




## Faculty Details proforma for DU Web-site

<b>Title</b>	<b>Prof.</b>	<b>First Name</b>	<b>Neeta</b>	<b>Last Name</b>	<b>Sehgal</b>	<b>Photograph</b>
<b>Designation</b>		Professor				
<b>Address</b>		Fish Endocrinology Lab Department of Zoology University of Delhi Delhi – 110007				
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<b>Educational Qualifications</b>						
<b>Degree</b>		<b>Institution</b>			<b>Year</b>	
<b>Ph.D.</b>		Ph.D. (Zoology), University of Delhi.			1990	
<b>PG</b>		M.Sc. (Zoology), Miranda House, University of Delhi.			1982	
<b>UG</b>		B.Sc. (Hons. Zoology), Miranda House, University of Delhi.			1980	
<b>Career Profile</b>						
2008 – till date: Professor, Department of Zoology, University of Delhi.						
2000 – 2008: Reader, Department of Zoology, University of Delhi.						
1992 – 2000: Lecturer, Department of Zoology, University of Delhi.						
<b>Administrative Experience</b>						
Proctor, University of Delhi : (2017- present)						
Head, Department of Zoology : (2013 to 2016)						
Warden of University Hostel for Women : (1997 to 2010)						
Resident Tutor of University Hostel for Women : (1995 to 1997)						
<b>Administrative Assignments</b>						
<ul style="list-style-type: none"> <li>• Convener of Expert Consultation, CIFE, Mumbai</li> <li>• Board member of National Talent Search Scheme, NCERT</li> <li>• Cordinator, UGC SAP</li> <li>• Co-opted Member of Task Force, SERB, DST</li> <li>• Member of Academic Council, DU</li> <li>• Member of Governing Body of Colleges, DU</li> </ul>						





**Supervision of awarded/ submitted Doctoral Thesis:                      Twenty**

- Vijay, Pooja. 2019. Protein Profiling, Gene Expression and *In-silico* Analyses of Multiple Forms of Vitellogenin and Choriogenin in the Murrel, *Channapunctatus* (Bloch).
- Dwivedi, Satyam. 2017. Physiological stress response in the murrel, *Channa punctatus* in relation to seasonal variation in water quality of Yamuna river catchment from Delhi.
- Panwar, Deepak. 2016. Studies on Protein-Protein Interactions Regulating Granulosa Cell Apoptosis in *Bubalus bubalis*.
- Verma, Vipin Kumar. 2016. Immuno-stimulatory effects of supplemented feed against *Aeromonas hydrophila* and development of ELISA to evaluate health status of the African catfish, *Clarias gariepinus* and the murrel, *Channa punctatus*.
- Khandelwal, Preeti. 2016. Studies on expression of estrogen responsive genes & precursor product profiling of Vitellogenin in the Indian freshwater catfish, *Heteropneustes flossilis*.
- Shrivastava, Nitisha. 2015. Repurposing of pharmacopoeia for identifying novel radioprotectors using zebrafish as organism model.
- Rawal, Leena. 2014. Molecular mining of repeat tagged transcribing genes in water buffalo *Bubalus bubalis*.
- Vikas Kumar. 2013. Designing of novel heterocyclic scaffolds as potential therapeutic agents against Neurodegenerative disorders: A computational approach.
- Supriya Pipil. 2013. Expression of Genes (*vga*, *vgb*, *hsp*, *era* ) on Exposure to Estrogens and Characterization of Vitellogenin c in the Indian Freshwater Murrel, *Channapunctatus* (Bloch).
- Luni. 2012. Cytoplasmic Reorganization and Hydration in the Oocytes of the African Catfish, *Clarias gariepinus*, during Meiotic Resumption.
- Kumari Vandana Rani. 2012. Induction, Characterization and Expression of Proteins Synthesized by Primary Hepatocytes of Murrel, *Channa punctatus* (Bloch) on Exposure to Natural Estrogens and Xenoestrogens.
- Archana Aggrawal. 2012. Role of N-acetylcysteine, an Oxidant in Mitigating the Adverse Effects Associated with Persistent Stimulation of Rat Leydig Cells with hCG.
- Santosh Kumar. 2011. Diversity and Ecology of Ciliated Protozoa from Select Biotopes and A Recombinant Cell Line of *Tetrahymena thermophila* as Potential Model for Toxicological Assays.
- Rawat, Varunendra Singh. 2010. Vitellogenins (A and B) and estrogen receptors ( $\alpha$  and  $\beta$ ) as indicators of exposure to estrogenic compounds: Gene expression analysis in the Indian freshwater murrel, *Channa punctatus* (Bloch). University of Delhi.
- Kaushik, Mahesh. 2009. Studies on expression of Androgen and Estrogen receptor- $\alpha$  in specific organs during hypo-spermatogenesis in the rat following hormonal intervention. University of Delhi.
- Om Prakash. 2008. Development of ELISAs for Vitellogenin and Choriogenin and Experimental Studies on the Induction of Egg-yolk Precursor Proteins in the Freshwater Murrel, *Channa punctatus* (Bloch). University of Delhi.
- Phartyal, Rajendra. 2008. Vitellogenin in the African Catfish, *Clarias gariepinus* (Burchell): *Invivo* and *in vitro* Induction, Estimation and Partial Characterization. University of Delhi.



