

# **ILA MISHRA**

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## **Positions**

**Research Associate** **2019- Present**  
Case Western Reserve University, Department of Medicine, Cleveland, OH  
Laboratory of Atul R. Chopra, M.D., Ph.D.

**Postdoctoral Fellow** **2017 - 2018**  
Western Kentucky University, Bowling Green, Kentucky  
Laboratory of Dr. Noah Ashley.

## **Education**

**Doctorate of Philosophy** **2012 – 2017**  
Chronobiology Laboratory, Department of Zoology  
University of Delhi, India  
Laboratory of Prof. Vinod Kumar

**Masters in Zoology** **2009 - 2011**  
Department of Zoology  
University of Delhi, India.

**Bachelors in Zoology** **2006 - 2009**  
Miranda House College  
University of Delhi, India.

## **Other Research Experience**

**Indo-US Fulbright exchange fellow** **January 2016 – March 2016**  
University of California, San Diego, California  
Laboratory of Prof. Michael Gorman

**Project Trainee** **August 2011 - January 2012**  
Department of Zoology, University of Delhi.  
Laboratory of Prof. Vinod Kumar.

## **Fellowship Awards**

**Indo-US postdoctoral fellowship award** **2017**  
Host laboratory: Prof. Satchidananda Panda's lab  
Salk Institute of biological sciences, San Diego, California (Did not avail fellowship)

**Senior Research Fellowship** **2014 - 2017**  
CSIR (Council of Scientific and Industrial Research), India

## Publications

- **Mishra I**, Kumar V. 2019. The quantity-quality trade-off: Differential effects of daily food times on reproductive performance and offspring quality in diurnal zebra finches. *Journal of Experimental Biology*, accepted for publication.
- **Mishra I**, Agarwal N, Rani S, Kumar V. 2018. Scotostimulation of reproductive neural pathways and gonadal maturation are not correlated with hypothalamic expression of deiodinases in subtropical spotted munia. *Journal of Neuroendocrinology*, 30(9):e12627.
- **Mishra I**, Singh D, Kumar V. 2018. Temporal expression of c-fos and genes coding for neuropeptides and enzymes of amino acid and amine neurotransmitter biosynthesis in retina, pineal and hypothalamus of a migratory songbird: Evidence for circadian rhythm dependent seasonal responses. *Neuroscience* 371:309-324.
- Agarwal N, **Mishra I**, Rani S, Kumar V. 2018. Temporal expression of clock genes in central and peripheral tissues of spotted munia under varying light conditions: Evidence for circadian regulation of daily physiology in a non-photoperiodic circannual songbird species. *Chronobiology International* 35(5):617-632.
- **Mishra I**, Singh D, Kumar V. 2017. Daily levels and rhythm in circulating corticosterone and insulin are altered with photostimulated seasonal states in night-migratory blackheaded buntings. *Hormones and Behaviour*, 94:114-123.
- Agarwal N, **Mishra I**, Komal R, Rani S, Kumar V. 2017. Circannual testis and moult cycles persist under photoperiods that disrupt circadian activity and clock gene cycles in spotted munia. *Journal of Experimental Biology*, doi: 10.1242/jeb.167809.
- **Mishra I**, Singh D, Kumar V. 2017. Seasonal alterations in the daily rhythms in hypothalamic expression of genes involved in the photoperiodic transduction and neurosteroid-dependent processes in migratory blackheaded buntings. *Journal of Neuroendocrinology*, doi: 10.1111/jne.12469.
- **Mishra I**, Kumar V. 2017. Circadian basis of seasonal timing in higher vertebrates. *Biological Rhythm Research*, 48: 723-738.
- **Mishra I**, Bhardwaj S, Malik S, Kumar V. 2017. Concurrent hypothalamic gene expression under acute and chronic long days: Implications for initiation and maintenance of photoperiodic response in migratory songbirds. *Molecular and Cellular Endocrinology*, 439: 81-94.
- **Mishra I**, Singh D, Kumar V. 2016. Daily expression of genes coding for neurotransmitters in central and peripheral tissues of redheaded bunting: Implication for circadian regulation of physiology in songbirds. *Chronobiology International*, 33:280-292.
- **Mishra I**, Kumar V. 2016. Role of melatonin in avian circadian and photoperiodic systems. *Journal of Endocrinology and Reproduction*, Volume 20 (1): 100-107.
- **Mishra I**, Trivedi AK, Kumar V. 2014. Daily behavior can differ between colour morphs of the same species: A study on circadian activity behavior of grey and pied zebra finches. *Indian Journal of Experimental Biology*, 52: 516-520.
- Trivedi AK, **Mishra I**, Rani S, Kumar V. 2011. Circadian and seasonal regulation of migration in redheaded Bunting, *Emberiza bruniceps*. Status of Indian birds and their conservation, Conference proceedings. ISBN- 81-902136-0-3, pg-115-116.

