




University Faculty Details: (Prof. Umesh Rai)

Title	Prof. Umesh Rai		
Designation	Professor		
Department	Zoology		
Address (Campus)	Room no. 106, Department of Zoology, University of Delhi, Delhi-110007		
(Residence)			
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Email	rai_u@rediffmail.com		
Education			
Subject	Institution	Year	
Ph.D. in Zoology	BHU, Varanasi	1986	
M.Sc. Zoology	Gorakhpur University	1980	
Career Profile			
2006-till date:	Professor, Department of Zoology, University of Delhi		
1998-2006:	Reader, Department of Zoology, University of Delhi		
1992-1998:	Lecturer, Department of Zoology, University of Delhi		
1988-1992:	CSIR – Research Associate, Department of Zoology, Banaras Hindu University		
Administrative Experience			
Organization / Institution	Designation	Duration	
University of Delhi, South Campus	Director	2011 to 2016	
Research Guidance (Since 2003)			
Supervision of Doctoral Thesis :			
A. Ph.D. awarded - 16			
B. Under progress- 04			
Supervision of M.Phil. dissertations :			
A. Awarded – 6			
M.Sc. Zoology (IV- Semester) Students dissertation- on average 4-5/year since 2011			

Publications

In Indexed/ Peer Reviewed Journals

<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>	<u>Co-Author</u>
2018	Majumdar SS 2018 Hormone induced differential transcriptome analysis of Sertoli cells during postnatal maturation of rat testes.	PLoS ONE 13 (1): e0191201	Gautam M, Bhattacharya I, Majumdar SS
2018	Divergence of protein sensing (TLR 4,5) and nucleic acid sensing (TLR 3,7) within the reptilian lineage.	Mol. Phylogenet. Evol.	Priyam M, Tripathy M, Ghorai SM
2017	Bisphenol A mediated effects on innate immunity in freshwater teleost spotted snakehead <i>Channa punctatus</i> murrel.	Fish. Sci.	Pandey M, Ghorai SM,
2017	Temporal expression and gonadotropic regulation of aromatase and estrogen receptors in the ovary of wall lizard, <i>Hemidactylus flaviviridis</i> : Correlation with plasma estradiol and ovarian follicular development.	Steroids	Tripathy M
2017	Repertoire of bone morphogenetic proteins and growth/differentiation factors in ovary of the Indian wall lizard (<i>Hemidactylus flaviviridis</i>) with emphasis on differential expression and gonadotropic regulation of <i>bmp15</i> and <i>gdf9</i> .	Gen. Comp. Endocrinol.	Tripathy M, Priyam M
2017	<i>De novo</i> sequencing and comparative analysis of testicular transcriptome from different reproductive phases in freshwater spotted snakehead <i>Channa punctatus</i> .	PLoS One 12	Roy A, Basak R
2017	Purification and identification of 25-hydroxycholesterol in a reptile: Seasonal variation and hormonal regulation.	Gen. Comp. Endocrinol.	Singh V, Priyam M, Tripathy M
2016	A Study of Differential Expression of Testicular Genes in Various Reproductive Phases of <i>Hemidactylus flaviviridis</i> (Wall Lizard) to Derive Their Association with Onset of Spermatogenesis and Its Relevance to Mammals.	PLoS One	Sarkar H, Arya S, Majumdar SS
2016	Tracing the evolutionary lineage of pattern recognition receptor homologues in vertebrates: An insight into reptilian immunity via de novo sequencing of the wall lizard splenic transcriptome.	Veterinary Immunology and Immunopathology	Priyam M, Tripathy M, Ghorai SM
2016	Seasonality of reproduction in male spotted murrel <i>Channa punctatus</i> : correlation of environmental variables and plasma sex steroids with histological changes in testis.	Fish Physiol Biochem.	Basak R, Roy A