- Pipil, Supriya. 2008. Electrophoretic, Immunological and Solubility Characteristics of the Egg-chorion of the African catfish, *Clariasgariepinus*. University of Delhi.
- Raj Kumar. 2008. Effect of Estradiol on Superoxide Dismutase and Lipid Peroxidation in Gonads of the African catfish, *Clariasgariepinus*. University of Delhi.
- Dabral, Sanyam. 2007. Effect of Estradiol 17 $\beta$  on Reactive Oxygen Species in Different Tissues of *Clariasgariepinus*. University of Delhi.
- KumariVandana Rani. 2007. Partial Sequence of Vitellogenin Gene in the Indian Freshwater Murrel, *Channapunctatus* (Bloch). University of Delhi.
- Aggarwal, Archana. 2007. Molecular Markers in Fishes with Special Reference to Selective Breeding. University of Delhi.
- Rawat, Varunendra Singh. 2003. Immunological Detection of Vitellogenin and Choriogenin in the Plasma of Murrel, *Channapunctatus*. University of Delhi.
- Giri, Shibashish. 2003. Polycyclic Aromatic Hydrocarbons (PAH): Sources, Bioaccumulation, Metabolism and Effects on Fish Reproduction with Special Reference to Gametogenesis. University of Delhi.
- Jyoti. 2000. Functional Anatomy of Fish Hepatocytes in Relation to Oogenesis. University of Delhi.
- Thaosan, Sarbojit. 1999. Egg-yolk Proteins in Fishes with Special Reference to Phosvitins. University of Delhi.
- Luke, Reena. 1997. Cryopreservation of Fish Gametes. University of Delhi.

#### **Books/Monographs (Authored/Edited)**

- Sehgal, Neeta, A Kumar and S K Sharma. 2004. *Biosensors: Technique & Applications*. Place of publishers: D K Publishers.
- Sehgal, Neeta, S K Sharma, A Khanduri and A Kumar. 2002. *Disposable strips for detection of alkaline phosphatase in pasteurized milk*. Place of publisher: Allied Publishers.

#### **Research papers published in Refereed/Peer Reviewed Journals**

- Vijay,P. & **Sehgal, N.** 2020. Structural analysis and Characterization of Egg-envelope in the Indian freshwater murrel, *Channapunctatus*. *Fish Physiology and Biochemistry*. 1-10.
- Vijay, P., Sharma, L. & **Sehgal, N.** 2019. Protein profiling and Precursor-product relationship between Vitellogenin and Lipovitellin in the African catfish, *Clariasgariepinus*. *Bulletin of Pure & Applied Sciences-Zoology* 38A (2): 67-81.
- Verma, V. K., **Sehgal, N.**, & Prakash, O. 2018. Isolation and characterization of immunoglobulin from African catfish, *Clariasgariepinus* (Burchell, 1822). *Indian Journal of Experimental Biology* 56 (6): 402-410.
- Dwivedi, S. & **Sehgal, N.** 2017. Scale of murrel: A non-invasive approach to monitor heavy metals in freshwater. *Journal of Biological Sciences and Medicine* 3 (3): 15-23.
- Shrivastava, N., Joshi, J., **Sehgal, N.**, & Kumar, I. P. 2017. Cyclooxygenase-2 identified as a potential target for novel radiomodulator scopolamine methyl bromide: An *in silico* study. *Informatics in Medicine Unlocked*.
- Verma, V. K., Rani, K., **Sehgal, N.**, & Prakash, O. 2016. Prevention of histopathological damages in the liver, spleen and kidney of *Channapunctata* infected with *Aeromonashydrophila*. *Prevention*, 2 (1), 227-232.
- Verma, V. K., **Sehgal, N.**, & Prakash, O. 2015. Characterization and screening of bioactive compounds in the extract prepared from aerial roots of *Ficus*

