



# Sudipta Maitra, Ph.D.

## Professor

Molecular and Cellular Endocrinology Laboratory, Department of Zoology, Siksha Bhavana  
Visva-Bharati University, Santiniketan - 731235, India

[smaitra3@gmail.com](mailto:smaitra3@gmail.com)

[sudipta.maitra@visva-bharati.ac.in](mailto:sudipta.maitra@visva-bharati.ac.in)

Google Scholar



VIDWAN

## SUMMARY

*Dr. Sudipta Maitra's lab employs molecular and pharmacological tools to decipher:*

- The underlying signalling events that facilitate oocyte meiotic maturation and ovulation at the gonadal and neuronal level*
- The impact of endocrine disrupting chemicals (EDCs) on teleost reproductive fitness and systemic physiology*
- Endocrine regulation of macrophage polarisation and inflammatory response*
- The impact of EDCs on immune regulation, metabolic dysfunction and neuroendocrine regulation*
- Transgenerational influence of EDCs in teleost*

***h-index - 23***

***i10-index - 42***

***Citations - 2317***

## SKILLS

*Molecular and Cellular Endocrinology*

*Reproductive Physiology*

*Immune-Endocrine Interaction*

*Metabolic Dysfunction*

*Endocrine Disruption*

*Insulin Resistance and Lipid Accumulation*

*Neuroendocrinology*

*Teleost and Mice Model Organisms*

## EXPERIENCE

### **Professor**

**Nov 2016 - Current**

Visva-Bharati University – Santiniketan, Birbhum, West Bengal, India

### **Associate Professor**

**Nov 2013 – Nov 2016**

Visva-Bharati University – Santiniketan, Birbhum, West Bengal, India

### **Assistant Professor**

**Nov 2004 – Nov 2013**

Visva-Bharati University – Santiniketan, Birbhum, West Bengal, India

## EDUCATION

### **CSIR-IICB**

**2001 - 2002**

DBT-Post Doctoral Fellow

### **Department of Zoology, Visva-Bharati University**

**2000 - 2001**

Research Associate (UGC-SAP)

### **Department of Zoology, Visva-Bharati University**

**1995 - 2000**

Doctor of Philosophy

## RECOGNITIONS

- Associate Editor: Comparative Immunology, Frontiers in Immunology*
- Review Editor: Frontiers in Endocrinology (Experimental Endocrinology)*

## PROFESSIONAL MEMBERSHIPS

- Life Member - Indian Society for Comparative Endocrinology*
- Life Member – Indian Society for the Study of Reproduction and Fertility*
- Life Member – Zoological Association of Burdwan*

## MEMBERSHIP IN COMMITTEES

- Director, Internal Quality Assurance Cell (IQAC), Visva-Bharati (23.09.2022 - 08.02.2024)*
- Environmental Consciousness and Sustainability (Key point 7, SSR2), NAAC, Visva-Bharati - Member (2020)*
- ISCE Executive Council (2019-2023) - General Secretary*
- ISCE Executive Council (till date) - Executive Member*

*Dr. Sudipta Maitra, Visva-Bharati University*

RESEARCH SUPERVISION

- Ph. D. Degree awarded – 16
- Number of research scholars working for Ph.D. at present – 1 DST-INSPIRE SRF and 1 DBT-SRF

