Fei Gao

Contact Information

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Research Interests

Clinical Trials; Causal Inference; HIV Prevention; Missing Data; Semiparametric Inference; Survival Analysis.

Education

2017   **Ph.D. in Biostatistics**, University of North Carolina at Chapel Hill

2012   **B.S. in Environmental Sciences**, Peking University

2011   **B.S. (Second Major) in Math and Applied Math**, Peking University

Professional Experience

2020 - Present   **Affiliate Assistant Professor**
Department of Biostatistics, University of Washington

2019 - Present   **Assistant Professor**
Vaccine and Infectious Disease Division (VIDD) and Public Health Sciences
Division (PHS), Fred Hutchinson Cancer Research Center

2017 - 2019   **Senior Fellow**
Department of Biostatistics, University of Washington

Teaching Experience

2014 - 2016   **Teaching Assistant**
Department of Biostatistics, University of North Carolina at Chapel Hill

Honors and Awards

2019   **Kupper Dissertation Publication Award**
Department of Biostatistics, University of North Carolina at Chapel Hill

2017   **Student/Post-Docs Paper Award**
2017 Conference on Lifetime Data Science

2017   **Distinguished Student Paper Award**
International Biometric Society, Eastern North American Region (ENAR)

2016   **Student Paper Award**
International Chinese Statistical Association

Publications

1. Parkin, N., **Gao, F.**, Grebe, E., Cutrell, A., Das, M., Donnell, D., Duerr, A., Glidden, D., Hughes, J. Mullick, C., Murray, J., Robertson, M., Valappil, T., Zinserling, J., Miller, V., for the Forum for Collaborative Research Recency Assay Working Group. "HIV recent infection assays can provide a counterfactual incidence estimate for clinical trials of pre-exposure prophylaxis: a consensus statement from the Forum HIV Prevention Trial Design Project". submitted.

2. **Gao, F.** and Chan, K. C. G. "Efficient Estimation of Semiparametric Transformation Model With Interval-Censored Data in Two-Phase Cohort Studies". submitted.

3. **Gao, F.**, Xia, F. and Chan, K. C. G. "Defining and Estimating Subgroup Mediation Effects with Semi-Competing Risks Data". arXiv preprint arXiv:2010.00061. revision submitted.

4. **Gao, F.** and Bannick, M. "Statistical Considerations for Cross-Sectional HIV Incidence Estimation Based on Recency Test". accepted for publication in **Statistics in Medicine**.

5. **Gao, F.** and Chan, K. C. G. "Non-iterative Adjustment to Regression Estimators with Population-based Auxiliary Information for Semiparametric Models". accepted for publication in **Biometrics**. biom.13585.

6. **Gao, F.**, Glidden, D., Hughes, J., and Donnell, D. "Sample Size Calculation for Active-Arm Trial with Counterfactual Incidence Based on Recency Assay". arXiv preprint arXiv:2011.00725. accepted for publication in **Statistical Communications in Infectious Diseases**.

7. Swan, D. A., Goyal, A., Bracis, C., Moore, M., Krantz, E., Brown, E., Cardozo-Ojeda, F., Reeves, D. B., **Gao, F.**, Painter, I., Gilbert, P. B., Corey, L., Cohen, M. S., Janes, H., Dimitrov, D., and Schiffer, J. T. (2021). "Mathematical Modeling of Vaccines that Prevent SARS-CoV-2 Transmission by Lowering Viral Load". **Viruses**, 13(10), 1921.

8. Janes, H., **Gao, F.** and Luedtke, A. "Discussion on "Estimating vaccine efficacy over time after a randomized study is unblinded" by Anastasios A. Tsiatis and Marie Davidian". **Biometrics**. https://doi.org/10.1111/biom.13542.

9. Chan, K. C. G, **Gao, F.**, and Xia, F. "Discussion on "Causal Mediation of Semicompeting Risks" by Yen-Tsung Huang". **Biometrics**. https://doi.org/10.1111/biom.13520.

10. **Gao, F.**, Wang, Y., and Zeng, D. (2021). "Semiparametric Regression Analysis of Bivariate Censored Events in a Family Study of Alzheimer's Disease". **Biostatistics**. kxab014.

11. Shelton, S. E., Stone, J., **Gao, F.**, Zeng, D., and Dayton, P. A. (2020). "Microvascular Ultrasonic Imaging of Angiogenesis Identifies Tumors in a Murine Spontaneous Breast Cancer Model". **International Journal of Biomedical Imaging**. 2020:7862089.

12. **Gao, F.**, Wang, Y., and Zeng, D. (2019). "Early Diagnosis of Neurological Disease Using Peak Degeneration Ages of Multiple Biomarkers". **Annals of Applied Statistics**, 13(2), 1295–1318.

13. **Gao, F.** and Chan, K. C. G. (2019). "Semiparametric Regression Analysis of Length-Biased Interval-Censored Data". **Biometrics**, 75(1): 121–132.

14. **Gao, F.**, Zeng, D., Couper, D., and Lin, D. Y. (2019). "Semiparametric Regression Analysis of Multiple Right- and Interval-Censored Events". **Journal of the American Statistical Association**, 114(527), 1232–1240.

15. Wan, Y., Jackson, T., Chung, C., **Gao, F.**, Blakey, G., & Nguyen, T. (2019). Comparison of Condylar Position in Orthognathic Surgery Cases Treated with Virtual Surgical Planning vs. Conventional Model Planning. **Orthodontics & Craniofacial Research**, 22, 142–148.

16. **Gao, F.**, Zeng, D., and Lin, D. Y. (2018). "Semiparametric Regression for Interval-Censored Data With Informative Dropout". **Biometrics**, 74(4), 1213–1222.