2013	Transcriptome Analysis of Spermatogenically Regressed, Recrudescing and Active Phase Testis of Seasonally Breeding Wall Lizards <i>Hemidactylus flaviviridis</i> .	PLoS ONE	Gautam M, Mathur A, Khan MA, Majumdar SS
2013	Clomiphene citrate potentiates the adverse effects of estrogen on rat testis and down-regulates the expression of steroidogenic enzyme genes.	Fertility and Sterility	Bharti S, Misro MM
2012	Sex-dependent effects of the UCP1 -3826 A/G polymorphism on obesity and blood pressure.	Ethn Dis. Spring	Dhall M, Chaturvedi MM, Kapoor S
2011	Dynorphin regulates the phagocytic activity of splenic phagocytes in wall lizards: involvement of a κ -opioid receptor- coupled adenylate-cyclase-cAMP-PKA pathway.	Exp Biol.	Kumar S
2011	β -Endorphin inhibits phagocytic activity of lizard splenic phagocytes through μ receptor-coupled adenylate cyclase- protein kinase A signaling pathway	Gen. Comp. Endocrinol.	Kumar S, Mondal S
2011	Immunomodulatory role of substance P in the wall lizard <i>Hemidactylus flaviviridis</i> : An in vitro study.	Neuropeptides	Kumar S
2011	Neuropeptide Y, an orexigenic hormone, regulates phagocytic activity of lizard splenic phagocytes	Peptides	Kumar S
2011	Role of estrogen in the regulation of spermatogenesis in the Indian wall lizard <i>Hemidactylus flaviviridis</i> .	Gen. Comp. Endocrinol.	Bharti S, Misro MM, Mathur A
2011	Immunomodulatory role of urotensins in teleost <i>Channa punctatus</i> .	Gen. Comp. Endocrinol	Singh, R
2010	Opioid and non-opioid receptor-mediated immunoregulatory role of Leucine-enkephalin in teleost <i>Channa punctatus</i> .	Fish & Shellfish Immunol.	Singh, R
2010	Kappa-opioid receptor-mediated modulation of innate immune response by dynorphin in teleost <i>Channa punctatus</i> .	Peptides	Singh R
2009	Delta opioid receptor mediated immunoregulatory role of methionine-enkephalin in freshwater teleost <i>Channa punctatus</i>	Peptides	Singh, R
2009	Genomic and non-genomic effect of cortisol on phagocytosis in freshwater teleost, <i>Channa punctatus</i> : an in vitro study.	Steroids	Roy B,
2008	Diurnal variation in phagocytic activity of splenic phagocytes in freshwater teleost <i>Channa punctatus</i> : melatonin and its signalling mechanism.	J. Endocrinol.	Roy B, Singh R, Kumar S
2008	Paracrine role of testicular macrophages in control	Gen. Comp.	Khan UW

