

Mohammad Shamimul Alam, PhD

Professor

Department of Zoology

University of Dhaka

Research Interests:

Conservation Genetics; *Drosophila* Genetics, Gene Function, Behavioural Genetics; Molecular Ecology

Educational Qualification:

- 1) **PhD in Genetics** (2013), **University of Melbourne**, Melbourne, Australia
- 2) **Master of Science (Thesis group)** in Zoology with specialization in Genetics and Molecular Biology, 1997 (held in 1999), **First class 2nd position**, University of Dhaka, Bangladesh
- 3) **Bachelor of Science (Honours)** in Zoology 1996 (held in 1997), **First class 1st position**, University of Dhaka, Bangladesh
- 4) **HSC (Science group)**, 1993, **First division**, Dhaka Board
- 5) **SSC (Science group)**, 1991, **First division**, Cumilla Board

Recent Publications:

Total publications – 40 (details are mentioned at the end of this document)

Some recent publications are mentioned below.

1. Complete mitogenome and intra-family comparative mitogenomics showed distinct position of Pama Croaker *Otolithoides pama*. *Scientific Reports*, 14(1), 13820. (2024)
2. Characterization of complete mitochondrial genome of *Labeo rohita* from Bangladesh. *Bioresearch Communications-(BRC)*, 10(02), 1539–1544. (2024)
3. Regulatory elements in the upstream region of *metallothionein* gene in tilapia species. *Dhaka Univ. J. Biol. Sci.* 30, no. 1: 95-103. (2021)
4. Role of MicroRNA Genes MiR-1000 and MiR-375 in Forming Olfactory Conditional Memory in *Drosophila melanogaster*. *MicroRNA* 9 (2020).
5. First Record of *Zaprionus indianus* (Gupta, 1970) (Diptera Drosophilidae) from Bangladesh. *Biodiversity Journal* 11, no. 3: 757–60. (2020)
6. Larval Locomotion Behavior in Three Species of *Drosophila*. *Bangladesh J. Zool.* 47, no. 2: 367–71. (2019)
7. Partial Sequence Analysis of Mitochondrial Cytochrome B Gene of *Labeo calbasu* of Bangladesh.” *Journal of Biodiversity Conservation and Bioresource Management* 5, no. 1: 25–30. (2019)

8. Identification of *Megaselia scalaris* (Diptera: Phoridae) Based on Morphology and Mitochondrial 16S RRNA and COI Gene Sequences. *Dhaka Univ. J. Biol. Sci.* 25, no. 2: 149–59. (2016)
9. Differentiation of *Clarias batrachus*, *C. gariepinus* and *Heteropneustes fossilis* by PCR-Sequencing of mitochondrial 16s rRNA Gene. *J. Asiatic Soc. Bangladesh, Science* 41, no. 1: 51–58. (2015)
10. PCR-Sequencing of Mitochondrial 16S RRNA Gene of *Labeo rohita*.” *Journal of Biodiversity Conservation and Bioresource Management* 1, no. 1: 53–58. (2015)

Research Experience:

Research Projects Completed as Principal Investigator:

- I. 2020-2023: **Principal Investigator**, Project Title: “Identification and utilization of genetic diversity towards higher production of commercially important fish *Labeo rohita*”, Funded by BAS-USDA Endowment Program, Bangladesh Academy of Sciences.
- II. 2022-23: **Principal Investigator**, Project Title: “Studying the impact of stress-induced depression and anti-depressant treatment on lifespan using *Drosophila* as a model”. Funded by the University Grants Commission, Bangladesh
- III. 2021-22: **Project Director**, Project Title – “Development of genome-wide polymorphic microsatellite markers associated with immune-related genes of *Labeo rohita*” conducted by the University of Dhaka and funded by UGC
- IV. 2020-21: **Principal Investigator**; Project Title – “Genetic status of white spot disease resistance in the wild and cultured *Penaeus monodon*: an approach toward sustainable shrimp production” funded by Centennial Research Grant, DU
- V. 2019-20: **Project Director**, Project Title: “Behavioral functions of neuronal microRNA gene miR-375 in the model organism *Drosophila melanogaster*” Funded by Neuroscience Research Center, DU
- VI. 2018-19: **Principal Investigator**, Project Title: “*Drosophila* species and genetic diversity as an indicator of climate change impact in Bangladesh”, Ministry of Science and Technology, Government of Bangladesh.
- VII. 2018-19: **Project Director**, Project Title: “Learning and memory function of human microRNA gene *mir-1000* in *Drosophila melanogaster*” Funded by Neuroscience Research Center, DU
- VIII. 2017-18: Project Director, Project Title – “Larval locomotion in the locally available species of fruitfly *Drosophila*” conducted by the University of Dhaka and funded by UGC
- IX. 2016-17: **Project Director**, Project title – “Identification of *Drosophila* species using morphological features and DNA barcoding – Phase II”, Funded by University Grants Commission, Bangladesh

