Guoqing Diao

Department of Biostatistics and Bioinformatics
Milken Institute School of Public Health
The George Washington University
950 New Hampshire Ave, NW
Washington, DC 20052

Office Phone: N/A
Fax: N/A
Email: gdiao@gwu.edu
https://sites.google.com/view/guoqingdiao-homepage/

Education

Ph.D.	Department of Biostatistics, University of North Carolina at Chapel Hill (UNC), August 2001 - December 2005
M.S.	Department of Statistics and Finance, majoring in Probability and Statistics, University of Science and Technology of China (USTC), August 1998 - July 2001
B.E.	Special Class for the Gifted Young, majoring in Electronic Engineering and Information Science, University of Science and Technology of China, August 1994 - July 1998

Research Interests

Semiparametric Models, Precision Medicine, Survival Analysis, Longitudinal Data Analysis, Statistical Genetics, High-Dimensional Data Analysis, Diagnostic Medicine, Clinical Trial, Drug Safety Signal Detection, Network Meta-Analysis, Computational Probability

Professional Experience

Professor	Department of Biostatistics and Bioinformatics, The George Washington University, August 2020 - present
Associate Professor	Department of Statistics, George Mason University, August 2012 - July 2020 (resigned before promotion to tenured full professor takes effect in August 2020)
Assistant Professor	Department of Statistics, George Mason University, August 2006 - August 2012
Postdoctoral Fellow	Department of Biostatistics, University of North Carolina at Chapel Hill, January 2006 - July 2006
Research Assistant	Collaborative Studies Coordinating Center, Department of Biostatistics, University of North Carolina at Chapel Hill, 2002 - 2005
Research Assistant	Department of Biostatistics, University of North Carolina at Chapel Hill, 2001 - 2002
Teaching Assistant	Department of Statistics and Finance, University of Science and Technology of China, 1998 - 2001

Awards

1. Travel Award, ENAR Junior Researcher Workshop, 2009
2. Travel Award, IMS Young Researcher Conference, 2008
3. Barry H. Margolin Dissertation Award, UNC-CH 2006.
4. Graduate School Transportation Grant, UNC-CH 2005.
5. Distinguished Student Paper Award, ENAR 2004.
6. Meritorious GUANGHUA Scholarship, USTC 1998.
7. Outstanding Student Scholarship, USTC 1995.

Publications (name of advisee underlined)

Refereed Book Chapters (RBC)

1. **Diao, G.**, Zeng, D., Lin, D. Y. (2018) "Analysis of secondary phenotype data under case-control designs". In *Handbook of Statistical Methods for Case-Control Studies*. [PDF]
2. **Diao, G.**, Hanlon, B., Vidyashankar, A. N. (2014). "Multiple testing for high dimensional data". Perspectives on Big Data Analysis- Methodologies and Applications, Contemporary Mathematics, American Mathematical Society, RI, 622, 95–108. [PDF]
3. **Diao, G.**, Zeng, D. (2013). "Clustered Competing Risks Data" in Handbook of Survival Analysis, edited by John P. Klein, Hans C. van Houwelingen, Joseph G. Ibrahim and Thomas H. Scheike. Chapman & Hall. [PDF]

Refereed Journal Publications (RJP)

1. Shah, P., Psotka, M., Taleb, I., Alharethi, R., Shams, M., Wever-Pinzon, O., Yin, M., Latta, F., Stehlik, J., Fang, J., **Diao, G.**, Singh, R., Ijaz, N., Kyriakopoulos, C., Zhu, W., May, C., Cooper, L., Desai, S., Selzman, C., Kfoury, A., Drakos, S. (2021) "Framework to Classify Reverse Cardiac Remodeling with Mechanical Circulatory Support: The U-NOVA Stages". *Circulation: Heart Failure*, accepted.
2. Jia, B., Zeng, D., Liao, J. Z., Liu, G. F., Tan, X., **Diao, G.**, Ibrahim, J. G. (2021) "Inferring latent heterogeneity using high-dimensional feature variables supervised by survival outcome". *Statistics in Medicine*, accepted.
3. Slawski, M., **Diao, G.**, Ben-David, E. (2021) "A pseudo-likelihood approach to linear regression with partially shuffled data". *Journal of Computational and Graphical Statistics*, accepted. [PDF]
4. **Diao, G.**, Liu, G. F., Zeng, D., Zhang, Y., Golm, G., Heyse, J. F., Ibrahim, J. G. (2020) "Efficient multiple imputation for sensitivity analyses of recurrent event data with informative censoring". *Statistics in Biopharmaceutical Research*, accepted.
5. **Diao, G.**, Lin, D. Y. (2020) "Statistically efficient haplotype analysis and single marker analysis with missing or untyped SNP data in family studies". *BMC Genetics*, accepted.

6. Chen, X., **Diao, G.**, Qin, J. (2020) “Pseudo likelihood based estimation and test of missing propensity function in nonignorable missing data problems". *Scandinavian Journal of Statistics*, accepted.

7. **Diao, G.**, Qin, J. (2020) “New semiparametric regression method with applications to selection-biased sampling and missing data problems". *The Canadian Journal of Statistics*, accepted.

8. **Diao, G.**, Vidyashankar, A. N., Zohar, S., Katsahian, S. (2020) “Competing risks model with internal time-dependent covariates for cancer studies". *Statistics in Biosciences*, accepted.

