of Kras activation and Pten deletion alone or in combination on MUC1 biology and epithelial to mesenchymal transition in ovarian cancer. *Oncogene*, 35(38): 5010-20. PMID: 26973247.
83. Chen CY, Logan RW, **Ma T**, Lewis DA, Tseng GC, Sibille E and McClung CA. (2016). Effects of aging on circadian patterns of gene expression in the human prefrontal cortex. *Proceedings of the National Academy of Sciences*, 113(1): 206-21. PMID: 26699485. (High Attention Paper, 99th percentile, News on National Public Radio (NPR))
84. Sanei-Moghaddam A, **Ma T**, ..., Mansuria SM and Linkov F. (2016). Changes in hysterectomy trends after the implementation of a clinical pathway. *Obstetrics & Gynecology*, 127(1), 139-147. PMID: 26646126.
85. Mony JT, Zhang L, **Ma T**, ..., Huang X and Vlad AM. (2015). Anti-PD-L1 prolongs survival and triggers T cell but not humoral anti-tumor immune responses in a human MUC1-expressing

preclinical ovarian cancer model. *Cancer Immunology, Immunotherapy*, 64(9):1095-108. PMID: 25998800.

86. Liao S, Hartmaier RJ, McGuire KP, Puhalla SL, Luthra S, Chandran UR, **Ma T**, ..., Tseng GC and Oesterreich S. (2015). The molecular landscape of premenopausal breast cancer. *Breast Cancer Research*, 17(1): 1-13. PMID: 26251034. (discussed in an interview; *Nature*, 527: S108-109)
87. Suryawanshi S, Huang X, Elishaev E, Budiu RA, Zhang L, Kim S, Donnellan N, Mantia-Smaldone G, **Ma T**, ..., Edwards RP and Vlad AM. (2014). Complement Pathway Is Frequently Altered in Endometriosis and Endometriosis-Associated Ovarian Cancer, *Clinical Cancer Research*, 20(23): 6163-6174. PMID: 25294912.
88. Hou L^, **Ma T**^ and Zhao H. (2014). Incorporating functional annotation information in prioritizing disease associated SNPs from genome wide association studies. *Science China Life Sciences*, 57(11): 1072-1079.

Book

89. Tseng GC, Huo Z and **Ma T**. Foundations for High-Throughput Omics Data Analysis: Methods, Theories and Applications. *Chapman & Hall/CRC*. In preparation and expected in 2022.

ABSTRACTS

1. White K, Robinson-Ector K, Wei M, **Ma T**, Bell B and Quinones A. DISCRIMINATION TRAJECTORIES, RESILIENCE CHARACTERISTICS, AND MULTIMORBIDITY AMONG MIDDLE-AGED AND OLDER BLACKS. (2022). SESSION 2300 (SYMPOSIUM).
2. Hatch K, Donohue B, **Ma T**, Chen S, Ma Y, Gao S, Hong E, Jahanshad N, Thompson P, Kochunov P. Novel Application of Algorithmic Approaches and Parallel GPU Computing for Voxel-wise Heritability and Voxel-wise Genome-Wide Association Studies. OHBM 2021, virtual.
3. Belus J, Ke, H, **Ma T**, Rose A, Regenauer K, Andersen L, Joska J, Safren S, Myers B and Magidson J. Alcohol-specific reward as a mediator of a behavioral activation intervention to reduce problematic substance use in people living with HIV in South Africa. ABCT 2021, New Orleans, LA.
4. Adenaiye O, Lai J, Hong F, Tai S, German J, Youssefi S, Mesquita P, Albert B, **Ma T**, Weston S, Frieman M and Milton D. Viral Shedding from Persons Infected with SARS-CoV02: Aerosols, Droplet Spray, and Fomites. AAAR 2021, Albuquerque, NM.