## Book chapter

- Kumar V, **Mishra I**. 2017. Circannual rhythms. In Encyclopedia of Reproduction, Second Edition. Elsevier. B978-0-12-801238-3.64613-5. (DOI: 10.1016/B978-0-12-801238-3.64613-5)

- **Mishra I.** 2017. Rhythms in Fishes. In Water biology. Khanna D.R., Bhutiani R (eds.). Discovery publishing house. New Delhi.

### **Awards: Oral and Poster Presentations**

- Awarded best oral presentation in **XXVI National Symposium on Chronobiology**, University of Mysore, Karnataka (2016).
- Awarded best poster award in **CCB (Centre for Circadian biology) symposium** at Sanford Consortium, University of California San Diego (2016).
- Awarded best oral presentation award at **XXV National symposium on chronobiology (NSB)** held at Pt. RSS University, Raipur (2014).
- Awarded best poster presentation award at **International conference on comparative endocrinology and physiology (ICCEP2013)** held at Nagpur, Maharashtra (2013).
- Awarded best poster presentation award at **6<sup>th</sup> SERB school in Neuroscience** held at National Institute of Science Education and Research, Bhubaneswar (2012).
- Awarded best hypothesis formulation award (Group award) at **11<sup>th</sup> SERC School in Chronobiology** held at NEHU (North-Eastern Hill University), Shillong, India (2012).
- Awarded best poster presentation award at the **10<sup>th</sup> SERC School in chronobiology** held at Meerut (2011).

### **Presentations**

- **Mishra I**, Kumar V. Time of feeding determines the offspring quantity-quality trade-off in zebra finches. International Ornithology Congress, Vancouver, Canada (2018).
- **Mishra I**. Time of feeding determines the offspring quantity-quality trade-off in zebra finches. Animal Behaviour Conference, Indiana University, Bloomington, USA (2018).
- **Mishra I**, Kumar V. Role of food in regulation of seasonal and circadian rhythms in birds. International symposium on biological timing and health issues in the 21<sup>st</sup> century. University of Delhi, Delhi, India (2017).
- **Mishra I**, Agarwal N, Kumar V. Neuropeptide Regulation of Seasonal Gonadal Recrudescence in Atypical Photosensitive Spotted Munia, *Lonchura punctulata* at the 29th Conference of the International Society for Chronobiology (ISC), Suzhou, China (2016).
- **Mishra I**, Kumar V. Thyroid responsive and steroidogenic gene switches during different photoperiod-induced states in black-headed buntings. XXVI National Symposium on Chronobiology, University of Mysore, Karnataka, India (2016).
- **Mishra I**, Kumar V. Food availability time affects reproductive fitness in Zebra finches. XXV National symposium on Chronobiology, Pt. RSS University, Raipur (2015).
- **Mishra I**, Singh D, Rani S, Kumar V. Circadian rhythm of neurotransmitters and neuromodulators in central and peripheral tissues of a migratory song bird. 26<sup>th</sup> International Ornithology Congress, Tokyo, Japan (2014).
- **Mishra I**, Trivedi AK, Kumar V. The Sparrow clock is for all seasons. International Chronobiology Conference held at University of Delhi, India (2012).
- Trivedi AK, **Mishra I**, Rani S, Kumar V. Circadian and seasonal regulation of migration in redheaded bunting, *Emberiza bruniceps*. Salim Ali Centre for Ornithology and Natural History (2011).

### **Member of scientific societies**

- Member of International Ornithology Society
- Life member, Indian Society for Chronobiology