

**Abha Mishra**  
**Associate Professor**  
**Department of Zoology**  
**School of Life Sciences**

**09450710387**

[abhamishra@bbau.ac.in](mailto:abhamishra@bbau.ac.in)

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



### Education Qualification

	<b>Organization</b>	<b>Year of award</b>
<b>Undergraduate</b>	Purvanchal University, Jaunpur	<b>1997</b>
<b>Post-graduation</b>	Banaras Hindu University, Varanasi	<b>2000</b>
<b>Ph.D.</b>	Banaras Hindu University, Varanasi	<b>2005</b>
<b>Post-Doctoral Training</b>	Banaras Hindu University, Varanasi	<b>2006</b>

### Professional Experience (In Years)

**Teaching Experience: 13 years**

**Research Experience: 18 years**

### Areas of Research (Maximum Five Bullet Points)

- \* Fish reproductive physiology
- \* Xenobiotic, pesticides, heavy metal etc effects on Fish physiology and reproduction
- \* Wound healing properties and mechanism of action in fish
- \* Bioremediation of toxicants in fish
- \* Fish culture techniques.

### Research/Consultancy Grants

<b>Title of Projects</b>	<b>Funding Agency</b>	<b>Duration (Specific Dates)</b>	<b>Total grant</b>	<b>Role (PI/CO-PI)</b>
Identification and evaluation of reproductive traits and genetic structure of <i>Ompok bimaculatus</i> in India	DBT	27 Sept 2011 to 26 Dec 2014	Rs. 55,31,000/-	Co-PI
Teratogenic effects of Hilban <sup>®</sup> , an organic	SERB-DST	28 May 2012 to 27 May 201	Rs. 24,00,000/-	PI

insecticide, on fresh water fish <i>Channa punctatus</i> (Bloch, 1793)				
Toxicological effect of chlorpyrifos, an insecticide, on the behavioral, physiological and biochemical aspects of fresh water fish <i>Channa punctatus</i> during its life span	CST-UP	14.2.13 to 13.2.16	Rs. 8,40,000/-	PI
Enhancement of immunity and nutritional value of fresh water fish <i>Heteropneustes fossilis</i> (Bloch, 1794) by novel arylvinylpyrimidine derivatives	DBT	16.3.2018 to 15.2.2021	Rs. 55,20,451/-	PI

## Publications

### International

1. **Mishra A & Joy KP. 2006**, HPLC-Electrochemical detection of ovarian estradiol-17 $\beta$  and catecholestrogens in the catfish *Heteropneustes fossilis*: Seasonal and periovulatory changes. *Gen. Comp. Endocrinol.* **145**, 81-95.
2. **Mishra A & Joy KP. 2006**, Relative effects of estradiol-17 $\beta$  (E<sub>2</sub>), catecholestrogens and clomiphene citrate on in vitro oocyte maturation in the catfish *Heteropneustes fossilis* (Bloch) and E<sub>2</sub> inhibition of 2-hydroxyestradiol-induced maturation. *Gen. Comp. Endocrinol.* **147**, 141-149.
3. **Mishra A & Joy KP. 2006**, Effects of gonadotrophin *in vivo* and 2-hydroxyoestradiol-17 $\beta$  *in vitro* on follicular steroid hormone profile associated with oocyte maturation in the catfish *Heteropneustes fossilis*. *J. Endocrinol.* **189**, 341-353.
4. **Mishra A & Joy KP. 2006**, Involvement of mitogen-activated protein kinase in 2-hydroxyestradiol-17 $\beta$  -induced oocyte maturation in the catfish *Heteropneustes fossilis* and a note on possible interaction with protein phosphatases. *Gen. Comp. Endocrinol.* **147**, 329-335.
5. **Mishra A & Joy KP. 2006**, 2-hydroxyestradiol-17 $\beta$  -induced oocyte maturation in the catfish *Heteropneustes fossilis* involves protein kinase C and its interaction with protein phosphatases. *Comp. Biochem. Physiol. A* **144**, 416-422 .

