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EDUCATION

Monash University

2018-2023 Ph.D. in Science (Genomics & Bioinformatics)

Campus: Malaysia

Award: Graduate research merit scholarship

Research: Unlocking the genetic secrets of heat tolerance in Malaysian weedy rice.

AIMST University Malaysia

2016-2017 MSc in Biotechnology (Research)

Research: Identification and characterization of novel ncRNA in *Enterobacter cloacae*.

University of Development Alternative (UODA)

2010-2014 BSc in Molecular Medicine and Bioinformatics.

Research: A Preliminary Phytochemical and Pharmacology study on Antinociceptive effect of *Curcuma longa* L. (Rhizome) Methanol Extract in Swiss Albino Mice

Presentation and award

- Winner of track three, MIT Hacking Medicine 2024.
- USF International Visiting Scholar Research Showcase, 2024
- Faculty of Science 2022 Graduate Research Conference held at Monash University on June 7th -10th 2022
- Monash University graduate research merit scholarship.
- USF Health Research Day 2025- Oral Presenter
- USF International Visiting Scholar Research Showcase, 2025.
- 2025 SOBP Annual Meeting. Poster presentation.

JOB EXPERIENCE

- **Postdoctoral Research Scholar**
Dec 2023 to Present
Position: Research Scholar
Institution: University of South Florida

- **Graduate Research Assistants**
Dec 2018 to Sep 2022
Position: Bioinformatics data scientist
Institution: Monash University
- **Research Data Collection Supervisor**
April 2016 to Sep 2016
Head of Operation: Sarwar Jahan Chowdhury
Research Topics: Formal-informal labor nexus and growth
Position: Field Supervisor
Institution: BRAC Institute Of Governance Development (BIGD)
- **Research Associate**
Aug 2015 to Dec 2015
Head of Operation: Anwarul Hoque
Research Topics: Essential services package (ESP) costing study
Position: Field Supervisor
Institution: Center for Social & Market Research (CSMR)

TRAINING AND WORKSHOP

- Welcome Genome Campus Advanced Course: Next Generation Sequencing Bioinformatics.
- R Statistics Essential Training
- Python for Data Science Essential Training
- Data Science Foundations: Data Mining
- SPSS Statistics Essential Training

TEACHING EXPERIENCE

- Teaching assistance at Monash University Malaysia statistical unit.
- Supervise two Honours students.
- Supervise Master's students.
- Supervised PhD student (USF)

AMIST University (Lead Instructor)

- Workshop on R for Bioinformatics

- Workshop on Bacterial Transcriptome Analysis and Identification of ncRNAs

RESEARCH EXPERIENCE

University Of South Florida: Postdoctoral Research Scholar

- Designed and developed a protocol to analyze posttraumatic stress disorder (PTSD).
- Epigenome-wide association studies (EWAS) of PTSD, Mediation analysis.
- MicroRNA expression profile of Sex differences in PTSD.
- RNA-seq analysis of PTSD and target gene identification.
- Comparative multilevel gene expression study.
- Implement machine learning strategies on gene expression study.
- Differential methylation and marker-associated correlation study

Monash University: *Graduate Researcher* (Graduate research merit scholarship)

- Design and developed protocol to screen stress tolerance weedy rice
- Reactive oxygen species and relative electric conductivity measurement from plant tissue
- Statistical analysis on data sets using SPSS, R program and Excel.

PUBLICATION

- Hot off the genes: uncovering differentially expressed genes in Malaysian weedy rice in response to heat stress (**Under Review**).
- A “jab” for rice: exploring the potential of heat shock proteins to enhance rice resilience (**Finalized Review**)
- Hasan Sarker, M.M., Ratanatharathorn, A., Ratanatharathorn, A., Wani, A.H., Aiello, A.E., Qu, A., Koenen, K., Wildman, D.E., Uddin, M., 2025. 457. DNA Methylation as a Mediator of Cardiovascular Disease Risk in Relation to PTSD Severity: Identification of Potential Epigenetic Biomarkers. *Biol. Psychiatry* 97, S285.
- DNA Methylation as a Mediator of Cardiovascular Disease Risk in Relation to PTSD Severity: Identification of Potential Epigenetic Biomarkers (Manuscript Written).
- Sarker, M.H., Hussain, M.H., Neik, T.X. et al. Screening of heat stress-tolerant weedy rice

- Pipeline Development for NGS.
- Weedy Rice WGS sequence analysis.
- *In vitro* and *in vivo* RNA techniques, RNA extraction.
- Generation of cDNA libraries for RNA-seq analysis
- Differential gene expression analysis using R program (DESeq2)
- Candidate gene validation using RT-qPCR

AIMST University: *Graduate Researcher*

- Data mining and processing of transcriptome sequence data.
- ncRNA identification and novel characterization
- Target identification and 3D structure prediction of selected novel ncRNA.
- RNA extraction & Validate ncRNA using northern blot.
- Expression intensity study using ImageJ tool

UODA University: *Honors Research*

- Phytochemical and Pharmacology study on Antinociceptive effect of *Curcuma longa* L. (Rhizome)
- Animal handling and testing medicinal properties.

and SNP identification of heat-tolerance-related genes. *Plant Biotechnol Rep* (2024). <https://doi.org/10.1007/s11816-024-00920-6>

- Roy, P., Naher, L., **Sarker, M.M.H.**, Azad, M.S.A., Haque, M., Rahman, S. and Rahmatullah, M., 2014. Oral glucose tolerance and antinociceptive activity evaluation *Coroupita guianensis* fruits. *Advances in Natural and Applied Sciences*, 8(9), pp.18-23.
- Sultana, J., **Sarker, M.M.H.**, Rahman, A., Monalisa, M.N., Marzan, M., Faisal, M. and Rahmatullah, M., 2014. Analgesic activity evaluation of methanol extract of *Luffa cylindrica* fruits. *Advances in Natural and Applied Sciences*, 8(9), pp.13-7.
- Faisal, M.D., **Sarker, M.H.**, Rahman, A., Hossain, A.I., Rahman, S., Bashir, A.B.M.A., Jahan, R. and Rahmatullah, M., 2014. *Murraya paniculata* (L.) Jack: a potential plant for treatment of toothache. *Journal of Dentistry, Oral Disorders and Therapy*, 2(3), pp.1-3.

REFERENCE

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