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*Research Associate, Department of Zoology, University of
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EDUCATION/TRAINING

DST-NPDF

University Of Calcutta

April, 2018-March 2020

DBT-RA

Subject: University Of Calcutta

Jan, 2015- Dec, 2017

PhD.

Visva-Bharati University

2007-2014

M.Sc., Zoology, Special: Environmental Sciences

Visva-Bharati University

2005-2007

Marks: 71.8%

B.Sc., Zoology [Hons.]

Burdwan University (Vivekananda Mahavidyalaya)

2003-2005

Marks: 60%

RESEARCH INTERESTS

- Molecular & Cellular Endocrinology
- Neurobiology
- Ecotoxicology & Stress Physiology
- Molecular Ecology

POSITIONS/RESEARCH EXPERIENCE

Resource Person

Diamond Harbour Women's University

August 2018- July 2021

Guest Lecturer

Bijay Krishna Girls College

June 2019- Till now

DST-NPDF

University Of Calcutta

2018- 2020

DBT-RA

University Of Calcutta

2015- 2017

Visva – Bharati University, Sanitinketan, India

Ph.D. student

12/2007-08/2014

Title of Thesis: Efficacy of melatonin as a photoperiodic messenger in the regulation of ovarian functions in Indian major carp

HONORS AND AWARDS:

- 1) CSIR-UGC NET in Life Sciences, December, 2007
- 2) DST, India Project JRF, 2007
- 3) Graduate Aptitude Testing Engineering (GATE) 2007, All India Rank 593
- 4) CSIR Senior Research Fellowship, 2010
- 5) Travel Grant Fellowship from DBT 2014
- 6) Hiralal Majumder Memorial Award from University of Calcutta for best presentation, 2016
- 7) Travel Grant Fellowship from DST 2017
- 8) Travel Fellowship from APN (Asia Pacific Network) 2017

PUBLICATIONS (Total IF: 133.24; Total Citation: 486)

Das, K., Basak, M., Mahata, T., Kumar, M., Kumar, D., Biswas, S., Chatterjee, S., **Moniruzzaman, M.**, Saha, N.C., Mondal, K., Kumar, P. (2022). RGS11-CaMKII complex mediated redox control attenuates chemotherapy-induced cardiac fibrosis. *Redox biology*. 57:102487. ISSN: 2213-2317. **IF: 10.787**

Moniruzzaman, M., Maiti, A.K., Chakraborty, S.B., Saha, I., Saha, N.C. (2022). Melatonin ameliorates lipopolysaccharide induced brain inflammation through modulation of oxidative status and diminution of cytokine rush in *Danio rerio*. *Environmental Toxicology and Pharmacology*. 96:103983. ISSN: 1382-6689. **IF: 5.785**

Moniruzzaman, M., Mukherjee, M., Kumar, S., Chakraborty, S.B. (2022). Effects of salinity stress on antioxidant status and inflammatory responses in females of a “Near Threatened”

