# **DR. SUDIPTA MAITRA**

PROFESSOR Department of Zoology, Visva-Bharati (A Central University) Santiniketan-731235, India

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# **Expertise**

# **Physiology of Reproduction**

Endocrine disruption, Metabolic dysfunction, insulin resistance and lipid accumulation, Molecular Endocrinology, Reproductive Physiology, Innate immune response

Education (Post-Graduation onwards & Professional Career)

Sl No.	Institution	Degree	Year	Field of Study
	Place	Awarded		
1.	Burdwan University	M. Sc	1992	Zoology
2.	Visva-Bharati University,	Ph.D.	2000	Endocrine Regulation of
	Santiniketan			Reproduction

# Date of Birth

13th November, 1969

**<u>Position and Employment</u>** (Starting with the most recent employment)

Sl. No.	Institution Place	Position	From (Date)	To (date)
1	Department of Zoology, Visva-Bharati, Santiniketan.	Professor	21.11.2016	Continuing
2	Department of Zoology, Visva-Bharati, Santiniketan.	Associate Professor	21.11.2013	20.11.2016
3	Department of Zoology, Visva-Bharati, Santiniketan.	Assistant Professor	06.11.2004	20.11.2013
4	Cellular Immunology Laboratory, Indian Institute of Chemical Biology (CSIR), Kolkata.	DBT-Post Doctoral Fellow	27.06.2001	17.11.2002
5	Fish Nutrition Laboratory Department of Zoology, Visva-Bharati, Santiniketan.	Research Associate (UGC-SAP)	06.05.2000	26.06.2001

# **Recognitions**

- 1. Associate Editor: Comparative Immunology, Frontiers in Immunology
- 2. Review Editor: Frontiers in Endocrinology (Experimental Endocrinology)

## Honors/Awards

- 1. Department of Biotechnology- Post-Doctoral Fellowship, 2001
- 2. Research Associate (UGC-SAP Programme) 2000

# Professional membership

Life Member - Indian Society for Comparative Endocrinology

Life Member -- Indian Society for the Study of Reproduction and Fertility



## **Membership in Committees**

2020: Environmental Consciousness and Sustainability (Key point 7, SSR2), NAAC, Visva-Bharati - Member 2019 - ISCE EXECUTIVE COUNCIL (2019-Continuing) - General Secretary

## Workshop/Seminar conducted

2015: Convener, National Symposium on Comparative Endocrinology and Reproductive Biology (CERB'2015)

## **Professional Experience and Training**

Name of the Course/ Programme/Training/ Summer or Winter School	Place& Instt	Duration (Dates)	Sponsoring Agency(UGC/ICAR/ICHR/ ICSSR/ Academies/Universities etc)
1. UGC sponsored 59 <sup>th</sup> Orientation Course	UGC-Academic Staff College, The University of Burdwan, Burdwan	28 days (19.8.2006- 15.09.2006)	UGC
2. UGC sponsored 3 <sup>rd</sup> Refresher Course in Life Science	UGC-Academic Staff College, The University of Burdwan, Burdwan	21 days (6.8.2011- 26.8.2011)	UGC
3. International Workshop on Applications of Flow cytometry and Imaging in Cell Biology and Nano-Biotechnology	Centre for Research in Nanoscience and Nanotechnology, University of Calcutta	7 days (Aug. 11- 18, 2012)	University of Calcutta & BD Biosciences
4. Course on Real Time PCR	Labindia Research and Development laboratory, Gurgaon, India	September 9 <sup>th</sup> -11 <sup>th</sup> , 2008	Applied Biosystems and LABINDIA
5 National Workshop on Interaction of Ionizing Radiation with biological systems	UGC-DAE consortium for scientific research, Kolkata centre & Department of Zoology, Visva- Bharati, Santiniketan	March 29 <sup>th</sup> -30 <sup>th</sup> , 2010	UGC-DAE consortium for scientific research, Kolkata centre & Department of Zoology, Visva-Bharati, Santiniketan

# Fields of Specialization under the Subject/Discipline

## Areas of research:

- (a) Molecular and Cellular Endocrinology in fish (b) Reproductive Physiology
- (c) Endocrine regulation of macrophage function/inflammatory response