TEACHING

- **Lecturer, University of Maryland**
  - EPIB652: Categorical Data Analysis Fall 2020, 2021, 2022, 2023, 2024 (peer-observed by Dr. Xin He)
  - EPIB664: Missing Data Analysis Fall 2019, Spring 2022
  - EPIB661: Applied Multivariate Data Analysis Spring 2019, 2020, 2021, 2023
- **Guest Lecturer, University of Maryland**
  - EPIB633: Health Survey Design and Analysis *Missing data imputation using SAS* Oct 2019
- **Lecturer, University of Pittsburgh**
  - BIOST2094: Advanced R Computing (with Zhiguang Huo; 16 students) Spring 2017
  - BIOST2025: Special Studies in Bayesian Data Analysis (with George Tseng, Zhiguang Huo and Li Zhu) Fall 2016
  - BIOST2094: Statistical Computing in R Spring 2015
- **Guest Lecturer, University of Pittsburgh**
  - BIOST2078: Introductory high-throughput genomic data analysis II: theories and algorithms: *Selected Bayesian Methods in Genomic Studies* Dec 2015

- **Teaching Assistant, University of Pittsburgh and Yale University**
  - BIOST 2078: Introductory high-throughput genomic data analysis II: theories and algorithms Fall 2015
  - IMED 645: Introduction to Biostatistics, Yale University School of Medicine Summer 2012
- **Teaching workshops attended, University of Maryland**
  - "Power Up Your Course Evals: Give Quality and Timely Feedback", UMD TLTC, 02/03/22
  - "Grading Faster & More Fairly Designing & Using Rubrics", UMD TLTC, 08/24/22
  - "Intersectional Pedagogy - Level 1", UMD TLTC, 10/24/22

STUDENT MENTORING

- Academic advisor, PhD in STAT-BB or STAT:
  - Rong Pan 2024-Now
  - Zhangchi Xu 2023-Now
  - Farrah Mariam Askari (passed oral candidacy exam 05/2024) 2023-Now
  - Neng Wang (passed oral candidacy exam 01/2023) 2022-Now
  - Travis Canida (passed oral candidacy exam 12/2022) 2021-Now
  - Hongjie Ke (Graduated in 07/2024) Outstanding Graduate Assistant Award AY 22-23, University of Maryland) 2020-2024
- Academic advisor, Other programs:
  - Li Feng, PhD in Nutritional science (co-advised with David Lei; Graduated in 05/2024) 2022-2024
  - Zhenyao Ye, PhD in Genetics (co-advised with Shuo Chen) 2021-Now
- Academic advisor and thesis/project committee chair, MPH in Biostatistics:
  - Naod Dawit 2024-Now
  - Henna Datta 2023-Now
  - Pavithra Mani 2023-Now
  - Brittney Yockey 2023-Now
  - Tina Zhen 2023-Now
  - Jacobs Schneider 2023-Now
  - Alisa Kotz 2022-2023
  - Sayed Hashimos 2022-Now
  - Soroor Saidian 2021-Now
  - Mackensie Horn (current position: Data analyst, Henry Jackson Foundation) 2021-2022
  - Ameri Mahsa (current position: Data Administrator, Amarex Clinical Research Inc.) 2020-2022
  - Amanda Behdin (current position: Statistician, Noridian Healthcare) 2020-2022
  - Boao Zhao (current position: PhD in Statistics, George Mason University) 2020-Now
  - Erica Lee (current position: DO student at Edward Via College of Osteopathic Medicine (VCOM)) 2020-Now
  - Kevin Chuang (current position: Research Assistant II at Henry Jackson Foundation) 2019-2021
  - John Yee (current position: Statistician, U.S Census Bureau) 2019-2020
  - Megan Gerdes (current position: ORISE fellow, CDC) 2019-2020
  - Eunsol Shim (current position: Statistician, U.S Census Bureau) 2019-2020
  - Zhenyao Ye (Gold Research Award 2020 Department of Epidemiology and Biostatistics; current position: PhD candidate in Human Genetics, University of Maryland) 2018-2020
  - Manyun Zhao (current position: Biostatistician at Northwestern University) 2018-2020