	of Leydig cell activities in the wall lizard, <i>Hemidactylus flaviviridis</i> .	Endocrinol.	
2008	Role of adrenoceptor-coupled second messenger system in sympatho-adrenomedullary modulation of splenic macrophage functions in live fish, <i>Channa punctatus</i> .	Gen. Comp. Endocrinol.	Roy, B.
2008	Role of gonadotropin and Leydig cell-secreted paracrine factors in the control of testicular macrophage activity in the wall lizard <i>Hemidactylus flaviviridis</i> .	Dev. Comp. Immunol.	Khan UW
2008	Beta-endorphin regulates diverse functions of splenic phagocytes through different opioid receptors in freshwater fish <i>Channa punctatus</i> (Bloch): an in vitro study.	Develop. Comp. Immunol.	Singh R
2007	Differential effects of histamine on Leydig cell and testicular macrophage activities in wall lizards: precise role of H1/H2 receptor subtypes.	J. Endocrinol.	Khan UW
2006	Cellular mechanism of estrogen-induced thymic involution in wall lizard: caspase-dependent action	J. Exp. Zool.	Hareramadas, B
2005	Mechanism of androgen-induced thymic atrophy in the wall lizard <i>Hemidactylus flaviviridis</i> : an in vitro study.	Gen. Comp. Endocrinol.	Hareramadas, B
2005	Endocrine and paracrine control of Leydig cell steroidogenesis and proliferation in the wall lizard: an in-vitro study.	Gen. Comp. Endocrinol.	Khan UW
2004	In-vitro effect of FSH and testosterone on Sertoli cell nursing function in wall lizard <i>Hemidactylus flaviviridis</i> (Rüppell).	Gen. Comp. Endocrinol.	Khan UW
2004	Dual mode of catecholamine action on splenic macrophage phagocytosis in wall lizard, <i>Hemidactylus flaviviridis</i> .	Gen. Comp. Endocrinol.	Roy B
2004	Inter-relationship among testicular cells in wall lizard <i>Hemidactylus flaviviridis</i> (Rüppell): an ultrastructural seasonal and experimental study	Ind. J. Exp. Biol.	Khan UW
2004	Glucocorticoid-induced thymocyte apoptosis in wall lizard <i>Hemidactylus flaviviridis</i> .	Gen. Comp. Endocrinol.	Hareramadas B, Rembhotka, GW
2003	Significance of regional difference in ion concentrations in lizard, <i>Hemidactylus flaviviridis</i> (Rüppell): assessment of ionic influence on sperm motility in vitro.	Ind. J. Exp. Biol.	Nirmal BK
2002	Dose and time-related in vitro effects of glucocorticoid on phagocytosis and nitrite release by	Comp. Biochem.	Mondal S

	splenic macrophages of wall lizard Hemidactylus flaviviridis.	<i>Physiol.</i>	
2002	In vitro effect of sex steroids on cytotoxic activity of splenic macrophages in wall lizards (Hemidactylus flaviviridis).	<i>Gen. Comp. Endocrinol.</i>	Mondal S
2001	Thymic structural changes in relation to seasonal cycle and testosterone administration.	<i>Ind. J. Exp. Biol.</i>	Hareramadas B
2001	In vitro effect of temperature on phagocytic and cytotoxic activities of lizard's splenic macrophages.	<i>Comp. Biochem. Physiol.</i>	Mondal S
2000	Epididymal protein secretion and its androgenic control in wall lizards Hemidactylus flaviviridis (Ruppell).	<i>Ind. J. Exp. Biol.</i>	Nirmal, BK
1999	Sexual dimorphism in phagocytic activity of wall lizard's splenic macrophages and its control by sex steroids.	<i>Gen. Comp. Endocrinol.</i>	Mondal S
1998	Sex steroids hormones modulate the activation of murine peritoneal macrophages: receptor mediated modulation.	<i>Comp. Biochem. Physiol.</i>	Savita
1997	Nirmal BK, Rai U 1997 Epididymal influence on the acquisition of sperm motility in the gekkonid lizard, Hemidactylus flaviviridis.	<i>Arch. Androl.</i>	Nirmal BK
1996	Localization of phospholipid and phosphatases in the epididymal spermatozoa of Indian wall lizard, Hemidactylus flaviviridis (Ruppell).	<i>Mol. Androl.</i>	Kaur S
1995	Effect of cyproterone acetate on FSH and testosterone influenced spermatogenesis, Leydig cells and epididymis in the Indian wall lizard, Hemidactylus flaviviridis (Ruppell).	<i>Europ. J. Morphol.</i>	Haider S
1992	Short term effects of antiandrogens on recrudescence and reproductively active testes of Indian wall lizard, Hemidactylus flaviviridis (Ruppell).	<i>Ind. J. Exp. Biol.</i>	Haider S
1991	Testis and epididymis of the Indian wall lizard (Hemidactylus flaviviridis): Effects of flutamide on FSH and testosterone influenced spermatogenesis, Leydig cells and epididymis	<i>J. Morphol.</i>	Haider S
1991	Adrenal and testis relationship in the Indian wall lizard, Hemidactylus flaviviridis (Ruppell).	<i>Ind. J. Exp. Biol.</i>	Haider S
1989	Effect of mammalian pituitary gonadotropins on the sexually quiescent ovary of Indian wall lizard, Hemidactylus flaviviridis (Ruppell).	<i>J. Zool. (London)</i>	Haider S

