

Kai Wang

College of Public Health Curriculum Vitae
Department of Biostatistics
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Educational and Professional History

Degrees Earned

1986	BA in Mathematics, Lanzhou University
1989	MA in Econometrics, Nankai University
1996	MA in Economics, University of Iowa, Iowa City, Iowa
1999	PhD in Statistics, University of Iowa, Iowa City, Iowa

Employment History

1989 - 1992	Instructor, Department of Mathematics, Nankai University, Tianjin, China
1999 - 1999	Research Assistant Professor, Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, Alabama
1999 - 2003	Assistant Professor, Department of Biostatistics Division of Statistical Genetics, University of Iowa, Iowa City, Iowa
2003 - 2005	Assistant Professor, Program in Public Health Genetics, College of Public Health, University of Iowa, Iowa City, Iowa
2005 - 2007	Associate Professor, Program in Public Health Genetics, College of Public Health, University of Iowa, Iowa City, Iowa
2007 - 2013	Associate Professor, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
2013 - Present	Professor, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa

Honors and Awards

1984	Outstanding Student Award, Lanzhou University
1999	NSF travel grant for the CBMS Summer Course on Inferences from Genetic Data on Pedigrees, Michigan Technical University
2001	New Investigator Research Award, College of Public Health and College of Medicine, University of Iowa
2002	NSF travel grant for the Workshop on Developments and Challenges in Mixture Models, Bump Hunting and Measurement Error Models, Case Western Reserve University
2002	NSF travel grant for the Frontiers of Statistical Research: A Celebration of the 40th Anniversary of the Department of Statistics at Texas A&M University, Texas A&M University

2003	Finalist in Post-doctoral Neal Young Investigator Award, International Genetic Epidemiology Society Conference, Los Angeles, CA
2005	Mathematical & Physical Sciences Funding Program Award, University of Iowa
2005	University of Iowa international travel grant for the joint meeting of the Chinese Society of Probability and Statistics (CSPS) and the Institute of Mathematical Statistics (IMS), CSPS and IMS
2016	Best Paper Awards, 5th Annual Global Healthcare Conference: GHC 2016, Singapore, Singapore Our paper is one of the two papers received this award
2019	Inducted into Delta Omega Honorary Society in Public Health, College of Public Health, The University of Iowa, Iowa City, Iowa
2019	Recognition from Thank-a-Teacher Program, Center for Teaching, Iowa City, Iowa
2020	Best Paper Award for "Treatment Effects on an Outcome under Nonlinear Modeling", 2020 Meeting of International Society for Data Science and Analytics, Notre Dame, Indiana
2022	Stanford/Elsevier's list of world's top 2% Scientists in their fields
2023	Stanford/Elsevier's list of world's top 2% Scientists in their fields
2023	College of Public Health Faculty Research Award, College of Public Health, The University of Iowa, Iowa City, Iowa
2023	Dr. Carol S. Gleich Development Award, College of Public Health, The University of Iowa, Iowa City, Iowa
2024	Stanford/Elsevier's list of world's top 2% Scientists in their fields

Teaching

Course Teaching

Instructor, University of Iowa

- BIOS:4120 (aka 171:161): Introduction to Biostatistics (F03, S12, S19)
- BIOS:5130 (aka 171:241): Applied Categorical Data Analysis (F08, F09, F10, F13, F14, F15, F16, F18, F19, F23)
- BIOS:5310 (aka 171:164): Research Data Management (F11)
- BIOS:5710 (aka 171:201): Biostatistical Methods I (F00)
- BIOS:5720 (aka 171:202): Biostatistical Methods II (S01)
- BIOS:5730 (aka 171:203): Biostatistical Methods in Categorical Data (S09, S11, S13, S14, S15, S16, S21, S22)
- BIOS:6210: Applied Survival Analysis (S17, S18, S20, S21, S23)
- BIOS:7210: Survival Data Analysis (F21, F23)
- BIOS:7600 (aka 171:290): Advanced Biostatistics Seminar (S10, F12, S18, F24)
- 171:162: Design & Analysis of Biomedical Studies (S07)
- 171:274 (aka 185:278): Computational Methods in Statistical Genetics (S02, F02, F04, F06, S08)
- 171:272: Statistical Genetics II: Continuous Traits (F03)
- 171:281: Independent Study in Biostatistics (F10, S11, Su11, F11, S12)
- 185:272: Population and Quantitative Genetics (F05, F07)

Guest lecturer, University of Iowa

- Iowa Summer Institute in Biostatistics (Su 10, Su11, Su12)
- GENE:7191 (aka 127:191): Human Molecular Genetics (S10, S22, S24)
- CEE:5390: PCBs in the Environment (F22)
- 63:176: Biostatistical Methods I (F99)
- 55:195: Computational Biology (F99)

Mentoring and Student Supervision

- Completed PhD dissertations for which I was advisor
 - Conditional linkage methods--searching for modifier genes in a large Amish pedigree with known Von Willebrand disease major gene modification. Diana Abbott, Program in Public Health Genetics, 2009. (Co-advisor)
 - Penalized methods in genome-wide association studies. Jin Liu, Department of Statistics and Actuarial Science, 2011. (Co-advisor)
 - A Moving-window penalization method and its applications. Minli Bao, Applied Mathematical and Computational Sciences, 2017.
- Committee member for 58 PhD dissertations, including 6 current ones. The departments/programs these dissertations are from include
 - Applied Mathematical and Computational Sciences (2)
 - Bioinformatics
 - Biomedical Engineering
 - Biostatistics (13)
 - Environmental Engineering
 - Epidemiology (5)
 - Interdisciplinary Graduate Program in Human Toxicology (14)
 - Interdisciplinary Graduate Program in Genetics (5)
 - Microbiology
 - Nursing
 - Occupational and Environmental Health (7)
 - Ophthalmology and Visual Sciences (2)
 - Pharmacy
 - Program in Public Health Genetics
 - Preventive Medicine (2)
 - Statistics and Actuarial Sciences
- Committee member for 8 (1 MS and 7 PhD) Comprehensive Exam Committee. The related departments include
 - Biostatistics
 - Epidemiology (3)
 - Interdisciplinary Graduate Program in Human Toxicology (2)
 - Nursing
 - Preventive and Community Dentistry
- Completed MS student preceptorship projects for which I served as advisor
 - The total number is 17, two of them were published (one in *Briefings in Biostatistics* and the other in *Genes*).
- Served as academic advisor for 32 MS students, including 5 current ones.