- PhD dissertation committee:
  - Rebecca Rosenstein, PhD in Nutritional science 2023-2024
  - Zuping Wang, PhD in STAT-BB 2024
  - Zhiwei Zhao, PhD in STAT-BB 2024
  - Tong Lu, PhD in STAT-BB 2021-2024
  - Yifan Yang, PhD in Statistics 2020-2023
  - Yujiang Ge, PhD in STAT-BB 2020-2022
  - Yiming Chen, PhD in STAT-BB 2020-2022
  - Qiong Wu, PhD in Statistics 2019-2021
  - Lauren Kauffman, PhD in Epidemiology 2022-2024
  - Jianyu Lai, PhD in Epidemiology 2021-2023
  - Jackie Reuben, PhD in Epidemiology 2021-2022
  - Lakeshia Watson, PhD in Epidemiology 2020-2022
  - Sarah Irvin, PhD in Epidemiology 2020-2022
  - Julia Callaway, PhD in Epidemiology 2020-Now
  - Alli Hanley, PhD in Epidemiology 2019-2021
  - Jun Chu, PhD in Health Service 2020-2022
  - Nicholas Rachmaninoff, PhD in Computational Biology 2021-2022
  - Nicole Sieck, PhD in Environmental Health Sciences 2022-2023
  - Rosemary Ezeugoh, PhD in Environmental Health Sciences 2020-2022
- MPH thesis committee:
  - Samantha Ammons, MPH in Epidemiology 2019
  - Angie Barrall, MPH in Epidemiology 2019
- MPH capstone project committee:
  - Luz Maria Villanueva, MPH in Biostatistics 2024
  - Ria Warrier, MPH in Biostatistics 2024
  - Natalia Alfaro, MPH in Biostatistics 2024
  - Hana Tekle, MPH in Epidemiology 2023
  - Crystal Najib, MPH in Epidemiology 2023
  - Rebecca Mead, MPH in Epidemiology 2022
  - Molly Lutrey, MPH in Epidemiology 2022
  - Erica Luciani, MPH in Epidemiology 2022
  - Hannah Col, MPH in Epidemiology 2022
  - Adele Fu, MPH in Epidemiology 2022
  - Lauren Kauffman, MPH in Epidemiology 2021
  - Yan Qiao, MPH in Epidemiology 2020
  - William Le-Hoang, MPH in Epidemiology 2020
- PhD independent study:
  - Wing Yan Yuen , PhD in STAT-BB Fall 2020
  - Jianyu Lai , PhD in STAT-BB Fall 2020
  - Yifan Yang, PhD in Statistics Spring 2020
  - Yunjiang Ge, PhD in STAT-BB Spring 2019
  - William Evans, PhD in Kinesiology Spring 2019
- Summer student research (master, undergraduate, high school):
  - Halley Milleson (Senior student at U Virginia; current position: MS in STAT-BB, UMD) Summer 2024

- Eric Li (Senior student at UMD Math; current position: MS in Biostatistics, Harvard University) Summer 2024
- Zewen Du (MS in Biostatistics at NYU; current position: PhD in Biostatistics, University of Pittsburgh) Summer 2023
- Priyanshi Patel (Senior at River Hill HS; current position: UMD Honors College) Summer 2022

RESEARCH SUPPORT

Active:

- **1K01DA059603-01A1, NIH/NIDA, PI: Tianzhou Ma**
  - A novel transcriptome-connectome approach to study the neurogenetic mechanism of nicotine and cannabis addiction.
  - Period: 09/01/24-08/31/28
  - Total direct costs: $653,024
  - Role: PI
  - Efforts: 75%
- **Grand Challenges Grant, UMD, PI: Tianzhou Ma**
  - Genetic and lifestyle risk factors of accelerated brain aging in severe mental illness: a multimodal and multi-omics approach.
  - Period: 03/01/23-02/28/26
  - Total direct costs: $150,000
  - Role: PI
  - Efforts: 0%
- **1R01DA057443-01, NIH/NIDA, PI: Jessica Magidson**
  - Peer-Delivered, Behavioral Activation Intervention to Improve Polysubstance Use and Retention in Mobile Telemedicine OUD Treatment in an Underserved, Rural Area.
  - Period: 09/30/22-09/29/27
  - Total direct costs: $1,702,973
  - Role: Co-I
  - Efforts: 7%
- **R01DA056102, NIH/NIDA, PI: Jessica Magidson**
  - Stepped Care, Peer-Delivered Intervention to Improve ART Adherence and SUD in Primary Care.
  - Period: 08/01/22-06/30/27
  - Total direct costs: $3,062,531
  - Role: Co-I
  - Efforts: 5%
- **1DP1DA048968-01, NIH/NIDA, PI: Shuo Chen**
  - A Multivariate Mediation and Deep Learning Framework for Genome-Connectome-Substance Use Research.
  - Period: 09/1/19-8/31/24
  - Total direct costs: $463,500
  - Role: Site PI
  - Efforts: 20%
- **R01EB015611, NIH/NIBIB, PI: Peter Kochunov**

  - Solar-Eclipse Computational Tools for Imaging Genetics.
  - Period: 09/1/21-8/31/24
  - Total direct costs: $463,500
  - Role: Site PI
  - Efforts: 17%

- **20216701734007, USDA/NIFA/AFRI, PI: Yuanyuan Li**
  - Effects of maternal soybean diet and early-life gut microbial development on long-term health consequences of the progenies.
  - Period: 01/01/23-8/31/25
  - Total direct costs: $500,000
  - Role: Co-I
  - Efforts: 5%

- **R34MH122268, NIH/NIMH, PI: Jessica Magidson**
  - Training CHWs to Support Re-Engagement in TB/HIV Care in the Context of Depression and Substance use.
  - Period: 07/30/20-05/31/23
  - Total direct costs: $689,139
  - Role: Co-I
  - Efforts: 5%

- **R01AG062315-01A1, NIH/NIA, PI: Jie Chen**
  - Effect of Hospital and Community Care Coordination on Health Care Quality and Equity among Individuals with Risk Factors or Diagnosis of ADRD.
  - Period: 03/01/21-02/28/24
  - Total direct costs: $1,233,474
  - Role: Co-I
  - Efforts: 5%

- **20216801533435, USDA-NIFA, PI: Hee-Jung Song**
  - Effects of an integrated system approach on hypertension management in community dwelling older adults.
  - Period: 10/01/20-09/30/23
  - Total direct costs: $553,285
  - Role: Co-I
  - Efforts: 5%

- **75N93021C00014, NIH/NIAID, PI: Donald K. Milton**
  - NIAID Centers of Excellence for Influenza Research and Response (CEIRR).
  - Period: 04/01/2021-03/31/2028
  - Total direct costs: $6,001,311
  - Role: Co-I
  - Efforts: 7%

Pending:

- **R03, NIH/NIA, PI: Tianzhou Ma**
  - A multi-omics approach to study allostatic load and its impact on brain aging in older adults.
  - Period: 09/01/24-08/31/26
  - Total direct costs: $200,000
  - Role: PI

- Efforts: 10%

- **R21, NIH/NIDA, PI: Tianzhou Ma**
  - A novel gene-to-imaging study that integrates GWAS, multi-omics QTL and brain imaging data to unveil the neurogenetic mechanism of nicotine addiction.
  - Period: 09/01/23-08/31/25
  - Total direct costs: $275,000
  - Role: PI
  - Efforts: 25%
  - Reviewed, impact score: 57

- **BBI Seed Grant, UMD, PI: Tianzhou Ma, Kellee White**
  - Racial disparity in brain aging and its risk factors.
  - Period: 01/01/23-12/31/23
  - Total direct costs: $132,365
  - Role: PI
  - Efforts: 0%
  - Reviewed, unfunded