17. **Gao, F.**, Zeng, D., Wei, H., Wang, X., and Ibrahim, J. G. (2018). "Estimating Treatment Effects for Recurrent Events in the Presence of Rescue Medications: An Application to the Immune Thrombocytopenia Study". **Statistics in Biosciences**, 10(2), 473–489.

18. Jung, H. K., Kuzmiak, C. M., Kim, K. W., Choi, N. M., Kim, H. J., Langman, E. L., Yoon, S., Steen, D., Zeng, D., and **Gao, F.** (2017). "Potential Use of American College of Radiology BI-RADS Mammography Atlas for Reporting and Assessing Lesions Detected on Dedicated Breast CT Imaging: Preliminary Study". **Academic Radiology**, 24(11), 1395–1401.

19. **Gao, F.**, Liu, G., Zeng, D., Xu, L., Lin, B., Diao, G., Golm, G., Heyse, J. F., and Ibrahim, J. G. (2017). "Control-based Imputation for Sensitivity Analyses in Informative Censoring for Recurrent Event Data". **Pharmaceutical Statistics**, 16(6), 424–432.

20. Zeng, D., **Gao, F.**, and Lin, D. Y. (2017). "Maximum Likelihood Estimation for Semiparametric Regression Models With Multivariate Interval-Censored Data". **Biometrika**, 104(3), 505–525.

21. **Gao, F.**, Dong, J., Zeng, D., Rong, A., and Ibrahim, J. G. (2017). "Pattern Mixture Models for Clinical Validation of Biomarkers in the Presence of Missing Data". **Statistics in Medicine**, 36(19), 2994–3004.

22. **Gao, F.**, Zeng, D., and Lin, D. Y. (2017). "Semiparametric Estimation of the Accelerated Failure Time Model With Partly Interval-Censored Data". **Biometrics**, 73(4), 1161–1168.

23. **Gao, F.**, Liu, G., Zeng, D., Diao, G., Heyse, J. F., and Ibrahim, J. G. (2017). "On Inference of Control-based Imputation for Analysis of Repeated Binary Outcomes with Missing Data". **Journal of Biopharmaceutical Statistics**; 27(3), 358–372.

24. Zeng, D., **Gao, F.**, Hu, K., Jia, C., and Ibrahim, J. G. (2015). "Hypothesis Testing for Two-stage Designs With Over or Under Enrollment". **Statistics in Medicine**, 34(16), 2417–2426.

INVITED TALK

1. "Semiparametric Regression Analysis of Bivariate Censored Events in a Family Study of Alzheimer's Disease", ICSA Applied Statistics Symposium, September, 2021.

2. "Efficient Estimation of Semiparametric Transformation Model With Interval-Censored Data in Two-Phase Cohort Studies". R. Clifton Bailey Seminar Series, Department of Statistics, George Mason University, April 2021.

3. Panel discussion on "Novel Scientific Approaches for Establishing Efficacy of New Biologics", Design Approaches for Current and Future HIV Prevention Efficacy Trials Virtual Workshop Series, Global HIV Vaccine Enterprise, March, 2021.

4. "Design for Actve-Arm Trial with Counterfactual Placebo Incidence Based on Recency Test", Fred Hutch/UW Infectious Disease Prevention Research via Innovative Statistical Methods (ID-PRISM), Feb 2021.

5. "Early Diagnosis of Neurological Disease Using Peak Degeneration Ages of Multiple Biomarkers", Joint Statistical Meetings, August 2020.

6. "Defining and Estimating Subgroup Mediation Effects with Semi-Competing Risks Data", Fred Hutch Biostatistics Seminar Series, July 2020.

7. "Semiparametric Regression Analysis of Length-Biased Interval-Censored Data", Fred Hutch VIDD Scientific Seminar Series, Seattle, WA, July 2019.

8. "Semiparametric Regression Analysis of Length-Biased Interval-Censored Data", ICSA China Conference, Tianjin, China, July 2019.

9. "Non-iterative Estimation Update for Parametric and Semiparametric Models with Population-based Auxiliary Information", ICSA Applied Statistics Symposium, Raleigh, NC, June 2019.

10. "Semiparametric Regression Analysis of Length-Biased Interval-Censored Data", Conference on Lifetime Data Science, Pittsburgh, PA, May 2019.

11. "Non-iterative Estimation Update for Parametric and Semiparametric Models with Population-based Auxiliary Information", UNC Charlotte Statistics Seminar, Charlotte, NC, Nov 2018.

12. "Control-based Imputation for Missing Data with Application to an Anti-Depressant Trial", NC TraCS Biostatistics Seminar Series, Chapel Hill, NC, April 2016.

Professional Memberships

- American Statistical Association

- International Biometric Society, ENAR

- International Chinese Statistical Association

Review Service

- Biometrics

- Biometrical Journal

- Journal of the American Statistical Association

- Journal of Applied Statistics

- Journal of Nonparametric Statistics

- Lifetime Data Analysis

- Plos One

- Scandinavian Journal of Statistics

- Statistica Sinica

- Statistics and Its Interface

- Statistics in Bioscience

- Statistics in Medicine

- Vaccine

Interests and Activities

- Badminton

  - Semi-finalist of Women Double B, 2019 BCD+A, Kirkland, WA
  - Runner-up of Women Double B, 2018 Charlotte Open, Charlotte, NC
  - Winner of Women Single D, 2018 WA Open, Kirkland, WA
  - Runner-up of Women Double A, 2017 Southern Open, Chattanooga, TN
  - Winner of Women Double B, BNC Open 2017, Morrisville, NC
  - Runner-up of Mixed Double C, 2016 Charlotte Open, Charlotte, NC
  - President of Badminton Club at the University of North Carolina at Chapel Hill, 2015-2016

- Traveling, Fitness