- benghalensis*. *International Journal of Pharmaceutical Sciences and Research*, 6(12), 5056.
- Joshi, J., Dimri, M., Ghosh, S., Shrivastava, N., Chakraborti, R., **Sehgal, N.**, ... & Kumar, I. P. 2015. Ligand and Structure Based Models for the Identification of Beta 2 Adrenergic Receptor Antagonists. *Current Computer-aided Drug Design*, 11(3), 222-236.
- Verma, V. K., Kumar, S. R., Rani, K. V., **Sehgal, N.**, & Prakash, O. 2015. Compound profiling in methanol extract of *Kalanchoeblossfeldiana* (Flaming katy) leaves through GC-MS analysis and evaluation of its bioactive properties. *Global Journal of Advanced Biological Sciences*, 1, 38-49.
- Panwar, D., Rawal, L., **Sehgal, N.**, & Ali, S. 2015. Cross Talk between KGF and KITLG proteins implicated with ovarian folliculogenesis in Buffalo *Bubalus bubalis*. *PloSone*, 10(6), e0127993.
- Rawal, L., Pathak, D., **Sehgal, N.**, & Ali, S. 2015. Transcriptional Dynamics of Homeobox C11 Gene in Water Buffalo *Bubalus bubalis*. *DNA and Cell Biology*.
- Dimri, M., Joshi, J., Chakraborti, R., **Sehgal, N.**, Sureshbabu, A., & Prem Kumar, I. 2015. Todralazine Protects Zebrafish from Lethal Effects of Ionizing Radiation: Role of Hematopoietic Cell Expansion. *Zebrafish*.
- Verma, V. K., Rani, K. V., **Sehgal, N.**, & Prakash, O. 2015. Enhanced disease resistance in the Indian snakehead, *Channapunctata* against *Aeromonashydrophila*, through 5% feed supplementation with *F. benghalensis* (aerial root) and *L. leucocephala* (pod seed). *Aquaculture International*, 1-14.
- Pipil, S., Kumar, V., Rawat, V. S., Sharma, L., & **Sehgal, N.** 2015. *In silico* and *in vivo* analysis of binding affinity of estrogens with estrogen receptor alpha in *Channapunctatus* (Bloch). *Fish Physiology and Biochemistry*, 41:31-40.
- Pipil, S., Rawat, V. S., Sharma, L., & **Sehgal, N.** 2015. Characterization of incomplete vitellogenin (VgC) in the Indian freshwater murrel, *Channapunctatus* (Bloch). *Fish Physiology and Biochemistry*, 41:107-117.
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- Kumar, V., Chadha, N., Tiwari, A.K., **Sehgal, N.**, Mishra, A.K. 2014. Prospective atom-based 3D-QSAR model prediction, pharmacophore generation, and molecular docking study of carbamate derivatives as dual inhibitors of AChE and MAO-B for Alzheimer's disease. *Medicinal Chemistry Research*, 23: 1114-1122.
- Aggarwal, N., Goswami, S.V., Khandelwal, P., **Sehgal, N.** 2014. Aromatase activity in brain and ovary: Seasonal variations correlated with circannual gonadal cycle in the catfish, *Heteropneustes fossilis*. *Indian Journal of Experimental Biology*, 52: 527-537.
- Rawal, L., **Sehgal, N.**, & Ali, S. 2013. Genome Analysis and Human Health: A Critical Appraisal. *Global Journal of Human Genetics & Gene Therapy*, 1(1), 16-37.
- V.K. Verma, K. V. Rani, **N. Sehgal** and O. Prakash 2013. Immunostimulatory effect of artificial feed supplemented with indigenous plants on *Clarias gariepinus* against *Aeromonashydrophila*. *Fish and Shellfish Immunology*, 35 (3):1924- 1931.
- V.S. Rawat, S. Pipil, L. Sharma, **N. Sehgal** 2013. Purification, characterization and expression of two vitellogenins in the Indian freshwater murrel *Channapunctatus*. *General and Comparative Endocrinology*, 189: 119-126.
- Om Prakash, **Neeta Sehgal**, Kumari Vandana Rani, and N Aggarwal 2013. Isolation purification and characterization of the egg-yolk proteins from the oocytes of the

Indian freshwater murrel *Channapunctatus*. *Indian Journal of Experimental Biology*, 51: 411-420.

Sharma, K.K., Shrivastava, B., Sastry, V.R.B., **Sehgal, N.**, Kuhad, R.C. 2013. Middle-redox potential laccase from *Ganoderma* sp.: Its application in improvement of feed for monogastric animals. *Scientific Reports*: 3, Article number 1299.