- X. 2015-16: **Principal Investigator**, Project Title - Effect of increased salt on *ATPalpha* expression in *Drosophila melanogaster*", Funded by Ministry of Science and Technology, GoB
- XI. 2014-15: **Principal Investigator**, Project title – “Salt stress and *ATPalpha* gene expression in *Drosophila melanogaster*”, Funded by Ministry of Science and Technology, GoB
- XII. 2013-15: **Project Director**, Project title – “Identification of *Drosophila* species using morphological features and DNA barcoding”, Funded by University Grants Commission, Bangladesh

Research Supervision -

PhD research student: one (ongoing)

MPhil research student: one (completed)

MS Thesis supervised: more than 25 students

Establishment of Research Lab -

In 2014, Dr. Mohammad Shamimul Alam started a research facility (named *Drosophila* Genetics Lab.) intending to utilize the model fruitfly *Drosophila* in exploring and solving contemporary problems related to biological science.

Experience as a research student -

- From April 2008 to November 2012: **PhD project** titled “Expression and function of five ligand-gated chloride channel genes of *Drosophila melanogaster*”.
- Two (2) years of research work (one year for a Master’s thesis and one year under the IFRB-PTRS 54 (2), 2000 Project) in the IFRB, Atomic Energy Research Establishment, Savar, Dhaka, Bangladesh.

Teaching Experience:

Courses Taught: Molecular Ecology and Conservation Genetics; Animal Diversity II, Molecular Biology and Biotechnology

Faculty Positions:

- 1) January 2018 to till date: **Professor**, Department of Zoology, University of Dhaka, Bangladesh
- 2) May 2013 to January 2018: **Associate Professor**, Department of Zoology, University of Dhaka, Bangladesh
- 3) December 2010 to May 2013; **Assistant Professor**, Department of Zoology, University of Dhaka
- 4) June 2005 to December 2010; **Lecturer**, Department of Zoology, University of Dhaka

5) December 2003 to June 2005; **Lecturer** in Zoology, Brahmanbaria Govt. College under Ministry of Education, GoB as a BCS (Education) cadre.

Academic Administration and Governance:

Mohammad Shamimul Alam is involved in academic activities related to quality assurance and enhancement of institutional teaching, research, and student relations in different capacities.

1. **Member, PSAC** (Program Self-Assessment Committee, Department of Zoology) under **IQAC** (Institutional Quality Assurance Cell), University of Dhaka. Since 2017-till now.
2. **Member, Curriculum/Syllabus Committee**, Department of Zoology, DU. Ongoing.
3. **Teaching Evaluation Admin**, Department of Zoology, University of Dhaka, From 2024 – till now.
4. **Student Advisor**, Department of Zoology. From 2024 – till now.

Conferences Attended:

2010 Bangalore Maggot Meeting: Neural Circuits to Behaviour

2012 Genetics Society of Australia conference in Melbourne

2012 18th Biennial Conference of Zoological Society of Bangladesh

2014 19th Annual Conference and General Meeting organized by Zoological Society of Bangladesh

2014 6th Biennial Fisheries Conference and Research Fair, Bangladesh

2016 20th National Conference of Zoological Society of Bangladesh

2017 International Conference on Biotechnology in Health and Agriculture organised by Global Network of Bangladeshi Biotechnologists

2017 20th International Conference and General Meeting organized by Zoological Society of Bangladesh

2018-2024 – Attended all the conferences organized by the Zoological Society of Bangladesh

