





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

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|---|--|
| 10/2022 – 01/2024
Dhaka, Bangladesh | Master of Science in Genetic Engineering and Biotechnology,
University of Dhaka 
CGPA: 3.73 (on a scale of 4.00) |
| 01/2018 – 09/2022
Dhaka, Bangladesh | Bachelor of Science (Honors) in Genetic Engineering and Biotechnology,
University of Dhaka 
CGPA: 3.77 (on a scale of 4.00) |
| 07/2015 – 06/2017
Dhaka, Bangladesh | Higher Secondary School Certificate in Science, Dhaka Residential Model College 
GPA: 5.00 (on a scale of 5.00) |
| 01/2013 – 05/2015
Dhaka, Bangladesh | Secondary School Certificate in Science, Dhaka Residential Model College 
GPA: 5.00 (on a scale of 5.00) |

EXPERIENCE

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| 09/2024 – present
Dhaka, Bangladesh | IDD Special Activities, icddr, b, Research Assistant  <ul style="list-style-type: none">• 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. |
| 01/2024 – 09/2024
Dhaka, Bangladesh | Department of Genetic Engineering and Biotechnology, University of Dhaka, Research Assistant  <ul style="list-style-type: none">• Assistance in various research projects, contributing to experimental design, data collection, and data analysis• Mentoring junior members in sub-projects |
| 08/2021 – 12/2023
Dhaka, Bangladesh | Department of Genetic Engineering and Biotechnology, University of Dhaka, Thesis Student and Researcher  <ul style="list-style-type: none">• Performing research on the antimicrobial activity of <i>Costus woodsonii</i> samples for Master's Thesis |

- Participating in bioinformatics projects on the virulence of *Tsukamurella paurometabola* and *Enterobacter cloacae*

02/2024 – Present
Khushab, Pakistan

Notesnook, Community Moderator [🔗](#)

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

06/2021 – 04/2022
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

Phytochemical Analyses

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

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

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

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

Analyzing Global Aquaculture Production Trends and Insights

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

Programming/Data Analysis

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

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

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

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**

CERTIFICATIONS

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

REFERENCES

Dr. Abu Ashfaque Sajib, *Professor and Chairperson*,
Department of Genetic Engineering and Biotechnology, University of Dhaka
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Dr. Mohammed Nazmul Ahsan, *Professor and Former Chairperson*,
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Dr. Hasan Muhammad Abdullah, *Associate Professor*,
Department of Agroforestry & Environment, Bangabandhu Sheikh Mujibur Rahman Agricultural University
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