1987	The epididymis of the Indian wall lizard (<i>Hemidactylus flaviviridis</i>) during sexual cycle and in response to mammalian pituitary gonadotropins and testosterone.	<i>J. Morphol.</i>	Haider S
1986	Effect of cyproterone acetate and flutamide on the testis and epididymis of Indian wall lizard, <i>Hemidactylus flaviviridis</i> (Ruppell).	<i>Gen. Comp. Endocrinol.</i>	Haider S
1986	Effects of mammalian pituitary gonadotropins and testosterone on the testis of sexually quiescent Indian wall lizard, <i>Hemidactylus flaviviridis</i> (Ruppell).	<i>J. Zool. (London)</i>	Haider S
1985	Some aspects of adrenal histology and histochemistry in the fresh water turtle, <i>Lissemys punctata granosa</i> .	<i>Zool. Jb. Anat.</i>	Haider S
1985	Distribution of adrenaline and noradrenaline chromaffin cells in the adrenal gland of a fresh water turtle, <i>Lissemys punctata granosa</i> .	<i>Current Science</i>	Haider S
1984	Histochemical, histoenzymological and experimental studies of adrenal gland of an Indian wall lizard, <i>Hemidactylus flaviviridis</i> (Ruppell).	<i>Zool. Jb. Anat.</i>	Haider S
1984	Histoenzymology and cytophysiology of adrenal gland in a water snake, <i>Natrix piscator</i> .	<i>Zool. Jb. Anat.</i>	Haider S
1984	Early versus delayed operation for acute cholecystitis.	<i>Journal of the Indian Medical Association</i>	Singh NK, Singh RJ

Conference Presentations

1. Haider, S. and Rai, U. (1983). XII European Comparative Endocrinology Conference, Sheffield.
2. Rai, U. and Haider, S. (1983). Proc. 70th Indian Science Congress.
3. Rai, U. and Haider, S. (1984). Proc. 71st Indian Science Congress.
4. Rai, U. and Haider, S. (1984). Proc. 71st Indian Science Congress.
5. Rai, U. and Haider, S. (1984). Symposium on Comparative Endocrinology, B.H.U.
6. Rai, U. and Haider, S. (1985). 72nd Indian Science Congress.
7. Rai, U. and Haider, S. (1986). 73rd Indian Science Congress.
8. Rai, U. and Haider, S. (1988). All India Symp. On Comparative Endocrinology, Nagpur University

