

FAN BU

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PROFESSIONAL AFFILIATIONS

Tenure-track Assistant Professor

Jan 2024 - present

Department of Biostatistics, University of Michigan - Ann Arbor

Postdoctoral Scholar

Aug 2021 - Dec 2023

Department of Biostatistics, University of California - Los Angeles

Supervisor: Dr. Marc Suchard

Visiting Scholar

Sept 2022 - Nov 2022

Simons Institute, University of California - Berkeley

Research Intern

May 2020 - Aug 2020

Duke Center for AIDS Research

EDUCATION

Department of Statistical Science, Duke University

2017 - 2021

Ph.D. in Statistics; Dissertation: Stochastic Process Models on Dynamic Networks

Advisor: Dr. Alexander Volfovsky

School of Mathematical Sciences, Peking University

2013 - 2017

B.S. in Mathematical Science (Specialty Track: Data Science)

PUBLICATIONS & PREPRINTS

† denotes student mentee

32. Z. Pan[†] and **F. Bu**. Multi-Signal Safety Surveillance with Bayesian Latent Factor Modeling and Bias Correction (2026+). *arXiv:2608.03775*. *Under review*.
31. M. Yu[†], Z. Wu, MM. Hood, CA Karvonen-Gutierrez, **F. Bu**, MR. Elliott. Bayesian Joint Modeling of Longitudinal Symptomatology Scale Responses and Fall Outcomes via Heterogeneous Latent Transition Analysis (2026+). *arXiv: 2608.00898*. *Under review*.
30. W. Hua[†] and **F. Bu**. GeoID-PINN: Identifiability-Aware Regional Epidemic Inference with Geographic Coupling (2026). *ACM SIGKDD epiDAMIK workshop; spotlight presentation*.
29. P. Chatha[†], **F. Bu**, J. Regier, E. Snitkin, and J. Zelner. Neural Posterior Estimation for Stochastic Epidemic Modeling (2026). *Annals of Applied Statistics*.
28. X. Ding, V. Vadini, C. Kim, **F. Bu**, ..., and A. Nishimura. Sex Differences in Comparative Effectiveness and Safety of Second-line Antidiabetic Agents: Real-world Evidence from Large-scale Multinational Study (2026+). *medRxiv: 2026.04.10.26350252*. *Under review*.
27. **F. Bu**, R. Wu[†], A. Ostropelets, [...], R. Khera, G. Hripscak, and M. A. Suchard. Comparative Cardiovascular Effectiveness of Individual Glucagon-Like Peptide 1 Receptor Agonists and Sodium-Glucose Cotransporter-2 Inhibitors as Second-Line Type 2 Diabetes Mellitus Treatments (2026). *Journal of the American College of Cardiology*.
26. C. Kim, **F. Bu**, C. Blacketer, A. Ostropelets, [...], and Y. Lu. Comparative safety of second-line antihyperglycemic agents in older adults with type 2 diabetes: a multinational real-world evidence from LEGEND-T2DM (2026). *Nature Communications*.
25. T. Boyer, R. B. Barret, C. Xiong, **F. Bu**, [...], and A. S. Minhas. Hypertensive Disorders of Pregnancy and Premature Cardiovascular Disease in a Diverse Cohort of Young US Women (2025). *Circulation*.

