MICHAEL OBUOBI, GStat

Graduate Teaching and Research Assistant
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EDUCATION

Doctor of Philosophy	*Statistics*	Auburn University	Aug. 2025 – Present
Master of Science	*Statistics*	University of Texas at El Paso	Aug. 2023 - May 2025
Bachelor of Science	*Statistics*	Kwame Nkrumah University of Science and Technology	Aug. 2018 - Nov. 2022

PROFESSIONAL ACCREDITATION

- **Graduate Statistician (GStat)**, American Statistical Association (ASA) June 2026 - June 2033
  - Accredited by the American Statistical Association after peer review of academic credentials and professional preparation in statistics.
  - Authorized to use the professional designation **GStat**.

RESEARCH INTERESTS

- Machine Learning
- Bayesian Analysis
- Multivariate Analysis
- Data Science
- Biostatistics
- Reliability and Survival Analysis

RESEARCH EXPERIENCE

- **Graduate Research Assistant**, *Harrison College of Pharmacy, Auburn University* Jan. 2026 - Present
  Supervisor: Dr. Matthew Loop, Assistant Professor, Health Outcomes Research and Policy, Auburn University
  - Collaborate on biostatistical and epidemiological research projects involving cardiovascular disease, neonatal outcomes, and population health.
  - Conduct statistical analyses using observational healthcare data, electronic health records (EHR), and large administrative databases.
  - Assist with study design, data management, statistical modeling, and interpretation of research findings.
  - Apply advanced epidemiological and biostatistical methods to investigate health outcomes among vulnerable populations, including preterm infants and rural communities.
  - Contribute to research focused on reducing gastrostomy tube placements in preterm infants and evaluating environmental determinants of cardiovascular health.
  - Support manuscript preparation, statistical reporting, and dissemination of research findings.

- **Graduate Research Assistant**: *Prediction Issues in Progressively Censored Life-Testing Experiments: New Ideas and Applications. (January 2024 - May 2025)*
  Principal Investigator: Dr. Ritwik Bhattacharya; **National Science Foundation (NSF), Award #231674 LEAP-MPS**
  - Determining optimal life testing plans under hybrid, progressive, and progressively hybrid censoring schemes to minimize cost and variance while ensuring accurate reliability assessment.
  - Developed cost and variance minimization-based optimality criteria to determine optimal life testing experiments.
  - Proposed a meta-heuristic algorithm based on the Variable Neighborhood Search (VNS) method for finding near-optimal solutions under progressive and progressively hybrid censoring schemes.
  - The research offers practical tools for manufacturers to design efficient life testing experiments, ensuring accurate reliability predictions and optimized resource use..

- **Master's Thesis:** *Computing Optimal Multi-Level Stress Testing Plans Using a Combined Variable Neighborhood Search Algorithm Under Progressive Type-II Censoring Scheme. (Jan. 2024 – May 2025)*
  Supervisor: Dr. Ritwik Bhattacharya, Department of Mathematical Sciences, University of Texas at El Paso
  - Developed a novel meta-heuristic algorithm (CVNS) to optimize multi-level stress testing designs under progressive Type-II censoring.
  - Focused on maximizing the determinant of the Fisher Information Matrix (D-optimality) to improve statistical efficiency.
  - Conducted simulation studies comparing the performance of CVNS against complete search and existing VNS algorithms.
  - The method provides practical experimental design tools for reliability engineers and manufacturers.

- **Undergraduate Thesis**: *Predicting Football Rankings and Points Using a Generalized Linear Model (GLM).*
  Supervisor: Dr. E. D. J. Owusu-Ansah Sept. 2022
  - Developed Poisson and Generalized Linear Models to predict football goals, league points, and team rankings.
  - Estimated attack and defense strength parameters using maximum likelihood methods.
  - Evaluated goodness-of-fit using likelihood ratio and chi-square tests.
  - Generated probabilistic forecasts for match outcomes and season-long rankings.
  - Applied regression-based models to relate goal differences to league points with high explanatory power ($R^2 > 0.93$).
- **Undergraduate Research Assistant**: *Perception of Clinicians and KNUST students on the importance of conducting a rapid diagnostic test for malaria before treatment. (September 2022)*
  Supervisor: Dr. George Gyamfi; Student:Asah Akuffo Priscilla.
- **Undergraduate Research Assistant** : *Greywater Management Practices (December 2022)*
  Supervisor: Dr. Barbara Gyapong Krosah (Assistant Grants and Research Manager)
  - Assisted Dr. Barbara Gyapong Krosah, Assistant Grants and Research Manager, in a research project focused on understanding the factors that influence the reuse of greywater in households.
  - Conducted a literature review to identify existing research on greywater management practices and their implications for household water use.
- **Course Research**: *Logistics Regression Analysis to Detect Counterfeit Banknote in Switzerland. (March 2024)*
  - Build a logistic model to detect whether a banknote is genuine or counterfeit using R.
- **Course Research**: *Bureau of Transportation Statistics (BTS) using nycflights data in R-Studio. (October 2022)*
  - Determined how delayed flights headed to a particular destination tend to be.
  - Evaluated how departure delays vary over months.
  - Determined which of the three major NYC airports has a better on time percentage for departing flights.
- **Course Research**: *Evaluation Of Climates Across The United States. (April 2024)*
  - Conducted a detailed exploratory analysis of the climate datasets collected from weather stations across Pennsylvania.
  - Test whether there are significant differences in climate between the periods of October-March and April-September.
  - Applied the K-means clustering algorithm to identify distinct groups among the weather stations and visualize the clustering results using a heat-map.
- **Software Project**: *Developed an interactive R application for data visualization, showcasing proficiency in R programming and data visualization techniques. (Dec. 2023)*
  - Hosted online: `https://aufi2d-obuobi-michael.shinyapps.io/Data_Visualization/`
  - Hosted online: `https://4kvtf7-michael-obuobi.shinyapps.io/PredictiveApp/`