- economically important fish species *Notopterus chitala*: a mechanistic approach. *Environmental Science and Pollution Research*. 1:1-2. ISSN- 09441344. **IF- 5.190**
- Sadhukhan, S., **Moniruzzaman, M.***, Maity, S., Ghosh, S., Pattanayak, A.K., Chakraborty, S.B., Maity, B. & Das, M. (2022). Organometallic Folate Gold Nanoparticles Ameliorate Lipopolysaccharide-Induced Oxidative Damage and Inflammation in Zebrafish Brain. *Acs Omega*. 7, 9917-9928. ISSN: 2470-1343. **IF – 4.132 (*Equal Contribution and joint first author)**
- Mukherjee, M., **Moniruzzaman, M.***, Ghosal, I., Pegu, T., Das, D.N. & Chakraborty, S.B. (2022). Evaluating the role of dietary plant extracts to allow adaptation to thermal stress in a cold stream ornamental fish, *Botia rostrata* (Günther, 1868). 105, 103224. ISSN: 0306-4565. **IF – 3.189 (*Equal Contribution and joint first author)**
- Kumar, S., **Moniruzzaman, M.***, Chakraborty, A., Sarbajna, A., & Chakraborty, S. B. (2021). Crosstalk between heat shock proteins, NRF2, NF-κB and different endogenous antioxidants during lead-induced hepatotoxicity in *Puntius ticto*. *Aquatic Toxicology*, 105771. ISSN: 0166-445X. **IF -5.202 (*Equal Contribution and joint first author)**
- Moniruzzaman, M.**, Bhowmick, A. R., Karan, S., & Mukherjee, J. (2021). Spatial heterogeneity within habitat indicates the community assemblage pattern and life strategies. *Ecological Indicators*, 123, 107365. ISSN: 1470-160X. **IF- 6.263**
- Moniruzzaman, M.**, & Saha, N. C. Consequences of sodium dodecyl sulfate exposure on the antioxidant status and steroidogenesis in fish gonad. *Environmental Science and Pollution Research*, 1-13. ISSN- 09441344. **IF- 5.190**
- Moniruzzaman, M.**, & Saha, N. C. (2020). Impact of variation in abiotic factors and metal accumulation pattern on the annual rhythmicity of antioxidants and maintenance of oxidative balance in fish gill. *Chemistry and Ecology*, 1-15. ISSN: 0098-0331 **IF- 2.381**
- Moniruzzaman M**, Mukherjee M, Das D and Chakraborty SB (2020). Effectiveness of melatonin in face of permethrin induced toxicity. *Environmental Pollution*. In press. ISSN: 0269-7491 **IF- 9.988**
- Moniruzzaman M**, Kumar S, Das D, Sarbajna A and Chakraborty SB (2020). Enzymatic, non-enzymatic antioxidants and glucose metabolism enzymes response differently against metal stress in muscles of three fish species depending on different feeding niche. *Ecotoxicology and Environmental safety*. 202, 110954. ISSN- 0147-6513 **IF- 7.129**
- Moniruzzaman M**, Das D, Dhara A and Chakraborty SB (2020). Enzymatic, non-enzymatic antioxidants levels and Heat Shock Protein expression as indicators of metal induced toxicity and reproductive modulation in female Indian major carp *Cirrhinus cirrhosus*. *Bulletin of Environmental Contamination and Toxicology*. 104(2), 235-244. ISSN- 0007-4861 **IF- 2.807**