Scholarship/Professional Productivity

Publications or creative works

Peer-reviewed papers and journal articles

1. Collaborative Linkage Study of Autism: Barret, S., Beck, J., Berniew, R., Bisson, E., Braun, T., Cassavant, T., Childress, D., Folstein, S. E., Garcia, M., Gardiner, M. B., Gilman, S., Haines, J. L., Hopkins, K., Landa, R., Meyer, N. H., Mullane, J. A., Nishimura, D. Y., Palmer, P., Piven, J., Prudy, J., Santangelo, S. L., Searby, C., Sheffield, V. C., Singleton, J., Slager, S., Struchen, T., Svenson, S., Vieland, V. J., Wang, K. & Winklosky, B. (1999). An autosomal genomic screen for autism. (Vols. 88). (6), pp. 609-615. *Am J Med Genet.* [PMID: 11811142.](#)
2. Wang, K., Vieland, V. & Huang, J. (1999). A Bayesian approach to replication of linkage findings. (Vols. 17). (Supplement 1), pp. S749-S754. *Genet Epidemiol.* [PMID: 10597525.](#)
3. Wang, K., Huang, J. & Vieland, V. J. (2000). The consistency of the posterior probability of linkage. (Vols. 64). (Part 6), pp. 533-553. *Ann Hum Genet.* [PMID: 11281217.](#)
4. Huang, J., Vieland, V. J. & Wang, K. (2001). Nonparametric estimation of marginal distributions under bivariate truncation with application to testing for age-of-onset anticipation. (Vols. 11). pp. 1047-1068. *Statistica Sinica.*
5. Bradford, Y., Haines, J., Hutcheson, H., Gardiner, M., Braun, T., Sheffield, V., Cassavant, T., Huang, W., Wang, K., Vieland, V., Folstein, S., Santangelo, S. & Piven, J. (2001). Incorporating language phenotypes strengthens evidence of linkage to autism. (Vols. 105). (6), pp. 539-547. *Am J Med Genet.* [PMID: 11496372.](#)
6. Vieland, V. J., Wang, K. & Huang, J. (2001). Power to detect linkage based on multiple sets of data in the presence of locus heterogeneity: Comparative evaluation of model-based linkage methods for affected sib pair data. (Vols. 51). (4), pp. 199-208. *Hum Hered.* [PMID: 11287741.](#)
7. Wang, K., Huang, J., Logue, M. & Vieland, V. J. (2001). Combined multipoint analysis of multiple asthma data sets based on the posterior probability of linkage. (Vols. 21). (Supplement 1), pp. S73-S78. *Genet Epidemiol.* [PMID: 11793769.](#)
8. Wang, K. & Huang, J. (2002). A score-statistic approach for the mapping of quantitative-trait loci with sibships of arbitrary size. (Vols. 70). (2), pp. 412-424. *Am J Hum Genet.* [PMID: 11791211.](#) [PMCID: PMC384916.](#)
9. Wang, K. & Huang, J. (2002). Score test for mapping quantitative-trait loci with sibships of arbitrary size when the dominance effect is not negligible. (Vols. 23). (4), pp. 398-412. *Genet Epidemiol.* [PMID: 12432506.](#)
10. Wang, K. (2002). Efficient score statistics for mapping quantitative trait loci with extended pedigrees. (Vols. 54). (2), pp. 57-68. *Hum Hered.* [PMID: 12566738.](#)
11. Morcuende, J. A., Minhas, R., Dolan, L., Stevens, J., Beck, J., Wang, K., Weinstein, S. L. & Sheffield, V. (2003). Allelic variants of human melatonin 1-A receptor (hMel-1A) in patients with familial adolescent idiopathic scoliosis. (Vols. 28). (17), pp. 2025-2029. *Spine.* [PMID: 12973153.](#)
12. Yang, X., Wang, K., Huang, J. & Vieland, V. J. (2003). Genome-wide linkage analysis of blood pressure under locus heterogeneity. (Vols. 4). (Supplement 1), pp. S78. *BMC Genet.* [PMID: 14975146.](#) [PMCID: PMC1866517.](#)
13. Zhang, X. & Wang, K. (2003). Bivariate linkage analysis of cholesterol and triglyceride levels in Framingham heart study. (Vols. 4). (Supplement 1), pp. S62. *BMC Genet.* [PMID: 14975130.](#) [PMCID: PMC1866500.](#)
14. Wang, K. (2003). Mapping quantitative trait loci using multiple phenotypes in general pedigrees. (Vols. 55). (1), pp. 1-15. *Hum Hered.* [PMID: 12890921.](#)
15. Wang, K. (2003). Score tests for epistasis models on quantitative traits using general pedigree data. (Vols. 25). (4), pp. 314-326. *Genet Epidemiol.* [PMID: 14639701.](#)

16. Wang, K. & Peng, Y. (2003). Linkage analysis of systolic blood pressure: A score statistic and computer implementation. (Vols. 4). (Supplement 1), pp. S77. BMC Genet. [PMID: 14975145](#). [PMCID: PMC1866516](#).
17. Wang, K. (2004). A note on asymptotic properties of affected-sib-pair linkage tests. (Vols. 68). (Part 4), pp. 367-375. Ann Hum Genet. [PMID: 15225162](#).
18. Sander, M. D., Abbasi, D., Ferguson, A. L., Steyers, C. M., Wang, K. & Morcuende, J. A. (2005). The prevalence of hereditary neuropathy with liability to pressure palsies in patients with multiple surgically treated entrapment neuropathies. (Vols. 30A). (6), pp. 1236-1241. Journal of Hand Surgery-American. [PMID: 16344182](#).
19. Wang, K. & Sheffield, V. C. (2005). A constrained-likelihood approach to marker-trait association studies. (Vols. 77). (5), pp. 768-780. Am J Hum Genet. [PMID: 16252237](#). [PMCID: PMC1271386](#).
20. Wang, K. (2005). A likelihood approach for quantitative-trait-loci mapping with selected pedigrees. (Vols. 61). (2), pp. 465-473. Biometrics. [PMID: 16011693](#).
21. Wang, K. & Peng, Y. (2006). Quantitative-trait-locus mapping in the presence of locus heterogeneity. (Vols. 70). (Part 6), pp. 882-892. Ann Hum Genet. [PMID: 17044863](#).
22. Bishop, J. R., Wang, K., Moline, J. & Ellingrod, V. L. (2007). Association analysis of the metabotropic glutamate receptor type 3 gene (GRM3) with schizophrenia. (Vols. 17). (6), pp. 358. Psychiatr Genet. [PMID: 18075480](#).
23. Fingert, J. H., Alward, W. M., Kwon, y. H., Wang, K., Streb, L. M., Sheffield, V. C. & Stone, E. M. (2007). LOXL1 mutations are associated with exfoliation syndrome in patients from the Midwestern United States. *American Journal of Ophthalmology* 144 (6) 974-975. [PMID: 18036875](#).
24. Wang, K. (2008). An analytic study of the power of popular quantitative-trait-locus mapping methods. (Vols. 38). (5), pp. 554-559. Behav Genet. [PMID: 18766435](#).
25. Ho, B. C., Epping, E., Wang, K., Andreasen, N. C., Librant, A. & Wassink, T. H. (2008). Basic helix-loop-helix transcription factor NEUROG1 and schizophrenia: Effects on illness susceptibility, MRI brain morphometry and cognitive abilities. (Vols. 106). (2-3), pp. 192-199. Schizophrenia Research. [PMID: 18799289](#). [PMCID: PMC2597152](#).
26. Maddox, C., Wang, B. X., Kirby, P. A., Wang, K. & Ludewig (2008). Mutagenicity of 3-methylcholanthrene, PCB3, and 4-OH-PCB3 in the lung of transgenic BigBlue® rats. (Vols. 25). (2), pp. 260-266. Environmental Toxicology and Pharmacology. [PMID: 18438460](#). [PMCID: PMC2346436](#).
27. Wang, K. & Abbott, D. (2008). A principal components regression approach to multilocus genetic association studies. (Vols. 32). (2), pp. 108-118. Genet Epidemiol. [PMID: 17849491](#).
28. Wang, K. (2008). Genetic association tests in the presence of epistasis or gene-environment interaction. (Vols. 32). (7), pp. 606-614. Genet Epidemiol. [PMID: 18435472](#).
29. Zhang, Y., Xiao, X. & Wang, K. (2009). Accommodating population stratification in case-control association analysis: a new test and its application to genome-wide study on rheumatoid arthritis. (Vols. 3). (Suppl 7), pp. S111. BMC Proceedings. [PMID: 20017976](#). [PMCID: PMC2795883](#).
30. Xiao, X., Zhang, Y. & Wang, K. (2009). Association of KCNB1 to rheumatoid arthritis via interaction with HLA-DRB1. (Vols. 3). (Suppl 7), pp. S134. BMC Proceedings. [PMID: 20018001](#). [PMCID: PMC2795908](#).
31. Wang, K. (2009). Testing for genetic association in the presence of population stratification in genome-wide association studies. (Vols. 33). (7), pp. 637-645. Genet Epidemiol. [PMID: 19235185](#).
32. Hu, D., Lehmler, H., Martinez, A., Wang, K. & Hornbuckle, K. C. (2010). Atmospheric PCB congeners across Chicago. (Vols. 44). (12), pp. 1550-1557. Atmos Environ. [PMID: 21918637](#). [PMCID: PMC3171135](#).
33. Lively, G. D., Koehn, D., Hedberg-Buenz, A., Wang, K. & Anderson, M. (2010). Quantitative trait loci associated with murine central corneal thickness. (Vols. 42). (2), pp. 281-286. Physiological Genomics. [PMID: 20423963](#). [PMCID: PMC3032283](#).
34. Jacobus, J. A., Wang, B., Maddox, C., Esch, H., Lehmann, L., Robertson, L. W., Wang, K., Kirby, P. & Ludewig, G. (2010). 3-Methylcholanthrene (3-MC) and 4-Chlorobiphenyl (PCB3) genotoxicity is gender-

