


CAREER OBJECTIVE

Inquisitive life science graduate with expertise in molecular biology, bioinformatics, and wet lab techniques, including microbiology and phytochemistry. Proficient in genomic and proteomic data analysis, and experienced in laboratory operations such as sample processing, microbiological analyses, and molecular diagnostics. Driven by a passion for advancing scientific knowledge and sharing insights, with a commitment to continuous learning and staying up-to-date with emerging computational tools in both academia and industry. Eager to contribute to impactful research and inspire the next generation of scientists.

EDUCATION

Oct 2022 – Jan 2024
Dhaka, Bangladesh

Master of Science in Genetic Engineering and Biotechnology

University of Dhaka 

CGPA: 3.73 (on a scale of 4.00)

Jan 2018 – Sep 2022
Dhaka, Bangladesh

Bachelor of Science (Honors) in Genetic Engineering and Biotechnology

University of Dhaka 

CGPA: 3.77 (on a scale of 4.00)

Jul 2015 – Jun 2017
Dhaka, Bangladesh

Higher Secondary School Certificate in Science

Dhaka Residential Model College 

GPA: 5.00 (on a scale of 5.00)

Jan 2013 – May 2015
Dhaka, Bangladesh

Secondary School Certificate in Science

Dhaka Residential Model College 

GPA: 5.00 (on a scale of 5.00)

EXPERIENCE

Sep 2024 – Present
Dhaka, Bangladesh

IDD Special Activities, icddr,b

Research Assistant

- Maintaining laboratory equipment, performing minor troubleshooting, and ensuring optimal operation.
- Processing, labeling, and storing samples in appropriate conditions according to study requirements, while ensuring sample integrity.
- Conducting microbiological analyses to isolate and identify enteric pathogens using rapid diagnostic tests, culturing techniques, and molecular methods like PCR.
- Extracting nucleic acid, identifying bacteriophages through phenotypic and molecular tests, and updating standard operating procedures (SOPs) and project-related documents.
- Collaborating with senior colleagues to ensure adherence to quality assurance processes, assisting with laboratory tests, and creating project presentations and spreadsheets.

Department of Genetic Engineering and Biotechnology, University of Dhaka

Jan 2024 – Sep 2024
Dhaka, Bangladesh

Research Assistant

- Assistance in various research projects, contributing to experimental design, data collection, and data analysis
- Mentoring junior members in sub-projects

Aug 2021 – Dec 2023
Dhaka, Bangladesh

Thesis Student and Researcher

- Performing research on the antimicrobial activity of *Costus woodsonii* samples for Master's Thesis
- Participating in bioinformatics projects on the virulence of *Tsukamurella paurometabola* and *Enterobacter cloacae*

Feb 2024 – Present
Khushab, Pakistan

Notesnook

Community Moderator

- Frontline user support and moderation of online communities
- Bug report handling and testing

Jun 2021 – Apr 2022
Dhaka, Bangladesh

Al-Quraner Vasha Institute

Virtual Classroom Assistant

- Moderation of virtual classroom for live "Comprehensive Arabic 21" course
- Management of course participants

RESEARCH INTERESTS

Microbiological Analyses

- Development, optimization and maintenance of pure cultures in diverse growth mediums
- Activity measurement of antimicrobial compounds (MIC and MBC)

Population Genomics and Evolutionary Biology

- Analysis of genetic variants within animal populations
- Reconstruction of phylogenetic trees and adaptation patterns
- Evaluation of selective pressure on genetic inheritance

Data Wrangling, Analysis and Predictive Modeling

- Development of tools to clean raw biological data
- Visualizing cleaned datasets with codes and tools
- Identifying patterns and insights within large datasets

Metagenomics and Microbiome Analysis

- Analysis of diverse microbial communities
- Characterization of microbiome and its possible roles
- Microbiome-based therapeutics and diagnostics

Functional Genomics and Bioinformatics

- Gene and gene product identification and annotation
- ncRNA analysis and function prediction
- Molecular docking and molecular dynamics simulation
- Gene/Protein interactome analyses

Phytochemical Analyses

- Processing of raw plant sample for phytochemical studies
- Extraction and detection of phytocompounds
- Thin-layer chromatography

PUBLICATIONS

2022

Supantha Dey, Sazzad Shahrear, Maliha Afroj Zinnia, Ahnaf Tajwar, and Abul Bashar Mir Md. Khademul Islam (2022). Functional Annotation of Hypothetical Proteins From the Enterobacter cloacae B13 Strain and Its Association With Pathogenicity 

Bioinformatics and biology insights, 16, 11779322221115535

PROJECTS

2024 – Present

A Randomized, Double-Blind, Placebo-Controlled, Safety, Tolerability and Pharmacokinetic Phase I Study of Escalating Single Doses of VPO-227 in Healthy Volunteers

Clinical Trial

Supported the clinical trial by collaborating with team members for developing informed consent forms (ICFs) and establishing protocols for blood, urine, and stool sample collection. Designed labeling for sample collection containers to ensure accurate identification and handling. Conducted a thorough count of required logistics items, compiling a detailed inventory list to facilitate smooth trial operations.

