CAREER OBJECTIVE

Inquisitive life science graduate with a passion for teaching and the intention of leveraging expertise in coding, molecular biology, and bioinformatics for genomic and proteomic data analysis. Eager to contribute cutting-edge bioinformatics solutions, advance scientific understanding, and inspire the next generation of researchers through an intense desire for learning and keeping up with the rapidly evolving computing landscape in academia or industry.

EDUCATION

10/2022 – 01/2024
Master of Science in Genetic Engineering and Biotechnology, University of Dhaka
CGPA: 3.73 (on a scale of 4.00)

01/2018 – 09/2022
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
Higher Secondary School Certificate in Science, Dhaka Residential Model College
GPA: 5.00 (on a scale of 5.00)

01/2013 – 05/2015
Secondary School Certificate in Science, Dhaka Residential Model College
GPA: 5.00 (on a scale of 5.00)

EXPERIENCE

02/2024 – Present
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

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

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

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

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

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

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

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

2024 — **Abira Khan, Ahnaf Tajwar (2024). Evaluation of Phytochemical Properties and In Vitro Antimicrobial Activity of Costus woodsonii Extracts,** (Manuscript under preparation)

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

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.

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

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

LANGUAGES

- Bengali
- English
- Arabic

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 Inflamers, Dhaka Residential Model College
2010 – 2011	**National Math Olympiad Participant**

REFERENCES

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abira.khan@du.ac.bd, (+88) 01920804028