- **R01, NIH/NIDA, PI: Shuo Chen**
  - New analytical methods to investigate the neurological risk score of nicotine addiction.
  - Period: 09/30/22-09/29/25
  - Total direct costs: $92,240 (UMCP portion)
  - Role: Site PI
  - Efforts: 10%

- **Breakthrough Award, DoD, PI: Joanne Dorgan**
  - Physiologic estrogens and biomarkers of breast cancer recurrence following neoadjuvant aromatase inhibitor therapy.
  - Period: 09/30/22-09/29/25
  - Total direct costs: $52,390 (UMCP portion)
  - Role: Site PI
  - Efforts: 15%

- **CERSI, FDA, PI: Joanne Dorgan**
  - Physiologic estrogens and biomarkers of breast cancer recurrence following neoadjuvant aromatase inhibitor therapy.
  - Period: 03/01/22-08/31/23
  - Total direct costs: $26,557 (UMCP portion)
  - Role: Site PI
  - Efforts: 7%

- **MAES Competitive Grant, USDA/NIFA/AFRI, PI: Yuanyuan Li**
  - Broccoli seed glucoraphanin prevents obesity-induced metabolic disorders: interplay between early-life gut microbiome, metabolome and epigenome.
  - Period: 01/01/23-12/31/23
  - Total direct costs: $30,000
  - Role: Co-I
  - Efforts: 0%

Completed:

- **MPower BHHP seed grant, UMD, PI: Tianzhou Ma, Peter Kochunov**

  - Genetic risk factors of accelerated brain aging in severe mental illness: an imaging genetics approach.
  - Period: 04/01/2021 - 03/31/2022
  - Total direct costs: $100,000
  - Role: PI
  - Efforts: 0%

- **025806624609, Icahn School of Medicine at Mount Sinai, PI: Donald K. Milton**
  - E-VERIFY: Biology of Human Influenza in Respiratory Droplets.
  - Period: 09/01/2019 – 09/30/2021
  - Role: Co-I
  - Efforts: 8%

- **N66001-17-2-4023 and N66001-18-2-4015, DARPA BTO, PI: Donald K. Milton**
  - Contagious Phenotypes of Acute Respiratory Infection: Identification, Characterization, and Biomarkers.
  - Period: 10/01/2018 – 12/31/2020
  - Role: Statistician and Bioinformatician
  - Efforts: 25%

- **Faculty-student research award AY20-21, University of Maryland**
  - Novel statistical methods for long non-coding RNA biomarker detection using RNA-Seq data.
  - Period: 09/01/2020 - 08/31/2021
  - Total direct costs: $10,000
  - Role: PI
  - Efforts: 0%

- **Faculty start-up fund, University of Maryland Department of Epidemiology and Biostatistics**
  - Period: 08/23/2018 - 08/01/2019
  - Total direct costs: $30,000

PRESENTATIONS

Talks

- **Invited**. JSM 2025, Nashville, TN Aug 2025
  - *Application of sparse group regularization in Transcriptome-Wide Association Studies to determine pathway-level genetic risk of brain aging.*
- **Invited**. Statgen 2024, Pittsburgh, PA May 2024
  - *Bayesian variable selection model for Phenome-wide Transcriptome-wide association studies fine mapping.*
- **Invited**. ENAR 2024, Baltimore, MD Mar 2024
  - *High-dimension-to-high-dimension Bayesian variable selection for Phenome-wide Transcriptome-wide association studies fine mapping.*
- **Invited**. JSM 2023, Toronto, Canada Aug 2023
  - *Bayesian indicator variable selection for multivariate response with application to multi-trait fine mapping.*
- Seminar talk, Department of Epidemiology and Biostatistics, University of Maryland Oct 2022
  - *Transcriptomic congruence analysis for evaluating model organisms.*
- **Invited** (Virtual). ICSA 2022 China Conference, Xi'an, China July 2022
  - *A Cox model based two-stage variable selection method for the detection of survival associated biomarkers with multiple genomic studies.*