**Teaching:** 

**Department of Zoology** (fourteen years –undergraduate, postgraduate and Ph.D. Course work) Topics: Methods in Biology, Fish Reproductive Physiology, Mechanism of hormone action in vertebrates, Developmental Biology and Cellular Immunology

# **Integrated Science Education and Research Centre**

Mechanism of hormone action

# <u>Skills</u>

- Maintenance and breeding of Zebrafish, embryo culture.
- Animal cell culture, Isolation, biochemical & immunological characterization of proteins. Raising polyclonal antisera, electrophoresis (Native & SDS), Western Blot, ELISA, RIA., Chromatography, Biochemical assays. Immuno-cytochemistry, Confocal microscopy
- Isolation of DNA, RNA, agarose gel electrophoresis, PCR, RT-PCR & qRT-PCR
- Endocrine disrupting chemicals

## **Research Projects**

1. "Assessment of endocrine disruption in fish reproduction"

Role: Project Coordinator & Principal Investigator Year 2019, Amount Rs. 288.78883 Lakhs Funded by: Department of Biotechnology, Government of India

 "Elucidating the mechanism and assessing amelioration potential of *Ocimum* and *Lucas* in stress-induced impaired energy homeostasis on growth and reproduction in Zebrafish" Role: Principal Investigator (PI) Year 2017, Amount Rs. 182.51050
 Funded by: National Agricultural Science Fund (NASF), Indian Council of Agricultural Research (ICAR), New Delhi

 Attempt to conserve endangered catfishes of Arunachal hill streams by manipulating germ cell maturation Role: Principal Investigator (PI)
 Year 2011, Amount Rs. 68.11 Lakhs
 Funded by: Department of Biotechnology, Government of India

4. Regulation of gonadotropin dependent oocytes maturational competence in catfish, *Clarias batrachus*.
Role: Principal Investigator (PI)
Year 2011, Amount Rs. 6.91 Lakhs
Funded by: University Grants Commission, New Delhi

 Molecular mechanism involved in the regulation of perch (*Anabas testudineus*) oocyte maturation Role: Principal Investigator (PI) Year 2007, Amount Rs. 17.64210
 Funded by: SERB, Department of Science & Technology (DST), Government of India

#### **Research Collaborations**

1. Dr. Jitendra Kumar Sundaray, Head of Division, Division of Fish Genetics & Biotechnology, ICAR-Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar - 751002, Odisha and

2. Dr. B.K Das, Director ICAR - Central Inland Fisheries Research Institute, Monirampur (Post), Barrackpore - 700120, West Bengal

Under DBT-sponsored Network/Collaborative research Project entitled "Assessment of endocrine disruption in fish reproduction (F. No. No.BT/PR28560/AAQ/3/919/2018), Coordinator & PI: Dr. Sudipta Maitra, Visva-Bharati Co-PI: Prof. Ansuman Chattopadhyay; Co-PI: Dr. Sutapa Mukherjee, Department of Zoology, Visva-Bharati (lead centre) 3. National Agricultural Science Fund (NASF, ICAR) sponsored collaborative Research Project (Ref. No. NASF/ABA-6018/2016-17), PI: Dr. Sudipta Maitra, Co-PI: Dr. Surjya Saikia, Visva-Bharati CCPI: Dr. Satya Sundar Bhattacharya, Department of Environmental Science, Tezpur University, Sonitpur – 784 028, Assam. Email: evssatya@gmail.com, Ph.: +913712-275610

4. Prof. Sankar Ch. Moi, Department of Chemistry, National Institute of Technology Durgapur, M.G. Avenue, Durgapur-713209, West Bengal, India (Work area: Evaluation of synthesized compounds against cancer cell proliferation).

5. Dr. Prithidipa Sahoo, Department of Chemistry, Visva-Bharati (Area of work: evelopment of novel fluoroscent probes (sensors) to detect environmental pollutants in water bodies and their impact on fish models).