RESEARCH PROJECTS

1. ***“Characterization of molecular candidates regulating ovulatory response vis-à-vis oocyte bioenergetics in zebrafish: susceptibility to environmental contaminants”***  
**Funded by:** Science and Engineering Research Board, Government of India  
**Role:** Principal Investigator, **Year:** 2024, **Amount:** Rs. 50.3575 Lakhs
2. ***“Role of certain herbal products in the healing of cutaneous wound in an Indian major carp”***  
**Funded by:** Science and Engineering Research Board, Government of India  
**Role:** Mentor, **Year:** 2022, **Amount:** Rs. 18.30 Lakhs
3. ***“Assessment of endocrine disruption in fish reproduction”***  
**Funded by:** Department of Biotechnology, Government of India  
**Role:** Project Coordinator & Principal Investigator, **Year:** 2019, **Amount:** Rs. 288.78883 Lakhs
4. ***“Elucidating the mechanism and assessing amelioration potential of Ocimum and Lucas in stress-induced impaired energy homeostasis on growth and reproduction in Zebrafish”***  
**Funded by:** National Agricultural Science Fund (NASF), Indian Council of Agricultural Research (ICAR), New Delhi  
**Role:** Principal Investigator (PI), **Year:** 2017, **Amount:** Rs. 182.51050 Lakhs
5. ***“Attempt to conserve endangered catfishes of Arunachal hill streams by manipulating germ cell maturation”***  
**Funded by:** Department of Biotechnology, Government of India  
**Role:** Principal Investigator (PI), **Year:** 2011, **Amount:** Rs. 68.11 Lakhs
6. ***“Regulation of gonadotropin dependent oocytes maturational competence in catfish, Clarias batrachus”***  
**Funded by:** University Grants Commission, New Delhi  
**Role:** Principal Investigator (PI), **Year:** 2011, **Amount:** Rs. 6.91 Lakhs
7. ***“Molecular mechanism involved in the regulation of perch (Anabas testudineus) oocyte maturation”***  
**Funded by:** SERB, Department of Science & Technology (DST), Government of India  
**Role:** Principal Investigator (PI), **Year:** 2007, **Amount:** Rs. 17.64210 Lakhs

RECENT PUBLICATIONS

- Mistri, A., Karmakar, S., Ghosh, S. and **Maitra, S.**, 2025. Aloin enhances cutaneous wound healing in *Labeo rohita* by orchestrating antioxidant, cytokine and proliferative responses. *Fish & Shellfish Immunology*, p.111014.
- Ghosh, S., Karmakar, S., Banerjee, S., Biswas, S., Mukherjee, U., Das, S., Samanta, A. and **Maitra, S.**, 2025. Detrimental impacts of chronic bisphenol A (BPA) exposure on follicular signalling modulation and ovulatory competence in zebrafish (*Danio rerio*). *Environmental Pollution*, p.126779.
- Mukherjee, U., Ghosh, S. and **Maitra, S.**, 2025. Multi-mechanistic effects of bisphenol A on testicular dysfunction and endocrine disruption in adult male *Labeo bata*: oxidative stress, inflammation, and dysregulated energy sensors. *Environmental Pollution*, 374, p.126231.
- Banerjee, S. and **Maitra, S.**, 2025. Epigenetic Regulation of Steroidogenesis and Impact of Bisphenol A on Testicular Epigenome.