- **Invited** (Virtual). EcoSta 2022 , Kyoto, Japan June 2022
  - *High-dimension to high-dimension screening for detecting genome-wide epigenetic regulators of gene expression.*
- **Invited**. ICSA Symposium 2022 , Gainsville, Florida June 2022
  - *A fast and robust variable screening method for detecting genome-wide epigenetic regulators of gene expression.*
- **Invited**. Department of Mathematics, University of Maryland Oct 2021
  - *Novel variable screening methods for omics data integration.*
- **Invited** (Virtual). UM Greenebaum Comprehensive Cancer (UMGCCC), University of Maryland School of Medicine June 2021
  - *Congruence evaluation for model organisms in transcriptomic response.*
- **Invited** (Virtual). Department of Biostatistics and Bioinformatics, Georgetown University Dec 2020
  - *High-dimensional variable screening: from single study to multiple studies.*
- **Invited** (Cancelled due to Covid-19). WNAR, Anchorage June 2020
  - *Deep learning model using network topology of linkage disequilibrium patterns increases the accuracy of polygenic risk scores.*
- **Invited** (Cancelled due to Covid-19). University of Maryland School of Medicine May 2020
  - *Poorly mimic or greatly mimic? A model-based evaluation with functional characterization for comparison of differential transcriptomic systems across model organisms.*
- **Invited**. The 11th ICSA International Conference, Hangzhou, China Dec 2019
  - *Variable screening with multiple studies and its application in survival analysis.*
- **Invited**. JSM 2019, Denver, CO Aug 2019
  - *Variable screening with multiple studies and its application in survival analysis.*
- **Invited**. The 2nd Conference on Lifetime Data Science, Pittsburgh, PA May 2019
  - *Variable selection in censored threshold regression model with applications to HIV drug adherence data.*
- ENAR 2019 Spring meeting, Philadelphia, PA March 2019
  - *Variable screening with multiple studies.*
- School of Public Health, University of Maryland College Park Oct 2018
  - *Statistical and computational methods for the meta-analysis and resemblance analysis of transcriptomic studies.*
- **Invited**. Department of Epidemiology and Biostatistics, University of Maryland College Park Dec 2017
  - *Differential expression analysis in multiple omics studies.*
- **Invited**. (Withdrawal). Department of Epidemiology and Biostatistics, University of Southern Carolina Feb 2018
  - *Differential expression analysis in multiple omics studies.*
- **Invited**. (Withdrawal). Department of Epidemiology and Biostatistics, University of Arizona Feb 2018
  - *Differential expression analysis in multiple omics studies.*
- **Invited**. (Withdrawal). Department of Mathematics and Statistics, University of Vermont Feb 2018
  - *Differential expression analysis in multiple omics studies.*
- JSM 2017, Baltimore, MD Aug 2017
  - *Biomarker detection and categorization in RNA-seq meta-analysis using Bayesian hierarchical model.*
- ENAR 2017 Spring meeting, Washington, DC March 2017
  - *Biomarker detection and categorization in RNA-seq meta-analysis using Bayesian hierarchical model.*
- Dahshu Data Science Symposium: Computational Precision Health 2017, San Franscisco, CA Feb 2017

  - *A joint Bayesian modeling for integrating microarray and RNA-seq transcriptomic data.*
- JSM 2016, Chicago, IL Aug 2016
  - *Biomarker detection and categorization in RNA-seq meta-analysis using Bayesian hierarchical model.*
- **Invited**. Statistical Genetics/Genomes Lab, University of Pittsburgh Dec 2015
  - *A Bayesian hierarchical model for RNA-seq meta-analysis and biomarkers categorization by study heterogeneity.*
- **Invited**. The 5th Annual Women's Cancer Research Center (WCRC) Retreat, Farmington, PA Nov 2015
  - *Immune gene signature pairs predict survival in immune-reactive cancer patients: a Pan-cancer analysis.*