- related in Fischer 344 transgenic rats. (Vols. 36). (8), pp. 970-979. *Environ Int.* [PMID: 20739065](#). [PMCID: PMC2949545](#).
35. Lively, G. D., Jiang, B., Hedberg-Buenz, A., Chang, B., Peterson, G. E., Wang, K., Kuehn, M. H. & Anderson, M. G. (2010). Genetic dependence of central corneal thickness among inbred strains of mice. (Vols. 51). (1), pp. 160-171. *Invest Ophthalmol Vis Sci.* [PMID: 19710407](#). [PMCID: PMC2869057](#).
 36. Martinez, A., Wang, K. & Hornbuckle, K. C. (2010). Fate of PCB congeners in an industrial harbor of Lake Michigan. (Vols. 44). (8), pp. 2803-2808. *Environ Sci Technol.* [PMID: 20131898](#). [PMCID: PMC3257175](#).
 37. Xie, W., Wang, K., Robertson, L. W. & Ludewig, G. (2010). Investigation of mechanism(s) of DNA damage induced by 4-monochlorobiphenyl (PCB3) metabolites. (Vols. 36). (8), pp. 950-961. *Environment International.* [PMID: 20129669](#). [PMCID: PMC2888624](#).
 38. Xie, W., Ludewig, G., Wang, K. & Lehmler, H. (2010). Model and cell membrane partitioning of perfluorooctanesulfonate is independent of the lipid chain length. (Vols. 76). (1), pp. 128-136. *Colloids and Surfaces, B, Biointerfaces.* [PMID: 19932010](#). [PMCID: PMC2818369](#).
 39. Martinez, A., Norstrom, K., Wang, K. & Hornbuckle, K. C. (2010). Polychlorinated biphenyls in the surficial sediment of Indiana Harbor and Ship Canal, Lake Michigan. (Vols. 36). (8), pp. 849-854. *Environment International.* [PMID: 19268364](#). [PMCID: PMC2888873](#).
 40. Shyy, W., Wang, K., Gurnett, C. A., Dobbs, M. B., Smith, N. H., Wise, C., Sheffield, V. C. & Morcuende, J. A. (2010). Evaluation of GPR50, hMel-1B, and ROR-alpha melatonin-related receptors and the etiology of adolescent idiopathic scoliosis. (Vols. 30). (6), pp. 539-543. *J Pediatr Orthop.* [PMID: 20733416](#). [PMCID: PMC2928583](#).
 41. Fingert, J. H., Alward, W. L., Wang, K., Yorio, T. & Clark, A. F. (2010). Assessment of SNPs associated with the human glucocorticoid receptor in primary open-angle glaucoma and steroid responders. (Vols. 16). pp. 596-601. *Mol Vis.* [PMID: 20376328](#). [PMCID: PMC2848919](#).
 42. Sun, X., Sui, H., Fisher, J. T., Yan, Z., Lui, X., Cho, H. J., Joo, N. S., Zhang, Y., Zhou, W., Lei-Butters, D. C., Yi, Y., Griffin, M. A., Naumann, P., Luo, M., Ascher, J., Wang, K., Wine, J. J., Meyerholz, D. K. & Engelhardt, J. F. (2010). Disease phenotype of a ferret CFTR-knockout model of cystic fibrosis. (Vols. 120). (9), pp. 3149-3160. *J Clin Invest.* [PMID: 20739752](#). [PMCID: PMC2929732](#).
 43. Schindler, E. I., Nylen, E. L., Ko, A. C., Affatigato, L. M., Heggen, A. C., Wang, K., Sheffield, V. C. & Stone, E. M. (2010). Deducing the pathogenic contribution of recessive ABCA4 alleles in an outbred population. (Vols. 19). (19), pp. 3693-3701. *Hum Mol Genet.* [PMID: 20647261](#). [PMCID: PMC2935854](#).
 44. Shyy, W., Wang, K., Sheffield, V. C. & Morcuende, J. A. (2010). Evaluation of embryonic and perinatal myosin gene mutations and the etiology of congenital idiopathic clubfoot. (Vols. 30). (3), pp. 231-234. *J Pediatr Orthop.* [PMID: 20357587](#). [PMCID: PMC2913130](#).
 45. Fabbro, S., Kahr, W. H., Hinckley, J., Wang, K., Moseley, J., Ryu, G. Y., Nixon, B., White, J. G., Bair, T., Schutte, B. & Paola, J. D. (2011). Homozygosity mapping with SNP arrays confirms 3p21 as a recessive locus for gray platelet syndrome and narrows the interval significantly. (Vols. 117). (12), pp. 3430-3434. *Blood.* [PMID: 21263149](#). [PMCID: PMC3069679](#).
 46. Mullins, R. F., Dewald, A. D., Streb, L. M., Wang, K., Kuehn, M. H. & Stone, E. M. (2011). Elevated membrane attack complex in human choroid with high risk complement factor H genotypes. (Vols. 93). (4), pp. 565-567. *Exp Eye Res.* [PMID: 21729696](#). [PMCID: PMC3206185](#).
 47. Kuehn, M. H., Wang, K., Roos, B., Stone, E. M., Kwon, Y. H., Alward, W. L., Mullins, R. F. & Fingert, J. H. (2011). Chromosome 7q31 POAG locus: ocular expression of caveolins and lack of association with POAG in a US cohort. (Vols. 17). pp. 430-435. *Mol Vis.* [PMID: 21321670](#). [PMCID: PMC3038208](#).
 48. Wang, K. & Huang, J. (2011). Treating phenotype as given: A simple resampling method for genome-wide association studies. (Vols. 5). (Supplement 9), pp. S60. *BMC Proceedings.* [PMID: 22373312](#). [PMCID: PMC3287899](#).
 49. Lai, I. K., Chai, Y., Simmons, D., Watson, W. H., Tan, R., Haschek, W. M., Wang, K., Wang, B., Ludewig, G. & Robertson, L. W. (2011). Dietary selenium as a modulator of PCB 126-induced hepatotoxicity in male Sprague Dawley rats. *Toxicol Sci* 124 (1) 202-214. [PMID: 21865291](#). [PMCID: PMC3196656](#).

