

# EMMANUEL SARFO FOSU

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📄 <https://scholar.google.com/citations?hl=en&authuser=1&user=GOd-3z8AAAAJ>

## Education

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

## Professional Accomplishment

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

## Research Interest

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

## Experience

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- Teacher of Record** **Aug 2022 – Present**  
*Dept. of Statistical Science, Baylor University* *Waco, TX*
  - Instruct an Introductory Statistics class of approximately 30 students, covering topics such as probability, hypothesis testing, and regression analysis.
  - Design assignments to assess student progress and conduct office hours to address student's questions.
  - Develop and implement effective learning strategies and resources for students struggling with the course.
  - Utilize various teaching methods to foster a motivating and conducive classroom environment for learning, and encouraging student participation.
- Graduate Assistant and Consultant** **Jul 2021 – Present**  
*Dept. of Statistical Science, Baylor University* *Waco, TX*
  - Provide statistical consulting services for numerous projects, offering expertise in data analysis, experimental design, and statistical modeling.
  - Collaborate with students and faculty across departments on dissertations and research grants, contributing to their methodologies and results interpretation.
  - Serve as a statistician on corporate organization projects, analyzing data to inform business decisions, strategies, and saving costs.
  - Assist collaborators in the preparation of research reports, presentations, and publications, ensuring accuracy and clarity of statistical information.
- Graduate Teaching and Research Assistant** **Aug 2019 – May 2021**  
*Dept. of Mathematical Sciences, Montana State University* *Bozeman, MT*

- Taught the Statistics course (STAT 216), covering statistical concepts such as descriptive statistics, probability theory, and inferential statistics.
- Provided tutoring services at the Math Learning Center, offering individual support to students needing help with various mathematical and statistical problems.
- Developed instructional materials and resources to enhance student's learning experiences.
- Assisted advisor with data analyses in research and consulting projects, utilizing new statistical methods and software and enhancing collaborative skills.

### Personal Banker

Oct 2018 – Jul 2019

*Mon-Tran Limited/Bond Savings and Loan Limited*

*Kumasi, Ghana*

- Managed customer relations, assisting with opening new accounts and addressing customer inquiries.
- Assisted in the risk calculation for loan disbursement, evaluating creditworthiness, and ensuring compliance with financial regulations.
- Collaborated with team members to improve customer service processes and enhance overall client satisfaction.

### Radiology Data Analyst

Sep 2017 – Aug 2018

*Komfo Anokye Teaching Hospital*

*Kumasi, Ghana*

- Analyzed waiting times to identify bottlenecks and improve service effectiveness, enhancing patient flow and reducing wait times.
- Conducted detailed examinations of patient data and estimated costs, providing insights to optimize resource allocation and budgeting.
- Developed reports and presentations to communicate findings and recommendations to hospital management.

## Research and Consulting Projects

**Sarfo Fosu, E.,** Ryu S., Lee G. & Joon Jin Song J. J. Network Harmonization of Spatial Interval-

Valued Data. | *JSM 2024 Poster Paper and Journal Paper*

**In Preparation.**

- **Role:** Led the formulation of methodology and conducted simulations, real data analysis, and presented at JSM.
- **Goal:** Developed a statistical spatial model to integrate data from different networks, maximizing information retention for predictions in unsampled locations.

Predicting the presence of Lead pipe materials on the city side for the City of Waco.

| *Statistical Consulting*

**Sep 2024**

- **Role:** Served as a statistician, conducting real data analysis, writing the results report, and presenting at the committee meeting.
- **Goal:** Aimed to predict the presence of lead in service lines using the City of Waco data, supporting EPA requirements for replacing certain galvanized steel lines, potentially saving the city about \$20 million.

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.

<https://doi.org/10.1016/j.pec.2023.107993>

| *Collaboration and Published paper*

**Sep 2023**

- **Role:** Provided statistical advice on methodology and conducted real data analysis.
- **Goal:** Examined the effectiveness of a behavioral intervention in promoting cervical cancer screening among women living with HIV (WLWH).

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. <https://doi.org/10.3390/vaccines11050890>.

| *Collaboration and Published paper*

**Apr 2023**

- **Role:** Provided statistical advice on methodology and conducted real data analysis.
- **Goal:** Examined whether the 3R (reframe, prioritize, and reform) communication model intervention can impact parents' and adolescents' HPV vaccination acceptability.

Investigating the effect of environment color on the behavior of water beetles.

| **Consulting & Poster Presentation**

**May 2022**

- **Role:** Acted as a statistical consultant, devising methodologies, running analyses and writing report.
- **Goal:** Investigated whether aquatic beetles preferred darker or lighter habitats, with the container of the darker substrate positioned at different cardinal directions.

Extraction of Effective Grain Diameter and Physical Snowpack Characteristics from LiDAR Reflectance

| **Statistical Consulting**

**Feb 2021**

- **Role:** Provided statistical consultation on methodology and conducted initial real data analysis.
- **Goal:** Evaluated the suitability of terrestrial LiDAR for extracting effective snow grain size using radiative transfer theory, considering the optical nuances intrinsic to LiDAR.

Suppressing Avena fatua by enhancing Spring Wheat Competitiveness.

| **Statistical Consulting**

**Oct 2020**

- **Role:** Provided statistical consultation on data collection methods, devised methodologies, and conducted real data analysis.
- **Goal:** Investigated whether the use of tall isogenic lines and high seeding rates could reduce yield loss due to wild oat (Avena fatua) competition.

## Conference / Training

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**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*

## Skills

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**Languages:** R, SAS, C++ (Beginner), Python (Beginner)

**Writing Tools/Frameworks:** L<sup>A</sup>T<sub>E</sub>X, GitHub

**General:** Excellent communication skills, Organisation skills

## Leadership / Volunteer

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**African Student Association**

**Fall 2020 – Spring 2021**

*Vice President*

*Montana State University*

- Chaired funding and giving day committees.

**Office of Student Engagement**

**Fall 2019 – Spring 2020**

*Volunteering*

*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.