9. Li, M., **Diao, G.** (2020) “On stratified density ratio model". *Statistica Sinica*, accepted.

10. Li, M., **Diao, G.**, Qin, J. (2020) “On symmetric semiparametric two-sample problem". *Biometrics*, accepted. (An earlier version of this manuscript won the IBM Student Paper Award by Moming Li at the 33rd New England Statistics Symposium in 2019)

11. Akhlaghi, N., Dhawan, A., Khan, A. A., Mukherjee, B., Truong, C., **Diao, G.**, Sikdar, S. (2020) “Sparsity analysis of a sonomyographic muscle-computer interface". *IEEE Transactions on Biomedical Engineering*, 67, 688–696. (Impact factor: 4.491) [PDF]

12. Tan, X., Liu, G. F., Zeng, D., Wang, W., **Diao, G.**, Heyse, J. F., Ibrahim, J. G. (2019) “Controlling false discovery proportion in identification of drug-related adverse events from multiple system organ classes". *Statistics in Medicine*, 38, 4378–4389. (Impact factor: 1.847) [PDF]

13. Dhawan, A. S., Mukherjee, B., Patwardhan, S., Akhlaghi, N., **Diao, G.**, Levay, G., Holley, R., Joiner, W., Harris-Love, M., Sikdar, S. (2019) “ Proprioceptive sonomyographic control: A novel method for intuitive and proportional control of multiple degrees of freedom by upper-extremity amputees". *Scientific Reports*, 9, Article number 9499 (15 pages). (Impact factor: 4.525) [PDF]

14. **Diao, G.**, Zeng, D., Hu, K., Ibrahim, J. G. (2019) “Semiparametric frailty models for zero-inflated event count data in the presence of informative dropout". *Biometrics*, in press. (Impact factor: 1.755) [PDF]

15. **Diao, G.**, Ibrahim, J. G. (2019) “Quantifying time-varying cause-specific hazards and sub-distribution hazards ratios with competing risks data". *Clinical Trials*, 16, 363–374. (Impact factor: 2.257) [PDF]

16. Li, L., Vidyashankar, A. N., **Diao, G.**, Ahmed, E. (2019) “Robust inference after random projections via Hellinger distance for location-scale family". *Entropy*, 21, 348 (40 pages). (Impact factor: 2.419) [PDF]

17. **Diao, G.**, Liu, G. F., Zeng, D., Wang, W., Tan, X., Heyse, J. F., Ibrahim, J. G. (2019) “Efficient methods for signal detection from correlated adverse events in clinical trials". *Biometrics*, 75, 1000–1008. (Impact factor: 1.755) [PDF]

18. **Diao, G.**, Yuan, A. (2019) “A class of semiparametric cure models with current status data". *Lifetime Data Analysis*, 25, 26–51. (Impact factor: 0.948) [PDF]

19. Marchese, S., **Diao, G.** (2018) “Flexible regression analysis of multivariate mixed-type data". *Computation Statistics and Data Analysis*, 125, 156–170. (Impact factor: 1.323) [PDF]

20. **Diao, G.**, Zeng, D., Ibrahim, J. G., Ke, C., Ma, H., Jiang, Q. (2018) “ Semiparametric regression analysis for composite endpoints subject to component-wise censoring". *Biometrika*, 105, 403–418. (Impact factor: 1.641) [PDF]

21. **Diao, G.**, Dong, J., Zeng, D., Ke, C., Rong, A., Ibrahim, J. G. (2018) “Biomarker threshold adaptive designs for survival endpoints". *Journal of Biopharmaceutical Statistics*, 28, 1038–1054. (Impact factor: 0.756) [PDF]

22. Sikdar, S., **Diao, G.**, Turo, D., Stanley, C. J., Damiano, D. (2018) “Quantification of muscle tissue properties by modeling the statistics of ultrasound image intensities using a mixture of Gamma distributions". *Journal of Ultrasound in Medicine*, 37, 2157–2169. (Impact factor: 1.718) [PDF]

23. Yuan, M., **Diao, G.** (2018) “Sieve maximum likelihood estimation in generalized linear models with an unknown link function". *WIREs Computation Statistics*, 10(2), e1425 (7 pages). (Impact factor: NA) [PDF]

24. Gao, F., Liu, G. F., Zeng, D., Xu, L., Lin, B., **Diao, G.**, Golm, G., Heyse, J. F., Ibrahim, J. G. (2017) “Control-based imputation for sensitivity analyses in informative censoring for recurrent events data". *Pharmaceutical Statistics*, 16, 424–432. (Impact factor: 1.584) [PDF]

25. Yin, L., **Diao, G.**, Liu, A. (2017) “ A semiparametric method for comparing the discriminatory ability of biomarkers subject to limit of detection". *Statistics in Medicine*, 36, 4141–4152. (Impact factor: 1.847) [PDF]

26. **Diao, G.**, Zeng, D., Ibrahim, J. G., Hu, K. (2017) “Modeling event count data in the presence of informative dropout with application to bleeding and transfusion events in Myelodysplastic syndrome". *Statistics in Medicine*, 36, 3475–3494. (Impact factor: 1.847) [PDF]

27. Yuan, M., Zhang, X., **Diao, G.** (2017) “Cure frailty models". *Wiley StatsRef: Statistics Reference Online*, 1–7. (Impact factor: NA) [PDF]

28. Weinstein, A. A., **Diao, G.**, Baghi, H., Escheik, C., Gerber, L. H., Younossi, Z. M. (2017) “Demonstration of two types of fatigue in subjects with chronic liver disease using factor analysis". *Quality of Life Research*, 26, 1777–1784. (Impact factor: 2.488) [PDF]

29. Gao, F., Liu, G., Zeng, D., **Diao, G.**, Heyse, J. F., Ibrahim, J. G. (2017). “On inference of control-based imputation for analysis of repeated binary outcomes with missing data". *Journal of Biopharmaceutical Statistics*, 27, 358–372. (Impact factor: 0.756) [PDF]