24. V. Obregon-Perko, A. Awasthi, R. Barfield, [...], **F. Bu**, [...], and A. Chahroudi. Biomarkers for viral rebound timing and control post-ART in SHIV-infected infant macaques (2025). *Science Translational Medicine*.
23. D. Morales, **F. Bu**, B. Viernes, [...], and M. A. Suchard. Risk of thyroid tumours with glucagon-like peptide-1 receptor agonists: international cohort study (2025). *Diabetes Care*.
22. L. Rountree[†], G. Tong, **F. Bu**, M. Ranney, and B. Mukherjee. Association of COVID-19 outcomes with measures of institutional and interpersonal trust: An ecological analysis using national data from 61 countries (2025). *Nature Scientific Reports*.
21. N. Hartman and **F. Bu**. Joint Models for Health Services Delivery During Infectious Disease Epidemics (2025+). *Under revisions*.
20. S. Chattopadhyay, **F. Bu**, M. J. Schuemie, J. A. McLeggon, E. Westlund, G. Hripcsak, P. Ryan, and M. A. Suchard. Comparative performance of the concurrent comparator design with existing vaccine safety surveillance approaches on real-world observational health data (2025+). *Under revisions*.
19. C. Reyes, T. Duarte-Salles, A. Pistillo, **F. Bu**, [...], and M. A. Suchard. Gastrointestinal Adverse Effects of Second-Line Anti-Diabetic Drugs: A Federated Cohort Study (2025+). *Under revisions*.
18. **F. Bu**, A. E. Aiello, A. Volfovsky, and J. Xu. Stochastic EM algorithm for partially observed stochastic epidemics with individual heterogeneity (2025). *Biostatistics*.
17. L. Rountree[†], Y.T. Lin, C. Liu, M. Salvatore, A. Admon, B. K. Nallamothu, K. Singh, A. Basu, **F. Bu**, B. Mukherjee. Reporting of Fairness Metrics in Clinical Risk Prediction Models: A Call for Change to Ensure Equitable Precision Health Benefits for All (2025). *Online Journal of Public Health Informatics*.
16. C. Cai, M. Hribar, Sally Baxter, [...], **F. Bu**, [...], and Patrick B. Ryan. Semaglutide and Nonarteritic Anterior Ischemic Optic Neuropathy (2025). *JAMA Ophthalmology*.
15. **F. Bu**, E. Minty, A. Aminorroaya, C. Blacketer, [...], and M. A. Suchard. Multi-national Patterns of Individual Cardioprotective Agents as Second-line Treatments for Type 2 Diabetes Mellitus: a LEGEND-T2DM Study (2024). *Proceedings of the 2025 OHDSI Global Symposium*.
14. R. Khera, A. Aminorroaya, L. S. Dhingra, P. M. Thangaraj, A. P. Camargos, **F. Bu**, [...], and M. A. Suchard. Comparative Effectiveness of Second-line Antihyperglycemic Agents for Cardiovascular Outcomes: A Large-scale, Multinational, Federated Analysis of the LEGEND-T2DM Study (2024). *Journal of the American College of Cardiology*.
13. C. Cai, A. Nishimura, M. Bowring, [...], **F. Bu**, [...], and Patrick B. Ryan. Similar risk of kidney failure among patients with blinding diseases who receive ranibizumab, aflibercept, and bevacizumab (2024). *Ophthalmology Retina*.
12. **F. Bu**, J. Kagaayi, M. K. Grabowski, J. Xu, and O. Ratmann. Inferring HIV Transmission Patterns from Viral Deep-Sequence Data via Latent Spatial Poisson Processes (2024). *Biometrics*. (Winner of 2024 ISBA Biostats and Pharma Best Paper Award. Winner of Best Paper in Biometrics by an IBS Member from 2024.)
11. T. V. Anand, **F. Bu**, M. J. Schuemie, M. A. Suchard, and G. Hripcsak. Comparative safety and effectiveness of angiotensin converting enzyme inhibitors and thiazides and thiazide-like diuretics under strict monotherapy (2024). *Journal of Clinical Hypertension*.
10. R. Khera, L.S. Dhingra, A. Aminorroaya, [...], **F. Bu**, [...], and M. A. Suchard. Multinational patterns of second line antihyperglycaemic drug initiation across cardiovascular risk groups: federated pharmacoepidemiological evaluation in LEGEND-T2DM (2023). *BMJ medicine*.
9. F. Arshad, M. J. Schuemie, **F. Bu**, [...], and M. A. Suchard. Serially Combining Epidemiological Designs Does Not Improve Overall Signal Detection in Vaccine Safety Surveillance (2023). *Drug Safety*.
8. E. A. Voss, A. Shoaibi, L. Y. H. Lai, [...], **F. Bu**, [...], and P. B. Ryan. Contextualising adverse events of special interest to characterise the baseline incidence rates in 24 million patients with COVID-19 across 26 databases: a multinational retrospective cohort study (2023). *EClinicalMedicine*.
7. **F. Bu**, M. J. Schuemie, A. Nishimura, L. H. Smith, K. Kostka, T. Falconer, J. A. McLeggon, P. B.