6. **Mishra A** & Joy KP. **2006**, 2-hydroxyestradiol-17  $\beta$  -induced oocyte maturation: Involvement of cAMP - protein kinase A and okadaic acid-sensitive protein phosphatases, and their interplay in oocyte maturation in the catfish *Heteropneustes fossilis*. *J. Exp. Biol.* **209**, 2567-2575.
7. Kaushal B.T. and **Mishra A**. **2011**. A comparative toxicity analysis of cadmium compounds on morphological and behavioral aspects in air breathing freshwater fish *Channa punctatus*. *International Journal of Science and Nature*. **2** (2); 266-269. (ISSN: 229-6441).
8. **A. Mishra**, B.T. Kaushal, K. Singh. **2012**, A toxicity study of heavy metal toxicant cadmium sulphate on behavioral and morphological changes of the fresh water fish *Channa punctatus* (Bloch). *International Journal of Pharmaceutical Invention*. **2**(8), 8-19. (ISSN: 2277-1220).
9. B.T. Kaushal and **A. Mishra**. **2013**, Investigation of acute toxicity of cadmium on snakehead fish *Channa punctatus*- A comparative toxicity analysis on median lethal concentration. *International Journal of Advanced Biological research*, **3**(2) 289-294. (ISSN: 2250-3579)
10. Krishna Singh and **Abha Mishra**. **2013**, A comparative study on seasonal distribution of the helminth parasites communities of some catfishes. *International Journal of Pharma and Biosciences* **4**(3). (ISSN: 0975-6299)( IF 0.47)
11. Yogita Devi & **Abha Mishra**. **2013**, Study of behavioural and morphological anomalies of fry fish of fresh water teleost, *Channa punctatus* under chlorpyrifos intoxication. *International Journal of Pharma and Biosciences* **4**(1): (B) 865 - 874. (ISSN:0975-6299)( IF 0.47)
12. **Abha Mishra** and Yogita Devi. **2014**, Histopathological alterations in the brain (optic tectum) of the fresh water teleost *Channa punctatus* in response to acute and subchronic exposure to the pesticide Chlorpyrifos. *Acta Histochemica* **116**:176-181. (IF 1.608)
13. **A. Mishra**, N. Mishra, A. Rawat, S. Verma. **2014**. Effect of an organophosphate insecticide, chlorpyrifos on mortality and haematology of freshwater butter catfish *Ompok bimaculatus* (Bloch, 1794). *La Pensee Journal*, **76**(5) 452-461. (IF 0.09).
14. Ravindra Kumar<sup>a\*</sup>, Brijesh Kumar Pandey<sup>a</sup>, Uttam Kumar Sarkar<sup>a</sup>, Naresh Sahebrao

Nagpure<sup>a</sup>, Vishwamitra Singh Baisvar<sup>a</sup>, Praveen Agnihotri<sup>a</sup>, Abhishek Awasthi<sup>a</sup>, **Abha Mishra<sup>b</sup>** & Narendra Kumar<sup>a</sup>. 2016, Population genetic structure and geographic differentiation in butter catfish, *Ompok bimaculatus*, from Indian waters inferred by cytochrome b mitochondrial gene. **Mitochondrial DNA Part A: DNA Mapping, Sequencing, and Analysis** 9:1-9. (IF 1.209).

15. **Abha Mishra**, Anurag rawat, Sneha verma, Uttam Kumar Sarkar, Ravindra Kumar (2016). Spawning dynamics of female freshwater buttercatfish, *Ompok bimaculatus* (Bloch, 1794) in different major rivers of India. **International J. of Fisheries and Aquatic Studies**; 4(3); 449-457.

16. **Abha Mishra** and Sneha Verma (2016). Acute toxicity bioassay of organophosphorus pesticide, chlorpyrifos on freshwater catfish, *Heteropneustes fossilis* (Bloch, 1794). **International Journal of Fisheries and Aquatic Studies**. 4(6): 388-393. **ISSN: 2394-0506**.

17. Abha Mishra and Sneha Verma 2017. In vitro effects of chlorpyrifos on gonadotropin-induced oocyte maturation and steroidal interplay of freshwater catfish, *Heteropneustes fossilis*. **International Journal of Pharma and Bio Sciences**, 8(3); 912-920 **ISSN 0975-6299**.

18. Uttam Kumar Sarkar, Praveen Agnihotri, Ravindra Kumar, Abhishek Awasthi, Brijesh Kumar Pandey, Abha Mishra. 2017. Dynamics of inter-population reproductive pattern in butter catfish, *Ompok bimaculatus* (Bloch, 1794) from different rivers in India. **Turkish Journal of Fisheries and Aquatic Sciences**. 17:1061-1071.

19. Mishra A., Sarkar U.K., Kumar R., Rawat A., Verma S., 2018. Gonadal maturity assessment of butter catfish (*Ompok bimaculatus*) from Indian major rivers and tributaries during spawning season. **Iranian Journal Of Fisheries Sciences**. 17(3) 458-470 (IF 0.527).