- Sehgal, Neeta**, V S Rawat, K V Rani and R Phartyal. 2013. Vitellogenin genes in fish: Differential expression on exposure to estradiol. *Fish Physiology and Biochemistry*, 39: 39-46.
- Aggarwal, N, Goswami, S V and **Sehgal, N**. 2012. A stereotaxic atlas and technique for nuclei of the diencephalon of catfish, *Heteropneustes fossilis* (Bloch). *J. Env. Bio-Sci*, 26 (1): 15-16.
- V.K. Verma, K. V. Rani, **N. Sehgal** and O. Prakash. 2012. Immunostimulatory response induced by supplementation of *Ficus benghalensis* root powder, in the artificial feed the Indian freshwater murrel, *Channapunctatus*. *Fish and Shellfish Immunology*, 33 (3): 590-596.
- Tiwari, A.K., Rathore, V.S., Sinha, D., Datta, A., **Sehgal, N.**, Chuttani, K., Mishra, A.K. 2012. Design and docking studies of [diethylenetriaminepentaacetic acid-(amino acid)<sub>2</sub>] with acetylcholine receptor as a molecular imaging agent for single-photon emission computed tomographic application. *Molecular Imaging*, 11 (3): 240-250.
- Aggarwal, A., Misro, M.M., Maheshwari, A. and **Sehgal, Neeta** 2012. Differential modulation of apoptotic gene expression by N-acetyl-l-cysteine in Leydig cells stimulated persistently with hCG in vivo. *Molecular and Cellular Endocrinology*, 348: 155-164.
- Sharma, K.K., Shrivastava, B., Nandal, P., **Sehgal, Neeta**, Sastry, V.R.B., Kalra, A., and Kuhad, R.C. 2012. Nutritional and Toxicological Assessment of White-Rot Fermented Animal Feed. *Indian Journal of Microbiology*. 52 (2): 185-190.
- Kaushik, M. C., Misro, M. M., **Sehgal, N.**, & Nandan, D. 2010. Effect of chronic oestrogen administration on androgen receptor expression in reproductive organs and pituitary of adult male rat. *Andrologia*, 42(3), 193-205.
- Archana Aggarwal, M M Misro, A Maheshwari, **Sehgal, Neeta** and D Nandan. 2010. N-acetylcysteine counteracts oxidative stress and prevents hCG-induced apoptosis in rat Leydig cells through down regulation of caspase-8 and JNK. *Molecular Reproduction and Development*. 77(10): 900-909.
- K V Rani, **Sehgal, Neeta**, Om Prakash and S V Goswami. 2010. Relative potencies of natural estrogens on vitellogenin and choriogenin levels in the Indian freshwater spotted snakehead, *Channapunctata*: in vivo and in vitro studies. *Fish Physiology and Biochemistry* 36: 587-595.
- M C Kaushik, M M Misro, **Sehgal, Neeta** and D Nandan. 2010. AR versus ER ( $\alpha$ ) expression in the testis and pituitary following chronic estrogen administration in adult rat. *System Biology in Reproductive Biomedicine*, 56 (6): 420-430.
- M C Kaushik, M M Misro, **Sehgal, Neeta** and D Nandan. 2010. Effect of chronic estrogen treatment on AR expression in reproductive organs and pituitary of male adult rats. *Andrologia*. 42(issue): 3: 193-205.
- Archana Aggarwal, M M Misro, A Maheshwari, **Sehgal, Neeta** and D Nandan. 2009. Adverse Effects Associated With Persistent Stimulation of Leydig Cells With hCG in Vitro. *Molecular Reproduction and Development*. 76(11): 1076-1083.
- M Dwivedi, **Sehgal, Neeta** and M Bala. 2008. Effects of 60Co-gamma-ray low dose on radioresistance, mutagenesis, gene conversion, cell cycle and transcriptome profile in *Saccharomyces cerevisiae*. *International Journal of Low radiation*. 9, 496-498.
- S K Sharma, **Sehgal, Neeta** and A Kumar. 2007. Lactase from *Clarias gariepinus* and its application in development of lactose sensor. *Sensors & Transducers Journal*. 82(8): 1458-1469.
- Om Prakash, S V Goswami and **Sehgal, Neeta**. 2007. Establishment of ELISA for murrel vitellogenin and choriogenin, as biomarkers of potential endocrine disruption. *Comparative Biochemistry and Physiology- C Toxicology and Pharmacology*. 146(issue 4): 540-551.