- Ryan, G. Hripcsak, and M. A. Suchard. Bayesian Safety Surveillance with Adaptive Bias Correction (2023). *Statistics in Medicine*.
6. M. Schuemie, **F. Bu**, A. Nishimura and M. Suchard. Adjusting for Both Sequential Testing and Systematic Error in Safety Surveillance using Observational Data: Empirical Calibration and MaxSPRT (2023). *Statistics in Medicine*.
 5. R. Asencio, **F. Bu**, L. Tucker, G. Varela, J. Moody, and A. Volfovsky. Network Position and Emergent Phenomena: A Multi-team System Case Study (2022+). *Under revisions*.
 4. **F. Bu**, A. E. Aiello, J. Xu, and A. Volfovsky. Likelihood-based Inference for Partially Observed Epidemics on Dynamic Networks (2021). *Journal of the American Statistical Association* (Winner of 2020 ASA SBSS Student Paper Award.)
 3. **F. Bu**, S. Xu, K. Heller, and A. Volfovsky. SMOGS: Social Network Metrics of Game Success (2019). *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*.
 2. W. Zhang, **F. Bu**, D. Owen-Oas, K. Heller, and X. Zhu. Who Started It? Identifying Root Sources in Textual Conversation Threads (2018). *arXiv:1809.03648*.

Research letters & non-peer reviewed:

1. **F. Bu**, F. Arshad, G. Hripcsak, P. B. Ryan, M. J. Schuemie, and M. A. Suchard. Response to Comments on “Serially Combining Epidemiological Designs Does Not Improve Overall Signal Detection in Vaccine Safety Surveillance” (2024). *Drug Safety*.

AWARDS & HONORS

Best Paper in <i>Biometrics</i> (published in 2024) by an IBS Member.	<i>January 2026</i>
2024 ISBA Biostats and Pharma Best Paper Award. For “Inferring HIV Transmission Patterns from Viral Deep-Sequence Data via Latent Spatial Poisson Processes”	<i>February 2025</i>
Blackwell-Rosenbluth Award (for outstanding early-career statisticians) by the International Society for Bayesian Analysis.	<i>November 2024</i>
OHDSI Best Collaborator Showcase for clinical application (nominated).	<i>October 2024</i>
OHDSI Titan Award for Methodological Research.	<i>October 2022</i>
Mentorship of Excellence award for 2022 UCLA B.I.G. summer research program.	<i>August 2022</i>
ISBA World Meeting travel award.	<i>June 2022</i>
Duke CFAR Fall Retreat Best Poster Award.	<i>October 2020</i>
American Statistical Association Section on Bayesian Statistical Science (ASA SBSS) Student Paper Award. For “Likelihood-based Inference for Partially Observed Epidemics on Dynamic Networks”	<i>August 2020</i>
Joint Statistical Meetings travel award.	<i>August 2020</i>
Honorable Mention for Ph.D. Teaching Assistant for the Year.	<i>May 2020</i>
Women in Machine Learning Workshop (WiML) travel award.	<i>December 2017</i>

RESEARCH GRANTS & AWARDS

PCORI Methodological Grant “Robust Personalized Causal Machine Learning” Role: PI (joint with Larry Han, Northeastern University)	<i>July 2026 - June 2029</i>
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MICHR Translational Science Pilot Award “The Digital Clan: Robust, Transparent Digital Twins for Personalized Treatment Evaluation” Role: PI	<i>March 2026 - March 2027</i>
US FDA CBER BEST Initiative, 75F40120D00039 “OHDSI-based FDA BEST Community Engagement and Development Coordination Center” Role: UM site PI (lead PI: George Hripcsak, Columbia University)	<i>Sep 2024 - March 2025</i>
Bill & Melinda Gates Foundation, INV-077867 “Comparative Effectiveness of Different Dosing Schedules of PCV in Brazil” Role: UM site PI (lead PI: Kayoko Shioda, Boston University)	<i>Aug 2024 - Aug 2026</i>
MIDAS Propelling Original Data Science (PODS) program “Neural Posterior Estimation (NPE) approaches for fitting high-dimensional stochastic epidemic models to real-world spatiotemporal disease data” Role: dual PI (with Jon Zelner, University of Michigan)	<i>Aug 2024 - July 2025</i>
US CDC NCIRD U01, IP001138 “Data driven transmission models to optimize influenza vaccination and pandemic mitigation strategies” Role: co-I (PI: Jon Zelner, University of Michigan)	<i>Jan 2025 - Aug 2025</i>

PROFESSIONAL SERVICE

Professional Societies:

Program Chair for <i>Biopharmaceutical section of the International Society for Bayesian Analysis</i> .	<i>January 2025 - present</i>
Associate Chair for <i>ENAR Social Media Committee</i>	<i>September 2023 - December 2024</i>
Program Chair for <i>the junior section of the International Society for Bayesian Analysis (j-ISBA)</i> .	<i>January 2022 - December 2023</i>

Editorial and Review Responsibilities:

Associate Editor for <i>Environmental and Ecological Statistics</i> .	<i>September 2025 - present</i>
Member for Book of OHDSI Committee.	<i>March - December 2025</i>
Judge for ASA SBSS student paper competition.	<i>October - December 2024</i>
Scientific Review Committee member for 2024 OHDSI Global Symposium.	<i>March - October 2024</i>
Co-editor for BaYSM 2023 proceedings, “ <i>New trends in Bayesian Statistics</i> ”.	<i>May - December 2024</i>
Grant proposal reviewer for UKRI.	<i>February 2024</i>

Journal reviewer for: *The Proceedings of the National Academy of Sciences (PNAS)*, *Nature Communications*, *Nature Cardiovascular Research*, *Journal of the American Statistical Association (JASA)*, *Biometrics*, *Annals of Applied Statistics (AOAS)*, *Journal of the Royal Statistical Society Series A (JRSS-A)*, *Journal of the Royal Statistical Society Series C (JRSS-C)*, *Journal of Computational and Graphical Statistics (JCGS)*, *Statistics in Medicine*, *Biostatistics*, *Bayesian Analysis*, *Statistical Science*, *Environmental and Ecological Statistics*, *Communications in Statistics*, *Science Advances*, *Statistics and Public Policy*, *Statistics and Computing*, and *Journal of Molecular Evolution*.

Conference reviewer for: *Uncertainty in Artificial Intelligence (UAI) 2024*.

Conference Organization:

Scientific Programme Committee member for CFE-CMStatistics 2025	<i>March - December 2025</i>
Scientific Programme Committee member for CFE-CMStatistics 2024	<i>April - December 2024</i>
Organizing Committee member for BIRS-CMO Workshop “Frontiers of Bayesian Inference and Data Science”.	<i>December 2023 - September 2024</i>
Organizing Committee member for 2024 ISBA EAC conference.	<i>February - June 2024</i>
Invited session (j-ISBA sponsored) organizer for Joint Statistical Meetings (JSM) 2024	<i>December 2023 - August 2024</i>
Organizing Committee member for Bayesian Young Statisticians Meeting (BaYSM) 2023.	<i>May - November 2023</i>

Internal & Miscellaneous:

Faculty judge for <i>Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS)</i>	<i>March 2025</i>
Student recruitment committee member for UM Biostatistics.	<i>September 2025 - August 2026</i>
Chair of seminar committee for UM Biostatistics.	<i>September 2024 - August 2025</i>
J-FAB committee member for UM School of Public Health.	<i>September 2023 - August 2025</i>
Judge for <i>Duke Datathon</i> .	<i>October 2020 & 2021</i>
Consultant for <i>DataFest: COVID-19 Virtual Data Challenge</i> .	<i>April 2020</i>
Team manager and student mentor for <i>Duke Data+ 2019</i> .	<i>May-August 2019</i>
Consultant for <i>ASA DataFest @ Duke</i> .	<i>April 2018 & April 2019</i>

TEACHING & MENTORING

† denotes a graduated mentee

While at University of Michigan:

Ph.D. advisor for:

Weixiong Hua (Biostatistics), Ziyang Pan (Biostatistics, co-advised with Menggang Yu)

Ph.D. committee member for:

Prayag Chatta (Statistics)[†], Leyao Zhang (Biostatistics), Mingyan Yu [†] (Biostatistics), Tasmine Clement (Bioinformatics), Troy (Zirui) Zhou (Epidemiology), Kayla Hanson (Epidemiology), and Sarah Goldberg (Epidemiology).

<i>Biostatistics 664: Special Topics.</i>	<i>Winter 2027</i>
<i>“Applied Mathematical Models in Biomedical Sciences”</i>	
<i>Biostatistics 602: Biostatistical Inference.</i>	<i>Winter 2027</i>
<i>Biostatistics 664: Special Topics.</i>	<i>Winter 2026</i>
<i>“Applied Mathematical Models in Biomedical Sciences”</i>	
<i>Biostatistics 602: Biostatistical Inference.</i>	<i>Winter 2026</i>
<i>Biostatistics 602: Biostatistical Inference.</i>	<i>Winter 2025</i>
<i>Biostatistics 602: Biostatistical Inference.</i>	<i>Winter 2024</i>

While at UCLA:

Instructor for OHDSI Tutorials at the 2023 Global Symposium.	<i>Fall 2023</i>
Mentor for the 2022 <i>B.I.G. summer research program</i> .	<i>Summer 2022</i>