30. **Diao, G.**, Zeng, D., Ibrahim, J. G., Rong, A., Lee, O., Zhang, K., Chen, Q. (2017) .“Statistical design of non-inferiority multiple region clinical trials to assess global and consistent treatment effects". *Journal of Biopharmaceutical Statistics*, 27, 933–944. (Impact factor: 0.756) [PDF]

31. Marchese, S., **Diao, G.**. (2017). “Density ratio model for multivariate outcomes". *Journal of Multivariate Analysis*, 154, 249–261. (Impact factor: 1.029) [PDF]

32. Shane, V. C., Ausborn, A. A., **Diao, G.**, Johnson, D. C., Johnson, T. S., Atkins, R., Ambegaonkar, J. P., Cortes, N. (2016). “Anthropometrics, physical performance, and injury characteristics of youth American football". *Orthopaedic Journal of Sports Medicine*, 4(8), 2325967116662251 (8 pages). (Impact factor: 2.589) [PDF]

33. Nault, J., Pigneur, F., Nelson, A. C., Costentin, C., Tselikas, L., Katsahian, S., **Diao, G.**, Laurent, A., Mallat, A., Duvoux, C., Luciani, A., Decaens, T. (2015). “Visceral fat area predicts radiological response and survival in patients with advanced hepatocellular carcinoma treated by tyrosine kinase inhibitors". *Digestive and Liver Disease*, 47, 869–876. (Impact factor: 3.037) [PDF]

34. Yuan, M., **Diao, G.** (2014). “Semiparametric odds rate model for modeling short-term and long-term effects with application to a breast cancer genetic study ". *The International Journal of Biostatistics*, 10, 231–249. (An earlier version of this paper won the Student Paper Award by Mengdie Yuan at the Joint Conference by the International Chinese Statistical Association and the International Society for Biopharmaceutical Statistics in 2013) (Impact factor: 1.309) [PDF]

35. Parhat, P., Rosenberger, W. F., **Diao, G.** (2014) “Conditional Monte Carlo randomization tests for regression models". *Statistics in Medicine*, 33, 3078–3088. (Impact factor: 1.847) [PDF]

36. Minnikantia, S., **Diao, G.**, Pancrazio, J. J., Peixoto, N. (2014) “Lifetime assessment of atomic layer deposited Al2O3-Parylene C bilayer coating for neural interfaces using accelerated age testing and electrochemical characterization". *Acta Biomaterialia*, 10, 960–967. (Impact factor: 6.638) [PDF]

37. Collamore, J., **Diao, G.**, Vidyashankar, A. N. (2014) “Rare event simulation for processes generated via stochastic fixed point equations". *Annals of Applied Probability*, 24, 2143–2175. (Impact factor: 1.703) [PDF]

38. Gerber, L., Sikda, S., Armstrong, K., **Diao, G.**, Heimur, J., Kopecky, J., Turo, D., Otto, P., Gebreab, T., Shah, J. (2013). “A systematic comparison between subjects with no pain and pain associated with active myofascial trigger points". *PM&R*, 5, 931–938. (Impact factor: 1.902) [PDF]

39. **Diao, G.**, Vidyashankar, A. N. (2013). “On assessing genome-wide statistical significance in quantitative trait loci mapping". *Genetics*, 194, 781–783. (Impact factor: 4.075) [PDF]

40. Nielsen, M. K., Vidyashankar, A. N., Hanlon, B., **Diao, G.**, Petersen, S. L., Kaplan, R. M. (2013). “Hierarchical models for evaluating anthelmintic efficacy in horses". *Veterinary Parasitology*, 197, 614–622. (Impact factor: 2.009) [PDF]

41. **Diao, G.**, Zeng, D., Yang, S. (2013) “Efficient semiparametric estimation of short-term and long-term hazard ratios with right-censored data". *Biometrics*, 69, 840–849. (Impact factor: 1.755) [PDF]

42. **Diao, G.**, Ning, J., Qin, J. (2012) “Maximum likelihood estimation for semiparametric density ratio model". *The International Journal of Biostatistics*, Vol. 8: Iss. 1, Article 16 (28 pages). (Impact factor: 1.309) [PDF]

43. Price, J. K., Srivastava, R., Bai, C., **Diao, G.**, Gerber, L. H., Younossi, Z. M. (2013) “Comparison of activity level among patients with chronic liver disease". *Disability and Rehabilitation*, 35, 907–912. (Impact factor: 2.054) [PDF]

44. **Diao, G.**, Yin, G. (2012) “A general transformation class of semiparametric cure rate random effects models". *Annals of the Institute of Statistical Mathematics*, 64, 959–989. (Impact factor: 0.772) [PDF]

45. Weinstein, A., Abraham, P., **Diao, G.**, Zeno, S., Deuster, P. (2011) “Relationship between depressive symptoms and cardiovascular disease risk factors in African American individuals". *Depression Research and Treatment*, Article ID 836542. (Impact factor: 1.710) [PDF]

46. Maibach, E. W., Nisbet, M., Baldwin, P., Akerlof, K., **Diao, G.** (2010) “Reframing climate change as a public health issue: An exploratory study of public reactions". *BMC Public Health*, 10, 299. (Impact factor: 2.567) [PDF]

47. Palsbo, S. E., **Diao, G.**, Palsbo, G. A., Tang, L., Rosenberger, W., Mastal, M. (2010) Case-mix adjustment and enabled reporting of the health care experiences of adults with disabilities. *Archives of Physical Medicine and Rehabilitation*, 91, 1339-1346. (Impact factor: 2.697) [PDF]