9. Rai, U. and Haider, S. (1988). Symposium on Recent trends in comparative endocrinology, B.H.U.
10. Rai, U. and Haider, S. (1989). Symposium on Recent Advances in Endocrinology.
11. Savita and Rai, U. (1996). Symp. on Emerging Frontiers in Hormone Research, B.H.U.
12. Nirmal, B. K. and Rai, U. (1996). Symp. on Emerging Frontiers in Hormone Research, B.H.U.
13. Mondal, S. and Rai, U. (1997). Satellite symposium of the XIII International Congress of Comparative Endocrinology, Nagpur University.
14. Rai, U. (1998). National Symposium on Advances in Endocrine Research and its Relevance to Biotechnology, Utkal University.
15. Nirmal, B. K. and Rai, U. (1998). National Symposium on Trends in Research on Hormones, Reproduction and Animal Productivity, University of Delhi.
16. Mondal, S. and Rai, U. (1998). National Symposium on Trends in Research on Hormones, Reproduction and Animal Productivity, University of Delhi.
17. Nirmal, B. K. and Rai, U. (1998). International Symposium of Asia and Oceania Society for Comparative Endocrinology, South Korea.
18. Mondal, S. and Rai, U. (1998). International Symposium of Asia and Oceania Society for Comparative Endocrinology, South Korea.
19. Hareramadas, B. and Rai, U. (1999). 18th National Symposium on Reprod. Biol. And Comp. Endocrinol, Madras Christian College, Chennai.
20. Rai, U. and Mondal, S. (1999). 18th National Symposium on Reprod. Biol. And Comp. Endocrinol, Dept. of Zoology, Madras Christian College, Chennai.
21. Mondal, S. and Rai, U. (1999). 18th National Symposium on Reprod. Biol. And Comp. Endocrinol, Madras Christian College, Chennai.
22. Rai, U. and Mondal, S. (2000). 4th Congress of the Asia and Oceania Society for Comparative Endocrinology, Taipei, Taiwan.
23. Mondal, S. and Rai, U. (2000). Effect of growth hormone and prolactin on phagocytic activity of wall lizard's splenic macrophages. 4th Congress of the Asia and Oceania Society for Comparative Endocrinology, Taipei, Taiwan.
24. Nirmal, B. K. and Rai, U. (2000). 4th Congress of the Asia and Oceania Society for Comparative Endocrinology, Taipei, Taiwan.
25. Hareramadas, B. and Rai, U. (2000). 4th Congress of the Asia and Oceania Society for Comparative Endocrinology, Taipei, Taiwan.
26. Mondal, S. and Rai, U. (2000). 69th Annual meeting of the society of Biological Chemists, Calcutta.
27. Rai, U. and Mondal, S. (2002). XX National Symposium on Reproductive physiology and Comparative Endocrinology, Bharathidasan University, Tiruchirappalli.
28. Khan, U. W. and Rai, U. (2002). XX National Symposium on Reproductive physiology and Comparative Endocrinology, Bharathidasan University, Tiruchirappalli.
29. Hareramadas, B. and Rai, U. (2002). XX National Symposium on Reproductive Physiology and Comparative Endocrinology, Bharathidasan University, Tiruchirappalli.
30. Rai, U. (2002). National Colloquium on Catfish Physiology, B.H.U., Varanasi.
31. Khan, U. W. and Rai, U. (2002). National Colloquium on Catfish Physiology, B.H.U.
32. Hareramadas, B. and Rai, U. (2002). National Colloquium on Catfish Physiology, Banaras Hindu University, Varanasi.
33. Roy, B. and Rai, U. (2002). National Colloquium on Catfish Physiology, B.H.U.
34. Roy, B., Mondal, S. and Rai, U. (2003). XXI SRBCE, Dept. Zoology, B.H.U., Varanasi.
35. Khan, U. W. and Rai, U. (2003). National symp. on current trends in comp. Endocrinology: Impact of Molecular Biology and Biotechnology, Nagpur University.
36. Roy, B. and Rai, U. (2003). National symposium on current trends in comp. Endocrinology: Impact of Molecular Biology and Biotechnology, Nagpur University.