While at Duke University:

Instructor of Record for <i>STA101: Data Analysis/Statistical Inference</i>	<i>Summer 2021</i>
Lab instructor and teaching assistant for <i>STA199: Introduction to Data Science</i>	<i>Fall 2020</i>
<i>STA723: Statistics Case Studies.</i>	<i>Spring 2020</i>
<i>STA601: Bayesian Methods and Modern Statistics.</i>	<i>Fall 2019</i>
Team manager and student mentor for <i>Duke Data+ 2019</i> .	<i>Summer 2019</i>
Instructor of <i>Duke Statistical Science Bootcamp</i> .	<i>August 2018</i>

INVITED TALKS & PRESENTATIONS

Oral Presentations:

Invited talk at CmStatistics 2025 (London, UK).	<i>December 2025</i>
Invited talk at EcoSta 2025 (Tokyo, Japan).	<i>August 2025</i>
Topic contributed talk at Joint Statistical Meetings.	<i>August 2025</i>
Invited talk at IMS New Researchers Conference (NRC).	<i>August 2025</i>
Invited talk at the ISBA BioPharm meeting.	<i>June 2025</i>
Invited talk at the 14th International Conference on Bayesian Nonparametrics.	<i>June 2025</i>
Invited seminar talk at Statistics Department, UC Riverside.	<i>June 2025</i>
Invited talk at 2025 Bayesian Young Statisticians Meeting (BaYSM).	<i>April 2025</i>
Invited seminar talk at Duke Biostatistics & Bioinformatics.	<i>February 2025</i>
Invited seminar talk at Centre for Statistics in Medicine (CSM) Botnar Research Centre, Oxford University.	<i>December 2024</i>
Invited talk at the UM Statistics student seminar.	<i>November 2024</i>
Invited talk at the Duke Statistical Science Alumni Symposium.	<i>October 2024</i>
Invited talk at the 2024 International Day of Women in Statistics and Data Science (IDWSDS) Conference.	<i>October 2024</i>
Contributed talk at ISBA World Meetings 2024.	<i>July 2024</i>
Invited talk at Ecosta 2024.	<i>July 2024</i>
Invited talk at the Online Seminar on Spatial and spatio-temporal Point processes and beyond (OSSP).	<i>April 2024</i>
Invited talk at the Statistical Methods for Infectious Diseases Across Scales Workshop (by Penn State University).	<i>April 2024</i>

Recent publications highlight talk at OHDSI community meeting.	<i>March 2024</i>
Invited talk at ENAR 2024.	<i>March 2024</i>
Invited talk at CMStatistics 2023.	<i>December 2023</i>
Invited talk at the RAND statistics seminar.	<i>Nov 2023</i>
Invited talk at EcoSta 2023.	<i>August 2023</i>
Invited talk at IISA 2023.	<i>June 2023</i>
Contributed talk at ENAR 2023.	<i>March 2023</i>
Invited colloquim talk at Reed College.	<i>March 2023</i>
Invited talk at the FDA CBER BEST Seminar Series.	<i>February 2023</i>
Topic-contributed talk at CMStatistics 2022.	<i>December 2022</i>
Invited talk at the UCLA 2022 Fall Biomathematics Seminar Series .	<i>November 2022</i>
Invited presentation at the 2022 OHDSI Global Symposium.	<i>October 2022</i>
Oral presentation at NSF Student Conference on COVID-19 Modeling.	<i>January 2021</i>
Invited talk at 2020 Bayesian Young Statisticians Meeting: Online (BAYSM:O).	<i>November 2020</i>
Topic-contributed talk at 2020 Joint Statistical Meetings.	<i>August 2020</i>
Invited talk at the 3rd Annual AT&T Labs Graduate Student Symposium.	<i>November 2019</i>
Invited talk at the 2019 New England Symposium on Statistics in Sports (NESSIS).	<i>September 2019</i>

Poster Presentations:

Collaborator Showcase poster presentation at the 2024 OHDSI Global Symposium.	<i>October 2024</i>
Poster presentation at the 2022 ISBA World Meeting.	<i>June 2022</i>
Poster presentation at the Dynamics & Evolution of Human Viruses meeting.	<i>April 2022</i>
Poster presentation at the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS).	<i>April 2019</i>
Poster presentation at the 2018 ISBA World Meeting.	<i>June 2018</i>
Poster presentation at Women in Machine Learning Workshop (WiML) 2017.	<i>December 2017</i>