

PhD Candidate in Biostatistics seeking a **Biostatistician** role in medical device or pharmaceutical development, applying statistics to develop life-saving clinical products. Brings industry experience at **Edwards Lifesciences** building synthetic data frameworks for clinical trial design, dissertation research on penalized GEE for longitudinal count outcomes, and 18+ peer-reviewed publications. Collaborated with 8 multidisciplinary research teams, leading or coordinating 4.

Education

PhD Candidate, Biostatistics, Drexel University, Philadelphia, PA
Dissertation: Fusion Learning and Quadratic Inference Function for Zero-inflated Count Data
MS (2018), **B.Sc.** (2017) in Statistics, Jahangirnagar University, Bangladesh

Expected Feb. 2027
Advisor: Brisa N. Sánchez, PhD

Relevant Experience

Edwards Lifesciences, Irvine, CA | Biostatistics Intern

May 2026 – Aug 2026

- Applied Gaussian copula-based synthetic data methodology to 3 ongoing medical device clinical trials (trial design and RWD usability assessment), supporting a 15+ person Biostatistics team (45+ including statistical programmers).
- Developed 10 evidence-based synthetic data use cases spanning the full clinical trial lifecycle—protocol/SAP development, sample size and power analysis, interim analyses, and post-study evaluations.
- Built and deployed an R Shiny platform used by 15+ biostatisticians for reproducible, auditable synthetic data generation; eliminated manual simulation setup and enabled rapid iteration on trial design scenarios.

Drexel University | Doctoral Research Fellow, Lead Biostatistician & Instructor

2022 – Present

Dept. of Epidemiology and Biostatistics, Dornsife School of Public Health, Philadelphia, PA

- Served as lead biostatistician on 5 longitudinal studies; authored Statistical Analysis Plans (SAPs), specified primary/secondary endpoints, and delivered analysis-ready outputs to multidisciplinary clinical and public health teams.
- Developed novel penalized GEE methods for repeated-measures zero-inflated count endpoints (e.g., adverse events, device use), providing efficient marginal estimates for each measurement window.
- First-authored *American Journal of Epidemiology* (2026) paper; presented at ENAR and JSM; developed open-source R packages and Shiny tools used by 3 research teams.
- Integrated EHR, geospatial, retail environment, and cohort data ($n > 5000$) for school food environment analyses; applied PSM, IPW, and regression discontinuity to improve causal validity of observational findings.
- Instructor for Introduction to Biostatistics (BST 571, Summer 2026); developed course materials and mentored graduate students.

BRAC University | Research Associate

2021 – 2022

BRAC JPG School of Public Health, Dhaka, Bangladesh

- Led 3+ epidemiologic studies from protocol development and power calculations through survey design, data collection, quality assurance, and preparation of analysis-ready datasets; served as REDCap data administrator.
- Conducted sample size/power calculations, survival and regression analyses, and causal inference studies to evaluate treatment and program effects; contributed to grant proposals and peer-reviewed manuscripts.

Leadership & Service

Team Lead & Coordinator, 4 multidisciplinary research teams (clinical, epidemiology, public health)

2017–Present

Session Chair & Poster Judge, ENAR Spring Meeting, Baltimore

2024

Coordinator, Independent Multi-country Research Group

2017–2023

Founder & President, Statistics LEAD Club, Jahangirnagar University — 25+ events (2 national)

2016–2018

Peer Reviewer: PLOS ONE, BMC Public Health, Social Network Analysis and Mining

Ongoing

Selected Publications

Karimuzzaman M, et al. Fast-food and convenience outlets near schools in California: a comparison of private and public schools. *American Journal of Epidemiology*, 2026. (*First Author*) 18+ career publications (10+ first/lead author); full list: karimuzzaman.com

Skillset and Interest

Languages	Bengali (Native), English (Fluent)
Programming	R (Expert), SAS, Python, SQL, Stata, Mplus, Git/GitHub
Statistical Methods	Survival, longitudinal & mixed-effects models, GEE, penalized models, zero-inflated models, Bayesian
Clinical & Regulatory	Clinical trial design, SAP development, synthetic data, sample size & power analysis, RWE, medical devices
AI Tools	Claude Code (agentic R/Shiny & HPC workflows), ellmer & shinychat (LLM apps in R), prompt engineering
Tools	REDCap (Administrator), EHR and claims databases, Quarto, L ^A T _E X, Tableau
Certifications	Edwards Lifesciences: Clinical Biostatistics, Clinical Investigation Development & Compliance Training
Interests	Photography, traveling, science communication, open-source R development