- D K Gautam, M M Misro, S P Chaki, M Chandra and **Sehgal, Neeta**. 2007. hCG treatment raises H<sub>2</sub>O<sub>2</sub> levels and induces germ cell apoptosis in rat testis. *Apoptosis*. 12(7): 1173-1182.
- Sehgal, Neeta**, S K Sandeep, A Kumar, R Chaudhary, S Pundir, C S Pundir. 2007. Lactose biosensor based on lactase and galactose oxidase immobilized in polyvinyl formal. *Artificial Cells, Blood Substitutes and Biotechnology*. 35(issue 4): 421-430.
- S K Sharma, Suman, C S Pundir, **Sehgal, Neeta** & A Kumar. 2006. Galactose sensor based on galactose oxidase immobilized in polyvinyl formal. *Sensors and Actuators B: Chemical*. 119(1): 15-19.
- D K Gautam, M M Misro, S P Chaki and **Sehgal, Neeta**. 2006. H<sub>2</sub>O<sub>2</sub> at physiological concentrations modulates Leydig cell function inducing oxidative stress and apoptosis. *Apoptosis*. 11(issue 1): 39-46.
- R Phartyal, Bibekananda, L Singh, S V Goswami, and **Sehgal, Neeta**. 2005. *In vitro* induction of vitellogenin by estradiol-17 $\beta$  in isolated hepatocytes of catfish, *Clarias gariepinus*. *Fish Physiology and Biochemistry*. 31(2-3): 241-245.
- Sehgal, Neeta** & S V Goswami. 2005. Vitellogenin exists as charge isomers in the Indian freshwater murrel, *Channapunctatus* (Bloch). *General and Comparative Endocrinology*. 141(1): 12-21.
- K Acharya, S V Goswami and **Sehgal, Neeta**. 2004. Role of lipid sources on reproductive activity on male African catfish, *Clarias gariepinus*, during spermatogenesis. *Applied Fisheries & Aquaculture*. 4(2): 24 -26.
- S K Sharma, R Singhal, **Sehgal, Neeta** and A Kumar. 2004. Biostrip technique for detection of galactose in diary foods. *Food Chemistry*. 88 (issue 2): 299-303.
- S K Sharma, R Singhal, B D Malhotra, **Sehgal, Neeta** and A Kumar. 2004. Langmuir-Bloggett film based biosensor for estimation of galactose in milk. *Electrochimica Acta*. 49 (issue 15): 2479-2485.
- S K Sharma, R Singhal, B D Malhotra, **Sehgal, Neeta** and A Kumar. 2004. Biosensor based on Langmuir-Bloggett films of poly (3-hexyl thiophene) for detection of galactose in human blood. *Biotechnology Letters*. 26(issue): 645-647.
- S K Sharma, R Singhal, B D Malhotra, **Sehgal, Neeta** and A Kumar. 2004. Lactose biosensor based on Langmuir-Bloggett film of poly (3-hexyl thiophene). *Biosensors & Bioelectronics*. 20(issue 3): 651-657.
- Sehgal, N.** and Goswami, S.V. 2003. Ultrastructural changes in the liver of the Indian freshwater murrel, *Channapunctatus* (Bloch) during estradiol-induced vitellogenin synthesis. *J. Aqua*. 11: 41-48.
- Sharma S.K., Rajnee, **Sehgal, N.** and Kumar A. 2003. Biomolecules for development of biosensors and their applications. *Curr. Appl. Phys. (USA)* 3: 307-316.
- Sharma, S.K., **Sehgal, N.** and Kumar A. 2003. Dry reagent strips for testing milk pasteurization. *Lebensmittel-Wissenschaft und-Technologie (Zurich)*. 36: 567-571.
- Sehgal, N.** and Goswami, S.V. 2003, Fine structure of the egg envelopes of the oocyte of the Indian freshwater murrel, *Channapunctatus* during vitellogenesis. *J. Aqua Trop*. 18 (4): 265-274.
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- Sehgal, N.** and Goswami, S. V. 2002. Immunological identification of two female-specific proteins in the plasma of the Indian freshwater murrel, *Channapunctatus* (Bloch). *Ind. J. Exp. Biol.* 40: 288-295.
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- Sharma S.K., BalaMadhu, Tulsani N.B., **Sehgal N.** and Kumar A. 2002. Albumin test strip for quick detection of albuminuria in human. *Ind. J. Chem. Tech.* Vol. 9: 496-498.
- Sehgal, N.** and Goswami, S.V. 2001. Purification of vitellogenin from the plasma of Indian freshwater murrel, *Channapunctatus* (Bloch) by different methods: A comparative study. *Ind. J. Biochem. Biophys.*, 38: 263-269.
- Sehgal, N.** and Goswami, S.V. 2001. Biochemical changes in the liver of the Indian freshwater murrel, *Channapunctatus* (Bloch) during estradiol-induced vitellogenin synthesis. *Fish Physiology and Biochemistry*, 24 (2): 149-155.
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- Sehgal, N.** and Goswami, S.V. 1991. Isolation and characterization of female-specific plasma proteins of the Indian freshwater murrel, *Channapunctatus* (Bloch). *Proc. Natl. Sym. Gen. Comp. Endocrinol.*, p. 44.
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- Goswami, S.V., Gupta, N., **Sehgal, N.** and Kanwal, V. 1987. Role of testosterone in reproduction in the female catfish, *Heteropneustes fossilis* (Bloch), *In: Proc. Ist Int. Congr. Asia and Oceania Society for Gen. Comp. Endocrinol.* (E. Ohinishi, Y. Nagahama and H. Ishizaki eds.), Nagoya University Corp., pp. 191-192.