## **Research Guidance/Supervision**

Ph. D. Degree awarded - 11, present - 6

#### **Doctoral Theses Guided**

- 1. "Impact of bisphenol-A on metabolism and reproduction of *Labeo bata* (Hamilton, 1822)" Visva-Bharati University, Dr. Urmi Mukherjee, 2022.
- 2. "Nitric oxide regulation of ovarian function in relation to plasma sex steroid levels in freshwater teleosts" Visva-Bharati University, Dr. Poulomi Nath, 2019.
- 3. "Endocrine modulation of inflammatory response in murine macrophages through insulin action". Visva-Bharati University, Dr. Soumojit Pal, 2018.
- 4. "Comparative study on dynamics of ovarian follicular growth and its regulation in catfish, *Olyra longicaudata* and zebrafish, *Danio rerio*". Visva-Bharati University, Dr. Pritha Ghosh, 2017.
- 5. "Characterization and endocrine regulation of meiotic maturational competence in relation to ovarian growth in catfish *Clarias batrachus* (Linn.)". Visva Bharati University, Dr. Sudip Hajra, 2016.
- 6. "Molecular mechanism of insulin-induced oocyte maturation in zebrafish *Danio rerio* (Hamilton, 1822)". Visva Bharati University, Dr. Debabrata Das, 2015.
- 7. "Role of Fetuin A in lipid induced insulin resistance". Visva-Bharati University, Dr. Durba Pal, 2013.
- 8. "Functional properties of C-reactive protein purified from Achatina fulica (Bowdich)". Visva-Bharati University, Dr. Sandip Mukherjee, 2012.
- 9. "Regulation of maturational events in freshwater perch (*Anabas testudineus*) oocytes". Visva Bharati University, Dr. Pragya Paramita Khan, 2011.

- 10. "Molecular basis of insulin resistance: Determination of possible drug target.". Visva-Bharati University, Dr. Suman Dasgupta, 2011.
- 11. "Endosymbiotic bacteria in filarial worms: Potential targets for control of filariasis.". Visva-Bharati University, Dr. Sutapa Datta.