- Mukherjee A, Bhowmick AR, Mukherjee J and **Moniruzzaman M*** (2019). Physiological response of fish under variable acidic conditions: A molecular approach through the assessment of an ecophysiological marker in the brain. *Environmental Science and Pollution Research*. 20, 23442-23452. ISSN- 09441344 **IF- 5.190 (*Corresponding Author)**
- Paul S, Kumar S, **Moniruzzaman M**, Chakraborty SB (2019). Oxygen Consumption of *Mystus gulio* under Combined Stress of Varying Salinity and Temperature. *Thalassas: An International Journal of Marine Sciences*. 1-6 **IF- 0.951**
- Ganguly A, **Moniruzzaman M***, Chakraborty SK, Karan S, Mukherjee J (2019). Impact of metal accumulation pattern on the annual rhythmicity of antioxidants and their interrelationship to maintain the oxidative balance in mollusc. *Biological Rhythm Research*. 1-6 ISSN- 0929-1016 **IF- 1.362 (*Equal Contribution as first author)**
- Mukherjee D, Ghosal I, **Moniruzzaman M**, De M and Chakraborty SB (2019). Dietary administration of ethanol and methanol extracts of *Withania somnifera* root stimulates innate immunity, physiological parameters and growth in Nile Tilapia *Oreochromis niloticus*. *Croatian journal of fisheries*. 77, 107-118. ISSN- 1848-0586 **IF- 1.1**
- Moniruzzaman M**, Mukherjee J, Jacquin L, Mukherjee D, Mitra P, Ray S, Chakraborty SB (2018). Physiological and behavioural responses to acid and osmotic stress and effects of *Mucuna* extract in Guppies. *Ecotoxicology and Environmental Safety*. 163, 37-46. ISSN- 0147-6513 **IF- 7.129**
- Moniruzzaman M**, Ghosal I, Das D, Chakraborty SB (2018). Melatonin ameliorates H₂O₂ induced oxidative stress through modulation of Erk/Akt/NFκB pathway. *Biological Research* 51, 17. ISSN- 0716-9760 **IF- 7.634**
- Das D, Das P, **Moniruzzaman M**, Sarkar MP, Mukherjee J, Chakraborty SB (2018). Consequences of oxidative damage and mitochondrial dysfunction on the fatty acid profile of muscle of Indian Major Carps considering metal toxicity. *Chemosphere*. 207, 385-396. ISSN- 0045- 6535 **IF- 8.943**
- Moniruzzaman M**, Das D, Dhara A, Midday P, Chakraborty SB (2018). Change in redox state and heat shock protein expression in an Indian major carp *Cirrhinus cirrhosus* exposed to zinc and lead. *The Journal of toxicological sciences*. 42, 731-740. ISSN- 1880- 3989 **IF- 1.792**
- Das D, **Moniruzzaman M**, Mukhopadhyay S, Karan S, Sarbajna A, Chakraborty SB (2018). Impact of metal toxicity on oxidative balance and mitochondrial enzyme function in muscle of tilapia. *Bulletin of Environmental Contamination & Toxicology*. 100, 647-652. ISSN- 0007-4861 **IF- 2.807**

Das D, **Moniruzzaman M**, Chakraborty SB (2017). Effect of heavy metals on tissue specific anti-oxidant response in Indian major carp. *Environmental Science and Pollution Research*. 24, 18010-18024. ISSN- 09441344 **IF- 5.190**

Mukherjee D., **Moniruzzaman M**, Ghosal I & Chakraborty SB (2017). Methanolic extract of *Mucuna pruriens* seed acts for neuro protection and antioxidant defense in a fish model. *International Journal of Pharmacognosy and Phytochemical Research*. ISSN- 0975-4873

Mukherjee J, **Moniruzzaman M***, Chakraborty SB, Lek S & Ray S (2017). Towards a physiological response of fishes under variable environmental conditions: An approach through neural network. *Ecological Indicators*. 78, 381-394. ISSN- 1872- 7034 **IF- 6.263** (***Equal Contribution as first author**)

Mukherjee M, **Moniruzzaman M***, Kumar S, Das D & Chakraborty SB (2017). Neuronal and Oxidative Damage in the Catfish Brain Alleviated After *Mucuna* Seed Extract Treatment. *International Journal of Pharmacognosy and Phytochemical Research*. 9, 52-57. ISSN- 0975-4873 (***Equal Contribution as first author**)

Moniruzzaman M, Mukherjee J, Das D & Chakraborty SB (2017). Impact of physical aquatic parameters on the annual rhythmicity of sex steroid and cortisol and their interrelationship in two distantly related fish population. *Biological Rhythm Research*. 1-12 ISSN- 0929-1016 **IF- 1.362**

Kumar S, **Moniruzzaman M***, Mukherjee M, Das D & Chakraborty SB (2016). *Mucuna* Seed Extract Treatment Alleviates SDS-Induced Oxidative Stress and Neuronal Damage in Carp Brain. *International Journal of Pharmacognosy and Phytochemical Research*. 8, 1669-1674. ISSN- 0975-4873 (***Equal Contribution as first author**)

Moniruzzaman M, Hasan KN & Maitra SK (2016). Action of melatonin on ovaprim-induced oocyte maturation in carp. *Reproduction*. 151, 285-296. ISSN- 1470- 1626. **IF- 3.923**