20. **Abha Mishra**, Radha Chaube, K. P. Joy. 2018. An *in vitro* study on noradrenergic modulation of final oocyte maturation in the catfish *Heteropneustes fossilis*. **Theriogenology** (114) 1-6. (IF 1.9).

21. **Mishra Abha**, Singh Parmeshwar, 2018. Impact of chlorpyrifos on the ovary of the

freshwater fish, *Channa punctatus*. **International Journal of Pharma and Bio Sciences**. 9(3)(B); 213-218.

22. **Mishra A & Joy KP**, 2020. Characterization of gonadotropin induced oocyte jelly coat from the catfish *Heteropneustes fossilis* (Bloch). **International Journal of Environmental Science and Technology**. 17, 287-294 (DOI: 10.1007/s13762-019-02299-2)

23. **Abha Mishra and Yogita Devi** (2020). Gonad Biochemical Profile Alteration by Chlorpyrifos in Freshwater Fish *Channa Punctatus* Int J Pharma Bio Sciences 11 (2), 84-94.

### **National**

1. **Mishra A & Joy KP**. Ovarian monosaccharides (glucose and fructose): hormonal effects and their role in final oocyte maturation and egg quality in catfish *Heteropneustes fossilis*, Bloch. **Indian J. Exp. Biol.** 2004, 42, 1084-1090 (ISSN: 0019-5189). (IF 1.295).

2. **Mishra A, Kumar A, Rawat A**. Effect of cadmium sulphate on protein and carbohydrate level in brain and ovary of fresh water fish *Heteropneustes fossilis* (Bloch). **Indian Journal of Science and Technology** 2011, 4 (8), 253-254 (ISSN: 0974-6846). (NAAS 3.2)

3. **Singh K & Mishra A**. Effect of season on helminth parasitic prevalence, dominance, means intensity and abundance in some fresh water scaly fish. **Trends in Biosciences** 5 (1), 2012, 25-30 (ISSN: 0976-2485). (NAAS 2.7)

4. **Yogita Devi & Abha Mishra**. Histopathological alterations in gill and liver anatomy of fresh water, air breathing fish *Channa punctatus* after pesticide hilban<sup>®</sup> (chlorpyrifos) treatment. **Advances in BioResearch**. vol. 4 [2] 2013, 57-62. (ISSN: 0976-4585).

5. **Yogita Devi & Abha Mishra**. An economic artificial laboratory feed for freshwater fishes and its impact on growth rate of *Channa punctatus* (Adult and Fry). **The Ecoscan (An International Biannual Journal of Environmental Sciences)** 7 (1&2): 83-86. 2013.

6. **KC Yadav, A Mishra, S Raizada, V Sahu, PP Srivastava**. Influence of formulated diet on survival and growth of giant snakehead, *Channa marulius* reared in pond condition. **Proceedings of the National Academy of Sciences, India Section B: Biological Sciences**

2016. 86(1):97–103 (IF 0.396) Doi 10.1007/s40011-014-0414-8. ISSN 0369-8211.

7. **Abha Mishra** and Parmeshwar Singh (2015). Effect of chlorpyrifos pesticide in non-target animals. (In Hindi) *Kahar*, **2(4)**. 20-21. ISSN 2394-3912.
8. Kailash Chandra Yadav, Sudhir raizada and **Abha Mishra** (2016). Study of gonadosomatic index of male and female giant snakehead fish, *Channa marulius* (Hamilton, 1822). *J Exp. Zool. India*, **19(2)**, 719-721. ISSN 0972-0030
9. Ravi Kiran, Sutanu Maji and **Abha Mishra** (2017). Effect of fish waste, fish guano and compost on growth, yield and quality of Broccoli (*Brassica oleracea* var. *italica*). **Indian Journal of Ecology**, **44(1): 120-123**. ISSN **03045250**
10. **Mishra Abha** and Rawat Anurag. 2017. Annual testicular cycle of freshwater catfish *Ompok bimaculatus* (Bloch, 1794) from the Gomti River, India. **Trends in Biosciences** **10(21)**, 4113-4116, ISSN **0974-8431**.
11. **Mishra Abha** and Rawat Anurag. 2017. Performance of exogenous hormones for induced breeding of fresh water butter catfish *Ompok bimaculatus* (Bloch, 1794). **Trends in Biosciences** **10(22)**, 3997-4000, ISSN **0974-8431**.
12. **Abha Mishra** and Abhisweta Singh, 2017. Fish Behaviour: A vital indicator of stress in aquatic habitat. **Kahar** **4(3)**, ISSN **2394-3912**.
13. Sneha Verma, **Abha Mishra** & Anurag Rawat. 2017. Artificial breeding of freshwater catfish *Heteropneustes fossilis* (Bloch, 1794) using synthetic hormone. **Asian Journal of Bio Science**. **12 (2)**,100-107. ISSN **0976-8343**.
14. Sneha Verma, Anurag Rawat & **Abha Mishra**. 2017. Study of lethal toxicity of Hilban® on freshwater catfish, Singhi (*Heteropneustes fossilis*; Bloch, 1794). **Asian Journal of Bio Science**. **12 (2)**, 156-164. ISSN **0976-8343**.
15. **Mishra Abha** and Rawat Anurag, 2018. Annual ovarian cycle of fresh water catfish *Ompok bimaculatus* (Bloch, 1794) from Gomti, India. **Indian Journal of Animal Sciences** **88(3): 386-391**. ISSN 0367-8318.
16. Mishra, A., & Singh, A. (2020). Attenuation of chlorpyrifos induced toxicity in freshwater catfish, *Heteropneustes fossilis*. *Biochemical and Cellular Archives*, **20**, 5065-5072.
17. Mishra, A., & Singh, A. (2020). Effect of curcumin, ascorbic acid against chlorpyrifos toxicity on histotexture and bimolecular content of fresh water catfish *Heteropneustes fossilis*. *Journal of Experimental Zoology India*, **23**, 1043-1049.