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51. Wang, B., Robertson, L. W., Wang, K. & Ludewig, G. (2011). Species difference in the regulation of cytochrome P450 2S1: Lack of induction in rats by the aryl hydrocarbon receptor agonist PCB126. *Xenobiotica* 41 (12) 1031-1043. [PMID: 21970748](#). [PMCID: PMC3564674](#).
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54. Mikulski, M., Hartley, P., Sprince, N., Sanderson, W., Lourens, S., Worden, N., Wang, K. & Fuortes, L. (2011). Risk and significance of chest radiograph and pulmonary function abnormalities in an elderly cohort of former nuclear weapons workers. (Vols. 53). (9), pp. 1046-1053. *J Occup Environ Med*. [PMID: 21866051](#).
55. Anney, R. J., Kenny, E. M., O'Dushlaine, C., Yaspan, B. L., Parkhomenka, E., Buxbaum, J. D., Sutcliffe, J., Gill, M., Gallagher, L., Bailey, A. J., Fernandez, B. A., Szatmari, P., Scherer, S. W., Patterson, A., Marshall, C. R., Pinto, D., Vincent, J. B., Fombonne, E., Betancur, C., Delorme, R., Leboyer, M., Bourgeron, T., Mantoulan, C., Roge, B., Tauber, M., Freitag, C. M., Poustka, F., Duketis, E., Klauck, S. M., Poustka, A., Papanikolaou, K., Tsiantis, J., Bolshakova, N., Brennan, S., Hughes, G., McGrath, J., Merikangas, A., Ennis, S., Green, A., Casey, J. P., Conroy, J. M., Regan, R., Shah, N., Maestrini, E., Bacchelli, E., Minopoli, F., Stoppioni, V., Battaglia, A., Iglizzo, R., Parrini, B., Tancredi, R., Oliveira, G., Almeida, J., Duque, F., Vicente, A., Correia, C., Magalhaes, T. R., Gillberg, C., Nygren, G., De Jonge, M., Van Engeland, H., Vorstman, J. A., Wittemeyer, K., Baird, G., Bolton, P. F., Rutter, M. L., Green, J., Lamb, J. A., Pickles, A., Parr, J. R., Le Couteur, A., Berney, T., McConachie, H., Wallace, S., Coutanche, M., Foley, S., White, K., Monaco, A. P., Holt, R., Farrar, P., Pagnamenta, A. T., Mirza, G. K., Ragoussis, J., Sousa, I., Sykes, N., Wing, K., Hallmayer, J., Cantor, R. M., Nelson, S. F., Geschwind, D. H., Abrahams, B. S., Volkmar, F., Pericak-Vance, M. A., Cuccaro, M. L., Gilbert, J., Cook, E. H., Guter, S. J., Jacob, S., Nurnberger, J. I. & McDougle, C. J. (2011). Gene-ontology enrichment analysis in two independent family-based samples highlights biologically plausible processes for autism spectrum disorders. *Eur J Hum Genet* 19 (10) 1082-1089. [DOI: 10.1038/ejhg.2011.75](#).
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177. Tran, C., Choi, D., Wang, K., Carter, K. D., Ko, A. C. & Shriver, E. M. (2023). Trends in Horizontal Periocular Asymmetry. *Canadian Journal of Ophthalmology* 58 (3) 229-234.
178. Roh, T., Knappett, P. S., Han, D., Ludewig, G., Kelly, K. M., Wang, K. & Weyer, P. J. (2023). Characterization of Arsenic and Atrazine Contaminations in Drinking Water in Iowa: A Public Health Concern. *Int. J. Environ. Res. Public Health* 20 (7) 5397.
179. Tang, Y., Fakhari, S., Huntemann, E. D., Feng, Z., Wu, P., Feng, W. Y., Lei, J., Yuan, F., Excoffon, K. J., Wang, K., Limberis, M. P., Kolback, R., Yan, Z. & Engelhardt, J. F. (2023). Immunosuppression reduces rAAV2.5T neutralizing antibodies that limit efficacy following repeat dosing to ferret lungs. *Molecular Therapy-Methods & Clinical Development* 29 70-80.
180. Herbach, E. L., Nash, S. H., Lizarraga, I. M., Carnahan, R. M., Wang, K., Ogilvie, A. C., Curran, M. & Charlton, M. E. (2023). Patterns of evidence-based care for the diagnosis, staging, and first-line treatment of breast cancer by race-ethnicity: a SEER-Medicare study. *Cancer Epidemiology, Biomarkers & Prevention* 32 (10) 1312-1322.
181. Liang, Y., Casteel, C., Janssen, B., Wang, K. & Rohlman, D. S. (2023). Organizational Resources and Social Support Influences on Stress and Depression: A Comparison among Cooperative and Non-Cooperative Farmers. *Journal of Agromedicine* 28 (2) 177-186.
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183. Wagner, V. A., Holl, K. L., Clark, K. C., Reho, J. J., Lehmler, H., Wang, K., Grobe, J. L., Dwinell, M. R., Raff, H. & Kwitek, A. E. (2023). The Power of the Heterogeneous Stock Rat Founder Strains in Modeling Metabolic Disease. *Endocrinology* 164 (12) bqad157.
184. Mullins, R.F., Mulfaul, K., Khan, A.H., Schwarte, S.G., Voigt, A.P., Moore, R.F., Wang, K., Scheetz, T.E., Stone, E.M., Tucker, B.A. (2024). Elevation of Granulocyte colony stimulating factor (G-CSF) in human AMD donor RPE-choroid. *Investigative Ophthalmology & Visual Science*.
185. Wang, K. & Alberding, SY. (2024). Powerful test of heterogeneity in two-sample summary-data Mendelian randomization. *Statistics in Medicine*. 43, 5791-5802.
186. Wang, K. (2024). Interval estimate of causal effect in summary data based Mendelian randomization in the presence of winner's curse. *Genetic Epidemiology*, 48(2) 74-84.
187. Yao, Z., Wang, K., Jin, S., Zhou, F., Wang, J. & Zou, X. (2024). A novel multiscale framework for delineating cancer evolution from subclonal compositions. *Journal of Theoretical Biology*. 582:111743.
188. Herbach, E. L., Curran, M., Roberson, M. L., Carnahan, R. M., McDowell, B. D., Wang, K., Lizarraga, I., Nash, S. H. & Charlton, M. (2024). Guideline-Concordant Breast Cancer Care by Patient Race-Ethnicity Accounting for Individual- Facility- and Area-Level Characteristics: A SEER-Medicare Study. *Cancer Causes & Control* 35:1017-1031.
189. Bullert, A. J., Li, X., Gautam, B., Wang, H., Adamcakova-Dodd, A., Wang, K., Thorne, P. & Lehmler, H. (2024). Distribution of 2,2',5,5'-Tetrachlorobiphenyl (PCB52) Metabolites in Adolescent Rats After Acute Nose-Only Inhalation Exposure. *Environmental Science & Technology*, 58(14), 6105-6116.
190. Li, X., Wang, H., Wang, H., Bullert, A. J., Cui, J. Y., Wang, K. & Lehmler, H. (2024). Germ-free status but not subacute polychlorinated biphenyl (PCB) exposure altered hepatic phosphatidylcholine and ether-phosphatidylcholine levels in mice. *Toxicology*, 504, 153790.
191. Evans, I. A., Sun, X., Liang, B., Vegter, A. R., Guo, L., Lynch, T., Zhang, Y., Zhang, Y., Yi, Y., Yang, Y., Feng, Z., Park, S. Y., Shonka, A., McCumber, H., Qi, L., Wu, P., Liu, G., Lacina, A., Wang, K., Gibson-Corley, K. N., Meyerholz, D. K., Limoli, D., Rosen, B. H., Yan, Z., Bartels, D. J. & Engelhardt, J. F. (2024). In Utero and Postnatal Ivacaftor/Lumacaftor Therapy Rescues Multi-Organ Disease in CFTR-F508del Ferrets. *JCI Insight*, 9(8): e157229.