TEACHING EXPERIENCE

- **Graduate Teaching Assistant**, *Auburn University, Auburn, Alabama, USA* Aug. 2025 - Present
  - Served as Graduate Teaching Assistant for MATH 1130 (College Algebra) during Fall 2025 and Summer 2026 and MATH 1150 (Precalculus Algebra) during Spring 2026.
  - Conducted weekly office hours and provided one-on-one tutoring to undergraduate students in algebra and precalculus topics.
  - Assisted students with problem-solving strategies, exam preparation, and course-related questions.
  - Graded assignments, quizzes, tests, and other assessments while providing constructive feedback.
  - Supported course instructors with classroom administration, student communication, and academic assistance.
- **Graduate Teaching Assistant**, *University of Texas at El Paso, El Paso, Texas, USA* Aug. 2023 - Dec. 2023
  - Organize tutorials for undergraduate students in Calculus.
  - Offered technical support to students in the use of [R] software.
  - Grade Undergraduate projects and assignments.
- **Teaching and Research Assistant**, *Kwame Nkrumah Univ. of Science & Tech, Ghana* Nov. 2022 - July 2023
  - Organize tutorials for undergraduate students in Regression Analysis and Time Series Analysis.
  - Offered technical support to students in the use of [R] software.
  - Aid students in their undergraduate thesis and projects.

- Assist in research related tasks, particularly, in the area of Statistical Data Analysis.
- Performed administrative activities

- **Intern**, *Ofori Panin Senior High School,Akyem Tafo, Eastern Region, Ghana* May 2019 - July 2019
  - Taught both Core and Elective Mathematics.
  - Proctored examinations.

- **Mathematics Teacher**, *Royal Ascot Basic School, Ghana* May 2017 - June 2018
  - Evaluated students' progress by maintaining appropriate records and preparing progress reports.
  - Collaborated with staff and parents to ensure proper student development.
  - Participated in many trainings, faculty meetings, and parent - teacher conferences throughout my time at Royal Ascot.

PROFESSIONAL EXPERIENCE

- **Intern**, *Cocoa Research Institute of Ghana, Akyem Tafo, Eastern Region , Ghana* Sept. 2021 - Nov. 2021
  - Collected, tracked and reviewed data to evaluate business and market trends.
  - Conducted data analysis to prepare forecasts and identify trends.

PUBLICATIONS & CONFERENCES

- **Peer-Reviewed Publications**
  - Paul Poku Sampene Ossei, Martin Kofi Agyei, Bernard Elikplim Petershie, **Michael Obuobi**, et al. (2025). *Suicidal Behavior in Police Custody: A Ten-Year (2011–2021) Study in the Northern Part of Ghana*. Archives of Psychiatry Research, 61(1):79–86.
  - Gideon Addo, Paul Poku Sampene Ossei, **Michael Obuobi**, et al. (2024). *Determinants of Hospital Stay Duration Post-Colorectal Surgery*. Journal of Biostatistics and Epidemiology, 9(2):241–256.
  - Gideon Addo, **Michael Obuobi**, et al. (2023). *Prediction of Diabetes in Middle-Aged Adults: A Machine Learning Approach*. Journal of Diabetology, 15(4):401–408.

- **Theses and Dissertations**
  - Michael Obuobi (2025). *Computing Optimal Multi-Level Stress Testing Plans Using a Combined Variable Neighborhood Search Algorithm Under Progressive Type-II Censoring Scheme*. Master's Thesis, University of Texas at El Paso. *Open Access Theses & Dissertations*. Retrieved from `https://scholarworks.utep.edu/open_etd/4424`

- **Other Publications**
  - Michael Obuobi & Saviour Ntow (2023). *The Concept of Mathematics: Understanding the Language of Mathematics*. Independently Published. ISBN: 979-8856123929.
    Retrieved from: `https://www.amazon.com/Concept-Mathematics-Understanding-Language/dp/B0CJHB7KQ1`

Peer Review Service

- **Certified Reviewer**, *AACE Endocrinology and Diabetes* (Elsevier) Sept. 2025 – Jan. 2026
  - Completed three (3) independent peer reviews for the journal.
  - Awarded an official *Elsevier Certificate of Reviewing*.