### **Book Chapters**

- 1) **Abha Mishra**, Sarita Gupta, Sneha Verma, Anurag Rawat (2014). Comparative study of fish guano and fertilizer formulations on vegetative growth of temperate crop (Tomato). In, *Functional Biology and Biotechnology*. Eds. Serajuddin, Tripathi and Arshad, Published by Excellent Publishing House, New Delhi. Page No. 61-63, ISBN: 978-93-83083-58-9.
- 2) **Abha Mishra**, Harshita Pandey (2014). Histopathological effects of chlorpyrifos, an organophosphate insecticide, on ovary of fresh water teleost *Channa punctatus* during pre-spawning season. In, *Biodiversity and Environment*. Eds. Serajuddin, Tripathi, Kanaujia and Arshad. Published by Excellent Publishing House, New Delhi. Page No. 86-88, ISBN: 978-93-83083-57-2.
- 3) Akhilesh Kumar, **Abha Mishra**, Amita Kanaujia (2014). Effect of sub-lethal concentration of cadmium sulphate on behavior and morphology of fresh water catfish, *Heteropneustes fossilis* (Bloch) in Lucknow, India. In, *Biodiversity and Environment*. Eds. Serajuddin, Tripathi, Kanaujia and Arshad. Published by Excellent Publishing House, New Delhi. Page No. 189-194, ISBN: 978-93-83083-57-2.
- 4) **Mishra Abha** and Uttam Kumar Sarkar. 2015. Perspectives of gonadal maturation in tropical fish: A review. In: *Advances in Fish Research*, Vol.V, pp. 15–30. Edited by: U.C. Goswami. Narendra Publishing House, Delhi, India. 360 pp. ISBN No. 978-93-80428-58-1.

### **Authored Books**

1. Seasonal effect of helminth parasites on freshwater fishes. By: Krishna Singh, **Abha Mishra**, Amit Srivastava. Lap Lambert Academic Publishing. pg 1-192. ISBN-13:978-3-659-66179-2; ISBN-10:3659661791; EAN:9783659661792
2. Proceedings of National Conference of Research Development in Fisheries (NCRDF-2019) By: **Abha Mishra**, Sandhya and Sutanu Maji (Eds). Published by Dept Zoology, BBAU from 7-8<sup>th</sup> November, 2019. pg 1-100. ISBN No: 978-93-5396-043-8