Books

1. Huang, J. & Wang, K. (2003). Semiparametric methods for mapping quantitative trait loci. In Huang, J. & Zhang, H. (Eds.) Development of Modern Statistics and Related Topics. pp. 262-271. New Jersey: World Scientific Publishing Co.

Non-peer-reviewed journal articles

1. Mendell, N. R., Babron, M., Boddeker, I., Chiu, Y., Grigull, J., Eerdewegh, P. V. & Wang, K. (2001). Introduction: Heterogeneity. (Vols. 21). (Suppl 1), pp. S42-S43. Genet Epidemiol.
2. König, I. R., Nsengimana, J., Papachristou, C., Simonson, M. A., Wang, K. & Weisburd, J. A. (2011). Multiple Testing in High-Throughput Sequence Data: Experiences from Group 8 of the Genetic Analysis Workshop 17. GAW 17.

Conference Proceedings

1. Wang, K. (2016). A robust statistical method for constructing 3D chromosome structure using Hi-C chromatin interaction data. Phuket: Proceedings of International Conference on Applied Statistics 2016.
2. Xu, Y., Dai, D. & Wang, K. (2016). A flexible penalized integrated analysis of mRNA and miRNA expression levels as biomarkers for endometrial cancer classification. pp. 53-58. Singapore: Proceedings of the 5th Annual Global Healthcare Conference (GHC 2016). ISSN: 2251-3833

Software

1. Wang, K. (2012). R package iGasso. <https://cran.r-project.org/web/packages/iGasso/>
2. Wang, K. (2017). R package iMediate. <https://cran.r-project.org/web/packages/iMediate/>

Research Interests/Current Projects

- Causal Inference (Mendelian randomization)
- Deep learning
- Statistical genetics/genomics
- Collaborative research on all the funded projects
- Mediation analysis
- Bioinformatics

Grants and Contracts

Active (Funded)

1. Iowa Superfund Research Program: Airborne PCBs: Sources, Exposures, Toxicities, Remediation; National Institutes of Health; Wang, Kai (Co-Investigator), Hornbuckle, Keri (Principal Investigator)
 - P42 ES013661
 - May 12, 2006 - Jan 31, 2025
 - Amount: \$54,450,883.00, 13% effort
2. VA-IPA: Effect of Gut Microbiome Dysbiosis in the Pathology of Multiple Sclerosis; US Department of Veterans Affairs, Iowa City; Wang, Kai (Principal Investigator)
 - Feb 1, 2021 - Jan 31, 2025
 - Amount: \$128,480.00, 20% effort
3. Environmental Factors in Pathobiology of Dementia: the Role of PCB Exposure, Microbiome, and Tissue Barrier Dysfunction; National Institutes of Health; Wang, Kai (Co-Investigator), Lehmler, Hans-Joachim (Principal Investigator)
 - R01 ES034691

- Jan 1, 2023 - Nov 30, 2025
 - Amount: \$2,186,707.00, 5% effort
4. Multidisciplinary Investigations in Visual Science; National Institutes of Health; Wang, Kai (Co-Investigator), Sheffield, Val (Principal Investigator)
 - P30 EY025580
 - Sep 1, 2016 - Jun 30, 2026
 - Amount: \$5,721,807.00, 2% effort
 5. MMP-9 based immune-driven mechanisms of neovascular AMD; National Institutes of Health; Wang, Kai (Co-Investigator), Sohn, Elliott (Principal Investigator)
 - R01 EY035435
 - Sep 1, 2023 - Jan 31, 2027
 - Amount: \$2,161,756.00, 3% effort
 6. Environmental Health Sciences Research Center; National Institutes of Health; Wang, Kai (Co-Investigator), Lehmler, Hans-Joachim (Principal Investigator)
 - P30 ES005605
 - Sep 29, 1990 - Mar 31, 2027
 - Amount: \$48,536,606.00, 10% effort
 7. Genetic Factors for Glaucoma in the OHTS: Risk, Progression and Mechanism; National Institutes of Health; Wang, Kai (Co-Investigator), Fingert, John (Principal Investigator)
 - R01 EY035266
 - Sep 30, 2023 - Jan 31, 2028
 - Amount: \$2,016,265.00, 10% effort