37. Hareramadas, B. and Rai, U. (2005). National Symposium on Comp. Endocrinol. and Reproductive Physiology: Retrospect and Prospect, University of Delhi.
38. Roy, B. and Rai, U. (2005). 15th International Congress of Comp. 17 Endocrinology, Boston.
39. Khan, U. W. and Rai, U. (2005). 15th Int. Congress of Comp. Endocrinology, Boston.
40. Rai, U. and Hare ramadas, B. (2005). 15th Int. Congress of Comp. Endocrinology, Boston.
41. Singh, R. and Rai, U. (2005). 15th Int. Congress of Comp. Endocrinology, Boston.
42. R. Singh and Rai, U. (2006). 5th Int. congress of AOSCE, Bangkok.
43. Rai, U. (2007). National Symposium on an update of Reproductive Endocrinology: Novel and Applied Strategies, B.H.U. Roy, B. and Rai, U. (2007). National Symposium on an update of Reproductive Endocrinology: Novel and Applied Strategies, B.H.U.
44. Khan, U. W. and Rai, U. (2007). National Symposium on an update of Reproductive Endocrinology: Novel and Applied Strategies, B.H.U.
45. Singh, R. and Rai, U. (2007). National Symposium on an update of Reproductive Endocrinology: Novel and Applied Strategies, B.H.U.
46. Kumar, S. and Rai, U. (2007). National Symposium on an update of Reproductive Endocrinology: Novel and Applied Strategies, B.H.U.
47. Singh, R. and Rai, U. International Structural Neuroscience Conference on Peptide. Nagpur University, Nagpur. February 2-3, 2008
48. Rai, U. and Khan, U.W. (2008). International Conference on Molecular and Clinical Aspects of Gonadal and Non-gonadal Actions of Gonadotropins. AIIMS, New Delhi.
49. Singh, R. and Rai, U. (2008). International Conference on Fish Diseases and Fish Immunology, Iceland, pp. 30.
50. Rai, U. and Roy, b. (2008). XX National Symposium on Chronobiology, School of Life Sciences, Pt. Ravishankar Shukla University, Raipur, pp. 9.
51. Rai, U. (2009). International Conference on Novel Updates in Reproductive Biology and Comparative Endocrinology and The 27th annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology (SRBCE-XXVII), pp. 19.
52. Rai, U. and Roy, B. (2009). Symposium on Functional Biodiversity and Ecophysiology of Animals, Dept. Zoology, BHU, Varanasi; pp. 87.
53. Pandey, M. and Rai, U. (2013). International Conference on Comparative 18 Endocrinology and Physiology, RTM Nagpur University, Nagpur.
54. Priyam, M., Ghorai, SM. and Rai, U. (2015). Indian Subcontinent Region Decision Sciences Institute Meet, Murcia, Spain.
55. Basak, R., Roy, A. and Rai, U. (2015). National Symposium on Comparative Endocrinology and Reproductive Biology, Department of Zoology, Visva- Bharti, Santiniketan, India.
56. Tripathy, M. and Rai, U. (2015). National Symposium on Comparative Endocrinology and Reproductive Biology, Department of Zoology, Visva- Bharti, Santiniketan, India pp.11
57. Priyam, M., Ghorai, SM. and Rai, U. (2015). National Symposium on Comparative Endocrinology and Reproductive Biology, Department of Zoology, Visva-Bharti, Santiniketan, India pp.9
58. Bakshi, A., Maurya, SK., Basak, R., Roy, A., Pandey, M. and Rai, U. (2015). National Symposium on Comparative Endocrinology and Reproductive Biology, Department of Zoology, Visva-Bharti, Santiniketan, India pp.10
59. Priyam, M., Ghorai, SM. and Rai, U. (2015). International Symposium on Comparative Endocrinology and Integrative Physiology, University of Kerala, Karivattom, Thiruvananthapuram, India pp.22
60. Tripathy, M. and Rai, U. (2015). International Symposium on Comparative Endocrinology and Integrative Physiology, University of Kerala, Karivattom, Thiruvananthapuram, India pp.23
61. Basak, R., Roy, A. and Rai, U. (2016). 8th congress of AOSCE-From comparative to translational research, Korea University, College of Medicine, Seoul, Korea pp. 57

62. Sarkar, H., Rai, U. and Majumdar, SS. (2016). Gordon Research Conference on meiosis, New London, NH, USA pp.28
63. Bakshi, A and Rai, U. (2017). International Conference on Reproductive Biology and Comparative Endocrinology and The 35th Annual Meeting of The Society for Reproductive Biology and Comparative Endocrinology, University of Hyderabad, India pp. 29
64. Kumari, B., Bakshi, A., Dotania, K. and Rai, U. (2017). International 19 Symposium on Recent Advances in Comparative Endocrinology, Madras Christian College, Chennai, India pp. 8
65. Tripathy, M. and Rai, U. (2017). International Symposium on Recent Advances in Comparative Endocrinology, Madras Christian College, Chennai, India.
66. Bakshi, A and Rai, U. (2017). International Symposium on Recent Advances in Comparative Endocrinology, Madras Christian College, Chennai, India.