- Samanta, A., Biswas, S., Ghosh, S., Banerjee, S., Dam, B. and **Maitra, S.**, 2025. Maternal exposure to chronic, low-dose nonylphenol in zebrafish: Disruption of ovarian health, reproductive function, and embryogenesis. *Journal of Environmental Management*, 375, p.124169.
- Das, S., Mukherjee, U., Biswas, S., Banerjee, S., Karmakar, S. and **Maitra, S.**, 2024. Unravelling bisphenol A-induced hepatotoxicity: insights into oxidative stress, inflammation, and energy dysregulation. *Environmental Pollution*, 362, p.124922.
- Ghosh, S., Biswas, S., Mukherjee, U., Karmakar, S. and **Maitra, S.**, 2024. Participation of follicular superoxides, inflammatory modulators, and endocrine factors in zebrafish (*Danio rerio*) ovulation: Cross-talk between PKA and MAPK signaling in Pgr regulation of ovulatory markers. *Molecular and Cellular Endocrinology*, 585, p.112180.
- Mukherjee, U., Das, S., Ghosh, S. and **Maitra, S.**, 2024. Reproductive toxicity of bisphenol A, at environmentally relevant concentrations, on ovarian redox balance, maturational response, and intra-oocyte signalling events in *Labeo bata*. *Science of The Total Environment*, 906, p.167415.
- Biswas, S., Ghosh, S. and **Maitra, S.**, 2023. Role of insulin-like growth factor 1 (IGF1) in the regulation of mitochondrial bioenergetics in zebrafish oocytes: lessons from in vivo and in vitro investigations. *Frontiers in Cell and Developmental Biology*, 11, p.1202693.
- Mukherjee, U. and **Maitra, S.**, 2024. Impact of Metabolic disrupting chemicals on redox homeostasis, energy sensors, receptor modulation, and hormone metabolism: A comparative account in Teleost and mammalian model organisms. *Aquaculture and Fisheries*, 9(3), pp.455-485.
- Tarai, S.K., Pan, A., Das, S., Bhaduri, R., Mandal, S., **Maitra, S.** and Moi, S.C., 2022. Anticancer property and normal cell toxicity profile of pyrrolidine-based platinum (II) complexes: Their DNA, BSA interaction, and molecular docking. *Applied Organometallic Chemistry*, 36(11), p.e6859.
- Ghosh, S., Biswas, S. and **Maitra, S.**, 2022. Molecular determinants regulating the release of the egg during ovulation: Perspectives in piscine models. *Aquaculture and Fisheries*, 7(5), pp.583-594.
- Kundu, S., Biswas, S., Ghosh, S., Karmakar, I., Brahmachari, G., **Maitra, S.** and Sahoo, P., 2022. A selective luminescent probe to monitor cellular ATP: Potential application for in vivo imaging in zebrafish embryo. *Journal of Photochemistry and Photobiology A: Chemistry*, 428, p.113895.
- Mukherjee, U., Samanta, A., Biswas, S., Ghosh, S., Das, S., Banerjee, S. and **Maitra, S.**, 2022. Chronic exposure to nonylphenol induces oxidative stress and liver damage in male zebrafish (*Danio rerio*): Mechanistic insight into cellular energy sensors, lipid accumulation and immune modulation. *Chemico-Biological Interactions*, 351, p.109762.
- Biswas, S., Ghosh, S., Das, S. and **Maitra, S.**, 2021, December. Female reproduction: at the crossroads of endocrine disruptors and epigenetics. In *Proceedings of the Zoological Society* (Vol. 74, No. 4, pp. 532-545). New Delhi: Springer India.
- Biswas, S. and **Maitra, S.**, 2021. Altered redox homeostasis in steroid-depleted follicles attenuates hCG regulation of follicular events: Cross-talk between endocrine and IGF axis in maturing oocytes. *Free Radical Biology and Medicine*, 172, pp.675-687.
- Biswas, S., Ghosh, S., Mukherjee, U., Samanta, A., Das, S. and **Maitra, S.**, 2021. Hormonally active agents: A menace for oogenesis and fertility

in teleosts. *Recent updates in molecular Endocrinology and Reproductive Physiology of Fish: An Imperative step in Aquaculture*, pp.283-321.

- Biswas, S., Ghosh, S., Samanta, A., Das, S., Mukherjee, U. and **Maitra, S.**, 2020. Bisphenol A impairs reproductive fitness in zebrafish ovary: Potential involvement of oxidative/nitrosative stress, inflammatory and apoptotic mediators. *Environmental Pollution*, 267, p.115692.
- Biswas, S., Mukherjee, U. and **Maitra, S.**, 2020. Endocrine disruption and female reproductive health: Implications on cross-talk between endocrine and autocrine/paracrine axes in the ovary.
- Mukherjee, U., Samanta, A., Biswas, S., Das, S., Ghosh, S., Mandal, D.K. and **Maitra, S.**, 2020. Bisphenol A-induced oxidative stress, hepatotoxicity and altered estrogen receptor expression in *Labeo bata*: impact on metabolic homeostasis and inflammatory response. *Ecotoxicology and Environmental Safety*, 202, p.110944.