- **Manuscript Reviewer**: Reviewed the case report *"Isolated Human Chorionic Gonadotropin Elevation – From Pregnancy to Premature Ovarian Insufficiency"* for *AACE Endocrinology and Diabetes* (Recommendation: Minor Revisions).

- **Manuscript Reviewer**: Reviewed the Brief Report *"Functional Characterization of an HNF1A Variant in Coinherited GCK-MODY"* (Manuscript No.: AED-D-26-00002) for *AACE Endocrinology and Diabetes* (Recommendation: Minor Revisions).

Workshops/Conferences/Webinars

- **El Paso Science Festival**, *El Paso Convention Center, El Paso, Texas* April 2025
  - Presented an interactive research poster titled:
    "How Statistics Predict Your Gadgets' Early Breakdown".
  - Demonstrated applications of reliability analysis, life-testing experiments, accelerated stress testing, and statistical prediction methods to a public STEM audience.

- Developed educational materials translating NSF-funded statistical research into accessible concepts for K–12 students, families, and community members.
- Research conducted under the National Science Foundation (NSF) funded project: *Prediction Issues in Progressively Censored Life-Testing Experiments: New Ideas and Applications* (Award No. 2316744).

- **Academic And Business Symposium**, *(Learning Strategies, How to Write Project Work, Secret of Success and CV Writing)–(OMEGA BRAINS INTERNATIONAL)*, March 2020.
- **Success Africa**, *(Participated in success Africa 2021 Edition, Africa's Young Leaders and Entrepreneurs Summit)*, June 2021.
- **Capacity Building Workshops/Training**, *(Soft Skills, Subjects/Courses Specific Training)*, Jan. 2023.
- **Research Designs/ Methods**, *(Research Approaches: Quantitative,Qualitative and Mixed Methods)*, Jan. 2023.
- **Quantitative Data Analysis**, *(Descriptive Statistics,Inferential Statistics: What analysis to perform?)*, Feb. 2023.
- **Self Studies: Literature Search and Review**, *(Use of appropriate Search Engines,Use of appropriate journal)*, Feb. 2023.
- **Research Theory**, *(Types Of Research: Case study, Human study and Clinical study)*, Feb. 2023.
- **Grantsmanship And Research Publication**, *(How to write a Research Proposal for Grants)*, Feb. 2023.

AWARDS AND SCHOLARSHIPS

- Graduate Statistician (GStat) Accreditation, American Statistical Association (ASA) — June 2026 - June 2033
- NSF-funded Graduate Research Assistant — Jan. 2024 – May 2025
- Best Student in the Department of Statistics, KNUST, GHANA — Aug. 2018 - Nov. 2022
- Brighter Investment Scholarship, KNUST, GHANA — Sept. 2018 - Nov. 2022
- Cocoa Marketing Board Scholarship, GHANA — Aug. 2014 - May 2017

PROFESSIONAL AFFILIATION

- **Member**, *American Statistical Association (ASA)*

APPLICABLE SKILLS

- **Computational Skills & Statistical Skills**
  - Data analysis and visualization using R, Python, SAS, SPSS, and Minitab
  - Experience with statistical modeling and experimental design using Design Expert
  - Proficient in database querying and management using SQL
  - Advanced proficiency in Microsoft Office Suite, including Excel, Word, and PowerPoint
- **Research and Publication**
  - Excellent Scientific Research ability with knowledge of APA and MPA referencing styles
  - Excellent written and verbal communication skills
  - Strong technical writing skills using LaTeX
  - Experience with creating online forms using Google Form

VOLUNTEER EXPERIENCE/COMMUNITY SERVICE

- **Volunteered and offered** educational help to Royal Ascot Basic School students in New Tafo-Koforidua, GHANA May 2020 - July 2020
- **Volunteered** to develop a website for Ghana Association of Statistics Student (GASS), KNUST, Ghana Aug. 2022 - Sept. 2022
- **Volunteered and offered** extra educational assistance to Statistics course mates who found it difficult to understand concepts taught in class. Jan 2021 – Sept. 2022.
- **Provided mentorship and guidance** to junior course mates at *Kwame Nkrumah Univ. of Science & Tech, Ghana* Jan 2022 - Sept. 2022.
- **Volunteered** as a Statistics tutor to PhD students from the School of Public Health at KNUST during National Service as a Teaching and Research Assistant, resulting in improved statistical skills. Feb. 2023 - July 2023

REFERENCE AVAILABLE UPON REQUEST