

EMMANUEL SARFO FOSU

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Waco, TX - 76706, United States

EDUCATION

- **Baylor University** Waco, TX
Doctor of Philosophy in Statistics, GPA: 3.86/4.00 July 2021 – May 2026
 - **Dissertation:** *Developing Spatial methodologies in symbolic data and spatial gene transcriptomic data.*
- **Montana State University** Bozeman, MT
Master of Science in Statistics, GPA: 3.91/4.00 Aug 2019 – May 2021
 - **Thesis:** *Statistical Learning for Duration Analysis, with application to missing persons data in Montana.*
- **Kwame Nkrumah University of Science and Technology** Kumasi, Ghana
Bachelor of Science in Actuarial Science, GPA: 3.87/4.00 Sep 2013 – Jun 2017
 - **Thesis:** *Queueing Theory Analysis of Waiting Lines. Case Study: Prepaid Section of the Electricity Company of Ghana, Ayigya Business Centre.*

PROFESSIONAL ACCOMPLISHMENT

- **SOA Exam Probability** Passed
Society of Actuaries Nov 2021

RESEARCH INTEREST

- Statistical Genetics and Genomics
- Statistics in Forensic and Public Health
- Biostatistics & Survival Analysis
- Spatial Statistics and Data Harmonization

EXPERIENCE

- **Graduate Assistant and Consultant** Waco, TX
Dept. of Statistical Science, Baylor University Jul 2021 – Present
 - Provide statistical consulting services for diverse projects, including experimental design, clinical, and statistical modeling, while assisting in preparing research reports, presentations, and manuscripts.
 - Collaborate with students, faculty, and corporate organizations on projects, contributing to methodologies, interpreting results, and analyzing data to inform decisions and strategies.
- **Teacher of Record** Waco, TX
Dept. of Statistical Science, Baylor University Aug 2022 – Present
 - Instruct an Introductory Statistics class of approximately 30 students utilizing diverse teaching methods to foster a motivating and engaging learning environment.
 - Design assignments, provide effective learning resources, and office hours to support struggling students.
- **Graduate Teaching and Research Assistant** Bozeman, MT
Dept. of Mathematical Sciences, Montana State University Aug 2019 – May 2021
 - Taught Statistics (STAT 216), developing instructional materials to enhance student learning experiences.
 - Provided tutoring and assisted with data analyses in research and consulting projects.
- **Personal Banker** Kumasi, Ghana
Mon-Tran Limited/Bond Savings and Loan Limited Oct 2018 – Jul 2019
 - Managed customer relations by opening new accounts, addressing inquiries, and ensuring client satisfaction.
 - Assisted in loan risk assessment by evaluating creditworthiness and ensuring compliance.
- **Radiology Data Analyst** Kumasi, Ghana
Komfo Anokye Teaching Hospital Sep 2017 – Aug 2018
 - Analyzed waiting times and patient data to optimize patient flow, and improve service effectiveness.
 - Prepared reports to communicate insights and recommendations to hospital management.