Scientific Society Affiliation:

Life Member, Zoological Society of Bangladesh

Life Member, GNOBB (Global Network of Bangladeshi Biotechnologists)

Life Member, Ecological Society of Bangladesh

Profile Links:

DU Faculty Profile: https://www.du.ac.bd/index.php/faculty/faculty_details/ZOO/1742#

Google Scholar:

https://scholar.google.com/citations?hl=en&user=FT3dGrEAAA&view_op=list_works&sortby=pubdate

ORCID: <https://orcid.org/0000-0002-4430-1097>

ResearchGate: <https://www.researchgate.net/profile/Mohammad-Alam-97>

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Publications Detail: (40)

1. Siddika, M. A., Ahmed, K. A., Alam, M. S., Bushra, J., & Begum, R. A. (2024). Complete mitogenome and intra-family comparative mitogenomics showed distinct position of Pama Croaker *Otolithoides pama*. *Scientific Reports*, *14*(1), 13820.
2. Jahan, H., Chakraborty, M., Alam, M. S., & Begum, R. A. (2024). Characterization of complete mitochondrial genome of *Labeo rohita* from Bangladesh. *BioResearch Communications-(BRC)*, *10*(02), 1539–1544.
3. Jahan, H., Nasrin, D., Anee, H. K., Alam, M. S., & Begum, R. A. (2024). Assessing Species-Level Identification of Some Cryptic Frog Species of Bangladesh Using 16s and 12s rRNA Genes. *Dhaka University Journal of Biological Sciences*, *33*(2), 27–52.
4. Barkat, A. I., Rahman, M. M., Alam, S., Khandaker, A. M., & ALAM, M. S. (2024). *First record of the lacewing species Croce filipennis (Neuroptera: Nemopteridae) and its family from Bangladesh based on morphological and molecular identification.* (Under Review).
5. Saha, S., Jaman, S., Anee, H. K., Khandaker, A. M., Alam, M. S., & Begum, R. A. (2022). Molecular Identification of Ribbon Fish (*Eupleurogrammus* Sp.) Using Partial Sequence of Mitochondrial COI Gene. *Bangladesh Journal of Zoology*, *50*(2), 231–238.
6. Alam, M., Rahaman, M., Begum, R., & Shahjahan, R. (2021). Non-invasive DNA extraction for molecular identification of royal Bengal tiger *Panthera tigris tigris*. *Dhaka University Journal of Biological Sciences*, *30*(2), 325–330.
7. Alam, M. S., Jahan, I., Rahman, S., Jahan, H., & Fatema, K. (2021). Regulatory elements in the upstream region of metallothionein gene in tilapia species. *Dhaka University Journal of Biological Sciences*, *30*(1), 95–103.
8. Anee, H. K., Ferdous, Z., Khandaker, A. M., Alam, M. S., & Shahjahan, R. M. (2021). Effect of temperature on life cycle and behaviour of *Aedes aegypti* (Diptera: Culicidae). *Bangladesh Journal of Zoology*, *49*(3), 369–379.
9. Anee, I. J., Alam, S., Begum, R. A., Shahjahan, R. M., & Khandaker, A. M. (2021). The role of probiotics on animal health and nutrition. *The Journal of Basic and Applied Zoology*, *82*, 1–16.
10. Rahman, S., Modak, C., Akter, M., & Alam, M. S. (2020). Role of MicroRNA Genes miR-1000 and miR-375 in Forming Olfactory Conditional Memory in *Drosophila melanogaster*. *MicroRNA*, *9*.
11. Rahman, S., Roy, D. K., & Alam, M. S. (2020). First record of *Zaprionus indianus* (Gupta, 1970) (Diptera Drosophilidae) from Bangladesh. *Biodiversity Journal*, *11*(3), 757–760.
12. Alam, M. S., Hoque, M. N., Akter, M., & Shahjahan, R. M. (2019). Diversity in external morphology, sex comb and developmental stages of three *Drosophila* species of melanogaster group. *Dhaka University Journal of Biological Sciences*, *28*(2), 167–176.