48. Gerber, L. H., Stout, N., McGarvey, C., Soballe, P., Shieh, C., **Diao, G.**, Springer, B. A., Pfalzer, L. A. (2010) “Factors predicting clinically significant fatigue in women following treatment for primary breast cancer". *Supportive Care in Cancer*, 19, 1581–1591. (Impact factor: 2.754) [PDF]

49. **Diao, G.**, Lin, D. Y. (2010) “ Variance-components methods for linkage and association analysis of ordinal traits in general pedigrees". *Genetic Epidemiology*, 34, 232-237. (Impact factor: 2.5) [PDF]

50. Palsbo S., **Diao, G.** (2010) “The business case for adult disability care coordination". *Archives of Physical Medicine and Rehabilitation*, 91, 178-183. (Impact factor: 2.697) [PDF]

51. Weinstein, A., Drinkard, B. M., **Diao, G.**, Furst, G., Dale, J. K., Straus, S. E., Gerber, L. H. (2009) “Exploratory analysis of the relationships between aerobic capacity and self-reported fatigue in patients with rheumatoid arthritis, polymyositis, and chronic fatigue syndrome". *PM&R*, 1(7), 620-628. (Impact factor: 1.902) [PDF]

52. Folsom, A. R., Chambless, L. E., Ballantyne, C. M., Coresh, J., Heiss, G., Wu, K. K, Boerwinkle, E., Mosley, T. H., Sorlie, P., **Diao, G.**, Sharrett, A. R. (2006) “An assessment of incremental coronary risk prediction using C-reactive protein and other novel risk markers: The Atherosclerosis Risk in Communities Study". *Archives of Internal Medicine*, 166, 1368-1373. (Current journal name: JAMA Internal Medicine; Impact factor: 20.768) [PDF]

53. **Diao, G.** Lin, D. Y. (2006) “Semiparametric variance-component models for linkage and association analysis of censored trait data". *Genetic Epidemiology*, 30, 570-581. (Impact factor: 2.5) [PDF]

54. **Diao, G.**, Lin, D. Y. (2006) “Improving the power of association tests for quantitative traits in family studies". *Genetic Epidemiology*, 30, 301-313. (Impact factor: 2.5) [PDF]

55. Chambless, L. E., **Diao, G.** (2006) “Estimation of time-dependent area under the ROC curve for long term risk prediction". *Statistics in Medicine*, 25, 3474-3486. (Impact factor: 1.847) [PDF]

56. **Diao, G.**, Lin, D. Y. (2005) “A powerful and robust method for mapping quantitative trait loci in general pedigrees". *The American Journal of Human Genetics*, 77, 97-111. (Impact factor: 9.924) [PDF]

57. **Diao, G.**, Lin, D. Y. (2005) “Semiparametric methods for mapping quantitative trait loci with censored data". *Biometrics*, 61, 789-798. (Impact factor: 1.755) [PDF]

58. **Diao, G.**, Lin, D. Y., Zou, F. (2004) “Mapping quantitative trait loci with censored observations". *Genetics*, 168, 1689-1698. (Impact factor: 4.075) [PDF]

59. Zhao, L., **Diao, G.** (2002) “Strong convergence of modified partitioning estimates of nonparametric regression functions". *Chinese Journal of Applied Probability and Statistics*, 18, 192-196. (Impact factor: NA) [PDF]

Refereed Conference Proceedings (RCP)

1. Justice, A. E., Howard, A., Chittoor, G., Fernandez-Rhodes, L., Graff, M., Voruganti, V. S., **Diao, G.**, Love, S. M., Franceschini, N., OĊonnell, J., Avery, C. L., Young, K. L., North, K. E. (2015). “Genome-wide association of trajectories of systolic blood pressure change". *BMC Proceedings*, 10(7), 321. [PDF]

2. Yuan, M., **Diao, G.** (2011) “Joint association analysis of bivariate quantitative and qualitative traits". *BMC Proceedings*, 5(Suppl 9):S74. [PDF]

3. Joubert, B., **Diao, G.**, Lin, D. Y., North, K. E., Franceschini, N. (2009) “Longitudinal age-dependent effect on systolic blood pressure". *BMC Proceedings*, 3(Suppl 7), S87. [PDF]

4. **Diao, G.**, Lin, D. Y. (2007) “Semiparametric methods for genome-wide linkage analysis of human gene expression data". *BMC Proceedings*, 1(Suppl 1), S83. [PDF]

Other Publication

1. **Diao, G.** (2018) Review of “Absolute Risk: Methods and Applications in Clinical Management and Public Health" by Ruth M. Pfeiffer and Mitchell H. Gail. *Journal of the American Statistical Association*, 113, 481. [PDF]

Manuscript under Invited Revision/Review (IRR)

1. Jia, B., Zeng, D., Liao, J., Liu, G. F., Tan, X., **Diao, G.**, Ibrahim, J. G. “Mixture survival trees for cancer risk classification". *Lifetime Data Analysis*, under invited revision.
2. Wang, Z., Ben-David, E, **Diao, G.**, Slawski, M. “ Regression with linked data sets subject to linkage error". *WIREs Computational Statistics*, revision submitted.
3. Zhong, W., **Diao, G.** “Semiparametric density ratio model for survival data with a cure fraction". *Statistics in Medicine*, submitted.
4. **Diao, G.**, Ma, H., Zeng, D., Ke, C., Ibrahim, J. G. “Synthesizing studies for comparing treatment sequences in clinical trials". *Biostatistics*, submitted.
5. Engdahl, S., Dhawan, A., Bashatah, A., **Diao, G.**, Mukherjee, B., Monroe, B., Holley, R., Sikdar, S. “Individuals with upper limb loss require minimal training to achieve robust motion classification using sonomyography". *Journal of NeuroEngineering and Rehabilitation*, submitted.