## **Recent Invited lectures at Conferences**

- Chaired a session at the “International Conference on Endocrinology, Metabolism and Reproduction: Exploring New Frontiers 2024 (ICEMR 2024)” organized by Department of Zoology, University of Jammu, during October 22-25, 2024 at Jammu UT, J&K, India.
- “Multifactorial Role of Gonadotropin in Zebrafish Oocytes: Insights into Redox Balance, Inflammation, and Mitochondrial Bioenergetics” – Plenary Lecture in the “International Conference on Endocrinology, Metabolism and Reproduction: Exploring New Frontiers 2024 (ICEMR 2024)” organized by Department of Zoology, University of Jammu, during October 22-25, 2024 at Jammu UT, J&K, India.
- Participated in the “National Seminar on Recent Advances in Animal Science RAASVB-2024” organized by the Department of Zoology, Visva-Bharati, Santiniketan, West Bengal, India during March 7-8, 2024.
- Participated as an important stakeholder and expert in a roundtable meeting to “Discuss on the draft Landscape report of Nonylphenol and its ethoxylates” on February 28, 2024, organized by Toxics Link ([www.toxicslink.org](http://www.toxicslink.org)), an India-based environmental NGO, in Cypress Hall, India Habitat Centre, New Delhi.
- “Molecular insight into gonadotropin-mediated zebrafish ovulatory response: Cross-talk between PKA, MAPK3/1 signalling in nPR regulation of follicular transcripts” – Invited Lecture in the “International Conference on Molecular Signalling 2024 (ICMS 2024)” organized by School of Life Science, University of Hyderabad during February 01-03, 2024 at Hyderabad, India.
- “Potential unintended effects of endocrine disruptors on female reproduction and fertility” – Invited Lecture in the “6th Regional Science and Technology Congress 2023 (RSTC 2023), Region 4” organized by Sidho-Kanho-Birsha University, Purulia and Department of Science & Technology and Biotechnology Government of West Bengal during December 12-13, 2023.
- Chaired a session and evaluated oral presentations in the “6th Regional Science and Technology Congress 2023 (RSTC 2023), Region 4” organized by Sidho-Kanho-Birsha University, Purulia and Department of Science & Technology and Biotechnology Government of West Bengal on 13.12.2023.
- “A molecular insight into gonadotropin-mediated zebrafish ovulatory response” – Plenary Lecture in the “International Symposium on Recent



Trends in comparative Endocrinology and Physiology: from brain to behaviour under Indian Society of Comparative Endocrinology (ISCE)” organized by Department of Zoology, S.P. Pune University during October 12-14, 2023 at Pune, India.

