

# FAN BU

fbu@umich.edu

<https://fanbu1995.github.io>

## PROFESSIONAL AFFILIATIONS

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### 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

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### 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 Mathematics and Applied Mathematics

## PUBLICATIONS & PREPRINTS

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† denotes student mentee

### Statistical Methodology:

P. Chatha<sup>†</sup>, **F. Bu**, J. Regier, E. Snitkin, and J. Zelner. Neural Posterior Estimation for Stochastic Epidemic Modeling (2025+). *arXiv:2412.12967*

**F. Bu**, A. E. Aiello, A. Volfovsky, and J. Xu. Stochastic EM algorithm for partially observed stochastic epidemics with individual heterogeneity (2025). *Biostatistics*.

**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.)

**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*.

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*.

**F. Bu**, A. E. Aiello, J. Xu, and A. Volfovsky. Likelihood-based Inference for Partially Observed Epidemics on Dynamic Networks (2020). *Journal of the American Statistical Association* (Winner of 2020 ASA SBSS Student Paper Award.)

**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)*.

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*.

### Scientific / Collaborative:

S. Chattopadhyay, **F. Bu** , M. J. Schuemie, J. A. McLeggon, E. Westlund, G. Hripcsak, P. Ryan, M. A. Suchard. Comparative performance of the concurrent comparator design with existing vaccine safety surveillance approaches on real-world observational health data (2025+). *Under review*.

C. Kim, **F. Bu** , C. Blacketer, A. Ostropolets, [...], 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 (2025+). *Under review*.

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 (accepted)*.

L. Rountree<sup>†</sup>, 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*.

C. Cai, M. Hribar, Sally Baxter, [...], **F. Bu** , [...], and Patrick B. Ryan. Semaglutide and Nonarteritic Anterior Ischemic Optic Neuropathy (2025). *JAMA Ophthalmology*.

**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*.

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*.

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 (2024+). *Under review*.

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*.

**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*.

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*.

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*.

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*.

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*.

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*.

## AWARDS & HONORS

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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

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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 - Sep 2026</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 - Jan 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>

## PROFESSIONAL SERVICE

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### 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</i>	<i>January 2022 - December 2023</i>

for *Bayesian Analysis (j-ISBA)*.

### Editorial and Review Responsibilities:

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

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

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

### Conference Organization:

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

### Internal & Miscellaneous:

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

### TEACHING & MENTORING

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#### While at University of Michigan:

Ph.D. committee member for:

Prayag Chatta (Statistics), Leyao Zhang (Biostatistics), Mingyan Yu (Biostatistics), Tasmine Clement (Bioinformatics), and Troy (Zirui) Zhou (Epidemiology).

*Biostatistics 602: Biostatistical Inference.*

*Winter 2025*

*Biostatistics 602: Biostatistical Inference.*

*Winter 2024*

### **While at UCLA:**

Instructor for OHDSI Tutorials at the 2023 Global Symposium.

*Fall 2023*

Mentor for the 2022 *B.I.G. summer research program*.

*Summer 2022*

### **While at Duke University:**

Instructor of Record for

*STA101: Data Analysis/Statistical Inference*

*Summer 2021*

Lab instructor and teaching assistant for

*STA199: Introduction to Data Science*

*Fall 2020*

*STA723: Statistics Case Studies.*

*Spring 2020*

*STA601: Bayesian Methods and Modern Statistics.*

*Fall 2019*

Team manager and student mentor for *Duke Data+ 2019*.

*Summer 2019*

Instructor of *Duke Statistical Science Bootcamp*.

*August 2018*

## **INVITED TALKS & PRESENTATIONS**

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### **Oral Presentations:**

Invited talk at EcoSta 2025.

*August 2025 (scheduled)*

Topic contributed talk at Joint Statistical Meetings.

*August 2025 (scheduled)*

Invited talk at the 14th International Conference on Bayesian Nonparametrics.

*June 2025 (scheduled)*

Invited seminar talk at Statistics Department, UC Riverside.

*June 2025 (scheduled)*

Invited talk at 2025 Bayesian Young Statisticians Meeting (BaYSM).

*April 2025 (scheduled)*

Invited seminar talk at Duke Biostatistics & Bioinformatics.

*February 2025*

Invited seminar talk at Centre for Statistics in Medicine (CSM) Botnar Research Centre., Oxford University.

*December 2024*

Invited talk at the UM Statistics student seminar.

*November 2024*

Invited talk at the Duke Statistical Science Alumni Symposium.

*October 2024*

Invited talk at the 2024 International Day of Women in Statistics and Data Science (IDWSDS) Conference.

*October 2024*

Contributed talk at ISBA World Meetings 2024.

*July 2024*

Invited talk at Ecosta 2024.

*July 2024*

Invited talk at the Online Seminar on Spatial and spatio-temporal Point processes and beyond (OSSP).

*April 2024*

Invited talk at the Statistical Methods for Infectious Diseases Across Scales Workshop (by Penn State University).

*April 2024*

Recent publications highlight talk at OHDSI community meeting.

*March 2024*

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 colloquium 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>