Manuscripts to be Submitted (TBS)

1. Tan, X., Wang, W., Liu, G. F., Zeng, D., **Diao, G.**, Ibrahim, J. G. “ Detecting safety-vaccine association from VAERS data with complex and high dimensional confounding".
2. **Diao, G.**, Jiang, T., Zeng, D., Mo, M., Xia, A., Ibrahim, J. G. “Improving power in adaptive expansion of biomarker populations in phase 3 clinical trials".
3. Zhong, W., **Diao, G.** “Joint semiparametric models for two-phase studies".
4. Zhong, W., **Diao, G.** “Semiparametric regression analysis of secondary response variables in case-cohort studies".
5. Li, M., **Diao, G.**, Gottipati, S., Zhang, P. “Ordinal exploratory factor analysis models with regularization".
6. Shah, P., Agbor-Enoh, S., Bagchi, P., Mercado, A., **Diao, G.**, JP Morales, D., Shah, K., Najjar, S., Feller, E., Rodrigo, M., Hsu, S., Khush, K. K., deFilippi, C. R., Valantine, H. “Sequencing of the Circulating MicroRNA Transcriptome Identifies Novel, High-Performance Biomarkers in Cardiac Transplant Rejection".
7. **Diao, G.**, Li, M., Gottipati, S., Zhang, P. “Joint factor and regression analyses of multivariate ordinal data - Application to psychiatric assessments".
8. Marchese, S., **Diao, G.** “Semiparametric regression analysis of multivariate secondary phenotype data in case-control association studies".
9. Yuan, M., **Diao, G.**, Qiao, W. “Sieve maximum likelihood estimation using B-spline smoothing in the GLMs/GLMMs with an unknown link function".
10. Yin, L., **Diao, G.**, Liu, A. “Semiparametric analysis of partial AUC for biomarkers subject to limit of detection".

11. Yin, L., **Diao, G.**, Liu, A. “A two-part semiparametric transformation model for the analysis of longitudinal semi-continuous data ".

12. **Diao, G.**, Vidyashankar, A. N., Cribben, I. “High dimensional covariate-adjusted semiparametric transformation Gaussian graphical models".

13. **Diao, G.**, Mao, L. “A general framework for semiparametric analysis of temporal covariate effects with right-censored data".

Work in Progress (WIP)

1. Vidyashankar, A. N., **Diao, G.**, Collamore, J. “Algorithm for obtaining the Lyapunov exponent in multivariate stochastic recursions".

2. Collamore, J., Vidyashankar, A. N., **Diao, G.** “Rare-event simulation for matrix recursions".

3. Vidyashankar, A. N., **Diao, G.** “Unified empirical likelihood confidence regions for branching processes-I, explosive case".

4. Vidyashankar, A. N., **Diao, G.** “Unified empirical likelihood confidence regions for branching processes-II, subcritical case".

5. **Diao, G.**, Qin, J., Yuan, A. “Maximum likelihood estimation and EM algorithms for panel count data".

6. **Diao, G.**, Wang, M.C., Zhu, Y. “Semiparametric regression and trend analysis of recurrent gap times with a terminal event".

7. **Diao, G.**, Qin, J. “Conditional variable screening in high-dimensional binary classification".

8. **Diao, G.**, Wu, X., Koper, C., Lum, C. “Semiparametric recurrent event frailty models for comparing the effects of proactive policing and reactive policing on crime".

9. Xia, T., **Diao, G.** “Semiparametric analysis of receiver operating characteristic curves for longitudinal and clustered data".

10. **Diao, G.**, Bagchi, P., Liu, A. “On group test with current status data".

11. Bruce, S., **Diao, G.** “On Bayesian density ratio models".

12. **Diao, G.**, Bagchi, P. “Semiparametric spatial Gaussian random fields".

Software

1. ZIF: Semiparametric frailty models for zero-inflated event count data in the presence of informative dropout

2. BTAD: Biomarker Threshold Adaptive Designs for Survival Endpoints

3. mDRM: Multivariate Density Ratio Model

4. sAUC: A Semiparametric Method for Comparing the Discriminatory Ability of Biomarkers subject to Limit of Detection

5. SLCMPRSK: Competing Risks Model with Short-term and Long-term Covariate Effects

6. RESSFPE: Rare Event Simulation for Processes Generated via SFPE

7. HAPFAM: Haplotype Association Analysis of Quantitative Traits in Family Studies

8. GHREG: Semiparametric General Hazards Rate Model for Right-Censored Data
9. SQTL: Semiparametric QTL Mapping in General Pedigrees
10. SQTDT/SPDT: Semiparametric Family-based Tests of Association
11. SVCC: Semiparametric VC Models for Linkage and Association Analysis of Censored Data