Hasan KN, **Moniruzzaman M** & Maitra SK (2014). Melatonin concentrations in relation to oxidative status and oocyte dynamics in the ovary during different reproductive phases of an annual cycle in carp *Catla catla*. *Theriogenology*. 82, 1173-1185. ISSN- 0093-691X **IF- 2.923**

Mukherjee S, **Moniruzzaman M** & Maitra SK (2014). Daily and seasonal profiles of gut melatonin and their temporal relationship with pineal and serum melatonin in carp *Catla catla* under natural photo-thermal conditions. *Biological Rhythm Research*. 45, 301-315 ISSN- 0929-1016 **IF- 1.362**

Mukherjee S, **Moniruzzaman M** & Maitra SK (2014). Impact of artificial lighting conditions on the diurnal profiles of gut melatonin in a surface dwelling carp (*Catla catla*). *Biological Rhythm Research*. 45, 831-845. ISSN- 0929- 1016 **IF- 1.362**

Maitra SK, Chatteraj A, Mukherjee S & **Moniruzzaman M** (2013). Melatonin: a potent candidate in the regulation of fish oocyte growth and maturation. *General and comparative endocrinology*. 181- 215- 222. ISSN- 0016-6480 **IF- 3.255**

Moniruzzaman M & Maitra S (2012). Influence of Altered Photoperiods on Serum Melatonin and Its Receptors (MT1 and MT2) in the Brain, Retina, and Ovary in Carp *Catla catla*. *Chronobiology international*. 29, 175-188. ISSN- 0742-0528 **IF- 3.749**

INVITED TALKS/SELECTED TALKS/CONFERENCE PROCEEDINGS

Invited Lecture in the ICEE at Guwahati University, Guwahati, 12-14th February, 2018.

Invited Lecture at Hiralal Majumdar Memorial College for Women's, Kolkata (February, 2016).

- **Papers Presented in National/International Seminars/ Conferences:**

- i. **Moniruzzaman M** and Maitra SK: Temporal organization and photoperiodic response of melatonin receptor (Mel1AR and Mel1BR) proteins in the brain, retina and ovary in a tropical carp *Catla catla*. XXIX Int. Natl. Symp. Reprod. Biol. & Comp. Endocrinol. (2011). pp. 32.
- ii. Mukherjee S, **Moniruzzaman M** and Maitra SK: Gastrointestinal melatonin in carp: Localization and diurnal rhythmicity. XXIX Int. Natl. Symp. Reprod. Biol. & Comp. Endocrinol. (2011). pp. 124.
- iii. Hasan NK, **Moniruzzaman M**, Mukherjee S and Maitra SK: Oocyte development and endogenous melatonin in carp *Catla catla*: A correlative study under natural and altered photoperiods. XXIX Int. Natl. Symp. Reprod. Biol. & Comp. Endocrinol. (2011). pp.162.
- iv. **Moniruzzaman M** and Maitra SK: Relative role of pineal and retina in determining photoperiodic response of serum melatonin during different reproductive phases in carp *Catla catla*. XXX Natl. Symp. Reprod. Biol. & Comp. Endocrinol. (2012).
- v. Hasan NK, **Moniruzzaman M** and Maitra SK: Role of liver in translational mechanism of actions of exogenous melatonin on oocytes growth in carp *Catla catla*. XXX Natl. Symp. Reprod. Biol. & Comp. Endocrinol. (2012). pp. 83.
- vi. Mukherjee S, **Moniruzzaman M** and Maitra SK: Does light dark condition play the role of a synchroniser of the daily rhythms of gastrointestinal melatonin- a study in carp *Catla catla*. XXX Natl. Symp. Reprod. Biol. & Comp. Endocrinol. (2012).
- vii. **Moniruzzaman M**, Hasan KN and Maitra SK. (2014). Demonstration of the influences of altered photoperiods on the temporal relationship between circulating profiles of melatonin and estradiol-17 β , MIH or Maturation Inducing Hormone in a surface dwelling carp *Catla catla*. ICEBEM-2014 **Visva-Bharati, Santiniketan; 24-26 February, 2014**
- viii. **Moniruzzaman M**, Mukherjee S and Maitra SK. (2014). Influence of melatonin on ovaprim induced oocyte maturation and ovulation in Indian major carp *Catla catla*. CECE-2014, Rennes, France.

ix. Oral presentation in International Conference on India Biodiversity Meet. (2018). organized by Agricultural and Ecological Research Unit, ISI, Kolkata; 14-17 March, 2018.