Updated list of Publication

Invited Chapters:

Published by NISCAIR, CSIR for e-Book on Reproductive Biology

1. Rai, U. and Roy, B. (2007). "Sex determination and differentiation invertebrates".
2. Rai, U. and Kumar, S. (2007). "Pregnancy".

Narosa publication

1. Rai, U. and Khan, U.W. (2008). Endocrine and paracrine control of testicular functions in reptiles.

Proceedings in the International Symposium/ Congress:

2. Nirmal, B. K. and Rai, U. (1999). Studies on the biochemical components of lizard's epididymis: influence of energy substrates on the motility of spermatozoa. **3rd Int. Symp. of Asia and Oceania society for Comp. Endocrinol., Republic of Korea, pp.177-183.**
3. Mondal, S. and Rai, U. (1999). Dose-dependent effects of sex steroids on lizard's splenic macrophage phagocytic activity. **3rd Int. Symp. of Asia and Oceania society for Comp. Endocrinol., Republic of Korea pp.482-488.**
4. Rai, U. and Mondal, S. (2000). Sexual dimorphism in functional activity of lizard's splenic macrophages. **4th Congress of the Asia and Oceania Society for Comparative Endocrinology (AOSCE), Taiwan, pp.360-369.**
5. Khan, U.W. and Rai, U. (2004). Effect of FSH and testosterone on lactate production by Sertoli cells of wall lizard *Hemidactylus flaviviridis*. **5th Congress of AOSCE, Nara, Japan, 200-202.14**
6. Hareramadas, B. and Rai, U. (2004). In vitro effect of corticosterone on lizard thymocytes. **5th Congress of AOSCE, Nara, Japan, 230-232.**
7. Roy, B. and Rai, U. (2004). Dose-related genomic and non-genomic action of catecholamines on splenic macrophage phagocytosis in wall lizard. **5th Congress of AOSCE, Nara, Japan, 233-235.**

8. R. Singh and **Rai, U.** (2006). In vitro effect of β -endorphin on splenic phagocyte activities in male *Channa punctatus*. **5th Inter Congress Symposium of AOSCE, Bangkok, Thailand**, 125-128.

9. Hareramadas, B. and **Rai, U.** (2006). Estrogen-induced thymic atrophy in the wall lizard, *Hemidactylus flaviviridis*. **5th Inter Congress Symposium of AOSCE, Bangkok, Thailand**, 267-275.

10. **Rai, U.** and Khan, U.W. (2008). Endocrine and paracrine control of Leydig cell activities in reptiles. **International Conference on "Molecular and Clinical aspects of gonadal and non-gonadal actions of gonadotropins" AIIMS, New Delhi, India.**

Public Service / University Service / Consulting Activity

Organised National symposium/ conferences/ workshops:

- National symposium on "Trends in research on hormones, reproduction and animal productivity" in 1998 sponsored by Ministry of Environment and Forests
- National symposium on "Comparative Endocrinology and Reproductive Physiology: Retrospect and prospect" in 2005 sponsored by Council of Scientific and Industrial Research (CSIR)
- Seminar-cum-workshop on "Comparative Endocrinology and Reproductive Physiology" in 2006
- Workshop on "Techniques for Endocrine Research" in 2012

Chair-person in national / international conferences:

- National Symposium on Comparative Endocrinology and Reproductive Physiology, organized by the Institute of Science, Mumbai (2009)
- International Congress on Bioimmunoregulatory Mechanisms Associated with Reproductive Organs: Relevance in Fertility and in Sexually Transmitted Infections (2009), organized by NII, New Delhi
- symposium organized by Dept. Zoology, BHU (2009)
- International Conference organized in AIIMS, New Delhi (2008)
- National Symposium organized in the Dept. of Zoology, B.H.U. (2007)
- Int. Symp. held in Dept. of Animal Sciences, University of Hyderabad (2005)
- 15th International Congress of Comparative Endocrinology held in Boston (2005)
- XXI SRBCE meeting held in Dept. of Zoology, B.H.U (2003)
- 4th International Congress of the AOSCE, Taipei, Taiwan (2000)
- Satellite Symp. of the XIII ICCE, Dept. of Zoology, Nagpur University (1997)

Invited Lectures:

- International Conference organized by Department of Animal Sciences, School of Life Sciences, University of Hyderabad, Hyderabad (2009)
- XX National Symposium on Chronobiology, Pt. Ravishankar Shukla University, Raipur (2008)
- International Conference organized in AIIMS, New Delhi (2008)
- 6th International Congress of the AOSCE, North Bengal University (2007).
- National Symposium organized in the Dept. of Zoology, B.H.U. (2007).
- National workshop organized by dept. Zoology, AMU, Aligarh (2005)
- Lecture-workshop organized under the auspices of Indian Academy of Sciences (2005)
- National Colloquium in Dept. of Zoology, BHU, Varanasi (2002)
- Fourth International Congress of the AOSCE, Taipei, Taiwan (2000)
- National Symposium in the Dept. Zoology, Utkal University (1998)

Professional Societies Memberships

- Indian Society for Comparative Endocrinology (ISCE)
- Asia and Oceania Society for Comparative Endocrinology (AOSCE)
- International Federation of Comparative Endocrine Society (IFCES)

Projects (/ Minor grant/ Major Grants / Collaborations)

1. Minor:

R&D Research Grant, University of Delhi, since 2007 every year

- 2012-13: University of Delhi, Expression analysis of Follicle stimulating hormone receptor and Luteinizing hormone receptor in the ovary of wall lizard, *Hemidactylus flaviviridis*
- 2013-2014: University of Delhi, Expression and Signaling of Toll-like receptor 2 in splenocytes of wall lizard, *Hemidactylus flaviviridis*
- 2014-2015: University of Delhi, De novo sequencing of ovarian transcriptome of wall lizard, *Hemidactylus flaviviridis*
- 2015-2016: University of Delhi, Effect of *Aeromonas hydrophila* infection on kiss and kiss receptor expression in immune organs of *Channa punctatus*

2. Major Research Projects:

- 1994-1998: UGC major research project, Role of epididymis in relation to maturation of spermatozoa in Indian wall lizard *Hemidactylus flaviviridis* Ruppell
- 2000-2004: DST research project, Humoral and cellular control of testicular function in wall lizard, *Hemidactylus flaviviridis*
- 2003-2006: UGC major research project, Neuroendocrine control of phagocytic, cytotoxic and inflammatory activities of splenic macrophages in wall lizard *Hemidactylus flaviviridis* Ruppell
- 2003-2006: ICAR research project, Endocrine control of macrophage activities in live fish *Channa punctatus*
- 2007-2009: DST research project, A study of bi-directional communication between Leydig cells and immune cells in the testis of wall lizard, *Hemidactylus flaviviridis*
- 2011-2012: University of Delhi, Pathogen induced Toll-like receptors and proinflammatory cytokines gene expression in spleen of fresh water teleost *Channa punctatus*
- 2011-2013: DU-DST PURSE, Detection, expression and hormonal regulation of testicular genes involved in activation and inactivation of spermatogenesis in freshwater fish *Channa punctatus*
- 2017-2019: DBT research project, Understanding signaling mechanism of inflammation in teleost *Channa punctatus*
- 2017-2019: EMR-SERB, DST research project, Understanding the mechanism of onset of reproductive activity in seasonally breeding reptile *Hemidactylus flaviviridis* : an emphasis on the role of the kisspeptin

(Signature of Faculty Member)

(Signature & Stamp)
(Head of the Department)