Invited Presentations

1. Efficient methods for signal detection from correlated adverse events in clinical trials. To be presented at the 2021 ASA Biopharmaceutical Section Nonclinical Biostatistics Virtual Conference, June 2021.
2. Semiparametric transformation models and their applications. Presented in the Biostatistics Division at Albert Einstein College of Medicine, New York City, April 2021.
3. Semiparametric transformation models and their applications. Presented in the Department of Biostatistics and Bioinformatics at the George Washington University, Washington, DC, February 2021.
4. Semiparametric transformation models and their applications. Presented in the Department of Statistics at the University of Virginia, February 2021.
5. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented at the 11th ICSA International Conference, Hangzhou, China 2019.
6. Maximum likelihood estimation and EM algorithms for panel count data. Presented at UNC BIOS 70th Anniversary Celebration, Chapel Hill, North Carolina 2019.
7. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented at Penn State College of Medicine, Hershey, Pennsylvania 2019.
8. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented at JSM, Denver, Colorado 2019.
9. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented at ICSA Applied Statistics Symposium, Raleigh, North Carolina 2019.
10. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented at Lifetime Data Analysis Interest Group Conference, Pittsburgh, Pennsylvania 2019.
11. High dimensional covariate-adjusted semiparametric transformation Gaussian graphical models. Presented at the 33rd New England Statistical Symposium, Hartford, Connecticut, 2019.
12. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented in the Department of Biostatistics, Bioinformatics & Biomathematics, Georgetown University, 2018.
13. Joint factor and regression analyses of multivariate ordinal outcome. Presented at the 2018 ICSA China Conference with the Focus on Data Science, Qingdao, China, 2018.
14. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented in the Department of Statistics, George Washington University, 2018.
15. Semiparametric regression analysis for composite endpoints subject to component-wise censoring. Presented in the Department of Biostatistics, Johns Hopkins University, 2018.

16. A Class of Semiparametric Transformation Models and Their Applications. Presented at ICSA Applied Statistics Symposium, Chicago, Illinois 2017.

17. Time-Varying Coefficient Risk Prediction Models for Competing Risks Data. Presented at the 2017 Lifetime Data Science Conference, University of Connecticut, 2017.

18. Semiparametric Regression for Composite Endpoints with Different Component Censoring Times. Presented at the University of Maryland, Baltimore County, 2017.

19. Semiparametric Regression for Composite Endpoints with Different Component Censoring Times. Presented at the University of Virginia, Charlottesville, 2016.

20. Semiparametric Regression for Composite Endpoints with Different Component Censoring Times. Presented at Johns Hopkins University, Baltimore, 2016.

21. Covariate-Adjusted Semiparametric Transformation Graphical Models with Applications to Time Series Imaging Data. Presented at the Sixth International Workshop on the Perspectives on High-dimensional Data Analysis, Toronto, Canada, 2016.

22. Conditional Variable Screening in High-Dimensional Binary Classification. Presented at the ICSA Applied Statistics Symposium, Atlanta, Georgia 2016.

23. A Semiparametric Method for Comparing the Discriminatory Ability of Biomarkers subject to Limit of Detection. Presented at Johns Hopkins University, Baltimore, 2016.

24. Conditional Variable Screening in High-Dimensional Binary Classification. Presented at the Fifth International Workshop on the Perspectives on High-dimensional Data Analysis, Victoria, Canada, 2015.

25. Statistical Design of Non-Inferiority Multiple Region Clinical Trials to Assess Global and Consistent Treatment Effects. Presented at ENAR Annual Meeting, Miami, Florida 2015.

26. New Semiparametric Regression Method with Applications to Selection-Bias Sampling and Missing Data Problems. Presented at the Office of Biostatistics Research, NHLBI, Bethesda, Maryland 2015.

27. New Semiparametric Regression Method with Applications to Selection-Bias Sampling and Missing Data Problems. Presented at Georgetown University, Washington DC, 2015.

28. New Semiparametric Regression Method with Applications to Selection-Bias Sampling and Missing Data Problems. Presented at Johns Hopkins University, Baltimore, Maryland 2014.

29. High Dimensional Covariate-Adjusted Semiparametric Transformation Gaussian Graphical Models. Presented at The Fourth International Workshop on the Perspectives on High-dimensional Data Analysis, Banff, Canada, 2014.

30. A new approach for generalized linear model with applications to selection biased sampling and missing data problems. Presented at Frontiers in Applied and Computational Mathematics, Newark, 2014.

31. Semiparametric Analysis of Right-Censored Data with Temporal Covariate Effects. Presented at ICSA & ISBS Joint Statistical Conference, Bethesda, Maryland 2013.

32. Bootstrap Inference for High-Dimensional Data. Presented at International Workshop Perspectives on High-Dimensional Data Analysis III, Vancouver, Canada, 2013.

33. A new approach for generalized linear model with applications to selection biased sampling and missing data problems. Presented in the Department of Statistics, George Washington University, 2013.

34. Multivariate Tests for High Dimensional Data. Presented at Second Joint Biostatistics Symposium, Beijing, China, 2012.

35. Multivariate Tests for High Dimensional Data. Presented at International Workshop Perspectives on High-Dimensional Data Analysis II, Montreal, Canada, 2012.

36. Semiparametric Hazards Rate Model for Modeling Short-Term and Long-Term Effects. Presented at the Department of Biostatistics, Columbia University, 2011.

37. A General Transformation Class of Semiparametric Cure Rate Random Effects Models. Presented at Department of Mathematics and Statistics, University of Maryland, Baltimore County, 2009.

38. Semiparametric Variance-Component Models for Linkage and Association Analysis of Censored Trait Data. Presented at Division of General Internal Medicine , The Johns Hopkins University School of Medicine, Baltimore, 2008.

39. Efficient Analysis of Associations between Haplotypes and Quantitative Traits in Family Studies. Presented at Department of Bioinformatics and Computational Biology, George Mason University, Manassas, 2008.

40. A General Transformation Class of Semiparametric Cure Rate Random Effects Models. Presented at Department of Statistics, University of Virginia, Charlottesville, 2008.

41. Efficient Analysis of Associations between Haplotypes and Quantitative Traits in Family Studies. Presented at Division of Cancer Epidemiology and Genetics, National Cancer Institute, Rockville, 2008.