13. Alam, M. S., Poly, F. S., Rahman, S., & Begum, R. A. (2019). Larval locomotion behavior in three species of *Drosophila*. *Bangladesh Journal of Zoology*, 47(2), 367–371.
14. Begum, R., Alam, M., Jahan, H., & Alam, M. (2019). Partial sequence analysis of mitochondrial cytochrome B gene of *Labeo calbasu* of Bangladesh. *Journal of Biodiversity Conservation and Bioresource Management*, 5(1), 25–30.
15. Rahman, M., Alam, M. S., & Rabbane, Md. G. (2018). Effects of feeding frequency on growth performances and RNA:DNA ratio of the gangetic mystus (*Mystus cavasius* Hamilton, 1822) in laboratory condition. *Dhaka University Journal of Biological Sciences*, 27(1), 75–83.
16. Chowdhury, M., Alam, M. S., Shahjahan, R. M., Begum, R. A., & Begum, A. (2016). Esterase banding pattern in different developmental stages of *Culex quinquefasciatus* Say 1823 (Diptera: Culicidae). *International Journal of Advanced Biological Research*, 6(4), 553–557.
17. Alam, M. S., Ahmed, K. A., Begum, R. A., & Shahjahan, R. M. (2016). Identification of *Megaselia scalaris* (Diptera: Phoridae) based on morphology and mitochondrial 16S rRNA and COI gene sequences. *Dhaka University Journal of Biological Sciences*, 25(2), 149–159.
18. Jahan, H., Gope, P. S., Alam, M. S., & Shahjahan, R. M. (2016). Electrophoretic Banding Pattern Of Esterase Isozyme In Different Tissues Of *Puntius Sophe* (Cyprinidae: Cypriniformes). *Journal of the Asiatic Society of Bangladesh, Science*, 42(2), 201–208.
19. Rabbane, M. G., Ahmed, M. F., Alam, M. S., & Hossain, M. M. (2016). Culture, reproduction and embryogenesis of wild zebrafish (*Danio rerio*) in laboratory condition. *Dhaka University Journal of Biological Sciences*, 25(2), 139–148.
20. ALAM, M. S., JAHAN, H., BEGUM, R. A., & SHAHJAHAN, R. M. (2015). Differentiation of *Clarias batrachus*, *C. gariepinus* and *Heteropneustes fossilis* by PCR-sequencing of mitochondrial 16S rRNA Gene. *J. Asiat. Soc. Bangladesh, Sci*, 41(1), 51–58.
21. Sultana, A., Begum, R. A., Jahan, H., Alam, M. S., & Shahjahan, R. M. (2015). Nucleotide sequence of 16S rRNA gene of *Clarias gariepinus* and its molecular phylogeny with other catfishes. *International Journal of Research in Fisheries and Aquaculture*, 5(1), 33–40.
22. Alam, M. S., Rahman, S., Jahan, H., Sultana, A., Shahjahan, R. M., & Begum, R. A. (2015). PCR-sequencing of mitochondrial 16S rRNA gene of *Labeo rohita*. *Journal of Biodiversity Conservation and Bioresource Management*, 1(1), 53–58.
23. Begum, R. A., Rashid, Md. A., Islam, S., Ferdous, Z., Alam, Md. S., & Shahzahan., R. Md. (2013). Esterase variability of different life stages of bed bug and screening adults against pesticides. *Jahangirnagar University Journal of Biological Sciences*, 2(11), 113–121.