• **National/ International Seminars/ Conferences/Workshops Attended:**

- i. XXIXth International Symposium on Reproductive Biology and Comparative Endocrinology at University of Mysore (Feb 10 - 12, 2011).
- ii. XXXth National Symposium on Reproductive Biology and Comparative Endocrinology at University of Udaipur (Jan 31 – Feb 2, 2012).
- iii. National workshop on interaction of ionizing radiation with biological system. Visva-Bharati University (2010).
- iv. National workshop on techniques in Molecular & Cellular Endocrinology. University of Madras (Jan 4 – Jan 18, 2010)
- v. International Symposium on Environmental Biology and Ecological Modelling at Visva-Bharati University (Feb 24 - 26, 2014).
- vi. International Symposium on Molecular Signalling at Visva-Bharati University (Feb 18 - 21, 2013).
- vii. International Symposium in CECE-2014 (Aug 24 – 31, 2014), University of Rennes, Rennes, France.
- viii. International Training Course on ‘Fishery Stock assessment and Ecosystem Modelling’ (September 16-22, 2015) organized by International Training Centre for Operational Oceanography, ESSO-INCOIS, Hyderabad.

TEACHING EXPERIENCE

Ecology, Endocrinology, Biochemistry, Genetics, Molecular Biology courses for UGC CBCS syllabus for B.Sc. three year Honours and General degree courses in Zoology. Bijoy Krishna Girls College, Howrah, West Bengal.

Fish Biology, Endocrinology, Ecology, Evolution, Developmental Biology syllabus in M.Sc. courses in Diamond Harbour Women’s University, Diamond Harbour, West Bengal.

Molecular Endocrinology and Ecotoxicology special paper of masters’ students in the Department of Zoology, University of Calcutta, Kolkata, West Bengal.

Ecology, Evolution, Molecular biology and Techniques, Fisheries syllabus for Distance Education Programme under Vidyasagar University.

SERVICES

-
- **Reviewer of Reputed International Journals:** 1) Science of the Total Environment, *Elsevier*; 2) Energy, Ecology and Environment, *Springer*; 3) Biological Rhythm Research,

Taylor & Francis; 4) Proceedings of Zoological Society of India, Springer-India; 5) Aquaculture, *Elsevier*; 6) Environmental Science and Pollution Research, *Springer*.

- External and internal **examiner** of M.Sc. Course Practical Examination under Diamond Harbour Women's University
- **Examiner** of answer scripts of M.Sc. Course Practical Examination under Diamond Harbour Women's University
- Teacher escort and **supervisor of excursion and field work** under Diamond Harbour Women's University
- Work as a **research advisor & research co-ordinator** in Hiralal Majumdar Memorial College, University of Calcutta

MEMBER OF SOCIETY

- Life Member for Society for Reproductive Biology and Comparative Endocrinology
- Zoological Society of India

LIST OF ACADEMIC REFEREES

1. Professor Saumen Kumar Maitra

Department of Zoology, Visva-Bharati University
Santiniketan-731235, West Bengal
Email: dgp_skmaitra@yahoo.co.in
Ph No.: +919434375781

2. Prof. (Dr.) Nimai Chandra Saha

Vice Chancellor
The University of Burdwan
Burdwan - 713104
Purba Bardhaman, West Bengal
Phone: +919051342474
Email: vcbunsaha@gmail.com
mr.nsaha@rediffmail.com

3. Dr. Suman Bhusan Chakraborty

Associate Professor
Department of Zoology, University of Calcutta
Kolkata-700019, West Bengal
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