42. A General Transformation Class of Semiparametric Cure Rate Random Effects Models. Presented at Department of Biostatistics, M D Anderson Cancer Center, Houston, 2008.

43. Joint Linkage and Association Analysis of Ordinal Traits in General Pedigrees. Presented at ICSA Annual Meeting, Raleigh, 2007.

44. Semiparametric Variance-Component Models for Linkage and Association Analysis of Censored Trait Data. Presented at ENAR Annual Meeting, Atlanta, 2007.

45. Semiparametric Variance-Component Models for Mapping Quantitative Trait Loci in General Pedigrees with Application to the Genetics of Alcoholism. Presented at Department of Biostatistics, Emory University, Atlanta, 2007.

46. Semiparametric Variance-Component Models for Mapping Quantitative Trait Loci in General Pedigrees with Application to the Genetics of Alcoholism. Presented at Department of Applied Engineering and Statistics, George Mason University, Fairfax, 2006.

47. Semiparametric Variance-Component Models for Mapping Quantitative Trait Loci in General Pedigrees with Application to the Genetics of Alcoholism. Presented at Department of Applied Mathematics & Statistics, State University of New York, Stony Brook, 2006.

Contributed Presentations

1. New Semiparametric Regression Method with Applications to Selection-Bias Sampling and Missing Data Problems. Presented at Joint Statistical Meeting, Boston, 2014.

2. Bootstrap Inference for High-Dimensional Data. Presented at Joint Statistical Meeting, Montreal, Canada, 2013.

3. Multivariate Tests for High Dimensional Data. Presented at Joint Statistical Meeting, San Diego, 2012.

4. Time Dependent Covariates in a Competing Risks Setting. Presented by Sandrine Katsahian at the 32^{nd} Annual Conference of the International Society for Clinical Biostatistics, Ottawa, Canada, 2011.

5. Semiparametric Hazards Rate Model for Modeling Short-Term and Long-Term Effects. Presented at Joint Statistical Meeting, Miami, 2011.

6. Semiparametric Cure Rate Models for Current Status Data. Presented at ENAR Annual Meeting, San Antonio, 2009.

7. Semiparametric Cure Rate Models with Random Effects. Presented at Joint Statistical Meeting, Denver, 2008.

8. Semiparametric Cure Rate Models with Random Effects. Presented at ENAR Annual Meeting, Arlington, 2008.

9. Semiparametric Methods for Linkage and Association Analysis of Quantitative Traits in Longitudinal Pedigree Studies. Presented at International Genetic Epidemiology Society Annual Meeting, St. Pete Beach, 2006.

10. Efficient Analysis of Associations between Haplotypes and Quantitative Traits in Family Studies. Presented at American Society of Human Genetics Annual Meeting, New Orleans, 2006.

11. Semiparametric Variance-Component Models for Linkage and Association Analysis of Censored Trait Data. Presented at ENAR Annual Meeting, Tampa, 2006.

12. Semiparametric Models for Mapping Quantitative Trait Loci With Censored Data. Presented at International Genetic Epidemiology Society Annual Meeting, Park City, 2005.

13. Improving the Power of Association Tests for Quantitative Traits in Family Studies. Presented at American Society of Human Genetics Annual Meeting, Salt Lake City, 2005.

14. A Powerful and Robust Method for Mapping Quantitative Trait Loci in General Pedigrees. Presented at ENAR Annual Meeting, Austin, 2005.

15. Mapping Quantitative Trait Loci With Censored Observations. Presented at ENAR Annual Meeting, Pittsburgh, 2004.

Doctoral Students

1. Liang Li. Defended in July 2011. Dissertation title: “Statistical Methods for the Association Analysis of Censored Failure Time and Ordinal Data in Genetic Family Studies". Currently Product Analytics Manager at Visa Inc.

2. Mengdie Yuan. Defended in April 2014. Dissertation title: “Semiparametric Regression Analysis of Survival and Longitudinal Data". Currently Mathematical Statistician at U.S. Food and Drug Administration.

3. Lixuan Yin. Defended in August 2017. Dissertation title: “Semiparametric Transformation Models with Applications to Diagnostic Biomarker Data and Clinical Trials". Currently Biostatistician II at MedPace.

4. Scott Marchese. Defended in March 2018. Dissertation title: “Semiparametric Modelling of Multivariate Regressions". Currently Data Scientist at Noblis.

5. Li Yang (co-advising with Dr. William Rosenberger). Defended in July 2019. Dissertation title: “A Two-Stage Covariate-Adjusted Response-Adaptive Enrichment Design". Currently Statistician at the Nursing Department, NIH Clinical Center.
6. Moming Li. Tentative dissertation title: “Three Essays in Regression Analysis". Defended in July 2020.
7. Tianjiao Xia. Tentative dissertation title: “Semiparametric analysis of ROC curves for longitudinal and clustered data". Expected to graduate in 2021.
8. Weibing Zhong.
9. Aisha Ghazwani.