### Conference Organization/ Presentations

#### *Participation as Paper/Poster Presenter*

- Sehgal Neeta. Vitellogenin: A novel protein for nutrition and defence in the Indian freshwater murrel, *Channapunctatus*. Poster presented in International Conference on Changing Environment: Understanding the Emerging Challenges and their Management Strategies With Pre-conference Workshop "The Foldscope" held at University of Delhi, **Delhi, India**. April 10-12, 2019.
- Sehgal Neeta. Stress response in fish with relation to water quality of Yamuna river and subsequent study in Pranmati river, Critical zone observatory, Himalayas. Poster presented in International Conference on Changing Environment: Understanding the Emerging Challenges and their Management Strategies With Pre-conference Workshop "The Foldscope" held at University of Delhi, **Delhi, India**. April 10-12, 2019.
- Sehgal Neeta. Screening of EDCs and evaluating the estrogenic potential of Genistein in Indian Freshwater catfish *Heteropneustes fossilis*. Poster presented in International

Conference on Changing Environment: Understanding the Emerging Challenges and their Management Strategies With Pre-conference Workshop "The Foldscope" held at University of Delhi, **Delhi, India**. April 10-12, 2019.

- Sehgal Neeta. Neuroendocrine regulation of oocyte maturation in *Heteropneustes fossilis*. Paper presented in HumboltKolleg on Comparative Endocrinology and Physiology held at RTM Nagpur University, **Nagpur, India**. January 7-9, 2019.
- Sehgal Neeta. Structural analysis of chorion and characterization of choriogenin genes (chgH and chgL) in Indian freshwater murrel, *Channa punctatus*. Paper presented in HumboltKolleg on Comparative Endocrinology and Physiology held at RTM Nagpur University, **Nagpur, India**. January 7-9, 2019.
- Sehgal Neeta. Stress response of fishes in relation to water quality of Yamuna river catchment from Delhi. Poster presented in National Seminar on Challenges in Biodiversity Conservation and management held at University of Jammu, **Jammu and Kashmir, India**. December 20-21, 2018.
- Sehgal Neeta. Localization of Nucleus preopticus in the brain of catfish, *Heteropneustes fossilis*. Poster presented in National Seminar on Challenges in Biodiversity Conservation and management held at University of Jammu, **Jammu and Kashmir, India**. December 20-21, 2018.
- Sehgal Neeta. Evaluation of estrogenic potential of Genistein administration in Indian freshwater catfish, *Heteropneustes fossilis*. Poster presented in INSCR Conference on Role of microbe- plant animal interaction in human health held at University of Delhi, **Delhi, India**. September 26-28, 2017.
- Sehgal Neeta. Expression of Heat Shock protein in liver under the influence of Estradiol-17 $\beta$  in fish. Poster presented in the IndoUS Workshop & International Symposium on Biological Timing and Health Issues in the 21<sup>st</sup> Century held at University of Delhi, **Delhi, India**. February 21-24, 2017.
- Sehgal Neeta. Characterization of Lipovitellin from Vitellogenic Oocytes of freshwater fish. Poster presented in the IndoUS Workshop & International Symposium on Biological Timing and Health Issues in the 21<sup>st</sup> Century held at University of Delhi, **Delhi, India**. February 21-24, 2017.