#### **Research publications**

#### A. Published papers in journals (in chronological order)

- 1. Tarai, S. K., Pan, A., Das, S., Bhaduri, R., Mandal, S., Maitra, S., & Moi, S. C. (2022). Applied Organometallic Chemistry, e6859.
- 2. Ghosh, S., Biswas, S., & Maitra, S. (2022). Aquaculture and Fisheries, 7, 583-594.
- 3. Kundu S., Biswas S., Ghosh S., Karmakar I., Brahmachari G., Maitra S., & Sahoo P. (2022) Journal of *Photochemistry and Photobiology A: Chemistry*, 113895.
- 4. Mukherjee, U., Samanta, A., Biswas, S., ... & Maitra, S. (2022). Chemico-biological interactions, 351, 109762.
- Biswas, S., Ghosh, S., Das, S., & Maitra, S. (2021). In Proceedings of the Zoological Society (pp. 1-14). Springer India.
- 6. Biswas, S., & Maitra, S. (2021). Free Radical Biology and Medicine, 172, 675-687.
- 7. Biswas, S., Ghosh, S., Samanta, A., ... & Maitra, S. (2020). *Environmental Pollution*, 267, 115692.
- Mukherjee, U., Samanta, A., Biswas, S., ... & Maitra, S. (2020). Ecotoxicology and Environmental Safety, 202, 110944.
- Saha, S., Das, S., Das, S., Samanta, A., Maitra, S., & Sahoo, P. (2020). Organic & Biomolecular Chemistry, 18(34), 6716-6723.
- 10. Biswas, S., Mukherjee U., & Maitra, S. (2020). Journal of Reproductive Health and Medicine, 1;2.
- 11. Nath, P., Mukherjee, U., Biswas, S., ... & Maitra, S. (2019). Molecular and Cellular Endocrinology, 496, 110544.
- Pal, S., Nath, P., Biswas, S., Mukherjee, U., & Maitra, S. (2019). Ecotoxicology and Environmental Safety, 174, 574-583.
- 13. Nath, P., & Maitra, S. (2019). General and Comparative Endocrinology, 279, 35-44.
- Mahata, S., Mukherjee, S., Tarai, S.K., Pan, A., Mitra, I., Pal, S., Maitra, S. and Moi, S.C. (2019). New Journal of Chemistry, 43(47), pp.18767-18779.
- 15. Das, S., Mukherjee, U., Pal, S., Maitra, S., & Sahoo, P. (2019). Organic & Biomolecular Chemistry, 17(21), 5230-5233.
- 16. Pal, S., Nath, P., Das, D., Hajra, S., & Maitra, S. (2018). Molecular and cellular Endocrinology, 476, 57-69.
- Sarkar, H. S., Ghosh, A., Das, S., Maiti, P. K., Maitra, S., Mandal, S., & Sahoo, P. (2018). Scientific reports, 8(1), 1-7.
- 18. Das, D., Nath, P., Pal, S., Hajra, S., Ghosh, P., & Maitra, S. (2018). Zygote, 26(1), 62-75.
- 19. Nath, P., Das, D., Pal, S., & Maitra, S. (2018). Molecular and Cellular Endocrinology, 460, 162-169.
- 20. Biswas, S., & Maitra, S. (2017). Glob. J. Reprod. Med., 1(4).
- Mahapatra, S., Kabita, S., Bhattacharya, D., Sarkar, S., Juin, S. K., Maitra, S., & Nath, P. (2017). Fish physiology and Biochemistry, 43(2), 477-491.
- 22. Juin, S. K., Sarkar, S., Maitra, S., & Nath, P. (2017). Aquaculture Reports, 7, 16-26.
- 23. Das, D., Khan, P. P., & Maitra, S. (2017; Epub 2016). General and Comparative Endocrinology, 241, 33-40.
- 24. Das, D., Nath, P., Pal, S., Hajra, S., Ghosh, P., & Maitra, S. (2016). General and Comparative *Endocrinology*, 239, 21-31.
- 25. Das, D., Pal, S., & Maitra, S. (2016). Reproduction, 151(1), 59-72.
- 26. Ghosh, P., Das, D., Juin, S. K., Hajra, S., Kachari, A., Das, D. N., ... & Maitra, S. (2016). Aquaculture Reports, 3, 120-130.
- 27. Hajra, S., Das, D., Ghosh, P., Pal, S., Nath, P., & Maitra, S. (2016). Zygote, 24(2), 181-194.
- Maitra, S., Das, D., Ghosh, P., Hajra, S., Roy, S. S., & Bhattacharya, S. (2014). Molecular and Cellular Endocrinology, 393(1-2), 109-119.
- 29. Kachari, A., Gogoi, B., Dutta, R., Aran, K., Ghosh, P., Maitra, S., ... & Das, D. N. (2014). International Journal of Fisheries and Aquatic Studies, 1, 86-93.
- 30. Das D., Khan PP, Maitra S. (2013). Molecular and Cellular Endocrinology, 374:46-55.
- 31. Khan PP., Maitra S (2013). General and Comparative Endocrinology, 181:88-97.
- 32. Mukherjee S., Chatterjee S., Sarkar S., Agarwal S., Kundu R., **Maitra S.** Bhattacharya S. (2013). *Indian Journal of Experimental Biology*, 51:623-634.
- 33. Das D. and Maitra S. (2012). World Journal of Science & Technology, 2(7):93-102.
- 34. Pal D, Dasgupta S, Kundu R, Maitra S, Das G, Mukhopadhyay S, Ray S, Majumdar SS, Bhattacharya S. (2012). *Nature Medicine*, 18, 1279–1285.
- Dasgupta S., Bhattacharya S., Maitra S., Pal D., Majumdar S., Datta A., Bhattacharya S. (2011) Biochim Biophys Acta - Molecular Basis of Disease, 1812(4):495-506.

- 36. Gayen P., Nayak A., Saini P., Mukherjee N., Maitra S., Sarkar P., Sinha Babu S (2013). Acta tropica, 125 (2), 150-156.
- 37. Nayak A., Gayen P., Saini B., Maitra S, Sinha Babu, S (2011) Experimental Parasitology, 128(3):236-242.
- 38. Gayen P, Maitra S, Datta S, Sinha Babu SP (2010) J. Biosci. 35(1), March 2010, 73-77.
- 39. Datta S, Maitra S, Gayen P, Sinha Babu SP (2009) Parasitology Research, 105:697-702.
- Priyadarshini A., Basu D., Navneet A.K., Bhattacharya A., Bhattacharya S., Maitra S., Bhattacharya S. (2009). Molecular Reproduction and Development, 76(3): 289-300.
- 41. Datta S., Maitra S., Gayen P. & Sinha Babu S.P. (2007). Current Science, 93(1):22-23.
- 42. Maitra S., Sahu R., Trehan N., Garg S.K. & Nath P. (2007) Aquaculture, 265: 370-384.
- 43. Maitra S., Ramachandran S. & Ray A.K. (2007) Aquaculture Research, 38:156-165.
- 44. Ghosh M., Mandal L., Maitra S., Rakshit S., Paul K., Bagchi J., Ganguly D., Pal C. & Bandyopadhyay S. (2006) Journal of Infectious Diseases, 194:294-301.
- 45. Maitra S. & Ray A.K. (2003) Aquaculture Research, 34:93-95.
- Ghosh M., Pal C., Ray M., Maitra S., Mandal L. & Bandyopadhyay S. (2003) Journal of Immunology, 170:5625-5629.
- 47. Kumar S.V., Maitra S. & Bhattacharya S. (2002) Biometals, 15:51-57.
- 48. Nath P. & Maitra S. (2001) General and Comparative Endocrinology, 124:30-44.