## Research Supervision

	Completed	Ongoing
<b>PG (dissertation)</b>	42	
<b>Ph.D</b>	6	4

## Honors, Recognition and Awards

1. **Gold Medal:** Dr. Hanuman Singh Memorial Gold Medal in the year 2000 for securing highest marks in Fish Biology specialization in M. Sc. Zoology, Banaras Hindu University.
2. **RET Award:** Secured 1st rank at National level Research Entrance Test (RET) for pursuing Ph. D. in Banaras Hindu University in the year 2000 and awarded fellowship.
3. **NET:** Qualified eligibility test for lectureship at National level jointly conducted by University Grants Commission (UGC) and Council for Scientific and Industrial Research (CSIR) of December 2001.
4. **SLET:** Qualified eligibility test for Lectureship at State level conducted by Rajasthan Public Service Commission (RPSC), Ajmer, Rajasthan, 2001.
5. **ASRB:** Qualified eligibility test for Lectureship / Assistant Professorship at National level conducted by Agricultural Scientists Recruitment Board (Indian Council of Agricultural Research), New Delhi, 2001.
6. **GATE:** Qualified Graduate Aptitude Test in Engineering at National level with 81.7 percentile in the year 2002.
7. **Best Poster Award:** Poster entitled “Induction of oocyte final maturation in the catfish *Heteropneustes fossilis* by catecholestrogens and catecholamines”, by A. Mishra and K. P. Joy, was selected for best poster award in the XXI- Symposium of the Society for Reproductive Biology & Comparative Endocrinology, Varanasi, 2003.
8. **F. Z. S. I.:** Zoological Society of India selected Fellow of Society in the year 2008.
9. **S. P. Basu Memorial Award:** Zoological Society of Kolkata for the year 2010
10. **SERB-Young Scientist Award,** New Delhi of year 2012.
11. **Bioved Young Scientist Award 2013:** In the field of Aquaculture and Fish Endocrinology by Bioved Research Institute of Agriculture and Technology, Allahabad.
12. **Dr. Hiralal Chaudhuri Best Scientist Award** for the year 2012-2013 by CIFE, Mumbai.



**13. Young Scientist Award 2013:** In the field of Fish Endocrinology by Society of Biological Sciences and Rural Development, Allahabad.

**14. Young Scientist Award:** for outstanding contribution in the field of fish and fisheries by Society for Science and Nature, 2016.

**15.** Honors for being an **Outstanding Academic and Administrative Professional**, 8<sup>th</sup> March 2017 by Committee of Basic Facilities for Women, BBAU, Lucknow.

### **Membership of Professional Bodies**

1. Life membership of “Indian Science Congress”, Membership No. L 12170.
2. Life membership of “Society for Reproductive Biology and Comparative Endocrinology (SRBCE)” in Feb 2010. Membership No.
3. Life membership of “Aquatic Biodiversity Conservation Society” in August 2010. Membership No. ABCS/L/G-155.
4. Life Membership of “The Zoological Society, Kolkata” in January 2011.
5. Life Membership of “Society of Biological Sciences and Rural Development (SBSRD) (National Academy of Biological Sciences and Rural Development)” in 20 August 2013, Membership No.153
6. Life membership of “Society for Science and Nature”, December 2016. Membership No. SFSN/2016-17/L-038.
7. External member of **Women Complain** Cell of NBFGR, Lucknow for three years (2016-2019)
8. Member of **Academic Council** under Chapter II clause 1 of the Academic ordinance of the University for three year (2015-2018).
9. Member of **School Board of SB & BT under** Chapter II clause 1 of the Academic ordinance of the University for three year (2017-2020).
10. Member of **Departmental Research Committee** of DAAS for three year (Nov 2017-2020)
11. Life membership of “Translational Biomedical Research Society (TBRS)”, 13<sup>th</sup> September 2019. Membership ID. LM 0009.

### **Seminar/Conference/Symposia /Workshops Organised**

Organizing Secretary of “National Conference of Research Development in Fisheries (NCRDF-2019)” organized by Dept Zoology, BBAU from 7-8<sup>th</sup> November, 2019.

### **Countries Visited**

\* Olhao, Portugal

### **Invited Lectures/Talks/Chair/Co-Chair in Seminar/Conference/Symposia/Workshops**

1. Abha Mishra. Toxicological effect of organophosphorous pesticide, chlorpyrifos, on fresh water teleost *Channa punctatus* (Bloch). In, The Indian Science Congress Association - Sagar Chapter, “National symposium on Frontiers in Modern Biology (Technology Transfer, knowledge Translation and social Transformation) “Innovations in Science and Technology for Inclusive Development” March 24-25, 2014.
2. Abha Mishra. Teratogenic effect of chlorpyrifos in fresh water fish. The Indian Science Congress Association 14, Dr Biresh Guha Street, Kolkata-700017, University of Mumbai, 3-7 January 2015.
3. Abha Mishra. Oocyte maturation in the catfish *Heteropneustes Fossilis* (Bloch): Role of catecholestrogens and some underlying cellular mechanisms. New directions in Cell Signaling held at Amity University, Haryana, 21 April 2017
4. Abha Mishra. “Chlorpyrifos impact on freshwater catfish *Heteropneustes fossilis*”. In International Conference on Emerging Researches in Bioscience (ICERB-2018). Department of Zoology, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). October 28-30, 2018.