- Sehgal Neeta. Induction of Vitellogenin Synthesis in the African Catfish *Clarias gariepinus* by Steroid Hormones. Poster presented in the International Conference on Comparative Endocrinology and Integrative Physiology, held at Park Centre, Technopark, Thiruvananthapuram, **Kerala, India**. August 4-7, 2015.
- Sehgal Neeta. Dopaminergic control of meiotic oocyte maturation in the fish. Poster presented in the International Conference on Comparative Endocrinology and Integrative Physiology, held at Park Centre, Technopark, Thiruvananthapuram, **Kerala, India**. August 4-7, 2015.
- Sehgal Neeta. A comparative study on murrel during different seasons maintained in water of river Yamuna, Delhi NCR. Paper presented in the International Conference on Comparative Endocrinology and Integrative Physiology, held at Park Centre, Technopark, Thiruvananthapuram, **Kerala, India**. August 4-7, 2015.
- Sehgal Neeta. Apoptosis in Testis and Liver during Synthesis of Vitellogenin in Murrel and Catfish. Poster presented in the 10<sup>th</sup> Indian Fisheries and Aquaculture Forum, held at ICAR-National Bureau of Fish Genetic Resources, **Lucknow, India**. November 12-15, 2014.
- Sehgal Neeta. Identification of D2 Receptors and Distribution of Putative Dopaminergic Neurons in the Brain of Fish. Poster presented in the 10<sup>th</sup> Indian Fisheries and Aquaculture Forum, held at ICAR-National Bureau of Fish Genetic Resources, **Lucknow, India**. November 12-15 2014.
- Sehgal Neeta. Protein profiling of Vitellogenin in the African catfish *Clarias gariepinus*. Paper presented in the 10<sup>th</sup> Indian Fisheries and Aquaculture Forum, held at ICAR-National Bureau of Fish Genetic Resources, **Lucknow, India**. November 12-15 2014.
- Sehgal Neeta. Vitellogenin: A novel protein for defense in the Indian freshwater murrel, *Channapunctatus*. Paper presented at International Conference on Comparative Endocrinology and Physiology, 22.10.2013, **Nagpur, India**.
- Sehgal Neeta. Proteolysis of yolk proteins and aquaporin play an essential role during oocyte maturation and hydration in freshwater catfish, *Clarias gariepinus*. Paper presented at 7<sup>th</sup> Asia Oceania Society for Comparative International Symposium on Reproductive Physiology of Fish (7<sup>th</sup> AOSCE) March 03-07, 2012, **Kuala Lumpur, Malaysia**.
- Paper entitled "Differential Expression of Vitellogenin Genes (VgA&VgB) by Hepatocytes of the Indian Freshwater Murrel, *Channapunctatus*, on Exposure to Estradiol" presented at 9<sup>th</sup> International Symposium on Reproductive Physiology of Fish (9<sup>th</sup> ISRPF) August 09-14, 2011, **Trissur, Kochi, India**.

- UGC sponsored National Seminar on New Trends in Fishery Development in India held at **Chandigarh, India** presented an invited lecture on "Isolation and partial characterization of vitellogenin in the Indian freshwater murrel, *Channapunctatus* (Bloch)" during February 2005.
- 3<sup>rd</sup> Indian Fisheries Science Congress held at **New Delhi, India** presented a paper entitled "Role of dietary fatty acids on reproductive activity of the male African catfish, *Clariasgariepinus* during spermatogenesis" during November 2004.
- 3<sup>rd</sup> Indian Fisheries Science Congress held at **New Delhi, India** presented a paper entitled "Plasma levels of vitellogenin and choriogenin in the Indian freshwater murrel, *Channapunctatus* during reproduction and in response to estradiol-17 $\beta$ " during November 2004.
- 3<sup>rd</sup> Indian Fisheries Science Congress held at **New Delhi, India** presented a paper entitled "Optimal conditions for *in vitro* induction of vitellogenin synthesis by primary cultures of non-enzymatically isolated hepatocytes of *Clariasgariepinus*" during November 2004. 30<sup>th</sup> Annual Conference of association of Clinical Biochemists of India held at **Bangalore, India** presented a poster entitled "Biosensor for estimation of lactose in food" during January 2004.
- 30<sup>th</sup> Annual Conference of association of Clinical Biochemists of India held at **Bangalore, India** presented a poster entitled "Aestimation on galactose" during January 2004. quick and economical test for
- National Symposium on Current Trends in Comparative Endocrinology: Impact of Molecular Biology and Biotechnology held at **Nagpur, India** presented a paper entitled "Vitellogenesis in the Indian Freshwater murrel, *Channa punctatus* (Bloch)" during November 2003.
- National Symposium on Current Trends in Comparative Endocrinology: Impact of Molecular Biology and Biotechnology held at **Nagpur, India** presented a paper entitled "Identification and isolation of vitellogenin and choriogenin in the plasma of the Indian freshwater murrel, *Channapunctatus* (Bloch)" during November 2003.
- National Symposium on Current Trends in Comparative Endocrinology: Impact of Molecular Biology and Biotechnology held at **Nagpur, India** presented a paper entitled "Isolation and identification of lipovitellin and phosvitin, in the Indian freshwater murrel, *Channapunctatus*, (Bloch)." during November 2003.
- Annual Conference of Association of Clinical Biochemists of India held at **Jaipur, India** presented a paper entitled "Langmuir-Blodgett films application in biosensor for prevention of galactosemia" during February 2003.