#### **Book authored**

Sudipta Maitra and Debabrata Das (2013)
"Estrogen Receptors Differential regulation of downstream signaling"
LAP LAMBERT Academic Publishing, ISBN: 978-3-659-32756-8,
© 2013 AV Akademikerverlag Gmbh & Co. KG

#### **Book chapters**

- 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. In: *Recent updates in molecular Endocrinology and Reproductive Physiology of Fish*. (J. Sundaray et al., eds.). # Springer Nature Singapore Pte Ltd. 283-321. ISBN: 978-981-15-8369-8.
- "Application of recombinant technology in endocrine research: an update" in Recent Fundamentals of Biodiversity, Biotechnology and Bioinformatics. Acharyya, A., Maitra, S. New Central Book Agency (P) Ltd, 2020, (in press).
- Biswas S., Mukherjee U., Ghosh S., Samanta A., Das S. and Maitra S.\* (2019) Connecting deregulated inflammation and apoptosis to ovarian follicular dynamics: missing link between endocrine disruption and compromised female fertility: In: ISSRF Newsletter - Translational Research in Reproductive health, Issue 24, (Prof. N.K. Lohiya, Dr. Rupesh Kumar Srivastava, eds). ISSN: 2395-2806.
- Biswas S., Mukherjee U., Maitra S. (2019) Endocrine disruption and female reproductive health: Implications on cross-talk between endocrine and autocrine/paracrine axes in the ovary. ISSRF Newsletter - Empowering Reproductive Health Through Basic Research, Volume 23, (Prof Shail K Chaube & Dr. Meenakshi Tiwari, eds). ISSN: 2395-2806.
- Das D., and Maitra S. (2016) Insulin Regulation of Ovarian Function: Lessons from Zebrafish (Danio Rerio) Eggs. In: ISSRF Newsletter - Environmental Impacts on Reproductive Health, Edition: Issue 18, (Prof. N.K. Lohiya, Dr. P.K. Mishra, Dr. R.S. Sharma, Dr. Sunil Kumar, eds). ISSN: 2395-2806.
- Nath P., Maitra S., Sahu R., Mohapatra S., Ghosh J (2005) Some Aspects of Teleost Vitellogenesis: Role of Fish Vitellogenin. In: Recent Advances in Hormonal Physiology of Fish and Shellfish Reproduction. (B.N. Singh and A.K. Pandey, eds.) pp. 45-51.

#### Invited lectures at national/ international conference / seminar

- 1. **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.
- 2. **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.
- 3. "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.
- 4. **Participated in** 1st Brain storming session on 'Fish reproduction biotechnology: Current Status and Future Prospects' in Visva-Bharati on 6-7th April, 2018.
- 5. "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 6<sup>th</sup> International Conference on Molecular Signaling (ICMS, 2018)" on topic entitled during February 8-10, 2018 at University of Hyderabad, Telangana, India.
- 7. **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.
- 11. 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.
- 12. **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
- 14. 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.
- 15. 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
- 16. An approach to identify an alternate regulator for piscine vitellogenesis [Nov17-19, 2005] National Symposium on Comparative Endocrinology and Reproductive Physiology: Retrospect & Prospect Dept. of Zoology, University of Delhi.
- 17. **Chaired a session** at The 6<sup>th</sup> International Conference of Asia and Oceania Society of Comparative Endocrinology (AOSCE) [December10-14, 2007], University of North Bengal, West Bengal, India.

#### **Other Academic Distinctions**

1. 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.

2. 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.

3. 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.

4. 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.

5. 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".

6. 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".

7. 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".

8. 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".

9. 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 lhcgr expression".