2024 – Present

The AWaRe1 pragmatic cluster-randomised trial, economic evaluation and process evaluation of antibiotic stewardship in primary healthcare of acute respiratory infections in low- and middle- income countries using the WHO AWaRe system (AWaRe1-Trial)

Clinical Trial

Translated key documents and questionnaires to Bangla to support localization for Upazila Health Complexes and offices. Compiled a list of senior officers as potential advisors and identified Upazila Health Complex workers in need of training, alongside creating a detailed map of facility locations.

2024 – Present

Non-HCC Biomarker Analysis Study

Clinical Study

Spearheaded blood specimen processing and storage protocols for the study while managing comprehensive documentation systems. Established efficient digital organization of patient test reports, prescription records, and informed consent forms (ICFs). Implemented standardized procedures for both biological sample handling and document management to ensure optimal specimen integrity and regulatory compliance.

2023 – Present

Study of Epigenetic Changes in Blood Samples in Breast Cancer Patients

Clinical Study

Coordinated documentation management for an epigenetic breast cancer research study, including systematic organization of informed consent forms (ICFs) and patient prescription records. Implemented efficient digital filing systems to enhance data accessibility while maintaining regulatory compliance in clinical research documentation.

2024

Analyzing Global Aquaculture Production Trends and Insights

Analytical Case Study

This project explored the top aquaculture-producing countries from 2014 to 2018, visualizing their production data through graphs. Additionally, the remarkable growth of aquaculture production in Bangladesh from 1960 to 2018 was, highlighting the impact of biotechnology in the industry.

2023 – 2024

Evaluation of Phytochemical Properties and In Vitro Antimicrobial Activity of *Costus woodsonii* Extracts

Masters Thesis Project

Prepared ethyl acetate extracts from powdered leaves, stems and roots of *Costus woodsonii* and analyzed their phytochemical composition and potential antimicrobial activity against *Bacillus subtilis*, *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumoniae* and *Salmonella paratyphi* through bi-layer diffusion assay and TLC bioautography assay.

2021 – 2022

Exploring the Virulence of *Tsukamurella paurometabola* Through Functional Annotation of Hypothetical Proteins

Bachelor's Project

Retrieved protein sequences of *Tsukamurella paurometabola* and after curation of the hypothetical proteins, carried out the functional annotation and virulence prediction.

2021 – 2022

Functional Annotation of Hypothetical Proteins From the *Enterobacter cloacae* B13 Strain and Its Association With Pathogenicity

Research Project

Assisted with data collection and processing of functional annotation and virulence analysis of hypothetical proteins of *Enterobacter cloacae* B13 Strain.

SKILLS

Laboratory Skills

- Recombinant DNA technology, PCR, cloning, transgenics
- Microbial assays, plant sample extraction, TLC

Teaching/Presentation Skills

- Tutoring school and college-level students
- High quality visuals, documents, presentations and spreadsheets (Microsoft Office/OpenOffice)
- Graphic design using computer/mobile tools

Soft Skills

- Adaptability and critical thinking
- Finding creative solutions to issues
- Effective collaboration with diverse teams

Bioinformatics and Biostatistics

- BLAST, MEGA, phylogenetics, protein studies
- Bioinformatics pipeline/workflow development
- Genomic and proteomic data analysis

Programming/Data Analysis

- Python (IDLE, PyCharm), R (RStudio), ggplot2, R Markdown, SQL, Perl, C++.
- Control flow, functions, data query, preprocessing and visualizations.

Additional Skills

- Linux and UNIX systems, CLI, file I/O, Bash scripts.
- Git, documentation, user support and beta testing
- Website deployment using Hugo/WordPress

AWARDS AND SCHOLARSHIPS

2023

National Science and Technology Fellowship

Ministry of Science and Technology, Government of Bangladesh

2020

6th Prize in Dhaka University Seerat Reading and Competition

Dhaka University Dawah Circle

2020

4th Prize, Essay Writing on Seerah

National Siratunnabi (PBUH) Celebration Committee

- 2019 **New India-Bangladesh Friendship Freedom Fighters Descendent Scholarship**
Ministry of Liberation War Affairs, Government of Bangladesh
- 2014 **Second Runners-up in Quiz Competition of Annual Science Fair**
Dhaka College
- 2014 **Regional Champion (Math and Computer, Dhaka Region, Bangabandhu Creative Talent Hunt Competition)**
Government of Bangladesh

EXTRA-CURRICULAR ACTIVITIES

- 2022 **Editor, Typesetter and Designer**
BioGen Magazine, Genetic Engineering and Biotechnology Club, University of Dhaka
- 2014 – 2016 **Academic Volunteer**
DRMC Science Club, Dhaka Residential Model College
- 2012 – 2016 **Quiz Team Member**
DRMC Inflammers, Dhaka Residential Model College
- 2010 – 2011 **National Math Olympiad Participant**

LANGUAGES

- Bengali
- English
- Arabic
- Hindi/Urdu

CERTIFICATIONS

- Master of Science in Genetic Engineering and Biotechnology
- Bachelor of Science in Genetic Engineering and Biotechnology
- Higher Secondary School Certificate in Science
- Secondary School Certificate in Science
- Good Clinical Practice (GCP) - NIDA 
- Protecting Human Research Participants Online Training 
- Biosafety and Biosecurity Training 
- Introduction to Programming in R for Biologists

REFERENCES

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