CONSULTING PROJECTS AND PUBLICATIONS

- **Sarfo Fosu, E., Song J. J. & Chekouo, T. T. Multivariate Spatial Poisson-Lognormal Network Model for Detecting Spatially Expressed (SE) Genes in Spatial Transcriptomics** Current project
Dissertation paper (2nd project)
 - **Role:** Formulate and develop methodologies, conduct simulations, analyze real-world data, and prepare the manuscript for the study.
 - **Goal:** To create a Multivariate Network-based model to identify spatially expressed genes by capturing gene correlations and spatial dependencies, enhancing insights into tissue organization and function.
- **Sarfo Fosu, E., Ryu S., Lee G. & Song J. J. Network Harmonization of Spatial Interval-Valued Data** In preparation
JSM 2024 Poster Paper and Journal Paper
 - **Role:** Led the development of novel methodologies, conducted simulations, analyzed real-world data, and presented findings at JSM.
 - **Goal:** Developed a statistical spatial model to integrate data from different networks, maximizing information retention for predictions in unsampled locations.
- **Sarfo Fosu, E., Pascarella, K, Sturdivant, R. X & Hering A. Estimating the Probability of Historical Presence of Lead Service Lines with Firth Logistic Regression.** Sep 2024
Statistical Consulting and Collaboration
 - **Role:** Acted as the statistician, performing comprehensive data analysis, drafting results reports, and delivering findings to the Waco Water committee.
 - **Goal:** Developed predictive models using Firth logistic regression to identify historical lead service lines, aligning with EPA compliance and proposing strategies to save the City of Waco approximately \$20 million in replacement costs.
- **Sarfo Fosu, E., Bel Zhang, Byford N, & Taylor, G. (2023) Type 2 Diabetes Clinical Trial Plan: Oral Tirzepatide.** May 2024
Clinical trials and Design of experiments
 - **Role:** Designed and actively contributed to the implementation of the Phase II clinical trial.
 - **Goal:** To develop a drug to lower blood sugar levels, considering delayed preclinical reproductive toxicology data (24 weeks), with females excluded from phase 2 studies until the data is available.
- **Asare, M., Obiri-Yeboah, D., Enyan, N. I. E., Nuer-Allornuvor, G., Sarfo Fosu, E., Ken-Amoah, S., & Akakpo, P. K. (2023). An intervention to increase cervical cancer screening among women living with HIV: A mixed methods study. Patient Education and Counseling, 118, 107993.** Oct 2023
Collaboration and Publication
 - **Role:** Designed and implemented advanced statistical methodologies, providing critical insights for analyzing real-world behavioral intervention data.
 - **Goal:** Evaluated the effectiveness of a behavioral intervention in increasing cervical cancer screening uptake among women living with HIV (WLWH), contributing to actionable public health strategies.
- **Asare, M., Agyei-Baffour, P., Koranteng, A., Commeh, M. E., Sarfo Fosu, E., Elizondo, A., & Sturdivant, R. X. (2023). Assessing the Efficacy of the 3R (Reframe, Reprioritize, and Reform) Communication Model to Increase HPV Vaccinations Acceptance in Ghana: Community-Based Intervention. Vaccines, 11(5), 890.** Apr 2023
Collaboration and Publication
 - **Role:** Delivered strategic statistical consultation and conducted comprehensive data analysis to assess intervention efficacy, utilizing advanced modeling techniques.
 - **Goal:** Investigated the influence of the 3R (Reframe, Reprioritize, and Reform) communication model in enhancing HPV vaccine acceptability among parents and adolescents, shaping community health policy.

SKILLS

- **Programming Languages:** R, SAS, C++ (Beginner), Python (Beginner)
- **Writing Tools/Frameworks:** L^AT_EX, GitHub, Markdown
- **General/Soft:** Strong analytical skills, Problem-solving, Excellent communication, Organization skills

CONFERENCE / TRAINING

- **Eli Lilly Discovery Day, Indianapolis, IN** *Mar 2025*
Participant and presented on an immunology project focused on treatment effects in related disease states. Eli Lilly and Company
- **Joint Statistical Meetings (JSM 2024), Portland, OR** *Aug 2024*
Poster Presenter and Participant, Diversity Mentorship Program American Statistical Association
- **Mon-Tran Teller Academy** *Oct 2018*
Basic banking, Customer service & Fraud Awareness Barclays Bank (Now Absa Bank)
- **Prudential Annual Actuarial Seminar** *Feb 2015*
Product Pricing Prudential Life Insurance Ghana

LEADERSHIP/VOLUNTEER EXPERIENCE

- **Leadership** *Fall 2020 – Spring 2021*
Vice President of African Student Association Montana State University
 - Chaired funding and giving day committee.
- **Volunteering** *Fall 2019 – Spring 2020*
Office of Student Engagement Montana State University
 - Habitat for Humanity of Gallatin Valley Restore.
 - Turning plastic grocery bags into plastic yarn which can then be weaved into mats for the homeless.

PROFESSIONAL MEMBERSHIPS

- **American Statistical Association** *Jul, 2021 - Present*
- **Society of Actuaries** *Jan 2021 - Present*
- **International Association of Black Actuaries (IABA)** *Jan 2020 - Present*

HONORS AND AWARDS

- **Aug 2024**: Baylor University Graduate travel grant: \$800
- **May 2023**: International Association of Black Actuaries (IABA) 2023-2024 Scholarship \$3,000