Ph.D. Dissertation Committee Membership

1. Oleksandr Sverdlov. Department of Statistics. Completed in 2007 (Advisor: William Rosenberger)
2. Elo Leung. Department of Bioinformatics and Computational Biology. Completed in 2007 (Advisor: Jennifer Weller)
3. James Diggans. Department of Bioinformatics and Computational Biology. Completed in 2008 (Advisor: Jennifer Weller)
4. Tigran Markaryan. Department of Statistics. Completed in 2009 (Advisor: William Rosenberger)
5. Ting Dong. Department of Statistics. Completed in 2011 (Advisor: Liansheng Tang)
6. Yang Wang. Department of Statistics. Completed in 2012 (Advisor: William Rosenberger)
7. Parwen Parhat. Department of Statistics. Completed in 2013 (Advisor: William Rosenberger)
8. Pin Ren. Department of Statistics. Completed in 2014 (Advisor: Anand Vidyashankar)
9. Daniel Saxton. Department of Statistics. Completed in 2014 (Advisor: Anand Vidyashankar)
10. Xin Cao. Department of Statistics. Completed in 2015 (Advisor: Anand Vidyashankar)
11. Hui Shao. Department of Statistics. Completed in 2015 (Advisor: William Rosenberger)
12. Seunghye Wilson. Department of Statistics. Completed in 2016 (Advisor: Jim Gentle)
13. Dave Hughes. Department of System Engineering and Operational Research. Completed in 2017 (Advisor: John Shortle)
14. Yanying Wang. Department of Statistics. Completed in 2019 (Advisor: William Rosenberger)
15. Zhantao Lin. Department of Statistics. Completed in 2020 (Advisor: William Rosenberger)
16. Matthew D’Anna, Department of Criminology, Law and Society. Completed in 2020 (Advisor: Christopher S. Koper)
17. Jingyi Shao, Department of Statistics, George Mason University. In progress (Advisor: Wanli Qiao)
18. Yizhao Zhou, Department of Biostatistics, Bioinformatics & Biomathematics, Georgetown University. In progress (Advisor: Ao Yuan)

Intramural Service (George Mason University)

Department Service

1. Graduate Program Director, Department of Statistics, 2019-2020.
2. Chair of Admission Committee, Department of Statistics, 2019-2020.
3. Chair of Student Recruitment Committee, Department of Statistics, 2019-2020.
4. Member of Faculty Search Committee, Department of Statistics, 2007-2008, 2009-2010, 2010-2011, 2013-2015, 2017-2020.
5. PhD Program Director, Department of Statistics, 2018-2019.
6. Co-chair for graduate student travel fund approval, Department of Statistics, 2018-2020.
7. Co-author (with Dr. Rosenberger) of a proposal for the Provost PhD Program Award, which was funded from 2015 to 2018 with the total amount of $377,994.
8. Acting PhD Program Director, Department of Statistics, 2014-2015.
9. Chair/Co-Chair of Departmental Seminar Committee, Department of Statistics, 2006-2012.

School Service

1. P&T Committee Member, Volgenau School of Engineering, 2017-2018, 2019-2020.
2. Member of Computing Committee, Volgenau School of Engineering, 2019-2020.
3. Member of the Engineering School Graduate Studies Committee, 2012-2020.
4. Member of Faculty Search Committee, Bioengineering Program, 2009-2010.
5. Member of the IT&E Graduate Studies Committee, 2007-2011.

University Service

1. Member of Research Council, George Mason University, Fall 2019.
2. Member of Faculty Search Committee, College of Health and Human Service, 2018-2019.
3. Member of the University Graduate Council, 2012-2018.
4. Member of Faculty Search Committee, Center of Chronic Illness and Disability, 2006-2007.

Professional Memberships

1. American Statistical Association
2. Institute of Mathematical Statistics
3. International Chinese Statistical Association

Professional Service

1. Chair of the Organization Committee, ICSA 2021 Applied Statistics Symposium (Virtual), Sep 12 - Sep 15, 2021
2. Member of PCORI Methods Review Panel, 2019, 2021
3. Chair of Student Paper and Poster Award Committee, 2019 ASA Lifetime Data Science Conference, Pittsburgh, PA
4. Organizer of the invited session “Advances in the Analysis of Composite Endpoints subject to Component-wise Censoring", 2019 Lifetime Data Science Conference, Pittsburgh, PA
5. ASA Lifetime Data Science Section Representative, 2019 JSM Program Committee
6. Program Chair, ASA Lifetime Data Science Section, 01/2019–12/2019
7. Program Chair-Elect, ASA Lifetime Data Science Section, 01/2018–12/2018
8. Member of Program Committee, ICSA, 2018–2020
9. Editorial service:
    - Associate Editor for Statistics in Biosciences, 2017-present
10. Member of Student Paper Award Committee, 2017 Conference on Lifetime Data Science, University of Connecticut
11. Organizer of the invited session “Advances in Ultra High Dimensional Data Analysis", 2016 ICSA Annual Meeting, Atlanta, GA
12. Local Committee Chair, 2013 ICSA & ISBS Joint Statistical Conference, Bethesda, MD
13. Co-Chair of the Local Arrangements Committee, 2008 ENAR Annual Meeting, Crystal City, VA
14. Referee for statistical journals:
    - Annals of Statistics
    - Biometrical Journal
    - Biometrics
    - Biometrika
    - Biostatistics
    - Communications in Statistics
    - Computational Statistics & Data Analysis
    - International Journal of Biostatistics
    - Journal of Applied Statistics
    - Journal of the American Statistical Association
    - Journal of Statistical Planning and Inference
    - Journal of the Royal Statistical Society (Series B)
    - Lifetime Data Analysis
    - Metrika
    - Sankhya
    - Sequential Analysis

- Statistical Methodology
- Statistics and Its Interface
- Statistics in Biopharmaceutical Research
- Statistics in Biosciences
- Statistics in Medicine
- Statistics and Probability Letters
- Statistical Science

15. Referee for genetic and medical journals:

    - Archives of Physical Medicine and Rehabilitation
    - BMC Genetics
    - BMC Proceedings
    - Genetica
    - Genetics
    - Genetic Analysis Workshop 15
    - Genetic Analysis Workshop 16
    - Genetical Research
    - Genetics Research
    - Human Heredity
    - Journal of the National Cancer Institute
    - Nucleic Acids Research
    - PLoS Genetics
    - PLoS One