Completed

1. A collaborative linkage study of autism; National Institutes of Health; Wang, Kai (Co-Investigator), Sheffield, Val (Principal Investigator). R01, Mar - May 2001, 21% effort
2. Linkage analysis under linkage disequilibrium and disease locus heterogeneity; College of Public Health-College of Medicine New Investigator Award; Wang, Kai (Principal Investigator). Jan - Dec 2001, 0% effort
3. Sampling models and methods for complex genetic diseases; NIMH; Wang, Kai (Co-Investigator), Vieland, Veronica (Principal Investigator). R01, Mar 2001 - Jul 2003, 25% effort
4. Infrastructure to Facilitate Discovery of Autism Genes; National Institutes of Health; Wang, Kai (Co-Investigator), Vieland, Veronica (Principal Investigator), R01, Aug 2002 - Jul 2003, 17% effort
5. A novel approach for finding genes in autism; NIMH; Wang, Kai (Co-Investigator), Wassink, Tom (Principal Investigator), R01, Jul - Aug 2003, 25% effort
6. Genetic Mapping of Familial Adolescent Idiopathic Scoliosis; COM HHMI Pilot Collaborative project; Wang, Kai (Co-Investigator), Morcuende, Jose (Principal Investigator), 2003 – 2005, 0% effort
7. Locating genes responsible for continuous traits: A software tool; University of Iowa, Mathematical & Physical Sciences Funding Program; Wang, Kai (Principal Investigator), 2005, 0% effort
8. Molecular Biology of Syndromic Retinal Degeneration; National Institutes of Health; Wang, Kai (Co-Investigator), Sheffield, Val (Principal Investigator), R01, Aug 1, 2002 - Jul 30, 2007, 10% effort
9. Elderly Cancer Survivors: Cognitive Outcomes and Markers of Neurodegeneration; National Institutes of Health; Wang, Kai (Co-Investigator), Schultz, Susan (Principal Investigator), R01 CA122934, Jul 1, 2007 - Jun 30, 2008, 5% effort
10. Robust Statistical Methods for Studies of Susceptibility to Environmentally Induced Diseases; Environmental Health Sciences Research Center (EHSRC) Pilot Grant; Wang, Kai (Principal Investigator), Apr 1, 2009 - Mar 31, 2010, Amount: \$23,200.00, 0% effort

11. Prediction of Relapse in Schizophrenia; National Institutes of Health; Wang, Kai (Co-Investigator), Miller, Del (Principal Investigator), U01 MH070010, Jul 1, 2008 - Dec 31, 2010, 5% effort
12. Molecular Genetics of Hereditary Glaucoma; National Institutes of Health; Wang, Kai (Co-Investigator), Sheffield, Val (Principal Investigator), R01 EY010564, Sep 30, 1994 - Mar 30, 2011, Amount: \$6,044,675.00, 12% effort
13. Neurobiological Predictors of Huntington's Disease – Biostatistics Core; High Q Foundation; Wang, Kai (Co-Investigator), Paulsen, Jane (Principal Investigator), Dec 14, 2009 - Apr 30, 2011, Amount: \$8,378,958.00, 15% effort
14. Genetic Modifiers of Von Willebrand Disease; National Institutes of Health; Wang, Kai (Co-Investigator), Paola, Jorge Di (Principal Investigator), R01 HL084086, Feb 1, 2007 - Jan 31, 2012, Amount: \$663,750.00, 10% effort
15. Elderly Cancer Survivors: Cognitive Outcomes and Markers of Neurodegeneration; National Institutes of Health; Wang, Kai (Co-Investigator), Schultz, Susan (Principal Investigator), R01 CA122934, Jun 5, 2007 - Jun 30, 2012, Amount: \$1,072,493.00, 4% effort
16. Choriocapillaris Activation in Macular Degeneration; National Institutes of Health; Wang, Kai (Co-Investigator), Mullins, Robert (Principal Investigator), R01 EY017451, Sep 15, 2007 - Jul 31, 2013, Amount: \$1,845,150.00, 10% effort
17. Genetics of Quantitative Traits Associated with Glaucoma; National Institutes of Health; Wang, Kai (Co-Investigator), Fingert, John (Principal Investigator), 5 R01 EY018825, Jul 1, 2009 - Jun 30, 2014, Amount: \$3,246,883.00, 10% effort
18. Molecular Genetics of Age Related Macular Degeneration; National Institutes of Health; Wang, Kai (Co-Investigator), Stone, Edwin (Principal Investigator), R01 EY016822, Sep 1, 2010 - May 31, 2015, Amount: \$3,954,664.00, 5% effort
19. Iowa Summer Institute in Biostatistics (ISIB); National Institutes of Health; Wang, Kai (Co-Investigator), Chaloner, Kathryn (Principal Investigator), T15 HL097622, Aug 20, 2009 - Feb 28, 2016, Amount: \$1,368,893.00, 4% effort
20. Genetic Determinants of Optic Nerve Head Structure; National Institutes of Health; Wang, Kai (Co-Investigator), Scheetz, Todd (Principal Investigator). R01 EY023187, Mar 1, 2013 - Feb 28, 2017, 10% effort
21. Genetic Dissection of Pigmentary Glaucoma; National Institutes of Health; Wang, Kai (Co-Investigator), Anderson, Michael (Principal Investigator), R01 EY017673, Apr 1, 2008 - Jan 31, 2018, Amount: \$3,142,847.00, 1% effort
22. Prospective Investigation of Environment Exposure to BPA and BPA Substitutes in Early Pregnancy in Relation to Pregnancy Complications; Environmental Health Sciences Research Center; Wang, Kai (Co-Investigator), Liu, Buyun (Principal Investigator), EHSRC Pilot Grant, Sep 1, 2017 - Aug 31, 2018, Amount: \$40,000.00, 0% effort
23. Interactive Multimedia Consent for Biobanking; National Institutes of Health; Wang, Kai (Co-Investigator), Klein, David (Principal Investigator). R01 HG008348, Aug 10, 2015 - May 31, 2019, Amount: \$1,763,794.00, 10% effort
24. Vulnerability of the Adolescent Brain to Organophosphorus Pesticides; National Institutes of Health; Wang, Kai (Co-Investigator), Rohlman, Diane (Principal Investigator), R01 ES022163, Mar 4, 2013 - Oct 31, 2019, Amount: \$2,710,726.00, 5% effort
25. Early Pathogenesis of Cystic Fibrosis Related Diabetes; NIH; Wang, Kai (Co-Investigator), Engelhardt, John (Investigator), R24 DK096518, Aug 15, 2012 - Jun 30, 2020, Amount: \$1,511,641.00, 5% effort
26. EnVision CF Multicenter Study of Glucose Tolerance in Cystic Fibrosis; Cystic Fibrosis Foundation; Wang, Kai (Co-Investigator), Larson Ode, Katie (Principal Investigator), LARSON18A0, Sep 1, 2018 - Aug 31, 2020, Direct Cost: \$459,419.00, 5% effort
27. Pregnancy-associated microRNAs in plasma as predictors of gestational diabetes; National Institutes of Health; Wang, Kai (Co-Investigator), Bao, Wei (Principal Investigator), R21 HD091458, Sep 10, 2017 - Jun 30, 2021, Amount: \$419,375.00, 5% effort