24. Kamruzzaman, M., Rashid, M. A., Ferdous, Z., Alam, M. S., Begum, R. A., & Shahjahan, R. M. (2013). Variation of esterase isozyme banding pattern in *Penaeus monodon* with reference to tissue specificity, malathion toxicity and allele frequency distribution. *Journal of Current Research in Science*, 1(6), 500.
25. Noor, S., Rashid, M. A., Ferdous, Z., Alam, M. S., Begum, R. A., & Shahjahan, R. M. (2013). Comparison of esterase banding pattern in some selected tissues of *Macrognathus aculeatus* and *Mastacembalus armatus*. *Octa Journal of Biosciences*, 1(2).
26. Rashid, M. A., Shahjahan, R. M., Begum, R. A., Alam, M. S., Ferdous, Z., & Kamruzzaman, M. (2013). Fecundity and embryonic development in three *Macrobrachium* species. *Journal of Entomology and Zoology Studies*, 1(1), 3–11.
27. Rashid, M. A., Mohammad Kamruzzaman, M. K., Zannatul Ferdous, Z. F., Alam, M. S., Begum, R. A., & Shahzahan, R. M. (2013). *Allele frequency distributions on polymorphic esterase loci in experiental populations of three Macrobrachium species*.
28. Begum, R. A., Rahman, D. T., Rashid, M. A., Alam, M. S., & Shahjahan, R. M. (2012). Comparison of esterase isozyme variability in some selected tissues of the Asian and African catfishes (Siluriformes: Clariidae). *Bangladesh Journal of Zoology*, 40(1), 43–50.
29. Begum, R. A., Yasmin, F., Rashid, M. A., Alam, M., & Shahjahan, R. (2011). Comparison of tissue specific esterase isozyme banding pattern in the larvae and adult of *Heteropneustes fossilis*. *Indian J Soc Nat Sci*, 1(1), 1–7.
30. Ahmed, M., Alam, M., Rashid, M., Begum, R., & Shahjahan, R. (2011). Variability of esterase isozyme at some developmental stages of mosquito fish, *Poecilia reticulata*. *Bangladesh J Life Sci*, 23(1), 139–142.
31. Chowdhury, M., Alam, M. S., Begum, R. A., Begum, A., & Shahjahan, R. M. (2011). Susceptibility of larval stages of the mosquito *Culex quinquefasciatus* Say against four Insecticides. *Bangladesh J. Zool*, 39(1), 19–25.
32. Alam, M. S., Begum, R. A., Ahmed, I., & Shahjahan., R. M. (2008). Karyotype analysis of *Mystus vittatus* (Bloch, 1797) and *Mystus tengara* (Himolton, 1822) with giemsa. *Dhaka University Journal of Biological Sciences*, 17(2), 103–108.
33. Jahan, I., Alam, M., Begum, R., Begum, A., & Shahjahan, R. (2008). Electrophoretic expression patterns of esterase isozymes in developmental stages of *Aedes aegypti*. *Bangladesh. J. Life Sci*, 20, 95–100.
34. Begum, R., Bhadra, S., Shahjahan, R., Alam, M., & Begum, A. (2008). Esterase banding pattern in differant tissues of *Pangasius hypophthalmus* (Sauvage, 1878). *Bangladesh J. Zool*, 36, 287–294.
35. Shahjahan, R. M., Karim, A., Begum, R. A., Alam, M. S., & Begum, A. (2008). Tissue specific esterase isozyme banding pattern in Nile Tilapia (*Oreochromis niloticus*). *University Journal of Zoology, Rajshahi University*, 27, 1–5.

36. Shahjahan, R. M., Khan, M., & Alam, M. S. (2007). Radiation and EMS induced mutation in the fruit fly, *Bactrocera cucurbitae* (COQ). *Bangladesh Journal of Zoology*, 35(2), 251–258.
37. Shahjahan, R. Md., Alam, M. S., & Begum, A. (2007). Ethyl methane sulfonate induced lethal mutation in the blow fly, *Lucilia cuprina* (wied.) (Diptera: Calliphoridae). *Bangladesh Journal of Zoology*, 35(1), 171–175.
38. Haque, T. Z., Alam, M. S., & Begum, A. (2004). Susceptibility status of *Aedes aegypti* and *Culex quinquefasciatus* mosquitoes of Dhaka city against some organophosphate and pyrethroid insecticides. *Bangladesh J. Sci. Ind. Res.* 39(3-4), 131-138, 39(3–4), 131–138.
39. Shahjahan, R., Begum, A., Haque, T., & Alam, M. (2003). Organophosphate toxicity and esterase variability in the larvae of *Aedes aegypti* (L.)(Diptera: Culicidae) of Dhaka city. *Bangladesh Journal of Zoology*, 31(1), 69–76.
40. Shahjahan, R. Md., Begum, A., Alam, M. S., & Haque, T. Z. (2003). Organophosphate toxicity and esterase pattern in *Culex quinquefasciatus* Say of Dhaka city. *Dhaka University Journal of Biological Sciences*, 12(1), 49–54.