Posters

- Poster (Selected; Virtual). 2021 NIDA GECCRT Meeting, National Institute of Health (NIH) March 2021
  - *White matter integrity and nicotine dependence in smokers: evaluating vertical and horizontal pleiotropy.*
- Poster, ASA Spring Banquet, Pittsburgh, PA April 2016
  - *A Bayesian hierarchical model for RNA-seq meta-analysis and biomarkers categorization by study heterogeneity.*
- Poster, GSPH Dean's day competition, University of Pittsburgh April 2016
  - *Disrupted circadian rhythms at the molecular level in Bipolar disorder (BP) and Schizophrenia (SCZ).*
- Poster, ENAR 2017 Spring meeting, Austin, TX March 2016
  - *A Bayesian hierarchical model for RNA-seq meta-analysis and biomarkers categorization by study heterogeneity.*
- Poster, GSPH Dean's day competition, University of Pittsburgh April 2015
  - *Cross-species Gene Expression Analysis: In what functional domains do mouse models predict human disease on a molecular basis?*

AWARDS

- Maryland Research Excellence 2023 Honoree, University of Maryland Apr 2023
- MPower BHHP seed grant, University of Maryland Mar 2021
- Faculty-student research award AY20-21, University of Maryland Dec 2019
- Delta Omega Membership, Delta Omega Honorary Society in Public Health Apr 2018
- Student Paper Award, ASA Section on Bayesian Statistical Science (SBSS) Aug 2017
- Student of the Year, American Statistics Association (ASA) Pittsburgh chapter Apr 2017
- Best Paper Award, Dahshu Data Science Symposium: Computational Precision Health 2017 Feb 2017
- Best Student Presentation Award, Department of Biostatistics, University of Pittsburgh Apr 2017
- Travel Award to attend "Optimization Opening Workshop", SAMSI Research Triangle Park Aug 2016
- Outstanding Graduate Student Researcher Award, Department of Biostatistics, University of Pittsburgh Apr 2016
- Dean's Day Poster Competition Award, GSPH, University of Pittsburgh Apr 2015
- Three consecutive years on Dean's list, Faculty of Arts and Science, University of Toronto 2008-2010,
- Three consecutive years' recipient of University College Scholarship, University College, University of Toronto, 2008-2010

CONFERENCE/SESSION ORGANIZING

- Invited session "Recent development of causal inference methods for neuroimaging and multi-omics data", JSM 2023, Toronto, ON, Canada, 08/2023
- Invited session "Integrative analysis of multi-modal neuroimaging and multi-omics data", ENAR 2023, Nashville, TN, 03/2023
- Invited session "Recent advances in statistical methods for big biomedical data integration", ICSA 2020 (Virtual), 12/2020
- First UMD-SPH Conference on Big Data in Public Health, University of Maryland, College Park, MD, 02/28/2020
  - $>$ 200 attendees from 35 different institutions and organizations.
  - See news report on UMD-SPH website.

DEPARTMENTAL/SCHOOL/UNIVERSITY SERVICE

- Department:
  - EPIB Graduate Student Recruitment/Admissions Committee (2018-present)
  - EPIB Curriculum Committee (2019-present)
  - EPIB PhD Comprehensive Exam Committee (2023-present)
  - EPIB Executive Committee (2019-2022)
  - TTK Faculty Search Committee (2023.09-present)
  - TTK Faculty Search Committee (2022.09-present)
  - PTK Faculty Search Committee (Chair, 2022.08-2022.12)
  - PTK Faculty Search Committee (Chair, 2021.01-2021.07)
  - TTK Faculty Search Committee (2020.10-2021.06)
- School:
  - Undergraduate Degree Program Task Force Committee (2019-present)
- University:
  - Department Liason to the University Library System (2018-present)
  - University Academic Standards And Procedures (APAS) Committee (2019-2021)

PROFESSIONAL SERVICE

Editorial Service

- Guest Editor, *Frontiers in Genetics*: New analytical methods and applications for brain imaging genetics, 2021.11-
- Editorial Board, *Imaging Neuroscience*, 2023.1-
- Editorial Board, *NeuroImage: Reports*, 2021.12-

Grant Review Service

- NIH ad-hoc reviewer for Behavioral Genetics and Epidemiology study section (BGES), meeting on Feb 8-9th, 2022.