- Chaired a session at the International seminar entitled “Regulatory Mechanisms underlying Behavior, Physiology and Development” during March 24-26, 2021 organized by Department of Zoology, University of Delhi.
- Chaired a session at National Seminar on Advancement of Biology in the 21st century held on February 28-29, 2020 in the Department of Zoology, Visva-Bharati University, Santiniketan, West Bengal.
- “Insulin modulation of inflammatory response in mouse macrophages under high glucose condition: relative importance of interleukin-10” in the Two days’ Workshop cum National Seminar on “Trends in modern biology: Techniques and applications” during March 23-24, 2019 at Department of Zoology, Visva-Bharati University, Santiniketan, West Bengal.
- Participated in 1st Brain storming session on ‘Fish reproduction biotechnology: Current Status and Future Prospects’ in Visva-Bharati on 6-7th April, 2018.
- “Physiological relevance of nitric oxide mediated cyclic nucleotide signalling in intercellular communication within ovarian follicle in teleosts: A myth or the reality?” in the Humboldt Kolleg on Comparative Endocrinology and Physiology organized by Department of Zoology, RTM Nagpur University during January 6-9, 2018 at Nagpur, India.
- Functional relevance of nitric oxide (NO)/cGMP signaling in teleost ovary” in the 6th International Conference on Molecular Signaling (ICMS, 2018)” on topic entitled during February 8-10, 2018 at University of Hyderabad, Telangana, India.
- Complex dialogue between endocrine and juxtacrine (autocrine/paracrine) factors in teleost ovary” in the “International Symposium on Recent Advances in Comparative Endocrinology (ISRACE)” organized by Madras Christian College during 29th Nov -1st Dec, 2017 at Chennai, India.
- Antagonism between cAMP-dependent and insulin-mediated signaling pathways in zebrafish (*Danio rerio*) oocytes. Session 3: Reproduction and Growth & Contraception and strategies for population control. International Symposium on Reproductive Biology and Comparative Endocrinology (ISRBCE 2015). Zoology, Centre of Advanced Study, Banaras Hindu University, Varanasi, India, February 25-27, 2015.
- Akt and MAPK3/1 (ERK1/2) activation in zebrafish (*Danio rerio*) oocytes matured in vivo and in vitro. Session 2: Molecular and Cellular Endocrinology, and Signal transduction. International Conference on Frontiers in Comparative Endocrinology and Neurobiology 2014 (IC-FCEN 2014). Department of Animal Biology, School of Life Sciences, University of Hyderabad, Hyderabad, India. November 25-28, 2014.
- Cyclic AMP-Mediated Inhibition of Insulin-Activated MAPK3/1 phosphorylation and meiotic maturation in zebrafish oocyte. [December 18-20, 2013]. International Conference on Integrative and Comparative Physiology (SEIB 2013), University of Kerala.
- Insulin action beyond metabolism: Inhibition of meiotic G2-M1 transition by adenylate cyclase activation in catfish (*Clarias batrachus*) follicle-enclosed oocytes [October 21-23, 2013] International Conference on Comparative Endocrinology and Physiology RTM Nagpur University.

- Insulin: not just a metabolic hormone [February 18-21, 2013] International Symposium on Molecular Signaling. Visva-Bharati (A Central University), Santiniketan-731235, India
- Crosstalk between cAMP/PKA and MAP kinase signaling in the regulation of meiotic maturation in perch oocytes [February 16-18, 2012] International Symposium on Comparative Endocrinology and Stress Physiology University of Kerala
- Inhibition of PKA upregulates synthesis of Mos and promotes Cdc25 activation during meiotic maturation in perch, *Anabas testudineus* oocyte. [Sept. 23-25, 2011] National Colloquium on Recent Advances in Molecular and Cellular Endocrinology Department of Zoology, Banaras Hindu University, Varanasi, India.
- A Chemical compound purified from plant source may be of use in cancer therapy. [Nov. 21-23, 2009] INSA Platinum Jubilee International Symposium on 'Research in Molecular Medicine Based on Natural Resources and Traditional Knowledge. National Chemical Laboratory, Pune, India
- An approach to identify an alternate regulator for piscine vitellogenesis [Nov 17-19, 2005] National Symposium on Comparative Endocrinology and Reproductive Physiology: Retrospect & Prospect Dept. of Zoology, University of Delhi.
- Chaired a session at The 6th International Conference of Asia and Oceania Society of Comparative Endocrinology (AOSCE) [December 10-14, 2007], University of North Bengal, West Bengal, India.