- Annual Conference of Association of Clinical Biochemists of India held at **Jaipur, India** presented a paper entitled “Langmuir-Blodgett films and their application in diagnosis of diseases” during February 2003.
- National Conference on Sensor Technology held at **Delhi, India** presented a paper entitled “Disposable strips for detection of alkaline phosphatase in pasteurized milk” during September 2002.
- Asian Pacific Congress of Clinical Biochemistry held at **New Delhi, India** presented a paper entitled “Quick detection of lactose by enzymatic test strip” during March 2002.
- 71<sup>st</sup> Meeting of Society of Biological Chemists held at **Ludhiana, India** presented a paper entitled “Lactase membrane and its application in food industries” during November 2002.
- 70<sup>th</sup> Annual Meeting of Society of Biological Chemists held at **Hyderabad, India** presented a paper entitled “Quick detection of lactose in milk and milk products” during December 2001.
- India-Japan Workshop on New Advanced Materials in Molecular Electronics held at **New Delhi, India** presented a paper entitled “Biomolecules for biosensors and their application” during November 2001.
- Fourth International Symposium on Fish Endocrinology held at **Seattle, Washington**, presented a paper entitled “Biochemical and ultrastructural changes in the liver of the Indian freshwater murrel, *Channapunctatus*, during vitellogenin synthesis.” during August 2000.
- The First Indian Fisheries Science Congress held at **Chandigarh, India** presented a paper entitled “Identification of egg-chorion precursor, choriogenin, in the Indian freshwater murrel, *Channapunctatus* (Bloch)” during September 2000.
- Fourth Congress of Asia and Oceania Society for Comparative Endocrinology held at **Taipei, Taiwan**, presented a paper entitled “Identification of two female-specific proteins in the plasma of the Indian freshwater murrel, *Channapunctatus* (Bloch)” during May 2000.
- National Symposium on Current Status of General and Comparative Endocrinology held at **Santiniketan, West Bengal**, presented a paper entitled “Isolation and characterization of female-specific plasma proteins of the Indian freshwater murrel, *Channapunctatus* (Bloch)” during January 1991.
- Second Congress of the Asia and Oceania Society for Comparative Endocrinology held at **New Delhi, India**, presented a paper entitled “Immunological identification of two female-specific plasma proteins in the plasma and their localization in the oocytes of the murrel, *Channapunctatus* (Bloch)” during December 1991.

- National Symposium on Current Status of General and Comparative Endocrinology held at **Delhi, India**, paper presented entitled “Alterations in enzyme activities in the liver of murrel *Channapunctatus* (Bloch)” during November 1988.
- First International Congress of the Asia and Oceania Society for Comparative Endocrinology held at **Nagoya University, Japan**, presented a paper entitled “Role of testosterone in reproduction in the female catfish, *Heteropneustes fossilis* (Bloch)” during November 1987.

### **Research Projects (Major Grants/Research Collaboration)**

**Name of Project:** Hormonal and molecular mechanisms of preovulatory water influx in the oocytes of a freshwater fish

**Position in Project:** Principal Investigator

**Period:** 2010–2013

**Funding Agency:** Department of Science and Technology

**Grant:** Rs 35,00,000

**Name of Project:** Development of Indicators for Anthropogenic, Environmental and Chemical Stress on Urban Ecosystem: A Study of Aquatic and Terrestrial Ecosystems of Yamuna River Catchments from National Capital Region (Delhi). **Position in Project:** Principal Investigator

**Period:** 2009 -2013

**Funding Agency:** PURSE scheme of University of Delhi and Department of Science and Technology

**Grant:** Rs 2,00,00,000

**Name of Project:** Yolk proteolysis and oocyte hydration in the Indian freshwater fish

**Position in Project:** Principal Investigator

**Period:** 2006–2009

**Funding Agency:** Department of Science and Technology

**Grant:** Rs 18,16,822/-

**Name of Project:** Molecular mechanisms of egg cell organization and egg hardening in fish.

**Position in Project:** Principal Investigator

**Period:** 2001 -2004

**Funding Agency:** Indian Council of Agriculture Research

**Grant:** Rs 16,81,720/-

**Name of Project:** Hepatic biosynthesis of vitellogenin and its incorporation by fish oocytes.

**Position in Project:** Principal Investigator

**Period:** 2001 -2004

**Funding Agency:** University Grants Commission

**Grant:** Rs 6,21,920/-



**Name of Project:** Structural, Physiological and Biochemical Processes of Fish Chorionogenesis.

**Position in Project:** Principal Investigator

**Period:** 1990 -1993

**Funding Agency:** Department of Science & Technology

**Grant:** Rs 2,90,000

**Association With Professional Bodies**

***Committees and Boards***

Expert Consultation, CIFE, Mumbai.

***Memberships***

Member, Indian Fisheries Association, India.

Member, Indian Society of Ichthyologists, India.

Member, Indian Society for Comparative Endocrinology, India.

Member, Asia Oceania Society for Comparative Endocrinology, Japan.

Member, General and Comparative Endocrinology, USA.

Neel Sehgal  


Signature of Faculty Member

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