28. Unraveling the 10q AMD Risk Locus; National Institutes of Health; Wang, Kai (Co-Investigator), Stone, Edwin (Principal Investigator), R01 EY026087, Sep 1, 2016 - Aug 31, 2021, Amount: \$1,983,012.00, 8% effort
29. PCB Enantiomers Implicated in Neurodevelopmental Disorders: Identification of Individual Metabolic Factors that Determine Risk and Vulnerability; National Institutes of Health; Wang, Kai (Co-Investigator), Lehmler, Hans-Joachim (Principal Investigator), R21 ES027169, Sep 1, 2017 - Aug 31, 2021, Amount: \$409,771.00, 10% effort
30. Early Pathogenesis of Cystic Fibrosis Related Diabetes; National Institutes of Health; Wang, Kai (Co-Investigator), Engelhardt, John (Principal Investigator), RC2 DK124207, Apr 30, 2021 - Mar 31, 2024, 5% effort
31. Non-Syndromic Hearing Loss - A Collaborative Study; National Institutes of Health; Wang, Kai (Co-Investigator), Smith, Richard (Principal Investigator), R01 DC002842, Sep 30, 1996 - Nov 30, 2024, Amount: \$13,924,795.00, 8% effort
32. PCB-mediated dysbiosis of the gut microbiome: A missing link in PCB-mediated neurodevelopmental disorders?; National Institutes of Health; Wang, Kai (Co-Investigator), Lehmler, Hans-Joachim (Principal Investigator), R01 ES031098, Feb 1, 2020 - Nov 30, 2024, Amount: \$3,124,660.00, 6% effort

Selected Presentations

Conferences

- Efficient Score Statistics for Mapping Quantitative Trait Loci Using Multiple Phenotypes. Annual meeting of the International Genetic Epidemiology Society, New Orleans, Louisiana, 2022.
- Score statistics for mapping quantitative trait loci with extended pedigrees. Annual meeting of the American Society of Human Genetics, Baltimore, Maryland, 2002.
- Using trait data and marker data in selected samples simultaneously: QTL mapping adaptive to the extent of selection. Annual meeting of the International Genetic Epidemiology Society. Redondo Beach, California. 2003.
- A constrained-likelihood approach to genotype-trait association studies. Annual meeting of the American Society of Human Genetics, Salt Lake City, Utah, 2005.
- Testing genetic association in the presence of population stratification. Annual Meeting of the International Genetic Epidemiology Society, St. Louis, Missouri, 2008.
- Detection of and correcting for the effect of population stratification in genetic association analysis with application to an eye disease study. International Workshop on Probability Theory, Statistics and Their Application to Biology, Beijing, China, 2009.
- Exact LASSO linear regression. Joint Statistical Meetings, Montreal, Canada, 2013.
- An efficient variance components model for genome-wide association studies with structured population. International Workshop on Statistics Frontier and Related Topics, Urumqi, Xinjiang, China, 2014
- Robust estimation of 3-D chromosome structure from Hi-C chromatin interaction data. ENAR. Miami, Florida, 2015.
- A flexible penalized integrated analysis of mRNA and miRNA expression levels as biomarkers for endometrial cancer classification. The 5th Annual Global Healthcare Conference, Global Science and Technology Forum, Singapore, Singapore, 2016
- Conditional Inference for the kernel association test. Joint Statistical Meetings 2016, Chicago, Illinois, 2016.
- Mediation analysis in observational studies via likelihood. ENAR 2017 Spring Meeting, Washington DC, 2017.
- Simple bias formulas for mediation analysis with unmeasured confounding. The 9th EMR-IBS and Italian Region Conference, Thessaloniki, Greece, 2017.
- An accurate normalization method for RNA-Seq data. The 8th International Forum on Statistics, Renmin University of China, Beijing, China, 2018.

- Maximum likelihood analysis of linear mediation models with treatment-mediator interaction. 2019 International Chinese Statistical Association China Conference, Tianjin, China, 2019.
- Maximum likelihood analysis of linear mediation models with treatment-mediator interaction. 2019 International Meeting of the Psychometric Society, Psychometric Society, Santiago, Chile, 2019.
- A likelihood-based analysis of the effects of a treatment on an outcome. 2019 Joint Statistical Meetings, Denver, Colorado, 2019.
- Treatment effects on an outcome under nonlinear modeling. 2020 Meeting of the International Society for Data Science and Analytics, 2020. (Virtual Conference)
- A general method for mediation analysis without using counterfactuals. 2020 Joint Statistical Meetings, 2020. (Virtual Conference)
- Some new results on summary data Mendelian randomization. The Fifth ICSA-Canada Chapter Symposium, Banff, Canada, 2022.
- An explicit method for SNP-heritability estimation with summary statistics. International Chinese Statistical Association 2024 China Conference. Wuhan, China, 2024
- Inference on causal effect in two sample summary data Mendelian randomization. The 10th international Statistical Genetics and Genomics Meeting, Wuhan, China, 2024.
- Summary data Mendelian randomization accounting for relatedness among summary statistics. The Joint Statistical Meetings 2024. Portland, 2024

Seminars

- A Bayesian Approach to Replication of Linkage Studies. Comprehensive Cancer Center. University of Alabama at Birmingham, 1998.
- Efficient Score Statistics for Mapping Quantitative Trait Loci. Department of Mathematics & Statistics, Memorial University of Newfoundland, Canada, 2002.
- Mapping quantitative trait loci with general pedigrees. Department of Statistics and Actuarial Sciences, University of Iowa, Iowa City, Iowa, 2002.
- Using trait data and marker data in selected samples simultaneously: QTL mapping adaptive to the extent of selection. Program in Public Health Genetics, University of Iowa, Iowa City, Iowa, 2003.
- Quantitative-trait-loci mapping with selected samples. Department of Statistics, Nankai University, Tianjin, China, 2004.
- Statistical genetics: overview, theory and application. College of Mathematics and System Science, Xinjiang University, Urumqi, China, 2005.
- A likelihood ratio test of incomplete dominance versus overdominance and/or under dominance. Department of Statistics and Actuarial Sciences, University of Iowa, Iowa City, Iowa, 2006.
- A score-based approach to quantitative trait loci mapping in inbred lines using flanking markers. Department of Population Health Sciences, University of Wisconsin, Madison, Wisconsin, 2006.
- Statistical methods in genetic association studies: cryptic relatedness, population stratification, and rare variants. Department of Biostatistics, University of Iowa, Iowa City, Iowa, 2012
- Association test in the presence of population stratification. Wellcome Trust Statistical Genetics Workshop. Wellcome Trust, Hinxton, England, 2013.
- An efficient variance components model for genome-wide association study with structured populations. Department of Epidemiology and Biostatistics, Indiana University Bloomington, Bloomington, Indiana, 2014.
- Robust estimation of 3-D chromosome structure from Hi-C chromatin interaction data. Division of Biostatistics, University of Minnesota, Minneapolis, Minnesota, 2015.

- Statistical mediation analysis via likelihood. Department of Biostatistics, University of Iowa, Iowa City, Iowa, 2017.
- Big genomic data analysis and its implications. Department of Mathematics, Yili Normal University, Yining, China, 2018.
- Methods for genomic association mapping: Regularized regressions and SKAT+. Department seminar, School of Mathematical Sciences, Nankai University, Tianjin, China, 2018.
- Effects of a treatment on the likelihood of a mediator and an outcome. Department of Statistics and Actuarial Science, The University of Iowa, Iowa City, Iowa, 2018.
- Maximum likelihood analysis of linear mediation models with treatment-mediator interaction. Department of Information and Computer Science, Wuhan University, Wuhan, China, 2019.
- Maximum likelihood analysis of linear mediation models with treatment-mediator interaction. School of Mathematics and Statistics, Lanzhou University, Lanzhou, China, 2019.
- Two sample two stage least squares Mendelian randomization using summary statistics from heterogeneous samples. Department of Biostatistics, University of Iowa, Iowa City, Iowa, 2022.
- Estimation of causal effects in two-sample summary-data Mendelian randomization fully accounting for measurement error. Department of Biostatistics, University of Nebraska Medical Center, Omaha, Nebraska, 2024.