## **OTHER ACADEMIC DISTINCTIONS**

- Dr. Subhasri Biswas, awarded Ph.D. degree in September, 2023, under the supervision of Prof Sudipta Maitra, has joined Oklahoma Medical Research Foundation, USA as a Post-doctoral Fellow in January, 2024.
- Dr. Sudipta Maitra who has been serving as an Associate Professor in the Department of Zoology, Visva-Bharati since 2004 has been upgraded to the position of Professor on 05.12.2020.
- Dr. Debabrata Das, awarded Ph.D. degree on 18-07-2016, joined MD Anderson Cancer Center, University of Texas, Houston, US as Research Investigator- Genetics in 2017.
- Dr. Soumojit Pal, awarded Ph.D. in 2019, joined as International Postdoctoral Associate, University of Pittsburgh, School of Medicine, Department of Medicine, Division of Cardiology on August 1, 2019.
- Dr. Poulomi Nath, awarded Ph.D. in 2019, joined as post-doctoral fellow in Department of Pharmacology and Chemical Biology, University of Pittsburg, UPMC Hillman Cancer Center in the month of December, 2020.
- Ms. Sampurna Karmakar received Second Prize in Oral Presentation at the "International Conference on Endocrinology, Metabolism and Reproduction: Exploring New Frontiers 2024 (ICEMR 2024)" organized by Department of Zoology, University of Jammu, during October 22-25, 2024 at Jammu UT, J&K, India. Title of Presentation – Participation of Reactive Oxygen Species, and Inflammatory Mediators in Maturational Steroid-Induced Ovulatory Response in Zebrafish (*Danio rerio*).
- Mr. Sambuddha Banerjee received the Best Poster Presentation award at the "National Seminar on Recent Advances in Animal Science

RAASVB-2024” organized by the Department of Zoology, Visva-Bharati, Santiniketan, West Bengal, India during March 7-8, 2024. Title of presentation – “Acrylamide alters the Brain-Pituitary-Testis axis in adult male zebrafish (*Danio rerio*) as an effect of disrupted brain homeostasis”.

- Mr. Sambuddha Banerjee received the Third Prize for Oral Presentation at the “International Symposium on Recent Trends in comparative Endocrinology and Physiology: from brain to behaviour under Indian Society of Comparative Endocrinology (ISCE)” organized by Department of Zoology, S.P. Pune University during October 12-14, 2023 at Pune, India. Title of the presentation – “Acrylamide-mediated neurotoxicity disrupts the Brain-Pituitary-Testis axis in adult male zebrafish (*Danio rerio*)”.
- Mr. Sambuddha Banerjee rewarded the Best Poster Presentation in the International seminar entitled “Impact of Climate Change on Aquatic Life and Mitigation Measures for a Sustainable Blue Economy” organized by Department of Zoology, Fatima Mata National College, during March 24-26, 2021 at Kollam, Kerala. Title of presentation “Bisphenol-A Alteration of Neuroendocrine Axis Pertinent to Reproductive Fitness in Adult Female Climbing Perch”.
- Ms. Subhasri Biswas rewarded the Best Poster Presentation in the International conference entitled “Regulatory Mechanisms underlying Behavior, Physiology and Development” organized by Department of Zoology, University of Delhi during March 24-26, 2021. Title of presentation “Protective Effects Of Gonadotropin-Induced Steroid Biosynthesis On Follicular Redox Homeostasis And Igf Axis In Zebrafish Ovary”.
- Mr. Soumyajyoti Ghosh received the Best Poster Presentation with Prof. S.P. Raychaudhuri Memorial Award in the “National Seminar on Advancement of Biology in the 21st century” organized by Department of Zoology, Visva-Bharati University, during 28-29 Feb at Santiniketan, West Bengal, India. Title of presentation “Endocrine disruption and impaired reproductive fitness in zebrafish ovary: participation of inflammatory and apoptotic mediators”.
- Dr. Poulomi Nath received Dr. Shamim Haider Gold Medal Award for best oral presentation in the “International Symposium on Recent Advances in Comparative Endocrinology (ISRACE)”. organized by Madras Christian College during 29th Nov -1st Dec, 2017. Title: “Differential expression of NOS isoforms and NO/cGMP regulation of gonadotropin (hCG) action in zebrafish (*Danio rerio*) ovary”.
- Ms. Subhasri Biswas received Dr. Radhakrishnamurthy Memorial Gold Medal Award for Best Poster Presentation at “International Symposium on Recent Advances in Comparative Endocrinology (ISRACE)” organized by Madras Christian College during 29th Nov -1st Dec, 2017 at Chennai, India. Title: “Aromatase inhibitor DL-Aminoglutethimide prevents igf3 expression in gonadotropin (hCG)-induced zebrafish follicle-enclosed oocytes in vitro potentially through down-regulation of lhcg expression”.