Organization Committee

- ICSA Awards Nomination Committee, 2022.4-

Journal Referee

- Statistical journals: *Bioinformatics* (5+), *Statistics in Medicine*, *Bayesian Analysis*, *Computational Statistics and Data Analysis*, *Annals of Applied Statistics*, *American Statistician*, Journal

of Biopharmaceutical Statistics, *Statistical Analysis and Data Mining*, *Statistics and Its Interface*, *The American Statistician*, *Communications in Statistics - Theory and Methods*, *Journal of Statistical Planning and Inference*.

- Scientific journals: *Human Brain Mapping* (5+), *PLOS One* (3+), *Nature Communication*, *Nucleic Acid Research*, *Briefings in Bioinformatics* (5+), *PLOS Computational Biology*, *NeuroImage*, *Schizophrenia Bulletin*, *Neural Computation*, *Journal of Nervous and Mental Disease*, *Genome Medicine*, *BMC Bioinformatics*, *BMC Medical Research Methodology*, *Cancer Immunology, Immunotherapy*, *Aging*, *Scientific Reports*, *Frontiers in Genetics*, *Frontiers in Cell and Developmental Biology*.

Conference Referee

- Reviewer for submitted papers, Pacific Symposium on Biocomputing 2022.

Service to the Profession

- Chair, 2020 ICSA Houston, session 43: Recent advances in statistical methods for big biomedical data integration
- Chair, The 11th ICSA International Conference, session :
- Chair, 2019 ENAR Spring meeting, session 85: Meta-analysis
- 2016-2018, American Statistical Association Pittsburgh Chapter Student Representative

CONFERENCES AND WORKSHOPS

- ICSA China 2022 (hybrid), Xi'an, China. July 2022
- ICSA Applied Statistics Symposium 2022, Gainsville, FL. July 2022
- EcoSta 2022 (hybrid), Tokyo, Japan. June 2022
- SRNT Annual Meeting 2022, Baltimore, MD. May 2022
- PSB 2022, Big Island, Hawaii. Jan 2022
- ASHG Annual Meeting 2021 (virtual). Oct 2021
- ICSA Applied Statistics Symposium 2020 (virtual). Dec 2020
- JSM Aug 2016-2017, 2019, 2022
- ENAR Spring meeting March 2014-2017, 2019, 2021 (virtual)
- NIDA Genetics and Epigenetics Research Meeting, Rockville, MD. 2019, 2020, 2021 (virtual)
- The 11th ICSA International Conference, Hangzhou, China. Dec 2019
- The 2nd Conference on Lifetime Data Science, Pittsburgh, PA. May 2019
- 2017 Summer Short Course on Causal Discovery and Datathon, Pittsburgh, PA. June 2017
- 3rd Annual Statistical Methods in Imaging Conference, Pittsburgh, PA. May 2017
- Computational Precision Health 2017, San Franscisco, CA. Feb 2017
- Optimization Opening Workshop, SAMSI, Research Triangle Park, NC. Aug 2016
- 5th Annual WCRC Retreat, Nemacolin Woodlands Resort, PA. Nov 2015

PROGRAMMING AND SOFTWARES

- R, SAS, Stata, C++, Python, UNIX shell scripting and others.

MEMBERSHIP

- Member of American Statistical Association *Sep 2013 ∼ Now*
- Member of Eastern North American Region International Biometric Society *Sep 2013 ∼ Now*
- Member of International Chinese Statistical Association *Mar 2015 ∼ Now*

HOBBIES

Writing, Playing baskeball and soccer.