Service

Professional Service

- President, Iowa Chapter, American Statistical Association, 2024-present. The person-in-charge during 2022-2023.
- Handling Editor, Briefings in Bioinformatics. Oxford Academic, 2024-present
- Review Editor, Quantitative Psychology and Measurement (specialty section of Frontiers in Psychology and Frontiers in Applied Mathematics and Statistics), 2020-2023.
- Guest Editor, PLoS Genetics (for one manuscript), 2021.
- Reviewer for grant proposals submitted to
 - American Cancer Society
 - Linz Institute of Technology, Austria (2 times)
 - NIH (2 times)
 - NIEHS (2 times)
 - NSF (2 times)
- External reviewer for promotion and/or tenure (10 times)
- Awards review committee:
 - 2024 JSM Biometrics Byar Award and Early Career Paper Awards review committee, American Statistical Association, 2023.
 - 2025 Section on Statistics in Genomics and Genetics Student Paper Award Competition, 2024.
- Session organizer for an Invited Session/2020 ICOSA China Conference, International Chinese Statistical Association, Wuhan, China, 2020. This conference was later cancelled due to COVID-19.
- Session Chair, Joint Statistical Meetings, 2024
- Member
 - International Biometric Society (ENAR), 2005-2006
 - International Genetic Epidemiology Society (IGES), 1999-2012
 - American Society of Human Genetics (ASHG), 1999-2016
 - American Statistical Association (ASA), 2013-present

- International Chinese Statistical Association (ICSA), 2015-present, lifetime member
- American Association for the Advancement of Science (AAAS), 2018-present
- Referee Manuscripts for the following journals
 - American Journal of Human Genetics
 - American Journal of Medical Genetics Part B: Neuropsychiatric Genetics
 - Annals of Human Genetics (3 times)
 - Annals of Otology, Rhinology & Laryngology (2 times)
 - Annals of Statistics
 - Arteriosclerosis, Thrombosis, and Vascular Biology
 - Bioinformatics (4 times)
 - Biometrics (2 times)
 - Biostatistics (3 times)
 - BMC Genetics
 - BMC Informatics
 - BMC Bioinformatics (2 times)
 - BMJ Open
 - Circulation (7 times)
 - Communications Biology
 - Computational Statistics and Data Analysis
 - Environmental Sciences and Technology
 - Epidemiology
 - Frontiers in Applied Mathematics and Statistics (2 times)
 - Frontiers in Evolutionary and Population Genetics (2 times)
 - Frontiers in Psychology (4 times)
 - Genes
 - Genetics (2 times)
 - Genetic Analysis Workshop 13, 15, 16, and 17
 - Genetic Basis of Complex Disease, Garland Science
 - Genetic Epidemiology (9 times)
 - Genome Biology
 - Genome Research (3 times)
 - Human Genetics
 - Human Genetics and Genomics Advances
 - Human Genomics and Proteomics
 - Human Heredity (6 times)
 - International Journal of Biostatistics
 - International Journal of Epidemiology
 - International Conference on Biological Information and Biomedical Engineering (BIBE) 2018
 - Journal of Clinical Epidemiology
 - Journal of Computational and Graphical Statistics (2 times)
 - Journal of Community Medicine & Public Health Care
 - Journal of Health Science Studies
 - Journal of Mathematical Biology
 - Journal of the American Statistical Association
 - Metrika
 - Nature Communication
 - Ophthalmologica
 - Physiological Genomics (2 times)

- PLoS Genetics (3 times)
 - PLoS One (4 times)
 - Psychiatric Genetics (2 times)
 - Psychometrika (6 times)
 - Scientific Reports (2 times)
 - Special Issue of Environment International titled “PCBs: New Knowledge Gained from Old Pollutants”
 - Statistics in Medicine
 - Statistica Sinica
 - Statistical Methods in Medical Research
 - Structural Equation Modeling: A Multidisciplinary Journal
 - Translational Research
- University Service
 - Genetics Cluster Hire Search Committee, Member, 2012-2013
 - Admissions Committee, Bioinformatics PhD Program, Member, 2009-2012
- College Service
 - CPH Faculty Council, Member, 2004-2005, 2010-2019, 2015-2017 (Co-Chair)
 - EHSRC Internal Advisory Committee, Member, 2016-present
 - New Investigator Research Award Review Committee, Member, 2004-2005
 - Alumni Relations Council, Member, 2005-2007
 - Strategic Planning Initiative: Research Foci and Organization Subgroup, Member, 2009
 - Graduate Student Poster Judge, Health Sciences Research Week, 2010
 - CPH Promotion and Tenure Committee, Member, 2014, 2016-2022, 2021. (2017 chaired one)
 - CPH Curriculum Innovations Committee: Academic subgroup, Member, 2014-2015
 - Collegiate Consulting Group, Chair (2015), Member (2017)
 - Post-Tenure Review Committee, Member, 2015, 2018
 - 5-Year Post Tenure Review Committee, 2020
 - Department of Epidemiology Faculty Search Committee, Member, 2022-2023
 - CPH Research Council (Faculty Representative), Member, 2021-present. Chair, 2024-2025
- Department Service for Biostatistics and Program in Public Health Genetics
 - Biostatistics Seminar Committee, Member, 2000-2001, 2007-2008, 2011-2015 and Chair 2010-2011
 - M.S. Core Exam Committee, Member, 2000-2001, 2007-2011, 2013-2015. 2020, 2022. Chair: 2010, 2020
 - Ph.D. Comprehensive Exam Committee, Member, 2001, 2004, 2007, 2014, 2017 (question writer)
 - Statistical Genetics Faculty Search Committee, Member, 2001
 - Instructional Development and Evaluation Committee, Member, 1999-2003
 - Student Admissions Committee, Member, 2002-2004, 2007-2008
 - Curriculum Committee, Member, 2003-2007, 2017-2018
 - Awards Committee, Member, 2005-2007
 - Departmental Self-Study Committee, Member, 2007-2008
 - Biostatistics Faculty Search Committee, Member, 2007-2008
 - Course Renumbering Committee, Member, 2008
 - Internal Peer Review Committee, Member, 2009
 - Theory Course Committee, University of Iowa, Member, 2011
 - Clinical Trials Faculty Search Committee, Member, 2012-2013

- Post-Tenure Review Committee, Chair, 2015
- Biostatistics Third-Year Review Committee, Member, 2016
- DCG for Tenure and Promotion to Associate Professor, Member, 2016, 2021
- DCG for Promotion to Full Professor, Member, 2017, 2018, 2024
- PhD Exam Steering committee, Member, 2024